

**INFORMAL LABOUR MARKET ACTIVITY:
A SOCIAL SAFETY NET DURING ECONOMIC
TRANSITION?**

THE CASE OF GEORGIA

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ABSTRACT

This thesis provides the first in depth study of formal and informal labour markets in Georgia, based on the analysis of labour force and household survey data for 1998, 1999. A conceptual framework is developed, which distinguishes informal activities from other types of untaxed, unregulated and/or unmeasured activities (illegal, underground and household activities).

Despite a massive collapse in output, following the dismantlement of the former Soviet Union, open unemployment increased relatively little in Georgia. This thesis suggests that this was, in part, due to a transfer of labour into informal employment. The results show that by 1999, 52% of total (34% of non-agricultural) employment was informal. It argues that the resulting fiscal crisis squeezed social security provision and individuals could not afford to be unemployed. It also shows that there was little growth in private firms capable of absorbing labour shed from the state sector. With limited formal job creation and no adequate social benefits, labour shifted mainly into informal employment.

The analysis shows that informal activities provide a social safety net. Informal employment is found to increase the risk of poverty with respect to formal employment and to lower it with respect to unemployment and inactivity *ceteris paribus*. Assuming that individuals are utility maximizing and that they make rational choices, this thesis concludes that, on average, individuals work informally because there is no formal alternative and because they are better off than being unemployed or inactive.

However, the informal sector is also found to be contributing to deskilling the labour force, further marginalizing certain vulnerable groups, and its concentration amongst ethnic minorities and underprivileged regions could contribute to undermining Georgia's stability. The challenge for policy will be how to benefit from the informal sector's capacity to provide a social safety net, while minimizing its potentially detrimental consequences.

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THE BACKDROP

1.1 THE CENTRAL ARGUMENT

When the socialist system collapsed, it was widely predicted that unemployment would be a key adjustment mechanism in the transition to a market economy (see for example Aghion and Blanchard 1993; Commander, S and Coricelli 1995).¹ The restructuring process was to result in the shedding of labour from state enterprises and the creation of a pool of unemployed, which would be needed to fill new jobs in private firms. However, despite a massive collapse in output in all transition countries, unemployment in the countries of the Former Soviet Union increased relatively little.² Many have argued that the lack of correlation between unemployment and restructuring can be explained by substantial labour hoarding in state enterprises (see for example Commander, S, et al. 1996; Commander, Simon and Tolstopiatenko 1997; Evans-Klock and Samorodov 1998; Layard and Richter 1995).³ This thesis suggests that there is also another explanation; the growth of informal labour market activity.

In Georgia, 13 years after the beginning of the transition to a market economy, over 50% of the employed population works informally. The majority is self-employed in small-scale activities such as petty trade, home-based bread manufacturing, unofficial taxi services or subsistence farming. Others are contributing family workers in household enterprises and on household farms and unregistered, low-skilled wage employees in the tea industry, on construction sites, in hotels, restaurants and domestic services. What the transition models failed to predict was the unprecedented collapse in output that followed the dismantlement of the former Soviet Union and the scale of the fiscal crisis that resulted in the virtual collapse of social security provision. Moreover, the break-up of inter-republican and CMEA (Council of Mutual Economic Assistance) trade links, coupled with mass privatisation and high inflation (resulting from the instantaneous and indiscriminate liberalisation of prices) impeded growth from resuming quickly. In the absence of formal jobs and social benefits, individuals engage in informal income-generating activities to survive. In this sense, the informal sector is providing a social safety net. However, does the informal sector also undermine government revenue and further exacerbate the government's inability to provide social security and intervene in the economy?

¹ In this thesis, the 'socialist' system is used to describe the system that existed in the USSR and Central and Eastern Europe prior to the transition to a market economy, as per Kornai (1992, p.10). Kornai argues that this is the term the system used to describe itself, since under Marxism-Leninism 'communist' referred to the unattained utopian society of the future, in which all would share in social production according to their needs, while in the meantime, there would be 'socialism'.

² The term 'transition countries' is used to refer to the countries of Central and Eastern Europe (CEE) and the Former Soviet Union (FSU).

³ Instead of shedding labour to adjust for a decrease in demand, enterprises reduce real wages, accumulate wage arrears, place workers on unpaid leave or reduce working hours.

Before tackling these questions, we first of all ask what exactly is the informal sector? Although an extensive body of literature exists on the definition of the informal sector in the international development context, it has largely been disregarded by researchers working on transition economies. Authors in this region have used the term the ‘informal’ (‘underground’, ‘unofficial’, ‘shadow’, etc.) economy to describe a wide spectrum of activities such as tax evasion, corruption, money laundering, organised crime, bribery, subsistence farming, barter, petty trade, and the stealing of state property. For policy purposes, it is important to distinguish small-scale income and employment-generating activities, from tax evasion, corruption and crime.

This thesis develops a conceptual framework that distinguishes between four types of ‘hidden’ economic activities⁴: (1) ‘*informal*’ activities, which are undertaken ‘to meet basic needs’ and are within the System of National Accounts (SNA) production boundary⁵; (2) ‘*underground*’ activities, which are deliberately concealed from public authorities to avoid either the payment of taxes or compliance with certain regulations; (3) *illegal* activities, which generate goods and services forbidden by the law or which are unlawful when carried out by unauthorised producers; and (4) *household* activities, which produce goods and services for own-consumption and are outside the SNA production boundary.

Unlike the traditional International Labour Organisation (ILO) definition of informal employment, which comprises all individuals employed in informal ‘enterprises’⁶, this approach includes all informal labour market ‘activity’⁷, regardless of whether it takes place in informal or formal enterprises. It consists of the following types of employment: (1) self-employed in household enterprises⁸; (2) self-employed on urban or unregistered plots of land; (3) unpaid contributing family workers; (4) wage employees working on the basis of oral agreements; (5) secondary job holders with formal primary jobs and informal secondary jobs in categories 1-4 above.

Turning to the question of whether the informal sector provides a social safety net, we can build on utility theory and on the theory of rational choice and examine the relationship between labour

⁴ We define hidden economic activities as productive activities that are (a) unmeasured in GDP, and/or (b) untaxed and/or (c) unregulated.

⁵ The SNA (1993) production boundary defines those productive economic activities that should be included in GDP estimates.

⁶ According to the ILO (1993b) ‘Resolution Concerning Statistics of Employment in the Informal Sector’, the informal sector is comprised of household enterprises engaging in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned. Amongst others, they can be characterised as operating at a low level of organisation, with little or no division between labour and capital and on a small scale.

⁷ Activity is used in the sense of productive economic activities as defined in ILO (1989) and in SNA (1993).

⁸ Household enterprises are defined in (ILO 1993b, para.5) Location is used as a proxy for household enterprise; enterprises located at home, outside home, in a street booth, market place, construction site, at a customer’s home or a non-fixed location.

market status and poverty to show that it does. In Georgia, informal employment is associated with higher poverty risks than formal employment, *ceteris paribus*. Thus for any category of employment, individuals who are informally employed are more likely to be poor than are those who are formally employed, everything else being equal. At the same time, informal employment significantly decreases the risk of poverty with respect to unemployment and inactivity, *ceteris paribus*. Assuming that individuals are utility maximizing and that they make rational choices, then we can deduce that, on average, individuals work informally because there is no formal alternative and because it is better than being unemployed or inactive and therefore conclude that the informal sector is providing a social safety net.

Indeed opportunities for formal employment are extremely limited in Georgia. The formal labour market is essentially limited to wage employment in state administration, health and education and to self-employment in agriculture. The private sector is still in an incubatory stage and offers very limited opportunities for formal employment. By the end of 1999, only 29% of all wage employees worked in the private sector and the large majority worked informally, without a written agreement. Moreover, the small private firms that were to absorb part of the labour shed from restructured state enterprises and be the driving force behind economic growth failed to materialise; only 1% of Georgia's employed in 1999 were entrepreneurs hiring at least one wage-employee. At the same time, unemployment is not an option as benefits, if paid at all, are worth approximately 11% of the minimum subsistence level. Therefore, in the absence of formal employment opportunities and formal social protection, the informal sector is providing a social safety net.

Does the informal sector undermine government revenue? Given the definition of informal sector adopted in this thesis, little support is found for this claim. The types of activities involved suggest that attempting to tax the informal sector may generate very little revenue and may indeed suppress these activities altogether. This does not of course deny that underground and illegal activities are widespread in Georgia and that there is enormous scope for increasing tax revenue by addressing these issues. However, attempting to tax subsistence farmers, petty traders and informal wage labour may raise very little revenue and could seriously undermine livelihoods in the absence of an alternative form of social security. Moreover, the findings show that most informal enterprises are better characterised as survival activities than as 'potential capitalist enterprises', although further research is required to examine which (if any) informal activities could potentially grow into formal enterprises.

Finally, the risk is that in the long run a dual labour market is created with a high-skilled, protected formal sector and a low-skilled, vulnerable informal sector. There is evidence that this is

already happening as informal employment is found to be strongly associated with certain vulnerable groups. Females, youth, ethnic minorities and people living in certain depressed regions are all more likely to be informally employed, *ceteris paribus*. This concentration suggests that the informal sector is not a transitional phenomenon, which temporarily absorbs the unemployed and provides a source of income while new formal jobs are being created. On the contrary, it indicates that the informal sector may become more entrenched as certain vulnerable groups are excluded from the formal labour market altogether and will only have one alternative to unemployment; informal employment. If Georgia and other transition countries are to avoid the establishment of a 'developing country'-style dual labour market, it is critical that while the informal sector should be supported in the short-run, emphasis should be placed on 'formalisation' through the creation of formal employment opportunities and a formal social security system that can address the needs of the most vulnerable groups in society.

Main Questions, Hypotheses and Road Map for the Thesis

Having outlined the core argument of the thesis, the main questions and hypotheses can now be summarised as follows:

1. Did the collapse in output, which accompanied the transition to a market economy in Georgia, result in a proportional increase in open unemployment? (Chapter 4)
2. If not, why not? (Chapter 5)

Hypothesis 1: Unemployment did not match the collapse in output, in part, because labour shifted directly into informal employment.

3. If informal employment increased, what caused this increase? (Chapter 6)

Hypothesis 2: The unexpected scale of the collapse in output led to a fiscal crisis that crippled social security provision and meant that individuals could not afford to be unemployed. Individuals work informally because there are no formal employment opportunities and because social benefits are inadequate.

4. What are the implications for the country's social and economic development? (Chapters 4, 5 and 6)
5. What are the implications for policy and what should be done about it? (Chapter 7)

However, before tackling these questions, the following questions must be addressed:

6. What is the informal sector? How has it been defined in the existing literature? (Chapter 2)
7. Why is a new conceptual framework needed and how can we measure informal labour market activity? (Chapter 3).

The thesis is organised as follows:

The rest of this chapter sets the stage for the thesis. Section 1.2 provides a background to the labour market in transition countries. It examines employment and social security during the Soviet period and describes the disintegration of the Soviet Union, the reforms in the first years of transition and the outcomes in terms of social security and living standards. Section 1.3 provides a brief background to Georgia, its history and geo-political significance.

The next two chapters provide the theoretical core of the thesis. Chapter 2, reviews the existing informal sector literature in developing, western industrialised, centrally planned and transition countries and shows that a new definition of the informal sector in transition countries is needed. This definition is developed in Chapter 3, which presents a new conceptual and operational framework for the study of the informal labour market activity. The framework clarifies the distinction between informal labour market activities, which are undertaken to meet basic needs, and other types of unmeasured, untaxed and/or unregulated activities, namely underground, illegal, and household activities.

The next three chapters provide empirical evidence for the hypotheses, based on the analysis of household and labour force survey data. Chapter 4 analyses the characteristics of the Georgian labour market and examines whether the collapse in output was matched by an increase in open unemployment. It assesses to what extent privatisation and restructuring resulted in the growth of private firms capable of absorbing the labour that was shed from the state sector. This chapter also analyses the determinants of poor labour market outcomes, or in other words, unemployment, underemployment and long-term unemployment.

Chapter 5 addresses the first hypothesis; namely that open unemployment did not increase, in part, because labour shifted from the state sector to the informal sector. To this end, it estimates the size of the informal labour market in Georgia as well as the characteristics and determinants of informal vs. formal employment. The second hypothesis, namely that individuals work informally because there is no formal alternative and because social benefits are inadequate, is addressed in Chapter 6. Answering this question provides insight into whether informal labour market activity provides a social safety net. Finally, chapter 7 summarises the main findings and highlights the implications for policy formulation. It discusses whether the informal sector should be encouraged or repressed and highlights the contributions of the thesis to the on-going debate about the nature and causes of the informal sector. It ends with a delineation of the contents of a possible future research agenda.

All methodological questions are dealt with in Appendix 2. This includes a description and discussion of the quality of the data, sample design and characteristics, definitions of variables used in the thesis, methodology for measuring and analysing poverty (including the definition of poverty and well-being, the choice of an indicator, equivalence scales and economies of scale indexes and the definition of a poverty line). It also discusses the multivariate analysis techniques exploited in the thesis. The rest of the appendices include annexes relating to chapters 3 to 6 (appendices 3 to 6 respectively) as well as a list of abbreviations and acronyms used in the thesis and currency equivalents (appendix 1).

1.2 THE SOVIET UNION AND ITS AFTERMATH

This section provides a background to Georgia's labour market and social security. Section 1.2.1 discusses the characteristics and main issues as regards employment and social security in the Soviet Union as a whole, and takes a brief look at Georgia's extensive second economy. Section 1.2.2 examines the disintegration of the Soviet Union, the reforms in the first years of transition and the outcomes in terms of social security and living standards in Georgia.

1.2.1 Employment and Social Welfare in the Soviet Union

The Soviet Union had centrally planned labour market and an extensive, well-established system of social welfare. The demand for labour was determined through the planned demand for output, and since the main concern of the socialist system was to maximize the growth of production, the result was that, relative to market economies, the distribution of labour was heavily biased in favour of industry, and to some extent agriculture, at the expense of (non-productive) services. (see Estrin 1994, 58-59; McAuley 1997, p.223)

Nevertheless, despite the fact that it was centrally planned, the Soviet labour market was characterised by a considerable degree of labour mobility. In practice, although there were some restrictions through housing and administrative constraints, workers were reasonably free to change jobs and employers were reasonably free to compete for their labour.⁹ Jackman (1994, p. 123) suggests that from the 1970s onwards, the Soviet labour market functioned more like that of a market economy than a centrally planned one. Workers were by and large allowed to choose their jobs, skills or professions as well as the region where they worked, and they were free to resign.

⁹ The image of an inflexible labour market comes from the Stalinist period (1930s), when workers were forbidden to quit their jobs. As discussed below, this was part of an industrialisation strategy based on the massive mobilisation of labour from rural areas.

Wage policy was fixed by the central government. A system of wage differentials existed such that jobs were graded according to output levels, hours worked, bonuses and regional coefficients set to encourage migration to unattractive areas or to offset labour flows to richer areas (Estrin 1994, p.60-61; Jackman and Rutkowski 1994, p.127). Thus, in contrast to western economies, wages did not necessarily reflect human capital and productivity. Because of the Soviet emphasis on industrial production, wages in construction and manufacturing were particularly high, whereas they were below average in agriculture and even lower in the services sector. As a consequence, enterprises competed for labour with benefits such as welfare facilities, subsidized kindergartens, housing, the right to buy a car or consumer durables, rather than with wages (Yemtsov 2001, p.8).

In general, the Soviet system was characterised by substantial labour surplus at the micro level, and perennial shortages at the macro level (see Clarke 1999a, p.4; McAuley 1997, p.225). Scarcity of labour at the macro level was one of the main concerns of policy makers throughout the Soviet period. From the early 1930s to the 1950s, one of the Government's key priorities was to transfer large numbers of the rural population to manufacturing centres and extractive industry, as part of the national plan for industrial development. Throughout the 1970s and 1980s it became necessary to draw on the non-working urban population (primarily women with children and pensioners) to meet production targets (Jackman and Rutkowski 1994). The high rates of growth achieved from the 1930s to the 1950s were based on an extensive-type of growth, whereby essentially free rural labour inputs were used in the industrialisation process. However, by the 1960s, returns to rapid capital and labour accumulation in industry started to diminish and the system was unable to shift into an intensive-type of growth, by increasing output per unit of input through technical progress. The result was that by the late 1980s, growth rates in the USSR had fallen to around 0% (see Estrin 1994, p.69).

At the same time as there was a shortage of labour at the macro level; a surplus of labour at the firm level was very common. This was a result of the fact that investment strategies, which were often inadequate, led to frequent fluctuations in demand and that enterprises, which had no incentive to use labour efficiently, would simply hoard substantial reserves of labour to meet these fluctuations (Clarke 1999a, p.4). One of the consequences was low labour productivity (see Estrin 1994; Jackman and Rutkowski 1994; McAuley 1997). Some studies suggest that by the mid-1980s, labour productivity was one third of that of the middle-income countries of the OECD (see Jackman and Rutkowski 1994, p.127). Nevertheless, productivity was not a major concern, as the ultimate goal of enterprises was not that of profit maximization. Soviet enterprises were first

expected to meet production targets, and second to provide a wide range of social benefits. In fact, Soviet enterprises played an important role in the provision of social security.

The Soviet Social Welfare System

One of the central tenets of the socialist system was the right to state-provided social welfare from 'cradle to grave' (Atkinson and Micklewright 1992c, p.215). Social security was guaranteed through the provision of a wide range of benefits through enterprises and supported by a comprehensive social welfare system, consisting of cash benefits and the provision of free public services. Enterprises provided a wide range of social benefits such as housing, garden plots, child-care, subsidized meals, vouchers for the purchase of durable goods, access to holiday resorts, transportation, and medical services to all employees and their family members, whether working or not (see Estrin 1994, p.60-61).

At the same time, Government policies ensured full employment and low controlled prices for basic goods and services as well as an extensive system of social welfare (see Falkingham, Jane, et al. 1997, p.15). McAuley (1979a) provides a detailed account of Soviet social welfare state, or in Soviet terminology; 'social consumption expenditures'. These consisted of cash transfers as well as free and subsidized services. The system of cash transfers comprised an extensive system of pensions, including: old-age pensions, invalidity pensions, survivor pensions, long-service pensions and personal pensions (for those who performed some special service to the state or the cause of revolution). It also included other types of social insurance transfers including sick benefits, maternity allowances and maternity grants (for low-income parents), burial grants, child allowances, family income supplement (an additional child allowance for low-income households), stipends for students in full-time higher education and secondary specialist training, and holiday pay (which technically was not part of the social insurance system but considered part of the social welfare system).

In addition, the social welfare system provided free health care, free education and subsidized housing (for details on the Soviet welfare state see McAuley 1979a, p.260-292). As argued by Falkingham (1997, p.15), the guarantee of full-employment, coupled with the provision of social security through the workplace, the system of cash benefits and extensive Government subsidies, were supposed to counteract the requirement for a targeted poverty alleviation programme and income-tested social assistance.

One result was that 'everyone enjoyed a feeling of stability and certainty' (Jackman and Rutkowski 1994, p.123). Indeed, Estrin (1994, p.57) suggests that the socialist system came to

regard absolute job security and the right to a job as virtually defining characteristics of socialism. Labour market policy was based on the ideal of a job for life and the work place was almost a 'second home'. 'For a Soviet worker, the main goal was finding a suitable job for the duration of his or her working life' (Clarke 1999a, p.2). There was essentially no unemployment, in the sense of workers willing to work at the going wage rate but unable to find jobs, and where it existed unemployment was of short duration (McAuley 1991, p.95).¹⁰

Another result was that, relative to western industrialised countries, there was relatively low inequality and, officially, no poverty (although, given the sensitivity of these issues, figures were not entirely reliable). Flemming and Micklewright suggest that in the 1980s, the socialist countries of Central and Eastern Europe (CEE) and the Soviet Union were more equal than the average OECD country at the time, and probably similar to the Scandinavian or Benelux countries (Flemming and Micklewright 2000, p.909). The low level of inequality in the socialist system can be explained by the fact that households received little income from wealth (as all productive capital was owned by the state) and that there was little differentiation in earnings since wages were determined by a relatively egalitarian wage structure (McAuley 1991, p.97-98). Nevertheless, McAuley suggests that there are reasons to believe that inequality was higher than official statistics would suggest thanks to the significant second economy and the extensive privileges (cars, access to western consumer durables, sanatoria, etc.) available to the ruling '*nomeklatura*' (see also Flemming and Micklewright 2000; McAuley 1991, p.98).

As regards poverty, there is evidence that a certain amount of poverty did exist. The USSR Yearbook '90, for example, reported that 'nearly 40 million people live below the poverty line' (quoted by Atkinson and Micklewright 1992b, p.178). This represented about 14% of the population of the USSR (Atkinson and Micklewright 1992c, p.237). Indeed as argued by Atkinson and Micklewright (1992b), poverty rates were probably similar to those of the EU at the time, although comparing is very difficult, as the choice of poverty line varies from country to country and reflects the historical, cultural and economic context as well as the dominant social values at a given time, and therefore differences in poverty rates can be as much a reflection of methodological choices as they are of real differences in well-being (Atkinson and Micklewright 1992b, p.180-181).

A third consequence of the socialist system was a high rate of labour force participation, much higher than in western industrialised countries. As previously discussed, this was partly motivated

¹⁰ Jackman argues that some unemployment did exist and that, since the Government denied its existence, the unemployed received no assistance (see Atkinson and Micklewright 1992c, p.219; Jackman and Rutkowski 1994, p.133-134).

by the pervasive shortage of labour and the necessity to draw on the non-working urban population to meet production targets. One result was that older workers received pensions and were, at the same time, able to continue working. Another was that women had particularly high participation rates relative to their Western European counterparts. This was made possible by a well-developed system of child-care and generous maternity leave. As illustrated in the table below, by 1985, the USSR had a labour force participation rate for 40-45 year-old women of 97% compared to a rate of 37% in Southern Europe and 71% in Northern Europe. Higher participation rates were associated with greater gender equality as female participation rates in education were very high and their career prospects were better than in many market economies today. Jackman (1994, p.125) suggests that by enhancing their financial independence, labour force participation helped to raise the social and political status of women. However, at the same time, women continued to bear most of the household and child-rearing responsibilities and therefore had essentially a double burden.

Table 1.1 Rates of Participation in the Labour Force for 40-45 year-old females (1950-1985)

Region and Country	1950	1960	1970	1980	1985
U.S.S.R.	67%	78%	93%	97%	97%
Central and Eastern Europe*	61%	70%	79%	86%	87%
Northern Europe	31%	40%	54%	70%	71%
Western Europe	35%	40%	46%	55%	56%
Southern Europe	22%	25%	30%	36%	37%

Source: (Kornai 1992, p.207)

Notes:

- (a) *Average of participation rates of Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland and Romania.
- (b) Northern Europe includes: Denmark, Finland, Norway, and Sweden. Western Europe includes: Austria, Belgium, France, Federal Republic of Germany, the Netherlands, Switzerland, Luxembourg, and United Kingdom. Southern Europe includes: Greece, Italy, Malta, Portugal, Spain

The second economy

A significant consequence of the heavily taxed formal labour market was the development of an extensive secondary labour market, which was liberal and largely inconsistent with Soviet ideology. Individuals engaged in the so-called 'second economy' to supplement their official wages, which were stable but low. Some of these activities were legal, while others were illegal (see chapter 2 for a detailed description of the Soviet second economy). Legal second economy activities included small-plot agricultural production and the private practice of certain professionals such as physicians, dentists, teachers, and tutors (Grossman 1982, 256). Illegal second economy activities included stealing from the state, speculation, illicit production and underground enterprises.

Both legal and illegal second economy activities were widespread in Georgia. Indeed, Georgia had what was perhaps the most extensive, visible and tolerated 'second' economy in the Soviet Union.¹¹

'Georgia's has a reputation second to none in this respect...In form this activity may not differ greatly from what takes place in other regions, but in Georgia it seems to have been carried out in an unparalleled scale with unrivalled scope and daring' (Grossman 1977, 35).

Similarly, Mars and Altman suggest:

'Soviet Georgia demonstrates an extraordinary economic ebullience ... linked to a parallel effervescence in Georgia's second economy, which Soviet watchers have ... continually affirmed as being particularly dominant compared to those of other Soviet Republics' (Mars, G and Altman 1987, 197).

Thus, before its collapse in 1991, the Soviet Union was characterised by a level of employment and social security that was high relative to most market economies. Poverty and inequality were low by western standards, as were wages and the general standard of living. While the formal workplace provided an important source of security and access to a variety of benefits, the second economy, which was officially denied but actively tolerated, enabled households to make a living. In this context, it is not difficult to see that the socialist system was poorly equipped to deal with the impact of the transition to a market economy.

Barr (2001, p.242) highlights three important implications of the Soviet system for the government's ability to deal with the social impact of transition. First, as there was officially no unemployment, there existed no system of unemployment benefits. Second, as there was officially no poverty, there existed little poverty relief. Third, as there was little (income) inequality, there existed no sophisticated targeting system. As a result of these factors and of the fact that most benefits were delivered by enterprises, the government's administrative capacity was very weak. Fretwell and Jackman (1994) provide details of the specific obstacles within the labour market: there were very limited if any active labour market policies; labour services were poorly funded and staffed; existing labour offices provided minimal local matching of workers with vacancies; there were no policies or technical expertise to deal with large-scale layoffs, because they did not occur; and finally, attitudes toward unemployment and job seeking were unhelpful as workers

¹¹ Agriculture accounted for the greater part of Georgia's second economy. Because of its southerly location, Georgia had a monopoly on citrus fruit production in the USSR and had considerable advantage in growing out of season fruit and flowers. Instead of being distributed by the State throughout the USSR, products were sold directly by producers in 'open markets' (particularly in the northern regions of the Soviet Union) for a much higher price. Some estimates have put Georgia's share of private agricultural revenue, in the early 1970s, at 40% of its total agricultural revenue (Gougouchvili and Zurabishvili 1983, 113).

were not accustomed to unemployment or to finding employment and expected the State to provide them with a job (Fretwell and Jackman 1994, p.165).

1.2.2 Transition: Policies and Outcomes

Why did the Soviet Union collapse? This question has been extensively discussed elsewhere (see for example Lavigne 1995) and goes beyond the scope of this thesis. Suffice it to say here that by 1989 a combination of political and economic factors had led to the unexpected and very rapid disintegration of the Soviet Union. As previously discussed, the possibilities for extensive-type growth, based on rapid capital and labour accumulation, had been exhausted and the system proved unable to switch to a more intensive-type growth, based on technical progress. As a result, growth was declining, productivity of labour and capital were low, and technical progress was implemented slowly. In addition, the military build-up was absorbing a large part of GNP, the agricultural sector was backward and could not provide food self-sufficiency, and the standards of living and consumption were mediocre (Lavigne 1995, p.92). At the same time, *perestroika* (restructuring), launched in 1985-87 and *glasnost* (openness), introduced in 1990, led to the introduction of political pluralism and to the end of the party's monopoly of power. Lavigne argues that the socialist system rested upon the monopoly of the party and that it was the breach in this monopoly that triggered the collapse (Lavigne 1995, p.94).

Major developments during the early years of transition

Between 1989 and 1991, the 15 former republics of the Soviet Union declared their independence one after the other. Georgia did so in April 1991.¹² This was followed by the dissolution of all ties that had kept the socialist system together. In particular, the Comecon and Warsaw pact were dissolved almost simultaneously in mid-1991.¹³ The dismantlement of Comecon, and all that operated within the organisation, was not inconsequential. In particular, the drastic dismantlement of the Council of Mutual Economic Assistance (CMEA) institutions and the vacuum that it created was to prove to be perhaps the single most important explanatory factor for the general collapse in output in the region. Moreover, not only were trade links between the members of the Comecon dismantled, but also trade between the republics of the former Soviet Union, which operated within the CMEA, was abruptly halted.

¹² Soon after the declarations of independence, the CIS (Commonwealth of Independent States) was formed on 21 December 1991 between all former Republics except the Baltic States and Georgia. The Baltic States never joined, while Georgia finally joined in October 1993. The USSR was officially dissolved nine days later, on 30 December 1991.

¹³ The Comecon was an economic organization, which existed from 1949 to 1991, linking the USSR with the countries of CEE, Mongolia, Cuba, and Vietnam (Yugoslavia as an associated member and Albania belonged to it only between 1949 and 1961). The Warsaw pact was a military and political organisation created in 1955, whose aim was to ensure collective security for its members.

Under the Centrally planned system, most enterprises producing intermediate and capital goods had a single buyer for their output and a single source of supply. Moreover, given the emphasis on very large enterprises, many towns were essentially company towns, being heavily dependent on a single enterprise for employment and many republics, such as Georgia, relied heavily on a handful of gigantic enterprises. With the dismantlement of inter-republican trade, enterprises suddenly lost their markets for both inputs and outputs and were unable to instantaneously find new trading partners, in part because marketing channels did not exist, in part because they were producing intermediary goods that were of no use to western markets and in part because the quality of the goods did not meet world standards. The consequences in terms of output and employment were dramatic. However, before turning to the outcomes, we must briefly discuss the other major policy decisions that were taken in those first years of independence and that were to determine the path that the newly independent states would follow in their transition to a market economy.

In the beginning of the 1990s there were two main schools of thought on how countries should undertake the transition from a centrally planned to a market economy. The first has been referred to in the literature as 'shock-therapy', 'the big bang', 'simultaneous reforms' or the 'Washington consensus'. The second has been called the 'evolutionary-institutionalist perspective', the 'gradualist approach', or 'sequential reform'. The principal source of disagreement between the two approaches was on the speed and sequencing of reforms. We will refer to the first approach as 'shock-therapy', as labelled by Jeffrey Sachs of Harvard University, who introduced it to the wider public through his article in the *Economist* magazine on 13 January 1990 entitled 'what is to be done?'. Shock-therapy is based on the idea that countries should move from central planning to a market economy as quickly as possible by introducing market reforms simultaneously. It is based on three main pillars: privatisation, liberalisation and stabilisation. The second school of thought, which we will refer to as the 'evolutionary-institutionalist perspective', as per Roland (2000b), is based on a more gradual approach to reform, emphasising the need to use existing institutions to prevent economic disruption and social unrest while developing new institutions.

While 'shock therapy has been dominant in shaping policy recommendations from the IFIs (International Financial Institutions), and has consequently largely been adopted by most newly independent states, the academic community has increasingly supported the evolutionary-institutionalist perspective (Roland 2000b, p.343). Although it is beyond the scope of this thesis to discuss the merits and drawbacks of the two approaches, there is one significant point that I would wish to highlight here. As argued by Roland (2000b, p.13, p.336-337), the shock-therapy approach ignored 'aggregate uncertainty' and failed to take existing political constraints into account and factor them into policy recommendations. However, political constraints cannot be

ignored, just as budget constraints or incentive constraints cannot be ignored. The political constraints that existed at the time transition began (i.e. pervasive corruption and the high concentration of economic and political power in a few hands) were of crucial importance and were endogenous to the transition process, and not exogenous to it. The failure to take into account these political constraints led to unexpected outcomes including the significant fall in output, asset stripping following mass privatisation in Russia, an explosion of the hidden economy, and resistance of large Russian enterprises to tax collection. Roland argues that it is unacceptable to lament incompleteness of reforms without taking into account existing political constraints; 'economists have too often blamed the (ugly) politics for messing up (elegant) economics' (Roland 2000a, p.13).

Nevertheless, Georgia, Russia and most other former Soviet republics, adopted some form of 'shock-therapy', liberalising, stabilizing and privatising at the same time.¹⁴ In Russia, all three were essentially launched in 1992, whereas in Georgia liberalisation took place in 1992, while privatisation was stalled until 1995 due to the civil war and territorial conflicts (see section 1.3.4). In Georgia privatisation was carried out through a large-scale give-away scheme (so-called 'mass privatisation')¹⁵. In 1995-1996, 1,295 (or 80% of all) small and medium enterprises were transferred to majority private ownership through voucher privatisation (the distribution of investment coupons at a symbolic price). At the same time, the privatisation of large-scale enterprises, which started in the same year, was to be carried out through strategic sales but continued to progress very slowly due to lack of financial viability and difficulties in attracting investors (EBRD 2000, p.166).

As everywhere in the former Soviet Union, the results can now be said to have been catastrophic. The disruption of CMEA (and particularly inter-republican) trade links, coupled with mass privatisation, led to an unprecedented collapse in output, while sudden and across the board price liberalisation resulted in an explosion of prices that further exacerbated the collapse of output¹⁶.

¹⁴ Note that not all transition countries followed the shock-therapy approach. Most notably China and Vietnam as well as some countries in Central and Eastern Europe such as Slovenia and Hungary, followed a gradualist strategy. As a general rule these countries introduced policies to encourage entry of the small private sector early on, and have followed with gradual privatisation and restructuring later on. Liberalisation has also been carried out gradually, as in China where dual pricing was successfully introduced in 1984; prices were liberalised at the margin in all sectors thereby maintaining planned prices for planned output and avoiding unmanageable inflationary pressures (see table 1.3, p.15 in Roland 2000a). Another country that did not follow the shock therapy approach was Uzbekistan, where gradual reform succeeded in avoiding a dramatic decline in output.

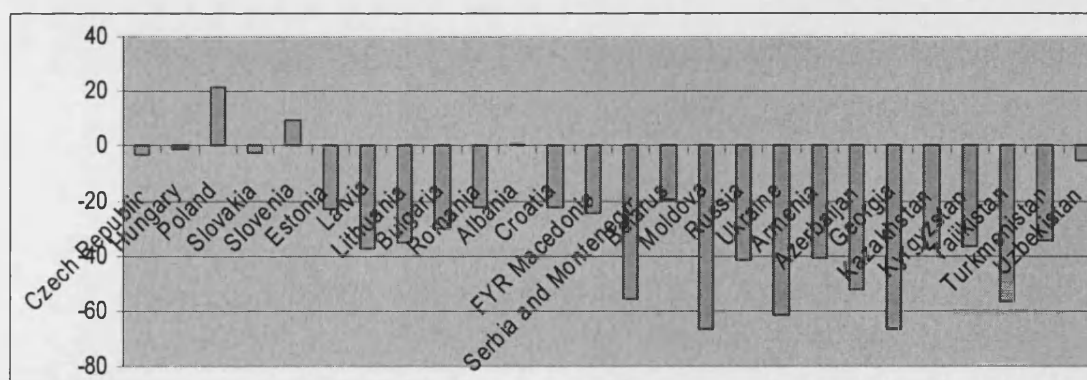
¹⁵ There were four main types of privatisation mechanisms in the FSU and CEE: sale to foreign investors, sale to domestic capitalists, give-away schemes, and spontaneous privatisation (Lavigne 1995, p.160).

¹⁶ Griffin (1995, p.5) argues that the unparalleled inflation was mainly a result of the instantaneous and indiscriminate liberalisation of prices and was further fuelled by the legacy of price controls and rationing, which led to a sort of 'forced savings' and accumulation of liquid funds in bank accounts. These cash balances or 'monetary overhang' represented pent-up demand that was released by rapid price liberalisation. Moreover, he suggests that because industrial and trading enterprises were not subject to market disciplines and were virtual monopolies, they reacted to

Relative prices fluctuated erratically and long-term investment decisions became impossible. As a result investment collapsed, further depressing output and incomes. The decline in gross investment in Georgia was so great that it was impossible to maintain the initial stock of capital intact. By 1995, gross domestic investment as a percent of GDP was just 3%¹⁷ (World Bank 1997, p.174-176). Georgia's output had fallen by approximately 70%, while industrial capacity utilisation dropped to about 20% of pre-1989 levels. Agricultural production collapsed as state and collective farms were broken up into low-productivity small 'subsistence' plots and tourism revenues collapsed. At the same time, significant external debt and payment arrears accumulated, while the budget deficit expanded. By the end of 1993, annual inflation had reached 8,400% (World Bank 2004, p.1).

Georgia experienced one of the sharpest declines in output in the region.¹⁸ The decline was, generally speaking, smallest in the countries of Central and Eastern Europe (CEE) and greatest in the Commonwealth of Independent States (CIS). Figure 1.1 shows that between 1989 and 1998, output declined by more than 60% in Georgia, Moldova and Ukraine and by nearly that amount in Azerbaijan and Tajikistan.

Figure 1.1: Real GDP CEE and CIS countries 1998, (percentage change, 1989=100)



Source: UNICEF Transmonee database (UNICEF 2004).

The impact on living standards

Throughout the region and particularly in the CIS, the results in terms of social security and living standards were disastrous. The collapse in output led both to a contraction of employment and real

price liberalisation by increasing prices and exploiting their dominant position in the market, further exacerbating inflationary tendencies. Finally inflation was also fuelled by public deficits that were monetized by central banks.

¹⁷ as a point of reference, the average level of investment in the CIS in 1990 was approximately 32% of GDP (World Bank 1997, table 4.12 p.174-176).

¹⁸ There are, of course, problems in measuring output, as statistical information is frequently inaccurate (not least because of the informal economy) and pre and post transition figures are difficult to compare. However, there is no doubt that output fell massively all over the FSU.

wages as well as to a decline in tax revenues. As will be discussed in Chapter 4, enterprises adjusted to the fall in output by cutting real wages, delaying the payment of wages, cutting benefits, placing workers on unpaid leave and releasing labour. Workers were thus deprived of their main source of income and social benefits. At the same time, the dramatic decline in output and inflation led to a fiscal crisis and the government was unable to compensate for the fall in real incomes with the provision of social security.¹⁹ As a result many workers turned to informal labour market activities to survive. In Georgia, the scale of the fiscal crisis was so severe that by 1999, tax revenue still amounted to only 14% of GDP, amongst the lowest levels of tax revenue in the world (EBRD 1999, p.168).²⁰ With external debt servicing absorbing more than 60% of government revenue, total spending on unemployment benefits, pensions, family allowance, assistance to IDPs (Internally Displaced Peoples)²¹, health, education and food security amounted to a meagre 8% of GDP in 1999 (World Bank 2004, p.11).²²

However Georgia was not unique in this respect. The decline in output which characterized the first decade of the transition period was accompanied by a decline in real government expenditure in most countries of CEE and the CIS. Figure 1.2 shows that between 1989 and 1998, overall government expenditure declined by roughly 40% in Georgia, Azerbaijan, Bulgaria and Albania and by more than 60% in Tajikistan.

Although the case of Georgia may be one of the more extreme ones in terms of the sheer scale of the collapse of GDP and government expenditure and hence the development of informal labour markets, there is evidence that informal labour market activity is widespread, particularly in the poorer countries of the CIS. For example Bernabè, Krstic' and Reilly (2003, p.24) find that in the CIS-7 (the seven poorest countries of the CIS)²³, in the late 1990s, informal employment ranged from approximately 30% of total employment in Moldova to 59% in the Kyrgyz Republic. Similarly, Schneider (2002, figure 2.3) estimates that at the end of the 1990s, the share of the working age population engaging in informal employment in these countries ranged from 33% in Uzbekistan to 53% in Georgia. Thus, this detailed analysis of the determinants and characteristics of informal labour markets in Georgia may very well provide some insight into the nature of informal labour markets in other poor CIS countries.

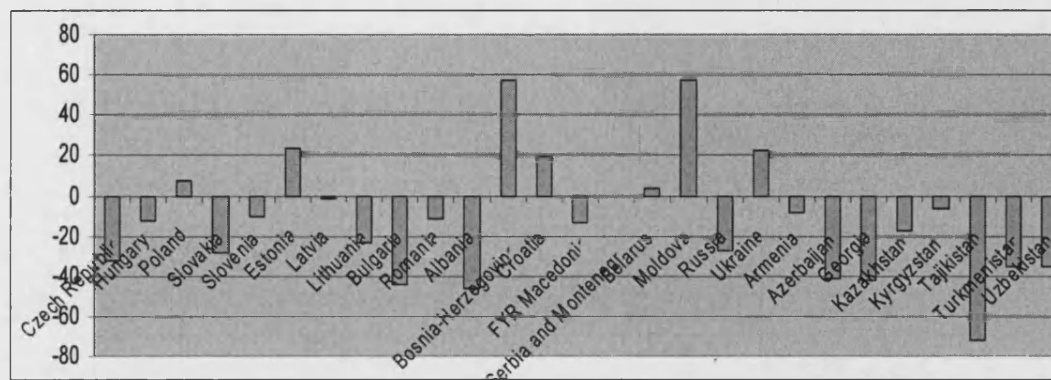
¹⁹ In addition to the collapse in output, the fiscal crisis was also caused by large-scale tax evasion and weak institutional capacity to collect taxes.

²⁰ Note that other countries in the Caucasus and Central Asia also had extremely low levels of tax collection, especially Azerbaijan and Kazakhstan, which reached lows of 16% and 13% of GDP respectively in 1996 and 1997 (see Falkingham 1999b, p.6).

²¹ There are approximately 286,000 IDPs spread over the territory of Georgia, as a result of the war in Abkhazia; see section 1.3.4 below (IMF 2001, p.51).

²² Klugman, Micklewright and Redmond (2002, p.17-19) show that debt-servicing levels in Georgia are almost three times the level of HIPIC countries (the group of mostly African and Central American countries that are considered 'Highly Indebted Poor Countries' by the IFIs).

Figure 1.2 General Government Expenditure CIS and CEE (percentage change, 1989=100)



Source: UNICEF Transmonee database (UNICEF 2004).

In Georgia, as a result of the fiscal crisis, the social security system was reduced to unemployment benefits, pensions, state social allowance and assistance to IDPs. However, despite its limited scope, the system remains weak. Incentives to register as unemployed with a state employment office are low because of the extremely low level of unemployment benefits (US\$7 per month), frequent payment delays, time-consuming registration procedures and a widely held perception that registration is of no help in finding a job. In 1998, there were 98,000 registered unemployed, whereas the number of individuals without work was estimated at about 300,000 (IMF 2001, p.51). Similarly the level of pensions is extremely low; a flat rate of GEL14 (US\$7) per month, while the official minimum consumption basket (for a family of four) is of GEL104 (US\$52) (IMF 2001, p.11). Moreover pensions also suffer from serious arrears; by 1999, the Government had accumulated total pension arrears of GEL 76 million (TACIS 1999b, p.72).²⁴ The state social allowance, which was introduced in 1998 and replaced the 'family allowance' is in fact only for a very small vulnerable group; non-working pensioners who live alone and have no legal breadwinner (TACIS 1999a, p.71). Finally, the IDP assistance programme comprises various cash and in-kind benefits that are not income tested, which makes the programme poorly targeted and means that IDPs often face a lower risk of poverty than non-IDPs (IMF 2001, p.52).²⁵

In terms of social spending in health and education, the results were also disastrous. Between 1990 and 1995, state expenditures in health and education decreased by 90-95% with respect to their pre-1989 levels (see Government of Georgia 2000, p.6; Micklewright 2000, p.19). In 1999, expenditures in health care represented 0.9% of GDP, or US\$7 per capita (according to the WHO,

²³ Armenia, Azerbaijan, Georgia, the Kyrgyz Republic, Moldova, Tajikistan and Uzbekistan.

²⁴ The pension arrears are despite the introduction of a token flat rate pension, the increasing of the retirement age from 55 to 60 for females and from 60 to 65 for males and the elimination of early retirement (IMF 2000, p.88).

a minimum of US\$60 per capita is needed for a health care system to function properly) (Government of Georgia 2000, p.6). Similarly education expenditures in 1999 amounted to 2.2% of GDP (Government of Georgia 2000, p.6). As a point of reference, the average level of spending in all low-income countries world-wide in 1997-98 was 1.2% of GDP for health care and 3.2% of GDP for education, while it was 2.6% and 4.6% respectively in middle-income countries (see Klugman, et al. 2002, p.14).

The human costs of transition have been well documented (see Cornia 1996; Falkingham 1999b; Falkingham, J, et al. 1997; Milanovic 1998; UNDP 2000; UNICEF 1999).²⁶ Whereas before the beginning of transition Georgia was considered to have one of the highest standards of living in the USSR, by 1999, 53% of the population was living below the official poverty line (World-Bank 2001).²⁷ Inequality levels are now comparable to the most unequal of Latin American economies with a gini coefficient for income inequality at 0.53 and 0.4 for consumption inequality (World-Bank 2001).²⁸ The poor are getting poorer (as poverty severity is increasing), vulnerability is increasing (it is estimated that about 60% of the population is at risk of falling into poverty) and chronic (long-term) poverty is increasing (World-Bank 2001). By 1998, Georgia ranked 108 out of a total of 174 countries according to the UNDP Human Development Index, which takes into account longevity, education and the standard of living, as measured by real GDP per capita at purchasing power parity prices in U.S. dollars (see appendix A2.3.1). With pension benefits below the minimum subsistence level, pensioners are migrating to rural areas to survive on small garden plots.

Moreover, under-investment in health and education have resulted in the rapid deterioration of hospitals and schools and contributed to the decline in public health and education. Patients and parents are required to make unofficial expenditure to cover costs of medicines, textbooks and maintenance of hospitals and schools. The Government estimates that 70% of health expenditures are covered directly by patients. These expenditures are often beyond the affordability of poor families, thereby further widening the gap between rich and poor (Government of Georgia 2000,

²⁵ The social security system is discussed in greater detail in chapter 2.

²⁶ Cornia argues convincingly that the increase in mortality rates (arguably the ultimate 'human cost' of the transition process), which have characterised almost all countries in the region, has been mainly caused by the psycho-social stress resulting from 'unguided, unassisted and unmanaged process of restructuring, the pace and pattern of which is left to highly imperfect markets and weak institutions' and from the resulting 'large shifts in income distribution and social stratification, and the erosion of health services, personal security and law and order' (Cornia 1996, p.30).

²⁷ Atkinson and Micklewright find that Georgia was amongst the least poor of the Soviet Republics, with poverty rates that were higher than the Baltic and European Republics but at least a third lower than those of the Central Asian Republics (see Atkinson and Micklewright 1992c, p.241-242).

²⁸ This represents a substantial increase in income inequality. Atkinson and Micklewright report a Gini coefficient for per capita income for Georgia of 0.292 in 1989, although data is not necessarily comparable (table U13 Atkinson and Micklewright 1992a).

p.6)²⁹. Health and education indicators speak for themselves: Infant mortality has increased by 16%, to 23 deaths per thousand births, the number of new cases of tuberculosis has tripled and malaria is re-emerging (IMF 2002, p.7). There has also been a sharp increase in drug use, STDs³⁰ and in AIDS, all of which were virtually inexistent before the beginning of the transition period (Government of Georgia 2000, p.6). The quality of education is also rapidly declining. The enrolment rates in primary and secondary education fell from 95% in 1990 to 80% for primary and 76% for secondary in 1994 (IMF 2001, p.54).

With these statistics in mind can we really claim that the reform has been a success? In the beginning of the 1990s, it was widely acknowledged that the reform had two central purposes: to raise the standards of living and to increase individual freedom and protect individual rights (Barr 1994). At the time, it was predicted that the reform effort would have failed if it would be unable to improve earnings opportunities, provide better education and more effective health services and increase individual choice (Barr and Harbison 1994, p.4). I would argue that by these standards, we could safely say that, in Georgia, the reform has (so far) failed.

1.3 GEORGIA: A BACKGROUND

Having described the general economic context, this section now completes the setting of the stage with an introduction to Georgia. First, it describes Georgia's geography, ethnic composition, language and religion. Second, it provides an overview of Georgia's regions. Third, it gives a brief account of Georgia's history and finally, it examines recent political and economic developments and discusses Georgia's strategic geo-political situation.

²⁹ UNDP estimates that less than 15% of the poor can afford to visit a doctor and purchase the medicines required for treatment (UNDP 2002, p.12).

³⁰ sexually transmitted diseases.

1.3.1 Geography, ethnicity and religion

The Republic of Georgia, or *Sakartvelo*³¹ (the land of the '*Kartvelians*', as the Georgians call themselves), lies between the Black and the Caspian seas, and on the southern flanks of the main Caucasus range. It borders Russia to the north and east, Turkey to the southwest, Armenia to the south and Azerbaijan to the southeast (see figure 1.3). Georgia occupies an area of about 70 000 sq km (about twice the size of Belgium) and has a population of roughly 5.5 million. Eighty percent of the land is covered by mountains: the Greater Caucasus Mountains to the north and the Lesser Caucasus Mountains to the south. Between these massive mountain ranges and land-locked seas lies a narrow belt of fertile lowlands. The strategic importance of these lowlands as one of the main routes linking Europe and Asia is not difficult to see. Throughout history Greeks, Romans, Parthians, Byzantines, Khazars, Arabs, Mongols, Persians, Ottoman Turks and Russians have repeatedly sought control of the Georgian territory. In spite (or perhaps because of) its history, Georgia has maintained a unique culture, language and religion.

Georgians make up approximately 70% of the population, while the rest is comprised of Armenians, Russians, Azeris, Ossetians, Greeks, Abkhaz, Ukrainians, Kurds, Jews and others (see table 1.2). The Georgian language belongs to the *Kartvelian* group of Iberian-Caucasian languages and is one of the oldest of the living languages. The Georgian alphabet is unique (one of 14 alphabets of the world) and was created in III century B.C.³² The large majority (approximately 78%) of the population is orthodox Christian, although there are also Catholics, Shi'a Muslims (mainly Azeris), Sunni Muslims (Kists and Avarians), Jews and Yezids (Kurds) (Gachechiladze 1995, p.96-98). Georgia was the second state in the world to convert to Christianity (after Armenia) in the IV century A.D.³³

³¹ The name *Sakartvelo* is derived from a pagan god called *Kartlos*, said to be the father of all Georgians. The foreign name 'Georgia', used throughout Western Europe, is mistakenly believed to come from the country's patron saint, St George. Actually it is derived from the names Kurj or Gurj, by which they are known to the Arabs and modern Persians (Rosen 1991)

³² The Assyrian manuscript 'A book of peoples and countries', written in the 5th century, contains a note that of 73 peoples then known, only 14 had a written language. Among these Georgians are mentioned (Rosen 1991).

³³ Tradition has it that it was St. Nino of Cappadocia that brought Christianity to Georgia in AD 330.

Table 1.2: Ethnic Composition of Georgia, 1989

	Population in 1000s	Share of total (%)
Georgians	3787.4	70.1
Armenians	437.2	8.1
Russians	341.2	6.3
Azeris	307.6	5.7
Ossetians	164.1	3
Greeks	100.3	1.9
Abkhaz	95.9	1.8
Ukrainians	52.4	1
Kurds	33.3	0.6
Jews	24.8	0.5
Others	56.6	1
Total	5400.8	100

Source: Population 1991

Geographically, Georgia can be divided into three main zones: *kavkasoni* (northern highlands), the *intermontane lowland* and the *southern upland* (see Gachechiladze 1995, p.8-10).

To the north, *Kavkasoni* (the great Caucasus range with heights exceeding 5600m) is the least populated geographical zone. Agricultural opportunities are limited and the main economic activity is animal husbandry. In contrast, the *Intermountain lowland* (between the north and south Caucasus ranges) covers only 40% of country's territory but holds 88% of its population. It is divided by the *Likhi* mountain range, which serves as the major watershed between eastern Georgia (*Iveria*) and western Georgia (*Kolkheti*). *Kolkheti* has a subtropical and humid climate and until the 20th century it was boggy and malaria-infected, and consequently much poorer than east, which had richer agricultural land and a healthier climate. In late 1920's, the region was revived with the introduction of subtropical crops (tea and citrus fruit) to supply the entire soviet market, bringing a high level of prosperity to the region (95% of tea and 100% of citrus fruit produced in the USSR came from this area) (Gachechiladze 1995, p.10). *Iveria*, (the eastern lowlands) is historically richer and more populated with a much drier climate and fertile soils. During the Soviet period agriculture became specialised in viticulture and fruit growing. Eastern Georgia is also ethnically more diverse, as it has historically been more vulnerable to external aggressions and suffered substantial population losses. The land that had been left vacant was subsequently populated by ethnic minorities (mainly Greeks and Azeris). All of Georgia's manufacturing industry is located in the intermountain lowland zone.

Finally, the *Southern Uplands*, which border with Armenia, are less elevated than *kavkasoni* but still peak at 3000m. This region is historically poor and characterised by very rigorous climate and limited agricultural opportunities other than the farming of potato and fruit. Since the south of

Georgia is less isolated than the north, it is also more ethnically diverse and the majority of the population is Armenian and Azeri.

1.3.2 Administrative-territorial division

Administratively, Georgia has inherited the complicated territorial division of the Georgian SSR (Soviet Socialist Republic). The country includes three autonomous regions: two Autonomous Republics (Abkhazia and Achara, both on the Black Sea coast) and one Autonomous Region (South Ossetia, in the north-eastern part of the country). There are 65 regions and 61 cities. However, in practice, Georgia is divided according to its historical provinces, coinciding with the kingdoms and principalities of the late Middle Ages. These provinces are outlined in figure 1.3.

In the centre-east, is located the historical province of Kvemo Kartli and Georgia's capital, Tbilisi. This is the richest and most populated part of the country; 38% of the country's population and about half of its total industrial production are located here.³⁴ The extreme eastern part of Kvemo Kartli is also the most important agricultural area of Georgia, specialising in fruit and vine growing, while the Borjomi valley (to the south west), is an important health-resort area with its well-known sulphurous water springs. From south to north stretches the Georgian Military Highway, which is the main route connecting Georgia to the Northern Caucasus.

In the eastern part of Georgia, are located the provinces of Kakheti and Mtianeti. These account for only 9% of Georgia's population and are largely specialised in viticulture and livestock breeding. To the centre-west are the provinces of Imereti, Racha and Svaneti, which together account for approximately 18% of Georgia's population. This part of Georgia is next in economic importance after the centre-east. It is rich in minerals, including manganese ores, copper, zinc, lead, arsenic, barite, diomite, talcum, bentonite clays, limestone, marble and other building materials (Gachechiladze 1995, p.12). Agriculture in this area is chiefly specialised in viticulture and tea growing. This is also the location of Georgia's second largest city, Kutaisi. In the western part of Georgia, along the black-sea coast, are located the historical provinces of Guria and Samegrelo, which together account for about 13% of the country's population. This area is the major centre for Georgia's subtropical agriculture (tea and citrus-fruit plantations). The economic and cultural centre of the region is Poti, one of the largest seaports on the Black-sea coast. In the south is the province of Samtskhe-Javakheti, the most sparsely populated part of the country, accounting for only 4 per cent of Georgia's population and one of the poorest regions in the country. The majority of the population here is Armenian and the main economic occupation is livestock breeding and fruit growing.

The autonomous republic of Abkhazia is located in the north-western part of the country, along the Black Sea coast. This is a mountainous region and the majority of the population is concentrated along the coast. The capital and main economic centre is Sokhumi. Abkhazia occupies a strategic position, straddling Georgia's only rail and most important road link to Russia as well as containing half of Georgia's coastline, including the best tourist resorts. It is rich in agricultural land and mineral resources and hosts one of Georgia's main power stations. Abkhazia has historically been an ethnically very diverse region, with Abkhaz (or *Apsua* as the ethnic Abkhazians refer to themselves) accounting for only 18% of the region's population in 1989. Some 45% of the population at that time was Georgian, while Armenians and Russians accounted for nearly 30%. Abkhazia has been the scene of violent conflict during the last decade. In August 1990, the Abkhazian Supreme Soviet declared Abkhazia's sovereignty and in August 1992 a war with Tbilisi broke out, which lasted until September 1993 when the Georgians were expelled from Abkhazia. The war cost more than 20,000 lives and displaced approximately 300,000 people. Talks between the Georgian and Abkhaz authorities under Russian and UN auspices resulted in a cease-fire agreement in May 1994 and the deployment of a CIS peace-keeping force monitored by UN troops. These fragile arrangements have been in place ever since (see Herzig 1999, p.76-81).

To the extreme southwest, along the border with Turkey and on the Black Sea coast, lies the Autonomic Republic of Achara. This region is known for its subtropical climate, citrus-fruit and tea plantations (about 60% of Georgia's total citrus fruit and 12% of the tea-plantations are in this region) as well as its considerable tobacco plantations. Given its strategic position, along the Turkish border, Achara has prospered significantly since the break up of the Soviet Union and the opening of trade routes with Turkey. The coastal area also boasts some well-known holiday resorts, and an important seaport at Batumi, the region's capital. The majority of the population is Georgian, but contrary to the rest of the country, the dominant religion is Islam. After the break-up of the Soviet Union, Achara was ruled in more or less complete autonomy from Tbilisi by Aslan Abashidze, and represented a potential source of instability for Georgia. Although at the time of writing Aslan Abashidze had resigned, the region continued to be a potential source of instability for the country.

Finally, to the northeast of Georgia, between the Main Caucasus range and the Inner-Kartli plain, lies the autonomous region South Ossetia (Shida Kartli). About two-thirds of the area is occupied by medium and high-mountains, while in the foothill zone, climactic conditions are favourable for

³⁴ This includes metallurgical, mechanical engineering, chemical, building materials, food processing, and leather and

the cultivation of fruit, cereals and other crops. Ossetians, who originally descended from Iranian-speaking tribes of Central Asia but largely converted to Christianity in the early middle ages, enjoyed a certain degree of autonomy during the Soviet period, particularly in so far as their language and culture was concerned. In 1989, concerned by rising nationalism in Georgia (see 'recent developments' below), the South Ossetian Supreme Soviet voted to unite South Ossetia with North Ossetia (now part of Russia). However, the decision was revoked by the Georgian Parliament and a violent conflict broke out towards the end of 1991, resulting in the flight of more than 100,000 refugees, mostly across the border into North Ossetia. In 1992, a ceasefire was negotiated at the initiative of the Russians and a peacekeeping force of Ossetians, Russians and Georgians was set up and was still in place at the time of writing.

1.3.3 A brief history: from mythology to independence

The Georgians themselves tell the following story about how they came to possess the land they deem the most beautiful in the world: When God was distributing portions of the world to all the peoples of the Earth, the Georgians were having a party. As a result they arrived late and were told by God that all the land had already been distributed. When they replied that they were late only because they had been lifting their glasses in praise of Him, God was pleased and gave the Georgians that part of Earth he had been reserving for himself. The beauty of Georgia's landscape is also evoked in Greek mythology. In particular, the legend of Jason and the Argonauts tells of a fabulously wealthy land (the ancient Kingdom of Colchis, present-day *Kolkheti*) where Jason stole the Golden Fleece from King Aetes with the help of his daughter Medea.

Indeed the Kingdom of Colchis was established along the Black Sea coast in the 6th century B.C. In the 3rd century B.C. the Kingdom of Kartli, or Iberia, was established in Eastern Georgia (present-day *Iveria*), with its capital in Mtskheta (near Tblisi). However settlement in the territory covered by present-day Georgia dates much further back to the 5th millennium B.C., when Neolithic tribes occupied the area.

Georgia's golden age was between the 11th and 13th centuries under the reign of King David the Builder (1089-1125) and then under his great-granddaughter, Queen Tamar (1184-1212). As Islam spread rapidly throughout Asia Minor, Georgia, like Armenia, began to forge an identity that marked it off from the surrounding Persian and Arab worlds. With the collapse of the last Armenian state in the 11th century, Georgia was left as a solitary outpost of Christianity. Yet it was just at this moment that the Georgian state reached the peak of its powers. Against a background of political unity, economic prosperity and military success, Georgian culture

flourished. Most notable was the development of a literary tradition revered to this day, marked by Shota Rustaveli's great epic poem, 'The Knight in the Tiger's Skin', which exemplified all the virtues of chivalry and honour and has been compared to Dante Alighieri's 'Divina Commedia'.

By the 13th century, Mongol invasions shattered the power of the central state. From then on, fractured by rivalries of its feudal princes and constantly invaded by the Mongols, Persians and Turks, Georgia suffered a lengthy period of decline that lasted well into the 18th century. Towards the end of the 18th century, Georgia concluded several agreements with Tsarist Russia to gain its protection against Ottoman Turkey. This was to prove to be the first step on the road to incorporation into the Russian empire. In 1801-1810 Georgia was occupied and annexed by the Tsarist Russian Empire.

By the late 19th century, opposition to the Russians had led to the formation of a national liberation movement among the Georgian intelligentsia, which quickly spread to the peasantry and the working class. When the Russian revolution broke out in October 1917, Georgia proclaimed its independence (on 26 May 1918). During its brief period of independence (1918-1921) Georgia was ruled by the Menshevik faction of the Social Democratic Party. However the new government faced enormous economic difficulties, not least because of the sudden loss of the crucial Russian market. In February 1921 the Soviet army occupied Georgia and incorporated it into a Transcaucasian Federative Soviet Socialist Republic (TSFSR), comprising Armenia, Azerbaijan and Georgia. In 1936 the TSFSR was dissolved and Georgia became one of the 15 republics of the Soviet Union.

Before its incorporation into the Soviet Union, Georgia had been a predominantly rural society with some 70% of its national income derived from agriculture and 85% of the population living in the countryside (Jones and Parsons 1996). However during the 1930s, under Stalin,³⁵ forced collectivisation and industrialisation entirely altered the socio-economic make-up of the country. During the political purges of 1936-38 countless Georgian writers, poets, artists, scientists and other were executed or perished in exile. Some have highlighted that far from benefiting from Stalin's patronage, Georgia suffered more than any other republic during the purges of the 1930s (see Jones and Parsons 1996). By 1989, 56% of the population was concentrated in urban areas and over 50% of the workforce was employed in industry and only 16% on collective farms (Jones and Parsons 1996).

³⁵ Josef Stalin was a Georgian, born Josef Vissarionovich Djughashvili.

1.3.4 Recent developments and the geopolitical framework

Toward the end of the 1980s Georgia witnessed a resurgence of the nationalist movement. At the same time, nationalist movements in Georgia's minority-populated regions, most notably Abkhazia and South Ossetia, led to increasingly violent clashes with the Soviet authorities. On April 9, 1989, an event which was to be a major turning point in Georgia's recent history took place: Soviet troops were used to break up a massive pro-independence demonstration in Tbilisi. Twenty people were killed and more than 4,000 were injured. This event accelerated the collapse of the socialist system and in October 1990, multi-party parliamentary elections were held, resulting in a majority of seats for the radical nationalist movement led by Gamsakhurdia. In March 1991, a referendum was held and Georgians voted unanimously for independence, which was officially declared on 9 April 1991.

Gamsakhurdia, elected president in May 1991, has been widely criticised for his authoritarian rule, his policies on Georgianisation and his very damaging attitude towards 'dangerous' ethnic minorities (see Jones and Parsons 1996). By the end of 1991, nationalists and reformists had joined forces in an anti-Gamsakhurdia coalition and in December 1991 armed opposition groups launched a violent coup d'état. Gamsakhurdia fled to Chechnya, and in January 1992 a military council took over and invited Edward Shevardnadze to return from Moscow, where he had been serving as foreign minister under Gorbachev, and resume his leadership of Georgia.³⁶

When Shevardnadze came to power, the Georgian state was in shambles. There were two wars, one with South Ossetian secessionists, and the other with Gamsakhurdia supporters in western Georgia. The south-western autonomous republic of Achara and the Abkhazian autonomous republic were out of Tbilisi's control and the Armenian and Azeri populated regions on the republic's southern borders (Samtskhe-Javakheti) effectively ran themselves. In September 1993 Gamsakhurdia returned from exile to organise an uprising and Russian armies were sent into Georgia to assist the government. The uprising was crushed. However, as part of the price for military and political support, Shevardnadze's government was forced to join the CIS in October 1993 (having initially refused to join in 1991).

Until his resignation on November 23, 2003, Shevardnadze became increasingly associated with the pervasive corruption that has hampered Georgia's economic growth. Many have criticised him for sacrificing Georgia's sovereignty to Russia in exchange for peace (Russia continues to exercise a great influence in the country- see below). On 2 November 2003 Georgia held parliamentary elections and a coalition of young reformists headed by Michail Saakashvili, Nino

Burjanadze and Zurab Zhvania opposed Shevardnadze's government. Shevardnadze won, however the elections were widely regarded as rigged and massive demonstrations followed in Tbilisi, finally forcing Shevardnadze to resign.

On January 4, 2004 Michail Saakashvili was elected President by 96% of the votes. He inherited many difficulties including more than 230,000 IDPs, fragile peace agreements with Abkhazia and South Ossetia, Achara's refusal to recognise Tbilisi's authority, and potential separatist tendencies in the Armenian dominated south (Javakheti). Moreover, relations with Russia remained problematic. Russia continued to have an important influence in the country; Russian peacekeepers were still present in both Abkhazia and South Ossetia and 'in exchange', the Russian military occupied three military bases, had joint use of all of Georgia's ports and airfields and supervised Georgia's borders. The war in Chechnya caused additional friction, as Russia accused Georgia of harbouring Chechen guerrillas.

At the same time, Georgia's increasingly close relationship with the US (particularly since it sent hundreds of special operations forces to assist the local military in fighting guerrillas as part of its 'war on terror') did nothing to improve relations with Russia, and nor did the securing of a US\$3 billion project to build a pipeline carrying oil from Azerbaijan to Turkey via Georgia (and not via Russia). In addition, one must not forget that following the break up of the Soviet Union, Moscow lost much of its indispensable access to the Black Sea coast (and through it to the Mediterranean and the rest of the world) to Ukraine and Georgia. As a result, Russia was left with only one important port on the Black Sea at Novorossiisk. Given these considerations, Russia's interests in Georgia cannot be underestimated.

Georgia's strategic geopolitical location will continue to be key in shaping its future. Sandwiched between Russia and a NATO member (Turkey), Georgia also serves as a buffer between two countries that have almost always had a common border and have continuously fought each other throughout history. Moreover, recent US and Western interests in the oil fields of Central Asia, as part of the US strategy to decrease dependence on middle eastern oil, have increased interests in this small country as the most convenient, technically least difficult, and 'friendly' means of transporting oil from central Asia and Azerbaijan to the Mediterranean sea. Georgia also serves as Armenia's only open border and therefore its only access to Russia and to the rest of the world, as

³⁶ Shevardnadze was involved in Georgia's leadership for the greater part of the last 40 years. From 1972 to 1985 he was First Secretary and previous to that he was Interior Minister from 1964 to 1972.

Armenia's borders with both Turkey and Azerbaijan are closed.³⁷ This important strategic position makes the stability and independence of Georgia difficult to maintain.

Finally, the Georgian economy remains very weak with extremely low fiscal revenues, widespread corruption and unsustainable external debt. GDP growth has been slow since the 1998 Russian crisis, further exacerbated by energy supply problems. As discussed above, poverty and inequality have increased substantially and the low level of government revenue has prevented the satisfactory provision of social security. Within this complex, insecure and unstable political and economic environment, we ask: How do the Georgian people make a living? As we will see in the following chapters, one important answer to this question is through informal economic activities.

³⁷ Armenia has tense relations with Turkey, largely as a result of the Armenian genocide in 1915, and continues to be at (undeclared) war with Azerbaijan over Nagorno Karabakh, the Armenian enclave in Azerbaijan.

**WHAT IS THE INFORMAL SECTOR?
A REVIEW OF EXISTING LITERATURE**

In the past few years the informal sector has increasingly become the focus of research, public policy and the media in the countries of CEE and the FSU. Newspapers cover front pages with eye-catching headlines on its scale; Governments, under pressure from international organisations to improve the state of their public finances, vow to eradicate it; while research increasingly highlights its multifaceted nature, as an important source of livelihoods, the cause of debilitating public deficits, and a dynamic sector which develops in reaction to crippling bureaucracies, corruption and excess regulation.

What exactly is the informal sector? Although the term has been very widely used, its meaning is far from clear. This chapter reviews the informal sector literature in developing, western industrialised, centrally planned and transition countries. Although comprehensive reviews of the main issues and debates exist in both developing and industrialised countries, I know of no attempts to provide a comprehensive, comparative review of how the informal sector has been defined in all five contexts.

The literature review reveals that there is no consensus over what constitutes the informal sector worldwide. Over the past 30 years, the term has been used in developing, western industrialised, centrally planned and transition countries to analyse a wide spectrum of activities that escape taxation, measurement, and regulation. The term 'informal sector' or 'informal economy' has been used to describe such diverse activities as street vending, hawking, undeclared domestic work, barter, stealing state property, corruption, tax evasion, the Mafia and organised crime. Below we review, in turn, the main definitions and sources of debate in developing countries, western industrialised countries, the Soviet Union and transition countries.

2.1 THE INFORMAL SECTOR IN DEVELOPING COUNTRIES:

A TYPE OF HOUSEHOLD ENTERPRISE

In developing countries, the term 'informal sector' has broadly been associated with unregistered and unregulated small-scale activities (enterprises) that generate income and employment for the urban poor. There have been two main parts to the informal sector debate: The first, which dominated much of the 1970s and 1980s, focused on the informal-formal sector relationship. Those who supported the 'duality' approach argued that there were two distinct urban economies (the poor/informally unemployed vs. the rich/formally employed), while their critics saw these as two aspects of the same, single, capitalist economy. The second part of the debate, which took off in the late 1980s in Latin America with the publication of de Soto's (1989) work on Peru, is

concerned with the causes of the informal sector: is the primary cause of the informal sector poverty or excess regulation?

2.1.1 The Informal sector relationship: dualism or continuum?

The term 'informal sector' emerged in the 1970s, at a time of crisis in development theory, following the growing recognition that the 'accelerated growth model' had not succeeded in creating employment and eliminating poverty in developing countries.³⁸ Unprecedented population growth, as of the 1950s, coupled with increase rural-urban migration, and an inability of the industrialisation process to absorb the large numbers of unskilled, illiterate workers resulted in widespread poverty and unemployment (Moser 1994, p.13-14). However, it soon became apparent that the urban poor were not actually 'unemployed', but were in fact engaged in a multitude of small-scale, unregistered, unmeasured and largely unregulated 'informal' activities.³⁹

The Dualist model

The first to employ the term 'informal sector' was anthropologist, Keith Hart, who described the 'formal' and 'informal' income-earning opportunities that he observed in Ghana, equating the first with wage-earning jobs and the second with self-employment, thereby setting the stage for the dualist interpretation (Hart 1973, p.67).

However, it was the International Labour Office (ILO) that was to disseminate the concept, through its very influential 'Report on income and employment in Kenya' (1972), which suggested there that there existed a marginal, poor, 'informal' sector of the urban economy, which produced goods and created employment and income for the poorest of the poor. The informal sector was seen as a separate, autonomous sector, which was defined in contrast to the formal one through seven distinguishing characteristics. Thus, for instance, where formal sector units were characterised by large-scale production, incorporation, and the use of capital-intensive technologies, informal sector units involved small-scale production, were unincorporated and family owned and used labour intensive technologies (ILO 1972, p.6). In contrast to Hart's emphasis on the individual, the ILO's focus was exclusively on units (or enterprises), thereby establishing the basis for most future interpretation of the informal sector in developing countries as a set of units.

³⁸ The 'accelerated growth model, which dominated development thinking throughout the 1950s and 1960s, was based on the assumption that industrial expansion would increase wage-sector employment and that the 'trickle-down' effect would ultimately lead to redistribution of resources and income.

³⁹ This raised important questions regarding the definition of 'employment' and 'unemployment' in a development context. Is the concept of 'unemployment' relevant in a context where unemployment insurance is essentially inexistent

In order to measure the size of the informal sector in developing countries, the definition was operationalised by using a set of multiple criteria. The operational definition included: (a) all enterprises or production units with less than a maximum number of workers (usually ten) or (b) enterprises with more than the suggested maximum number of workers that specified at least one of the following additional criteria: they operated illegally; they worked on an irregular basis; they were located in a temporary structure or in the open; they did not use electric power; they did not depend on formal credit institutions; they did not rely on formal distribution network, or; most of their workers had less than six years of schooling (Sethuraman 1981, p.22). This definition still holds today and forms the basis of the ILO revised definition adopted in the '1993 Resolution Concerning Statistics of Employment in the Informal Sector' (ILO 1993b, par. 7-9).⁴⁰

An alternative dualist interpretation was offered by PREALC, the ILO's World Employment Programme in Latin America.⁴¹ Like the ILO-Geneva, PREALC viewed the informal sector as a marginal, unprotected sector of the economy in which people survive. However, in contrast to the ILO-Geneva's focus on the enterprise, PREALC concentrated on income and employment. Two alternative typologies were used: the first, based on status in employment, included domestic servants, casual labourers, the self-employed, and all persons working in enterprises employing a maximum number (4-10) of persons. The second included all persons whose income is below a minimum level (usually the minimum wage) (Souza and Tokman 1976, p. 356-357).⁴²

Finally, other dualist approaches have defined the informal sector in terms of its position *vis a vis* 'state protection'. Weeks (1975), for instance, argues that informal sector units operate outside the formal system of benefits and of formal credit institutions, while formal sector units are officially recognised, nurtured, and regulated by the State, through such mechanisms as tariff and quota protection, import tax rebates, selective monetary controls and licensing measures. Similarly, Mazumdar (1976) distinguishes between informal, 'unprotected', urban labour and formal, 'protected' urban labour and, more than a decade later, Roberts (1990, p.35) argues that the informal sector is 'the means by which people make out in the absence both of state provision of basic welfare services and of private mutual interest associations which defend their members and advance their interests'.

and people engage in informal activities to survive? And can the concept of 'employment' be limited to official, 'formal' employment? These questions are the source of much research and debate in developing countries.

⁴⁰ This new definition is discussed in detail in chapter 3, section 3.2.

⁴¹ PREALC stands for Programa Regional del Empleo Para America Latina y el Caribe.

⁴² Note that there is considerable debate as to whether informal sector employment can be equated with poverty. Many have argued that not all informal workers are poor (successful informal entrepreneurs for instance) and that not all poor work in the informal sector (low-paid industrial workers for instance) (see Cartaya 1994; Portes, Alejandro and Schauffler 1993; Thomas 1995).

Informal-Formal Continuum

Critics of the dualist model have argued that formal and informal activities are not separate and independent, but rather parts of one overall capitalist system in which informal activities are subordinate to, and dependent on, the formal sector.

The Marxist critique, for instance, rejects the whole concept of 'informal sector', preferring the term 'petty commodity production' to refer to these activities, which, it argues, exist at the margins of the capitalist mode of production but are integrated into and subordinate to it (Birkbeck 1979; Bromley and Gerry 1979; Moser 1994; Portes, Alejandro 1978). Two main exploitative relationships are emphasised. On the one hand, the informal sector is simply an extension of the production network of large firms, providing a pool of cheap and flexible wage labour through self-exploitation.⁴³ On the other, it subsidizes the formal economy by providing cheap goods and services to the labour force, therefore enabling large firms to pay extremely low wages (Allen 1998, p.9).

Within this framework, Portes, Castells and Benton (1989, p.300) suggest that at least three types of activities can be distinguished: direct subsistence activities, informal activities subordinate to production and marketing in the formal sector, and autonomous informal enterprises with modern technology and some capacity for capital accumulation. Similarly, Bromley and Gerry question the adequacy of the formal-wage-employment vs. informal-self-employment dichotomy. They suggest that there is a continuum from stable wage work to true self-employment, passing through 4 categories of 'casual work': short-term work, disguised wage-work, dependent work and finally true self-employment (Bromley and Gerry 1979).

Similarly, in her work on Zaire, MacGaffey calls for the introduction of a new conceptual framework; that of the 'Real Economy', which includes the totality of economic activity, and not just its component parts. She suggests that the real economy should consist of:

'the recorded economy, that is, all economic activities that are recordable and reported and that are gathered by statistics; the non-monetised economy that is, all activities concerned with the non-monetised production for self-consumption; and all the remainder, which is monetised (though operating with a variety of currencies and also through barter), unrecorded, and inadmissible (because it is more or less legal)' (MacGaffey 1991, p.10).

⁴³ A well-known example is offered by Birkbeck's 1978 study of informal garbage collectors in Cali, Columbia. It shows the extent to which collectors, the most 'marginal' of workers, are connected with modern capitalist production. Informal garbage collectors supply sorted and packed plastic, paper, bone and glass to informal deposit owners, who in turn pass on the product to wholesalers that supply the large orders of industrial firms. The firms dictate the final price and each intermediary along the chain takes a share, with the collectors receiving the lowest share, and no work protection whatsoever (Birkbeck 1979).

She argues that the division of the economy into formal and informal sectors is arbitrary and unrealistic, and that 'what has previously been thought of as a marginal sector of the economy is in fact the principal means by which it operates' (MacGaffey 1991, p.7).⁴⁴

Finally, in an attempt to reconcile the two interpretations, Sethuraman (1981) argues that the concept of dualism does not necessarily deny the presence of interdependence. Thomas suggests that 'formal' and 'informal' should be exhaustive and mutually exclusive categories (in order to classify agents), but they are not required to be independent. In fact, as Moser points out, the debate is not so much on whether or not the informal sector is independent, but on the nature of the formal-informal relationship. Where the dualist approach assumes a benign relationship and therefore advocates the development of closer links through subcontracting and credit, the petty-commodity production school assumes the relationship is exploitative and consequently advocates an increased autonomy of petty commodity production and cutting the links with large-scale capitalist enterprises (Moser 1994, p.12).

2.1.2 The causes of the informal sector: excess regulation or poverty?

Much of the debate on the informal sector in the past decade has focused on its causes. Is the primary cause of the informal sector rural-urban migration and urban poverty or is it excess regulation, taxation and a heavy state bureaucracy? The position taken on this question largely determines the definition used, and ultimately the policy recommended.

Poverty

The ILO-Geneva and PREALC approaches emphasise the survival nature of informal activities, arguing that poverty is the main cause of the informal sector. In their view, activities are undertaken as an alternative to open unemployment since, in the absence of social security benefits, individuals cannot afford to be unemployed (Souza and Tokman 1976, p.355-356). Informal activities are seen as marginal, and workers are vulnerable, as they are unprotected by labour laws. Thus, they argue, the primary path to development and to poverty alleviation is macroeconomic policy that emphasises expanding modern sector employment and incomes (Rakowski 1994, p.36).

⁴⁴ A similar argument has been presented by Harding and Jenkins (1989) for western industrialised countries. They suggest that there is no such thing as a separate 'black' or 'hidden' economy, but that formal and informal activities co-exist and are part of the modern capitalist economy. There are simply varying degrees of formality and informality depending on the context and most social interaction partakes of a degree of each (Harding and Jenkins 1989, p. 175).

Some have emphasised the 'discrete logic of production' in informal sector units, which differs from that prevailing in the formal economy, in that 'the accent is on employment generation and not on seeking suitable investment opportunities for the sake of realising a return on investment' (Guerguil 1988, p.60; Sethuraman 1981, p.16). I will later argue that this 'discrete logic of production' (to use Guerguil's terminology) which characterises informal activities and distinguishes them from formal ones, can also be used to distinguish 'informal' activities undertaken to meet basic needs from larger scale 'underground' activities deliberately concealed to avoid the payment of taxes.

Excess Regulation

In the late 1980s, De Soto introduced a new dimension to the study of the informal sector. In his best selling book, 'The Other Path', on 'the informals' of Peru, de Soto highlights the role of excess regulation and the state bureaucracy in creating the informal economy (de Soto 1989). The informal sector consists of 'potential entrepreneurs' who are forced to operate illegally because of flaws in the tax system and in other laws and regulations. Although he highlights the role of rural-urban migration, it is essentially the 'mercantilist' state, which 'only exists to protect the interests of itself and big business', which is responsible for in the existence of the urban informal sector. Informality is therefore the 'popular response, which successfully breaks down this legal barrier' (de Soto 1989, p.11).

As noted by Rakowski (1994, p.31), de Soto's work marked a shift away from seeing the expansion of the informal sector as a problem for development, to an emphasis on the informal sector as an asset or solution to economic crisis and poverty. Thus, in Bromley's words, de Soto argues that through the combination of deregulation, de-bureaucratisation and privatisation, 'the size of the state apparatus can be reduced and the quality of life of every citizen improved, and the nation's vast entrepreneurial potential unleashed' (Bromley 1994, p.138).

This view of an informal sector defined as the set of 'illegal' activities, resulting from excess taxation and regulation, has been the basis for numerous studies of the informal sector in Latin America in the past decade. Loayza, for instance, uses an empirical model of the informal sector, defined as all 'untaxed' and 'unregistered' activities, to show that its size depends positively on the level of taxation and labour market restrictions, and negatively on the quality of Government (Loayza 1997).

A third approach, the so-called 'structuralist approach', combines elements of both the de Soto 'legalist' interpretation and the PREALC poverty-based one (see Castells and Portes 1989; Portes, Alejandro 1978; Portes, A, et al. 1989; Portes, Alejandro and Schauffler 1993). The informal

sector is viewed as a product of state regulation, which essentially supports the modern formal sector. Firms 'go underground' (i.e. large firms subcontract to small firms or engage in illegal hiring practices) to lower the costs associated with protective labour legislation. However, the structuralist approach argues that the elimination of state controls would remove the informal firms' competitive advantage, which stems from their ability to escape tax and labour regulations, and would therefore not result in the expansion of entrepreneurial activity and reduction in poverty that is suggested by de Soto. Nevertheless, they recognize that more deregulation and greater flexibility is needed to enable firms to adjust to changes in the economic conditions, but agree that it should be supplemented with policies aimed at reducing survival activities through capital investment in the modern industrial sector (Portes, Alejandro and Schauffler 1993, p.55).

In summary, the legalist and poverty-based approaches essentially define two different groups of activities and consequently give rise to different policy recommendations. In the ILO/PREALC approach illegality is a related characteristic of informality, but the basic defining one is its 'discrete logic of production'.⁴⁵ In the de Soto approach illegality is the basic defining characteristic and the 'production rationale' of informal enterprises is no different from that of formal ones. Guerguil argues that these two definitions only slightly overlap. Some activities performed to generate basic household income, such as domestic work, may not be illegal, whereas other activities which are illegal are not carried out with a production logic different from that of the formal (capitalist) sector (Guerguil 1988, p.61).

2.2 THE INFORMAL SECTOR IN WESTERN INDUSTRIALISED COUNTRIES: UNMEASURED AND UNTAXED PRODUCTION

Whereas in developing countries the debate on the informal sector has been mainly conceptual, in western industrialised countries, it has been methodological, focusing principally on measurement techniques. Moreover, whereas in developing countries there is disagreement over what constitutes the informal sector, but agreement over what to call it, in western industrialised countries there is general agreement over what it is but absolutely no agreement over what to call it. Thus the terms 'informal' 'black', 'underground', 'unrecorded', 'hidden', 'shadow' 'irregular', 'subterranean', 'parallel', economy have all been used to essentially describe income or production, which escapes taxation and/or GDP estimates.

⁴⁵ The ILO/PREALC's Viktor Tokman points out that the majority of enterprises are neither fully illegal nor fully legal, but that there exists a spectrum of positions with 'legal' and 'illegal' merely being two extremes (Tokman 1992, p.5-6).

Definitions in western industrialised countries have mainly been income-based. Two such definitions can be identified: (1) The national production or income that is missed by the statistical offices when they calculate the value of national product, and, (2) the revenue not reported to, and discovered by the tax authorities, which is produced in underground activities (Tanzi 1999, 344). On the one hand, Tanzi, Macaffee and Feige all (more or less) define the 'underground', 'unobserved' or hidden' economy as the GDP that is not measured by official statistics because of un-reporting and/or underreporting (although Feige also includes activities which escape registration due to convention - e.g. household activities) (see Feige 1983; Feige, E.L. 1979; 1980; Macaffee 1982; Tanzi 1982; Tanzi 1983). On the other hand, Gutmann defines it as 'the economic activity or transactions that escape taxation' (Gutmann, P.M. 1979, p.14).

As noted by Tanzi (1999), these two approaches do not necessarily measure the same thing as tax evasion and GDP are measured in different ways, and it is therefore possible to have a lot of tax evasion without understating GDP. Cowell (1990) provides a useful framework to understand how these concepts are related to one another. He distinguishes between total economic production and officially defined production, or production which falls within the System of National Accounts (SNA) of a country. The second is a subset of the first and excludes activities such as housework and do-it-yourself work. He then shows how the black economy intersects both these production boundaries but also includes activities such as benefit fraud and evasion of taxes on capital gains, which are not productive activities, and therefore fall outside the production boundaries. Thus, *unmeasured* GDP includes that part of the black economy, which overlaps with total economic production but not with officially defined production, which by definition is allowed for in the SNA and therefore estimated, whereas *untaxed* revenue includes all of the black economy (i.e. both that which overlaps with total economic production and that which is outside of it) (Cowell 1990, p.15).

Others, such as Dallago (1990) and Thomas (1992; 1995), have used a definition of the 'irregular' economy based on legal status rather than income. Dallago, for instance, defines the 'irregular' economy as activities which are 'deliberate attempts to evade or avoid the rules (laws, regulations, contracts and agreements) that apply to a particular context, the purpose being to achieve a goal that is permitted, tolerated, or at any rate not explicitly condemned in the economic system concerned' (Dallago 1990, p. XVIII).

However, the core of the debate in western industrialised countries has been on empirical methodologies. Apart from a few direct methods (such as the tax auditing approach), most methods used to measure the underground economy, have been indirect (i.e. using available

statistics). There have been three main approaches: monetary, expenditure-income discrepancy, and employment census methods.

Monetary approaches, which have been the most common, are based on Cagan's (1958) *currency-ratio method*, which assumed that transactions in the underground economy are conducted in cash and that changes in the ratio of currency to money supply could partly be explained by changes in the size of the underground economy. Gutmann (1977; 1983), elaborates this model and develops the *currency demand deposit method*, based on the assumption that there exists a base period in which little subterranean activity existed, and attributes changes in the ratio of currency to demand deposits to changes in the level of subterranean activity (Gutmann, P.M. 1977, p.27). Feige (1979) and Tanzi (1983) also use similar methods (see Bernabè 2002a, p.14-15 for details).

The *expenditure-income discrepancy method* compares production and consumption data, either at the national or household level, to derive the size of the underground economy. Macafee argues that by comparing income measures of GDP, which are primarily based on tax declarations, and expenditure measures of GDP, which are primarily derived from industrial and household surveys, one can obtain a reasonable indication of the size of the 'hidden' economy (Macafee 1982, p.148). Smith (1986), for example, uses both macro economic data (national accounts) and micro economic data (family expenditure data) to find evidence of discrepancies between income and expenditures for the UK. Finally, the *employment census methods*, involve comparing the official rate of employment and the employment rate as calculated by other means. Examples include comparing employment figures from population surveys to those obtained from surveys of establishments, or comparing employment figures from demographic data to figures of employment derived from the data used in the national accounts.⁴⁶

What is worrying is that these methods give considerably different estimates of the underground economy. Frey and Pommerehne find that in the United States, the underground economy estimates for 1976 range from 4% of GNP if one uses the expenditure-income discrepancy approach to 22% if the transactions-ratio method is used (Frey and Pommerehne 1982, p.18). Similarly, Smith (1986, p.84-85) finds that for the UK, the range of estimates of the size of the black economy extends from 2%-4% of GDP if expenditure-income discrepancy methods are used to about 15% if monetary approaches are used.

46 Charmes (1993) uses this approach to derive the size of the informal sector in Morocco, Tunisia and Egypt. He compares national statistics on the active population (using the population census or a household survey) to statistics on firms in these countries

2.3 THE SOCIALIST SECOND ECONOMY: THE PRIVATE PARALLEL ECONOMY

The informal economy in transition countries is not new. There has long been a parallel, private, unregistered and untaxed part of the economy, which during the Soviet period was referred to as the 'second economy'.

It was Grossman (1977) who was largely responsible for the spreading of the term 'second economy', which he defined as comprising 'all production and exchange activity that fulfills at least one of the two following tests: (a) being directly for private gain; (b) being in some significant respect in knowing contravention of existing law' (Grossman 1977, p.25). Others have adopted definitions based on ideology. Los (1990) defines the second economy as 'all areas of economic activity which are officially viewed as being inconsistent with the ideologically sanctioned dominant mode of economic organisation' (Los 1990, p.2; see also Shelly 1990, p.12).

We can divide the 'second economy' activities into those that were legal, but ideologically unacceptable and therefore officially discriminated against, and those that were illegal. The most common legal second economy activity was the cultivation of private 'garden' plots. Private agricultural production was permitted not only for farming households that worked on collective or state farms, but also for many workers of industrial and other sectors, including those in urban areas who were allocated plots outside the city limits on which they could build their *dachas* (summer houses) (see Braithwaite 1994, p.6; Grossman 1982, p. 256). Private plot production seems to have been quite extensive. McAuley (1979c, p.76) reports that for instance in Pavloskii Posad (a small town in the Moscow oblast) between one half and three quarters of all households (depending on income) had access to a private plot of land. Indeed private plot production was an important source of additional income, especially as it was often sold (illegally) on the black market (see Grossman 1982; Grossman and Tremml 1987). Grossman and Tremml estimate, for instance, that if private plot production were considered, then the Soviet Union's actual agricultural production in 1977 would have been approximately five times the official figure (Grossman and Tremml 1987, p.292).

Another type of legal private activity was the construction of private housing, which consisted of apartments in housing cooperatives (mainly used by better off families), traditional peasant huts in rural areas and summer residences (*dachas*) (McAuley 1979b, p.11).⁴⁷ In fact some estimates claim that as much as half of all Soviet families resided in private accommodation (as quoted by

⁴⁷ Note that private housing became illegal when it involved the acquisition of materials on the black market and the illegal hiring of construction workers

McAuley 1979b, p.11). Finally, other private legal activities included the private practice of certain professionals such as physicians, dentists, teachers, and tutors (Grossman 1982, p.256).

The illegal second economy consisted of four types of activities: (1) stealing from the state, (2) speculation, (3) illicit production and (4) underground enterprises (Grossman 1982, 249). Stealing from the state, which involved stealing anything from enterprise light bulbs and toilet rolls to output produced, was widespread. Grossman relates:

‘All sources agree that it is practised by virtually everyone. All also agree that the public takes it for granted, attaches almost no opprobrium to it – and on the contrary, disapproves of those who do not engage in it – and sharply distinguishes between stealing from the state and stealing from private individuals’ (Grossman 1982, 249).

Similarly, Simis claims that ‘the mass of the population does not look upon theft from the state as real theft, as stealing someone else’s property’ (Simis 1982, p.253).

Apart from the stealing of state property, stealing from the state also included so-called *left-hand work* (the earning of informal income at the formal workplace, or that which the left hand does while the right hand performs the official work). Simis explains that left-hand work ‘is usually done during working hours, using state tools, equipment and means of transport’ (Simis 1982, p.261). It was widespread and considered a normal aspect of working life. Simis and Kurkchian use the example of bus drivers to illustrate left-hand work in Georgia and Armenia respectively (Kurkchian 2000, p.86; Simis 1982, p.265). Bus drivers had an official wage, which served to guarantee basic security, however it was accepted (and expected) that their main source of income came from charging passengers for fares and not issuing tickets or receipts. At the same time, they had to pay bribes to get good routes and to avoid inspection of tickets. Kurkchian argues that any driver who did not partake in *left-hand work* would not have been able to survive and that ‘it was not possible to live outside the alternative economy other than at great cost, not only in terms of income, but also in terms of social mobility and integration in society’ (Kurkchian 2000, p.86). She argues that the official and the second economy were two inseparable and essential parts of the Soviet economy; while the first provided a basic standard of living, the second complemented it and ensured a reasonable lifestyle for the population.

Finally, another example of ‘stealing from the state’ was embezzlement, which was a direct product of the shortage of goods. Thus, employees of State-owned stores or restaurants would take rare goods and re-sell them for a profit, or they would set them aside for their favoured customers, from whom they could expect good tips (Grossman 1982, p.250; Shelly 1990, p.13).

The second illegal second economy activity, which also resulted from the shortage of goods, was speculation. Grossmann relates: 'given the invariable maldistribution by the state of goods over time and space and chronic shortages of many items in the USSR, the opportunities for black market trading for profit are nearly unlimited' (Grossman 1982, p.251). However, despite its pervasiveness, speculation was considered a very serious offence and punishable by the death penalty (Simis 1982, p.267). Nevertheless, it was normal for people to have their 'own speculator', who would come around the workplace or home to sell consumer items such as clothing or food.

A third illegal 'second-economy' activity was illicit production (or moonlighting). This was production that took place for private gain outside official working hours (as opposed to left-hand work which took place during working hours). 'Moonlighters', particularly those working in construction, were referred to as *shabashniki*. They were typically men who worked in construction trades or as agricultural workers on state and collective farms. Shelly suggests that *shabashniki* accounted for half of the construction workers in some regions of the USSR (Shelly 1990, p.16).

Finally, the last type of illegal second economy activity was underground enterprises, or formal enterprises that were simultaneously involved in anything from small-scale 'plan manipulation' to large-scale illegal production. Berliner (1952) argued that plan manipulation was a result of the motivation structure for Soviet managers. As the main motivating factor was not the wage, but the 'premium' (a bonus paid in return for fulfilling the planned output target), Soviet managers used a variety of techniques to fulfil output targets, which were not necessarily in the interests of the State. These included: inflating statements of material requirements, arranging to have the firm's output plan set at a level well below capacity, producing the wrong assortment of products, falsifying accounts, lowering the quality of the output and, misappropriating funds (Berliner 1952, p. 348-356). However, these techniques were also commonly used for illegally producing extra output, which was then sold for private gain. Through their study of a Georgian biscuit factory, Mars and Altman, find that similar techniques were used for parallel production and that the extra produce was then sold by 'making a deal' with the retailer, who would sell them in shops next to the 'official produce' and share the profits with the factory managers (Mars, G and Altman 1987, 201-205).

Another common example of illicit production in state enterprises was the hiring of so-called *dead souls* (or 'ghost workers'). These were workers who took on a second job but never appeared at their place of work and then shared their secondary wages with their employer (Shelly 1990, p.17).

Finally, corruption has also been included in the study of the second economy, either as an integral part of it or as a closely related activity. Grossman identifies three types of corruption: the daily 'petty bribing' of Soviet authorities, and particularly of law enforcement officials; the tradition of *prinosheniye* (literally 'bringing to'), which involved the regular bringing of valuable gifts to one's supervisors; and the purchase of lucrative official positions (Grossman 1982, p.251-252). Another, widespread form of corruption was *blat*, or the use of personal influence to obtain favours to which a person or firm was lawfully entitled. Berliner argues that *blat* was common in all aspects of firm's activity, and that its need was so great that special people were hired, the so-called '*tolkach*' ('pushers'), who were responsible for 'pushing' for the firm's interests. The *tolkach* often lived in Moscow, or in some other large city, and had very good personal connections. They were carried on the books as enterprise 'representatives' and often worked for several firms at a time (Berliner 1952, p.356-358).

Thus, the second economy was heterogeneous and pervasive; it involved everyone, from the top government official to the poorest citizen. As Shelly points out:

'At the top, were the large-scale underground businessmen, whose success depended on their ties to members of the official elite. Below them were the large numbers of small-scale private businessmen, moonlighting professionals and full time black marketers. Many of these relied on their ties with mid-level government functionaries, for success. At the bottom were those numerous citizens who supplemented their incomes through some form of illegal or semi-illegal activities such as petty theft in factories or putting aside merchandise for favoured customers' (Shelly 1990, p.23).

As we will see below, many have argued that it is the legacy of the second economy and, more specifically, of the incentive structures that dominate it, which has been the cause of such an extensive informal economy during the transition period and which is in part responsible for the failure of formal economic policies.

2.4 THE INFORMAL SECTOR IN TRANSITION COUNTRIES:

HOUSEHOLD ENTERPRISES, UNTAXED PRODUCTION OR SECOND ECONOMY?

In the past ten years, since the break-up of the Soviet Union, the informal economy in transition countries has increasingly become the focus of both policy and academic research. This is the result of a growing concern with corruption, tax evasion and crime as well as with an unprecedented increase in poverty and inequality. Given this wide spectrum of concerns, studies have used a variety of definitions of the informal sector (or economy) depending on the question

they are addressing. Moreover, the term 'informal sector (or economy)' has been used interchangeably with 'unofficial', 'hidden', 'underground' and 'shadow' economy.

Studies of the informal sector in transition can broadly be grouped into three groups, depending on the issues they address. In fact, they can be seen as reflecting the three different approaches discussed so far. The concept of the informal sector adopted by the first group of studies resembles that used in 'developing countries', the one adopted by the second group resembles that of the 'second economy' and the third is similar to approaches used in western industrialised countries.

The first group consists of those whose aim has been to understand how people survive during the transition period, given the collapse of real wages and persistent arrears in their payments. In these studies the informal economy (or sector) is essentially the set of survival strategies. For example, Johnson, Kaufmann and Ustenko identify six types of survival strategies used in Russia, which they also refer to as 'informal activities': (1) having another job; (2) using a dacha or other plot of land to grow food; (3) working as private taxi driver; (4) renting out one's apartment; (5) business trips abroad (to purchase goods for resale), and; (6) renting out one's garage (Johnson, et al. 1997b, p.185-186).

Similarly, Clarke (1999b) broadly defines the informal sector in Russia as including unregistered primary and secondary employment (including small-plot agricultural production). He argues that informal work is not associated with poverty as it is more of 'an additional security for those who are already well placed to weather the storm' (Clarke 1999b, p. 20, 33). Lokshin and Yemtsov (2001) use the related concept of 'coping strategies' and distinguish between 'active' coping strategies (e.g. secondary work, cultivation of garden plot, or renting out of one's own apartment) and 'passive ones (e.g. cutting back on food and clothing expenditures). They find that the higher the level of a household's human capital, the more likely it is to use 'active' coping strategies and that these strategies are more successful in offsetting economic shocks than the 'passive' strategies used by households with lower human capital.

Others have adopted the 'traditional' ILO definition of the informal sector and applied it to the transition context. Anderson, for example, in a study of the informal sector in Mongolia, defines it as 'small-scale, usually family-based, economic activities that may be undercounted by official statistics and may not be subject, in practice, to the same set of regulations and taxation as formal enterprises' (Anderson 1998, p.2). In line with the ILO approach, he limits his definition to legal activities, 'monetised' transactions (thereby excluding household production) and the urban sector.

The second group of informal sector studies consists of those who have analysed the transformation of the Soviet second economy into the present informal economy. These definitions, like those the second economy, are much broader, including a variety of activities such as barter, survival strategies, *left-hand work*, bribery, corruption, money laundering, tax evasion and corruption. Kurkchian, for instance, includes 'tax evasion, stealing from employers, illegal contracts, bribing politicians and officials, money laundering and so forth' (Kurkchian 2000, p.96). She argues that the present 'informal economy' has evolved from the long-established Soviet tradition of informal relationships, and suggests that although the new market economy may *officially* be the product of the legislative reform, the behaviour is in fact dominated by the informal sector, which today accounts for the largest share of the total economy (Kurkchian 2000, p.93-97).

Indeed, there is much evidence of the persistence of 'second economy' practices in the present (informal) economy. Ledneva, for instance, argues that both *blat* (or the use of personal networks in order to obtain goods and services in short supply or to influence decision-making) and *pripiski* (false reporting) are as widespread now as they were in the Soviet Union (Ledneva 2000, p.7). Similarly, Birdsall's analysis of 'covert earning schemes' is essentially the persistence of *left-hand work*. She identifies two types of covert earning schemes: the manipulation of official business transactions to realise monetary earnings; and the exploitation of the 'grey zones' at the fringes of the workplace, including the diversion of customers for a private client base, and the pocketing of fees for services rendered through the firm (Birdsall 2000, p.5).

Feige, who has been one of the main contributors to the debate on the measurement of the underground economy in developed countries, also highlights the legacy of the Soviet system in determining the character and scope of the informal, or underground, economy during the transition period. He defines 'underground economies' as 'non-compliant behavior with institutional rules', suggesting that there are several types of underground economies depending on the institutional rule being violated. He thus distinguishes between 'unreported' economies when fiscal rules are violated, 'unrecorded' economies when income-producing activities are concealed from national accounting, and 'illegal' economies, when the criminal laws are violated (Feige, Edgar L. 1997, p.25). In his view, formal policies have failed in the former Soviet Union, because they are based on the incentive structure of formal institutions, whereas the dominant incentive structure is that of informal institutions, which are a result of the Soviet system of non-compliance. Gaddy and Ickes present a similar argument to explain the failure of enterprise restructuring in Russia, and the emergence of a dual economy. They suggest that while the first

economy is private and restructured, the second is paternalistic and un-restructured, and based on 'informal activities' such as barter, tax offsets and survival activities (Gaddy and Ickes 1998, p.2).

For most authors in this group, the 'second economy' definition is still valid, as most of the private sector can be considered informal. Braithwaite (1994) and Sik (1992), for instance, both adopt 'second economy' definitions to describe the informal sector in transition. Braithwaite includes 'all activities outside the state sector undertaken for private gain and/or unregistered for taxes, etc. with the authorities', while Sik uses the lack of regulation as the main defining criterion (see Braithwaite 1994; Sik 1992). Similarly, Commander and Tolstopiatenko argue that the economy can be divided into two sectors: the informal sector, which is comprised of private activities that are largely untaxed, and the formal sector, comprised of state activities (including privatised state enterprises) that face a set of payroll taxes (Commander, Simon and Tolstopiatenko 1997, p.4). Moreover, they suggest that all part-time work can be considered informal, or 'undeclared', and all full-time work is formal and subject to payroll tax.

The third group of studies on the informal economy in transition countries has focused on the measurement of unrecorded GDP and/or tax evasion. These definitions have generally been narrower than those of the second group, but have nevertheless been very broad, including all income or production that escapes taxation or measurement and thereby encompassing both survival activities and large-scale tax evasion. Some have focused on measurement, while others have tried to explain what causes enterprises or individuals to operate informally.

Studies that have tried to measure the informal economy have arisen from a suspicion that GDP in the Former Soviet Union is highly undervalued and that measures of the aggregate collapse in output greatly overestimate the real slump in GDP (Dobozi and Pohl 1995, p.17). Kaufmann and Kaliberda define the 'unofficial', or 'informal', economy as 'the unrecorded value added by any deliberate misreporting or evasion by a firm or individual' and use the 'macro-electrical approach', first applied by Dobozi and Pohl (1995), to estimate the size of the 'unofficial' economy in Central and Eastern Europe and the CIS. They argue that electricity consumption provides a good measure of overall economic activity and compare the level of income, which should have been produced given the level of electricity consumption, to official measures of national income. Their estimates suggest that in 1994, the unofficial economy accounted for approximately one quarter of GDP in Central and Eastern Europe and one third in the countries of the former Soviet Union, reaching up to 65-70% of GDP in Georgia (Kaufmann, Daniel and Aleksander Kaliberda 1996, p.2, A4).

An alternative to the Kaufmann and Kaliberda (1996) model is presented by Lackò, who argues that household electricity consumption (rather than total electricity consumption) provides a better measure of the informal economy, as it permits the isolation of the structural changes during transition, that may be responsible for part of the increase in overall electricity consumption (Lackò 2000, p.122). She adopts a definition of the 'underground' economy proposed by Carter (1984), which includes 'activities that are assumed to be measured but escape official registration or measurement' (Lackò 2000, p.119). Her estimates are slightly more conservative than those of Kaufmann and Kaliberda, with CEE countries such as the Czech Republic and Slovenia having 22-23% of their national income 'unreported' while CIS countries such as Ukraine and Georgia had unofficial economies accounting for 53% and 57% of GDP respectively.

Others have tried to explain what causes enterprises to operate 'informally'. Johnson, Kaufmann and Shleifer (1997a), for instance, find that high tax burden, onerous regulation and low tax collection are associated with large shares of unofficial activity, as well as with poor public goods (such as police protection and enforcement of contracts), and poorer economic growth performance during transition. Later, Friedman, Johnson, Kaufmann and Zoido-Lobaton (1999) argue that in fact, entrepreneurs go underground, not to avoid official taxes but to reduce the burden of bureaucracy and corruption. Finally, Kolev (1998) points out that there are two different causes of informal employment and therefore two main categories of the informally employed. On the one hand, there are those who could be at ease in the regular job market, but who are driven into the informal sector because of the disincentive effects of the tax system, and on the other, those who are forced into it in order to survive in the new circumstances and cope with their low regular earnings (Kolev 1998, p.6).

2.5 SUMMARY

There is no consensus over what constitutes the informal sector (or economy) worldwide. In developing countries, the term has largely been associated with urban household enterprises whose main purpose is to generate income and employment for the households concerned. The main policy and research questions have been: (1) to what extent is the informal sector independent or integrated with the formal, capitalist economy? and (2) to what extent are informal enterprises 'survival activities', caused by poverty and lack of formal employment opportunities, or 'potential capitalist enterprises' that are being held in check by excessive bureaucracy and regulation?

In western industrialised countries, the term has been used interchangeably with other terms such as 'black', 'underground', 'hidden', 'unrecorded', 'shadow', etc. economy to describe all income or production that escapes taxation and/or GDP estimates. The focus of the debate has been on how to measure it. In the *Soviet Union*, the corresponding 'second economy' referred to the private, and often illegal, activities, which were inconsistent with the dominant ideology, and included activities such as small plot agricultural production, stealing from the state, speculation, illicit production and underground enterprises.

In transition countries, not only have other distinct definitions been used, but also there has been little debate *per se* on what constitutes the informal sector. Thus, each piece of research has simply used the term to define its area of interest. Although this is mainly due to the relative novelty of the 'transition context' (only thirteen years have passed since the collapse of the Soviet Union), it is time for a discussion on what is meant by the 'informal', 'underground', 'unofficial', or 'shadow' economy in the transition context. As illustrated in this review of existing literature the term 'informal sector/economy' has been used to describe an extremely wide spectrum of activities, which do not necessarily have much in common, including tax evasion, corruption, money laundering and organised crime to bribery, subsistence farming, barter, petty trade, and the stealing of state property. In chapter 3 I argue that such a broad term is not particularly useful for policy purposes and that a conceptual framework is needed to distinguish between these different activities.

MEASURING INFORMAL LABOUR MARKET ACTIVITY

The lack of consensus on the definition of the informal sector is, in part, a result of the fact that it has been approached by a multitude of different disciplines. The informal sector is of interest to labour statisticians, national accountants, legal specialists, social policy experts, anthropologists, macro economists, and others. Each piece of research uses the term to define its own particular area of interest. As we have seen, over the past thirty years, the 'informal sector' has been used in developing, western industrialised and transition countries to describe a wide spectrum of activities that do not necessarily have very much in common. It has referred to street vending, hawking, undeclared domestic work, barter, the stealing of state property, corruption, tax evasion, the Mafia and organised crime.

Although there is no need for a unique definition of the informal economy *per se*, for policy purposes it is important to distinguish crime and deliberate tax evasion from small-scale activities that individuals undertake to meet basic needs. This chapter develops a new conceptual framework that distinguishes between informal, underground, household and illegal activities.⁴⁸

Section 3.1 makes the case for a new definition of the informal sector for transition countries that distinguishes between small scale activities undertaken to meet basic needs from those deliberately concealed from the authorities to avoid taxation or complying with certain regulations. Section 3.2 develops a new conceptual framework that comprises four types of 'hidden' (unmeasured, untaxed and/or unregulated) activities: household, informal, underground and illegal activities. Section 3.3 examines how this new definition of the informal sector relates to other definitions in the literature. Section 3.4 presents an operational definition of the informal sector for the purpose of studying informal employment. It develops a typology of informal employment, which will be applied to the Georgian Labour Force Survey (LFS) data and form the basis for the empirical analysis in chapters 5 and 6. Finally, section 3.5 summarises the main arguments of the chapter.

3.1 WHY SO MANY DEFINITIONS AND WHY IS A NEW CONCEPTUAL FRAMEWORK NEEDED?

The diversity in definitions of the informal sector is a result of the fact that different units of observation and different criteria of informality have been used. It is possible to identify four main units of observation: enterprises, activities, income and individuals. Similarly, three main criteria used to determine informality can be identified: registration (mainly for tax and social

⁴⁸ A version of this chapter has been published as Bernabè (2002a).

security purposes), measurement (in GDP statistics) and regulation (mainly labour regulation). The informal sector has been defined by any combination of the above units and criteria. Thus, for instance, it has been defined as the set of all income that escapes measurement, all enterprises that escape registration, all activities that escape regulation, all income that escapes registration, all individuals whose work escapes registration, all enterprises that escape regulation, and so forth.

Although these concepts are related, they do not necessarily define the same thing. For instance, the 'registration' (for taxation purposes) and 'measurement' criteria are often assumed to delineate the same group of observations (see for example Kaufmann, Daniel and Aleksander Kaliberda 1996). However, as already noted, activities that escape taxation are not necessarily activities that escape measurement of GDP. Moreover, only productive activities are included in GDP, whereas certain activities such as illegally exporting capital or concealing income on capital gains, are considered tax evasion but are not productive activities and therefore are not considered to be 'unmeasured GDP'. Similarly, household activities such as agricultural production for own-consumption should be included in GDP, and would therefore be included in measures of the underground economy based on the measurement criterion, but are not considered part of tax evasion. In the same way, using income or productive activities as units does not necessarily measure the same thing, as certain taxable income is generated by non-productive activities such as capital gains.

None of these criteria or units of observation are preferable to the others *per se*. Different units and criteria may be used depending on the aim of the research. However, it is important to make a conceptual distinction between those unmeasured, (and/or unregistered and/or unregulated) activities (income, enterprises, or individuals) whose primary purpose is to meet basic needs, from those which are deliberately concealed to avoid taxes or regulations. This is particularly important in transition countries where, despite the focus of both policy and academic research on tax evasion, money laundering and corruption, there is increasing evidence of the existence and growth of an informal sector in the 'developing country' sense, as people turn to small-scale income and employment generating activities to generate livelihoods in the absence of sufficiently remunerated formal employment and social security (see Anderson 1998; Bernabè 2002b; Clarke 1999a; b; Lokshin and Yemtsov 2001). By distinguishing between these two concepts, it is possible to analyse the extent to which these 'informal' income-generating activities provide a social-safety net, and the extent to which they undermine government revenue.⁴⁹ This information will be critical for public policy, as it will allow the benefits of an increase in government revenue to be weighed against the risk of an increase in poverty, which would result from an attempt to

⁴⁹ This question will be examined in chapter 6.

'tax' or 'eradicate' some of these income-generating activities without providing any other form of social security.

The call to distinguish between the informal and the underground/hidden/unofficial sector (or economy) is not new. Thomas (1992; 1995), for instance, suggests that informal enterprises can be distinguished from irregular ones in that the latter involve the production of legal goods and services, but are illegal in the production or distribution process (because they evade taxes, social security contributions, or infringe other regulations), while the former involve legal goods and services and are 'quasi-legal' in their production or distribution process. They are 'quasi-legal' in that they are undertaken 'not to evade taxes, since their earnings are unlikely to be large enough to attract the tax collector, but because the authorities do not formally encourage such (activities)' (Thomas 1995, p.14).

Similarly, the Organisation for Economic Cooperation and Development (OECD), the System of National Accounts (SNA) and the International Labour Office (ILO) suggest that 'activities performed by production units of the informal sector are not necessarily performed with the deliberate intention of evading the payment of taxes or social security contributions, or infringing labour or other legislations or administrative provisions. Accordingly the concept of informal sector activities should be distinguished from the concept of activities of the hidden or underground economy' (Eurostat, IMF, OECD, UN and World Bank 1993, Par.5(3); ILO 1993b, Par.5(3); OECD 1997, p.16). However, as we will see below, the argument presented here is for a distinction between informal economic *activities*, and underground economic *activities*, irrespective of the type of enterprise in which they take place, whereas the ILO and OECD distinguish between activities that take place in informal *enterprises* and underground *activities*.

The European Bank for Reconstruction and Development (EBRD) also differentiates between 'informal work undertaken to maintain subsistence levels' and 'informal labour motivated by market incentives such as tax evasion or the business environment' (EBRD 2000, p.102). It suggests that informal work has played a crucial role in the provision of employment and earnings for many people during the transition period but that the driving forces have differed across regions, with the poorer countries motivated by the lack of formal opportunities and a need to survive while in the more advanced countries the motivation has been more market-related including tax evasion and avoidance of bureaucratic delays and impediments (EBRD 2000, p.97).

Finally, it is important to note that the use of motive (or intent) to differentiate between activities is common practice in both law and economics. As Cowell (1990, p.11-12) points out, from a legal perspective the distinction between (illegal) evasion and (legal but questionable) avoidance

relies on the judge's perception of the intentions underlying the taxpayer's actions. Motive also plays an important part in the construction of models of economic behaviour and Cowell suggests that evasion and avoidance can be distinguished on the basis of motive and therefore also differ in economic behaviour.

3.2 THE HIDDEN ECONOMY: DISTINGUISHING BETWEEN INFORMAL, HOUSEHOLD, UNDERGROUND AND ILLEGAL ACTIVITIES

Although the distinction between informal and underground activities is the subtlest, it is also important to distinguish between other forms of non-measured, non-taxed, and/or non-regulated activities. Several authors have argued that a distinction can be made between household, informal, underground, and illegal activities⁵⁰ (Commission of the European Communities - Eurostat, et al. 1993; ILO 1993b; Thomas 1992). However, most of these conceptual frameworks have based their definition of the informal sector on that adopted by the 15th International Conference of Labour Statisticians (ILO 1993b). As argued below, this enterprise-based definition is not necessarily appropriate for transition countries where there has been a growing informalisation of the labour market, which is not entirely captured by the ILO (1993b) concept of 'informal enterprises'.

Since the informal sector is associated with unmeasured activities, it is useful to use the conceptual framework of the system of national accounts. I propose to build on concepts defined in the 1993 Eurostat, IMF, OECD, UN, World Bank 'System of National Accounts' (hereon referred to as SNA 1993). As explained above the units and criteria used to define informality are related, but not identical.⁵¹ The choice of units and criteria ultimately depends on the reason for which the informal sector or economy is being studied. Here I do not attempt to argue that one unit or criterion is preferred to the others, but rather to present a broad conceptual framework, which can be used to distinguish between household, informal, underground or illegal sectors regardless of the units or criteria used to define them. It is important to highlight from the outset that the framework must therefore remain quite broad and that it is impossible (and unrealistic) to define strict boundaries between these sectors. The sectors overlap and for certain activities, persons, enterprises, or income, it may be difficult to determine whether they belong to one sector

⁵⁰ Not all have used the same terminology (e.g. Thomas distinguishes between household, informal, irregular, and criminal production), but the broad concepts are the same.

⁵¹ Recall that four main units of observation (enterprises, activities, income and individuals) and three main criteria (non-registration, non-measurement, and non-regulation) were identified.

or another. However, this does not deprive us of an understanding of what constitutes the bulk of the sectors.

Moreover, here the use of the term 'sector' refers only to the grouping of similar activities, enterprises, individuals, or income along certain lines for the purpose of measurement and research and in no way implies that these groupings are independent of one another. In fact, as much of the research in developing countries has shown, there is a continuum, not only between informal and formal activities, but also between household, informal, underground and illegal activities. However, for policy, measurement and analytical purposes it is important to distinguish between them. Finally, it is possible, if so desired, to make the sectors mutually exclusive by simply starting with one sector and defining each subsequent one as including that, which is not included in the previous ones. So, for example, starting with the household sector, the informal sector could be defined as the set of activities, enterprises, income or persons, which satisfy certain characteristics, and which are, by definition, not part of the household sector, and so on.

I adopt the term '*hidden economy*' to refer to the output from all productive activities, enterprises, income or individuals which are (a) unmeasured in GDP and/or (b) untaxed and/or(c) unregulated. In order to simplify the discussion I refer only to 'productive economic activities', but any of the other units of observations could be used. The important thing is how the sectors can be distinguished from one another. Also note that any of the criteria (measurement, registration, regulation) could be used alone or together, depending on the purpose.

Thus the hidden economy comprises a wide range of productive activities from housework to organised crime. These can be grouped into four main categories: the household sector, the informal sector, the underground sector and the illegal sector.

*The household sector is defined as the set of household productive economic activities that produce goods and services for own-consumption within the same household and, which are (a) unmeasured and/or (b) untaxed and/or(c) unregulated because they are outside the SNA production boundary (e.g. household cleaning, maintenance and repair of dwelling occupied by the household, preparation and serving of meals, care for the sick or elderly, transportation of household members and their goods, etc).*⁵²

⁵² Productive economic activities are activities, which fall within the general production boundary, as defined by the 1993 SNA. They must satisfy two important criteria: (1) they are 'carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods and services'. Thus, 'a purely natural process without any human involvement or direction' such as unmanaged growth of fish stocks

According to the SNA (1993) household activities producing goods for own-consumption are only included in the SNA production boundary 'if the amount produced is believed to be *quantitatively significant* in relation to the total supply of that good in the country' (SNA1993: 6.25). Thus, in developing and transition countries, activities such as agricultural production for own-consumption (which often represents a significant share of total national agricultural production) are included in the SNA. These activities are therefore excluded from the definition of the household sector and, as will be argued below, they are considered part of the informal sector. Thus here the household sector includes those activities that fall within the general production boundary but not within the SNA production boundary.

This definition of the household sector is different from that adopted by the SNA (1993) and Thomas (1992), which include *all* household production for own-consumption in the household sector (regardless of how quantitatively significant it may be). The main reason they do this is that both adopt the ILO (1993) concept of the informal sector, which by definition excludes household production for own-consumption (ILO 1993b, par. 14). However, as will be argued in detail below, household production for own consumption should be included in the informal sector, because it is included in the SNA, and because it is a very important source of employment, income and production in many transition and developing countries. Moreover, for public policy purposes, it should be distinguished from other household activities such as cleaning and cooking, which are not included in the SNA.

Finally, some authors have argued for the inclusion of non-quantitatively significant household activities in the SNA, particularly in developing countries where they may contribute considerably to livelihoods (see for example Harrison 2000, p. 46-47). Since there are market alternatives to activities such as taking care of the old or the sick and education, then only including services that are paid for in national income means that equivalent activities, which take

in international waters is not included, whereas the activity of fish farming is (SNA1993 : 6.15). (2) The output must be capable of being exchanged. Thus activities such as eating drinking, sleeping, taking exercise, etc. are not included as 'it is impossible for one person to obtain another person to perform them instead', whereas activities such as washing, preparing meals, caring for children, the sick or aged are all activities that can be provided by other units and therefore fall within the general production boundary' (SNA 1993: 6.16).

The SNA Production Boundary, as defined by the 1993 SNA, defines those productive economic activities that should be included in GDP estimates. Regarding the production of goods and services within the household, it specifies that production of goods within the household should be included in GDP if the amount produced is believed to be quantitatively significant in relation to the total supply of that good in the country (1993 SNA:6.25). Production of services is generally excluded from GDP 'with the exception of own-account production of housing services by own-occupier, and of domestic and personal services produced by employing paid domestic staff' (1993SNA:6.18). Productive activities which fall within the SNA production boundary are classified in the latest revision of the UN 'International Standard Industrial Classification of All Economic Activities (ISIC) Third Revision' (1989). An equivalent classification is provided by Eurostat for the European Union in the 'Statistical Classification of Economic Activities in the European Community (NACE Rev. 1) (1996b).

place within the household, are counted as costless. In developing and transition countries where social services are extremely limited and incomes are very low, household activities are an important source of income and employment for a significant share of the population. In the UK, the Office for National Statistics (ONS) is developing a so-called 'household satellite account' which will, for the first time, measure and value the outputs produced by households, including housing, transport, nutrition, clothing, childcare, adult care and so forth (Office for National Statistics UK 2002).

The informal sector is defined as the set of productive economic activities, which fall within the SNA (1993) production boundary, and are (a) unmeasured, and/or (b) untaxed and/or (c) unregulated, not because of deliberate attempts to evade the payment of taxes or infringe labour or other legislation, but because they are undertaken to meet basic needs (e.g. petty trade, household agricultural production, ambulant street vending, unregistered taxi services – with own car, rickshaw or other means of transportation, undeclared paid domestic employment, etc).

As previously mentioned, the ILO (1993) (and thereby the SNA 1993) also argue for the need to distinguish informal sector activities from underground activities on the basis that the former are not necessarily performed with the deliberate intention of avoiding the payment of taxes, social security contributions, or complying with certain legal standards, while the latter are. However, there is a fundamental difference in the conception of the informal sector presented here and the ILO (1993) definition: The ILO (1993) definition is based on *units* (or enterprises), while the one presented here is based on productive *activities*, irrespective of the units (or enterprises) in which they are carried out.

The ILO (1993) 'Resolution Concerning Statistics of Employment in the Informal Sector' defines the informal sector as the set of 'units engaged in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned' (ILO 1993b, 5(1)). Production units of the informal sector are defined as a subset of *household unincorporated enterprises*. Household enterprises are

'units engaged in the production of goods or services which are not constituted as separate legal entities independently of the households or household members that own them, and for which no complete set of accounts (including balance sheets of assets and liabilities) are available which would permit a clear distinction of the production activities of the enterprises from the other activities of their owners and the identification of any flows of income and capital between the enterprise and the owners' (ILO 1993b, 7).

The informal sector definition presented here differs from the ILO (1993b) definition in three main ways. First of all, in the ILO definition, activities undertaken in informal sector enterprises can theoretically be ‘underground’ (i.e. undertaken with the deliberate intent of evading taxes etc.) but they generally are not, because the ‘primary objective (of informal sector enterprises) is to generate income and employment to the persons concerned (ILO 1993b, 5(1)). In contrast, in the concept of the informal sector presented here, informal activities are by definition *not* underground, although it may at times be difficult to know which of the two categories a given activity may belong to (see figure 3.1 below). Thus, defining the informal sector in terms of productive activities instead of enterprises is conceptually more consistent with the SNA (1993) concepts of underground, household and illegal *productive activities*, and therefore enables the conceptualisation of the hidden economy as being comprised of these four largely distinct concepts.

Secondly the definition presented here includes all productive activities that are unregistered, unprotected by labour and other legislation, unmeasured, and generally outside the formal legal system, and not just those that take place in units with certain characteristics. Informal productive activities, can take place in informal, formal, non-informal household, or other enterprises. The type of unit in which they take place does not determine whether or not they are informal. This is important because it means that all persons engaging in such activities are considered informally employed, including casual workers in formal enterprises, contributing family workers in other household or formal enterprises, and all other unregistered workers who are not protected by labour regulations (such as minimum wage requirements, maximum hours of work, paid holidays, protection against dismissal, etc.) and have no access to social protection (such as pensions, health and other insurances). As previously mentioned, this is particularly important in transition countries (but also in developing countries and to some extent developed countries⁵³) where there has been a growing informalisation of the labour market with an increase in self-employment, subcontracting, and moonlighting (to supplement official wages and pensions, which are often only a fraction of the minimum subsistence level).

Indeed, since its ‘conception’ the informal sector has been of interest in developing countries because it is an important source of income and employment for the poor. It is a survival strategy in countries where there are insufficient formal employment opportunities, where wages may be too low to cover the cost of living, and where social safety nets such as unemployment or pension

⁵³ The literature on the informalisation of employment in western industrialised countries looks at whether the growth of ‘self-employment’ is a positive or negative phenomenon. Some have argued that it is a sign of the efficiency, flexibility and adaptability of the labour market, while others see it as an increase in precarious, unprotected

benefits are either lacking or also insufficient to cover the cost of living. As such, it should include all productive activities, which generate income and employment for the poor, and not just those that take place in household enterprises with certain characteristics.

Thirdly, the ILO (1993) resolution excludes household production of goods and services for own final use. In contrast, the definition presented here includes these activities as long as they are part of the SNA production boundary. As previously mentioned, *goods* are included in the SNA production boundary if they are quantitatively significant in relation to the total supply of that good in the country. In practice, in transition countries this generally means the inclusion of the production of agricultural goods for the household's final use, as many other goods produced by households, such as clothing and housing, constitute a very small fraction of the total production of these goods in these countries. For *services*, it includes the personal services produced by employing paid domestic staff and the own-account production of housing services by the owner-occupier.

No explanation was provided by the 1993 'Resolution concerning statistics of employment in the informal sector' for the exclusion of household activities producing for own consumption. However in both transition and developing countries, household agricultural production for own consumption constitutes not only an essential source of income and employment for a large share of the population, but also an important share of total agricultural production. Moreover, primary employment in household agricultural production for own-consumption does not differ in economic behaviour from that in other informal activities, as all are undertaken to generate income to meet basic needs. Finally, small-plot agricultural production has been a significant source of 'extra income' for households in transition countries since the Soviet period, and as we have seen there is evidence that with the collapse in living standards, many have turned to subsistence agriculture to survive.

The concepts of underground and illegal production used here are those defined in the SNA (1993).

The underground sector consists of legal productive economic activities⁵⁴ that are part of the SNA (1993) production boundary and are (a) unmeasured and/or (b) untaxed and or (c) unregulated because they are deliberately concealed from public authorities for the following kind of reasons: to avoid the payment of income, value added or other taxes; to avoid the payment

employment, arguing that people become 'independent contractors' because they lose or cannot retain full-time wage employment with accompanying benefits (see for example Dennis 1996).

⁵⁴ They are legal provided that certain standards or regulations are complied with.

of social security contributions; to avoid having to meet certain legal standards such as minimum wages, maximum hours, safety or health standards, etc.; to avoid complying with certain administrative procedures such as completing statistical questionnaires or other administrative forms (SNA1993: 6.34) (e.g. most cases of tax evasion and benefit fraud).

*The illegal sector consists of productive activities that generate goods and services forbidden by law or that are unlawful when carried out by unauthorised producers. There are two types of illegal activities: (a) those that produce goods and services whose sale, distribution or possession is forbidden by law, and (b) activities which are usually legal, but become illegal when carried out by unauthorised producers (SNA 1993: 6.30) (e.g. production of narcotics, illegal transportation in the form of smuggling, prostitution and unlicensed medical practice). Furthermore illegal activities are included in the SNA production boundary if the transactions involved are based on *mutual consent*. Thus, for instance, prostitution is included but theft is not (OECD 1997, p.12).⁵⁵*

The table below provides a convenient summary of the conceptual framework. It is important to consider that the three criteria used here to distinguish between the different sectors are not the only ones that determine whether an activity is informal, underground or other.⁵⁶ They are just used here to help the reader recall what has been broadly conceptualised as the household, informal, underground and illegal sectors.

⁵⁵ The SNA (1993) recognises that it may be difficult to determine whether there is mutual consent (e.g. does bribery involve mutual consent?).

⁵⁶ For example, it does not include lack of measurement, registration and regulation as criteria. Nor does it include activities that are illegal because they are carried out by unauthorised producers.

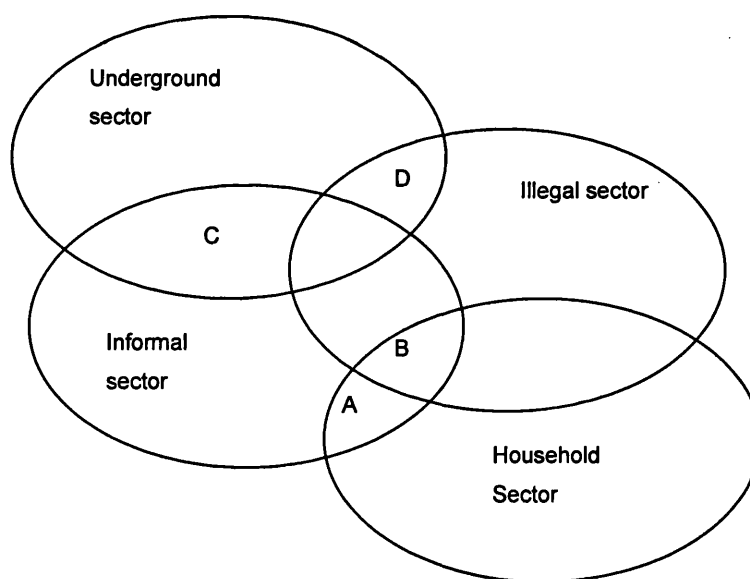
Table 3.1 Summary of the Conceptual Framework

Productive activities	Within the SNA (1993) production boundary?	Are goods and services legal?	Primary reason why activity is unmeasured/untaxed/unregulated?
Household	No	Yes	Irrelevant*
Informal	Yes	Yes	Activities undertaken to meet basic needs, not deliberately concealed.
Underground	Yes	Yes	Activities deliberately concealed to avoid taxes, social security contributions, legal standards, compliance with administrative procedures, etc.
Illegal	Yes	No	Irrelevant

* The primary reason why household and illegal activities are unmeasured is irrelevant to their classification in the household or illegal sector, as this is determined by whether or not they are within the SNA production boundary and whether or not they are legal.

As can very quickly be seen, the borderline between household, informal, underground and illegal sectors may not be very clear, and activities may often belong to more than one sector. Figure 3.1 illustrates how these sectors are interrelated.

Figure 3.1 The relationship between informal, household, underground and illegal activities



As can be seen, it may not be obvious whether an activity is part of the *household or informal sector* (area A in figure 3.1). Subsistence farming, for instance, may be considered part of the household sector if it is not quantitatively significant in respect to total agricultural production (as may be the case in many western industrialised countries), whereas it may be part of the informal sector if it is quantitatively significant (as is the case in many developing and some transition countries). Similarly, it may be difficult to determine whether an activity is part of the *illegal*,

· *household, or informal sectors (area B)*. The cultivation of poppy seeds on household plots for instance, could be considered as any of the three depending on whether household production of poppy seeds is quantitatively significant with respect to the total poppy seed production in the country, whether it is undertaken to meet basic needs, and whether it is considered illegal in that particular country. The boundary is similarly difficult to define between informal and underground and between underground and illegal activities. Construction activities undertaken by unregistered construction workers, for instance, may be considered *informal or underground (area C)*, depending on whether or not they are deliberately concealed and whether they are undertaken to meet basic needs (they could of course be both). Finally, as highlighted in the SNA (1993, 6.35), production that does not comply with certain safety, health or other standards, for instance, could be described as either *underground or illegal (area D)*.

Having said this, however, it is important to reiterate that what is critical is the conceptual distinction between these activities. The sectors are not required to be mutually exclusive in order to understand what types of activities constitute the bulk of each sector.

3.3 HOW DOES THIS NEW DEFINITION OF THE INFORMAL SECTOR RELATE TO THOSE IN THE EXISTING LITERATURE?

Table 3.2 provides a simplified summary of the conceptual framework and its relation to definitions of the informal sector in the existing literature. Once again, it is important to clarify that this table is neither a precise recapitulation of the conceptual framework proposed in this thesis, and nor is it a summary of the definitions in developing, industrialised, centrally planned or transition countries. For the purpose of simplicity, the table is based on only one unit of observation (economic activities) and one criteria of informality (lack of measurement). Moreover, as in table 3.1, it uses only three criteria to distinguish between household, informal, underground and illegal activities (position with respect to the SNA production boundary; legality of goods and services produced; and primary reason for which the activity is unmeasured).⁵⁷ Finally, it only represents the 'main' or 'stereotypical' definitions in each of these regions although, as we have seen, there is great heterogeneity in informal sector definitions in all regions.

According to *the conceptual framework presented here*, the informal sector is represented in table 3.2 by the sum of cells 2, 3 and 4 (i.e. the area with vertical lines). The underground sector is the

⁵⁷ Note that this table is not exhaustive. Another reason why activities may be unmeasured is because of statistical error for instance. However it is not included here as it is not relevant to the distinction between household, informal, underground, and illegal activities.

sum of cells 5, 6, 7, the illegal sector is the sum of cells 8,9,10, and the household sector is represented by cell 1 (e.g. cooking, cleaning, caring for the sick etc). Note that for OECD (1997) and Thomas (1992) the household sector would be represented by cells 1 and 3 (i.e. they include all activities aimed at producing goods and services for own-consumption, including those that are in the SNA production boundary, such as subsistence agriculture in many developing and transition countries).

Definitions in '*developing*' countries can be illustrated by the ILO (1993) definition, which can broadly be represented in table 2 by the sum of cells 2, 5, 8 (i.e. the area with horizontal lines). In this case, the informal sector is the set of informal own-account enterprises and enterprises of informal employers. As we have seen, according to this definition, activities undertaken in the informal sector can theoretically be underground or illegal (cells 5 and 8)

Table 3.2: Comparing the conceptual framework to other definitions of the informal sector in the literature

Types of Enterprises or units			Unmeasured economic activities				
			Out of SNA production boundary	In SNA production boundary			Illegal
				Legal			
				Aim is to meet basic needs	Deliberately concealed to avoid tax or regulation		
Unincorporated	Household	Informal own-account enterprises or Enterprises of informal employers		(2)	(5)	(8)	
		Other (e.g. household enterprises producing for own-consumption)	(1)	(3)	(6)	(9)	
	Non Household (e.g. government)			(4)	(7)	(10)	
Other (i.e. corporations, quasi-corporations, non-profit institutions)							

Notes: Cells shaded in black represent activities that, by definition, do not exist. Cells that are blank do exist, but are outside of the conceptual framework of this thesis. In this conceptual framework, the household sector = (1); the informal sector = (2)+(3)+(4); the underground sector = (5)+(6)+(7) and the illegal sector = (8)+(9)+(10).

Definitions in *'developed' countries* can broadly be represented by the sum of cells 2 to 10. This includes all activities that should be measured, taxed or regulated, because they fall within the SNA production boundary, but are not. Note that it may also include other activities such as the evasion of taxes on capital gains, which we cannot represent in our matrix because they are not productive economic activities.

As we have seen, definitions in *transition countries* have been extremely varied. In the literature review, studies were grouped into three categories, which can very broadly be represented in the table above. Definitions used by studies that have focused on how people survive during transition, can be represented by any combination of cells 2 and 3. Those which have focused on measuring untaxed or unmeasured GDP have defined it as any combination of cells 2 to 10 plus some other non-productive activities such as capital flight. Finally, those which have focused on the transformation of the Soviet second economy into the informal economy are even more difficult to represent in the above table as they have included all private sector activity, which could include cells 2,3,5,6,8,9 and those parts of cells 4,7 and 10 which are in the private sector plus other non-productive activities such as theft, bribery and capital flight.

Finally, definitions in *centrally planned* countries are equally difficult to illustrate in the above table and could be represented by the same cells as those of the above group that adopted second economy definitions.

3.4 MOVING TOWARD AN OPERATIONAL DEFINITION OF THE INFORMAL SECTOR

In order to measure and study the informal sector, the conceptual definition must be made operational. The way it is operationalised will depend on the measurement objectives. Thus, for example, if the aim is to measure or analyze informal employment, then labour force surveys can be used and the definition can be operationalised based on status in employment. If the aim is to measure the production of the informal economy, it may be more appropriate to use household income and expenditure surveys and to adopt an operational framework based on productive units.

The aim of this thesis is to examine informal labour market activity and to this end the conceptual definition of the informal sector developed above can now be operationalised to identify individuals that are engaging in such activities through the Georgia Labour Force Survey (LFS) data. I begin by developing a typology of informal employment, which is relevant for transition

countries in general. Based on this typology, I devise an operational definition that can be applied to the Georgian LFS.

3.4.1 A typology of informal employment

If existing data is to be used to obtain a measure of informal employment in the country, assumptions will have to be made. In particular, assumptions must be made as to what types of activities can be considered to be undertaken 'to meet basic needs'. One way to operationalise the definition is to use status in employment as a proxy.⁵⁸ It is therefore assumed that individuals engaging in certain types of employment can be considered to be engaging in productive activities which are unmeasured and/or untaxed and/or unregulated not because they are deliberately concealed to evade the payment of taxes or to avoid complying with certain laws and regulations, but because of a necessity to generate income and employment to meet basic needs.

The typology of informal employment presented here includes individuals with the following status in either their primary or secondary jobs: (1) own-account workers and employers in household enterprises⁵⁹; (2) contributing family workers; (3) non-regular employees; (4) others employed casually, temporarily or seasonally; and (5) employees engaging in left-hand work (or the earning of informal income at the formal workplace).⁶⁰

Own-account workers and employers in household enterprises are essentially those employed in the traditional ILO 'informal sector', although as argued above, it also includes production for own-final use (such as small-plot agricultural production). These are 'informal own-account workers' or 'informal employers' as defined in ILO (1993b). *Contributing family workers* are also, by definition, employed in household enterprises. Both these groups can be assumed to be unregistered, unmeasured and unregulated, not because of a deliberate attempt to evade taxation but because are simply generating income and employment for the household.⁶¹

⁵⁸ The ILO (1993a, (4)) 'International Classification of Status in Employment' classifies the employed into 6 groups: employees, employers, own-account workers, members of producers' co-operatives, contributing family workers, and workers not classifiable by status.

⁵⁹ It is important not to confuse household enterprises with the household sector. Household enterprises are not necessarily part of the household sector as defined here (they are only part of the household sector if they produce for own consumption and the product is not quantitatively significant). See section 3.2 for the definition of household enterprises.

⁶⁰ Bernabè Krstić and Reilly (2003) and Yemtsov (2001) classify individuals who are inactive or unemployed but live in households whose members engage in their own enterprise or own land, as informally employed. In appendix A3 we argue that this assumption is incorrect in the case of Georgia and show how some of the results of the empirical analysis of this thesis would be affected if such an assumption were made.

⁶¹ The EBRD (2000, p.102) also considers contributing family work as informal employment, undertaken to maintain subsistence levels.

Non-regular employees do not satisfy the conditions of 'regular employment' as defined by the ILO (1993a). Regular employees have 'stable contracts, for whom the employing organisation is responsible for payment of relevant taxes and social security contributions and/or where the contractual relationship is subject to national labour legislation' (ILO 1993a, par.8, 9). In contrast to western industrialised countries, where many of those employed 'under the table', may be doing so to deliberately avoid the payment of taxes, in many developing and transition countries, these are often low-skilled, low-paid workers, who work under such contracts because of a necessity to meet basic needs (this is arguably also the case in western industrialised countries). Both the Georgian Labour Force data and Clarke (1999c) show that non-regular paid employees, in Georgia and Russia respectively, are largely employed in low-skilled jobs such as tea or bread manufacturing and petty trade.

It can, of course be argued, that their employers are involved in 'underground' activities, because they may be deliberately avoiding the payment of taxes and social security contributions. However, evidence from the Georgia Labour Force data (1999) and from Clarke (1999c) suggests that non-regular agreements are often used in small-scale family enterprises, and often for friends, partners or relatives, not because they are 'a means of evading the restrictions of labour legislation, but because they are appropriate in very small, informally organised businesses, particularly in the sphere of trade' (Clarke 1999c, p.12-13). *Casual, temporary and seasonal workers* in transition countries can also be assumed to be informal in that it can quite safely be assumed that they do not have 'regular contracts' and that those who engage in such precarious employment do so to meet basic needs.

Finally, as previously discussed, research and anecdotal evidence suggests that *left-hand work*, which was widespread during the Soviet period, has increased since the beginning of transition. These activities should be considered informal, as they are unregistered and unaccounted for not because of a deliberate attempt to evade the payment of taxes but because of a necessity to meet basic needs. As Birdsall highlights, activities such as the overcharging of customers, the pocketing of fees for official services or the diversion of clientele from the firm are as vital to livelihood as formal wages and can constitute a significant part of worker's earnings (Birdsall 2000, p.1). *Left-hand work* is regarded as a way in which people 'get by' in the absence of sufficient formal income; 'their small-scale allows the practitioner to 'tread water' but not get ahead' (Birdsall 2000, p.3).

This typology is distinct from the ILO operational definition in five significant ways. First, as discussed extensively above, it includes all forms of vulnerable, invisible, precarious 'informal' employment and not only that which takes place in 'informal sector enterprises'. Second, it

includes *left-hand work*, or the earning of informal income at the formal work place. Third, as we have seen, it includes employment in the production of goods and services for own consumption (in practice this means agricultural production for own-consumption and paid domestic employment).

Fourth, it includes employment in agriculture. The ILO (1993:16) excluded agricultural activities from the informal sector 'for practical reasons'. It had no objection to their inclusion from a conceptual point of view, but from an operational one it deemed that it would be inconvenient to include them in the informal sector, as agriculture represents such an important share of employment in developing countries and it would therefore be very expensive to cover agricultural activities in informal sector surveys. However, precisely because it is such an important source of (largely informal) employment in developing and in the poorer transition countries and because it has proved to be one of the main strategies employed by households to cope with the fall in living standards in many transition countries, it is argued here that agriculture should be included.

Fifth, whereas the large majority of informal sector studies using the ILO (1993) operational framework have included only the urban sector, both rural and urban employment is included here. Nevertheless, it is important to note that the ILO 1993 Resolution explicitly states that both urban and rural activities should be included. However, as with agriculture, it recommends that given that the informal sector is so widespread in rural areas, and that it may be very expensive to carry out surveys across both urban and rural areas, countries could start by measuring the *urban* informal sector (ILO 1993b, para.14).

3.4.2 The operational definition

To apply the typology of informal employment to the Georgia Labour Force survey, proxies must be used for 'household enterprises', 'non-regular employment', and '*left-hand work*'. First, location is used as a proxy for 'unincorporated household enterprises' rather than 'registration' or 'number of employees below a certain number', as per the ILO (1993) definition.⁶² Thus own-account workers and employers in household enterprises include: (1) own-account workers or employers whose business is located at home, outside home, in a street booth, on a construction

⁶² The ILO (1993) operational definition of the informal sector consists of household enterprises that are either (1) informal 'own-account enterprises' or 'enterprises of informal employers'. The first are operated by own-account workers and can employ contributing family workers and employees, however they do not employ employees on a continuous basis. The second employ one or more employees on a continuous basis. For operational purposes, all own-account workers are usually included as are employers operating enterprises, which are unregistered or employ less than a maximum number of workers (usually 4-10).

site, in a market place, at a customer's home or in a non-fixed location⁶³ (2) own-account workers or employers whose business takes place in a factory, office, establishment, shop, workshop, etc. which is independent from the home and is not registered, and (3) own-account workers or employers working on their own or rented plot of land, in agriculture, either in an urban area or in a non-registered rural enterprise.

Location is used as a proxy for household enterprises in the case of the Georgian Labour Force data because the question on registration is not particularly meaningful. Over 90% of own-account workers said they were 'registered'. However, qualitative research and anecdotal evidence suggest that in some cases this may refer to the payment of some kind of local licence fee (to obtain a permit to sell in a market for instance), while in others it refers to the payment of bribes to local police, sanitary inspectors, tax inspectors, and local racketeers.⁶⁴ However, in neither of these cases does the ILO 'registration criterion' apply, since it refers to registration under national legislation, such as under 'factory or commercial acts, tax or social security laws, professional groups regulatory acts, or similar acts, laws or regulations established by national legislative bodies' (ILO 1993b, :8.(3)). The OECD (1997) also argues that it is inappropriate to define the informal sector in transition countries according to legal status or to the relation with public authorities since most of these countries lack business laws and regulations and the means to enforce them.

Similarly, identifying informal enterprises by the number of employees (less than 4 - which is generally the lowest number used in such cases) is also inappropriate, as over 97% of own-account workers and employers work in enterprises with less than 4 people (including owners, employees, unpaid workers and casual workers). It would therefore amount to including all own-account workers and employers and it could be argued that it would also include professionals (doctors, lawyers, accountants) etc. who could have relatively high incomes and intentionally conceal their activities to avoid the payment of taxes. The most appropriate proxy for household enterprises in the Georgia Labour Force Survey is therefore location.⁶⁵

⁶³ The omitted (formal) category is "at a factory, office, establishment, shop, workshop, etc. independent from home".

⁶⁴ As an example of these 'unofficial' taxes, Dudwick (1999, p.29) relates: 'to sell Khachapuri, a cheese pastry, in the market, Gayane pays the tax inspector 50 Lari (US\$25) and the director of the market 120 Lari (US\$60) each month.

⁶⁵ However, as can be seen in the operational framework below, the registration criterion is used for employers and own-account workers working in 'non-household' locations such as offices, factories, establishments, etc. (although they only represent 0.03% of total employment). Registration is also used to identify informal rural agricultural own-account workers and employers. This is because the data suggests that agricultural workers who say their enterprise is located 'at home' rather than 'on a plot of land' are less likely to be registered. This suggests that these could be, smaller, subsistence 'garden plots'. We also include own-account workers and employers engaging in urban agriculture for similar reasons. Since own-account work in agriculture accounts for more than half of total employment in Georgia (Bernabè 2002b), it is important to identify the more vulnerable and precariously employed. To this end, lack of registration and urban setting appear to be meaningful criteria. However we could also have included all own-account workers in agriculture.

Second, 'employees with an oral agreement' is used as a proxy for 'non-regular employees'. In many transition countries, including Georgia and Russia, oral employment agreements are illegal. Although in most western industrialised countries the law regards oral employment contracts as legally binding and therefore offers employees hired on the basis of oral agreements the same protection as those hired under written agreements, in most CIS countries (including Russia and Georgia), oral agreements have no legal force and those employed under such agreements have no protection under the labour code (Clarke 1999c, p.8). Moreover, employment based on an oral agreement is unregistered and therefore employers will not pay any of the taxes and social security payments required by the law.

Finally, *left-hand work* is omitted from the operational definition as it is problematic to operationalise. Not only are there no questions in the Georgia Labour Force Survey that would permit the identification of individuals engaging in informal income-earning activities at the formal work place, but also even if there were such questions, responses may not be reliable, as individuals are likely to be reluctant to disclose such information. One possible way of analysing such activities would be to use the existing literature to identify occupations that typically give rise to opportunities for *left-hand work* and to analyse the income-consumption gap of individuals employed in these occupations. This could be the topic for future research. However, *left-hand work* is perhaps best studied by qualitative means.

The operational framework presented below provides a detailed, step-by-step flowchart of how the informally employed are identified in the Georgia Labour Force Survey (1999). For the purposes of analysis and presentation, the informally employed are grouped into five major categories: (1) *informal self-employed*: own-account workers and employers working in household enterprises⁶⁶ (categories P1a to P1d + P2a to P2d), (2) *contributing family workers* (P3), (3) *informal employees*: employees with oral agreements, and employees employed casually or temporarily (P4+P5) (4) *other informals*: others (including members of producers co-operatives) working either casually, temporarily or in typically informal activities (P6+P7a+P7b),⁶⁷ and (5) *informal secondary jobholders*: workers with formal primary jobs and informal secondary jobs (S1 to S7b).

⁶⁶ Own-account workers are merged with employers because employers accounted for only 1.5% of total employment and 'informal' employers accounted for only 0.7% of total employment in 1999.

⁶⁷ Members of producer's co-operatives and those with unidentified status in employment are not asked about the location of their work. Casual/temporary/seasonal employment is therefore used as a criterion of informality as well as whether the individuals are involved in activities or occupations for which more than 50% of workers are informal. This

In the framework below P and S refer to Primary and Secondary employment. We consider all those with an informal primary job or with a formal primary job and an informal secondary job to be informally employed. Primary employment is checked first. If primary employment is not informal, then secondary employment is checked, thereby avoiding any double counting.

group represents a very small share of total employment. Overall, others informally employed' account for only 0.8% of total employment.

Figure 3.2 Informal employment: checking primary job

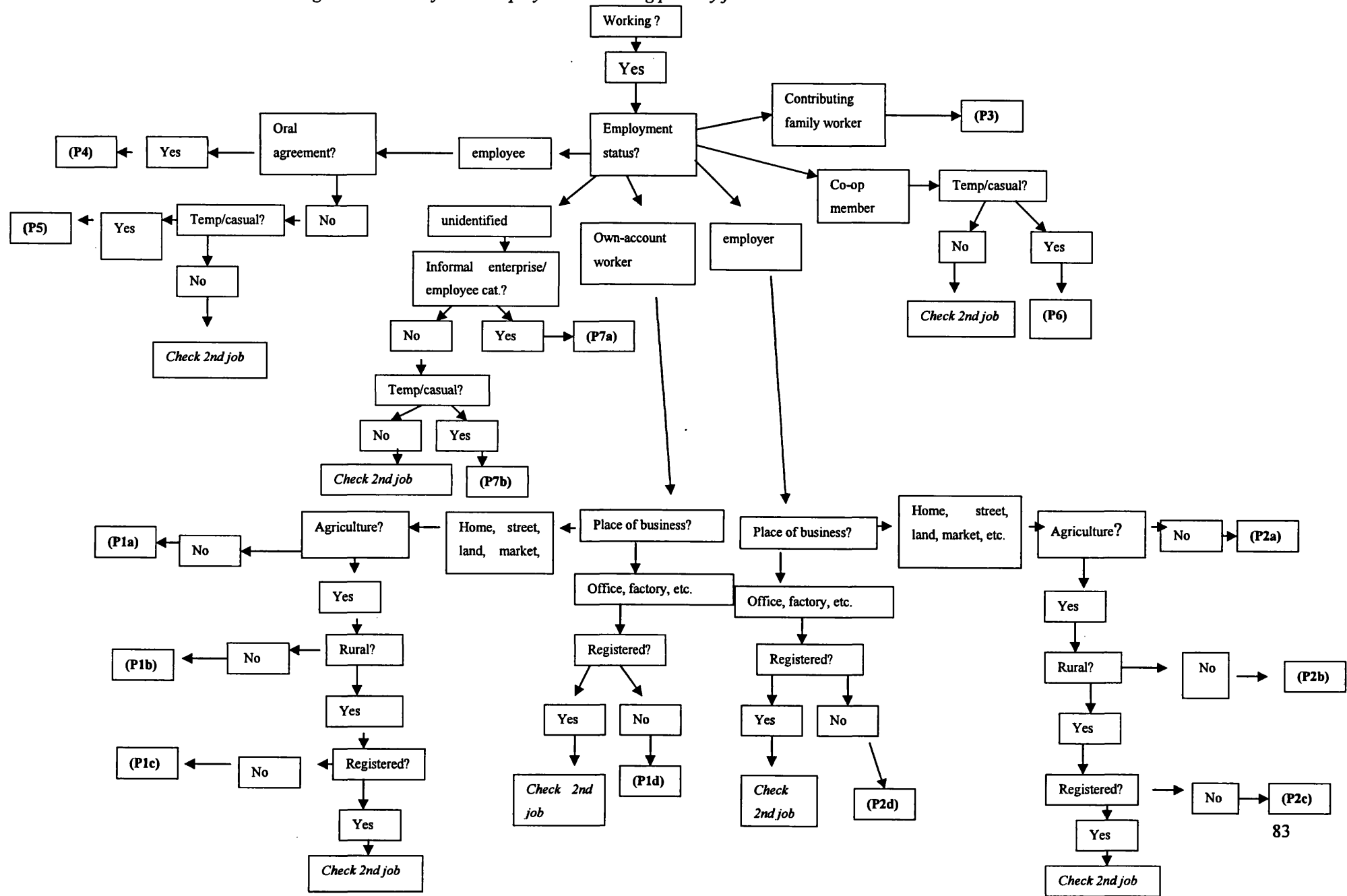
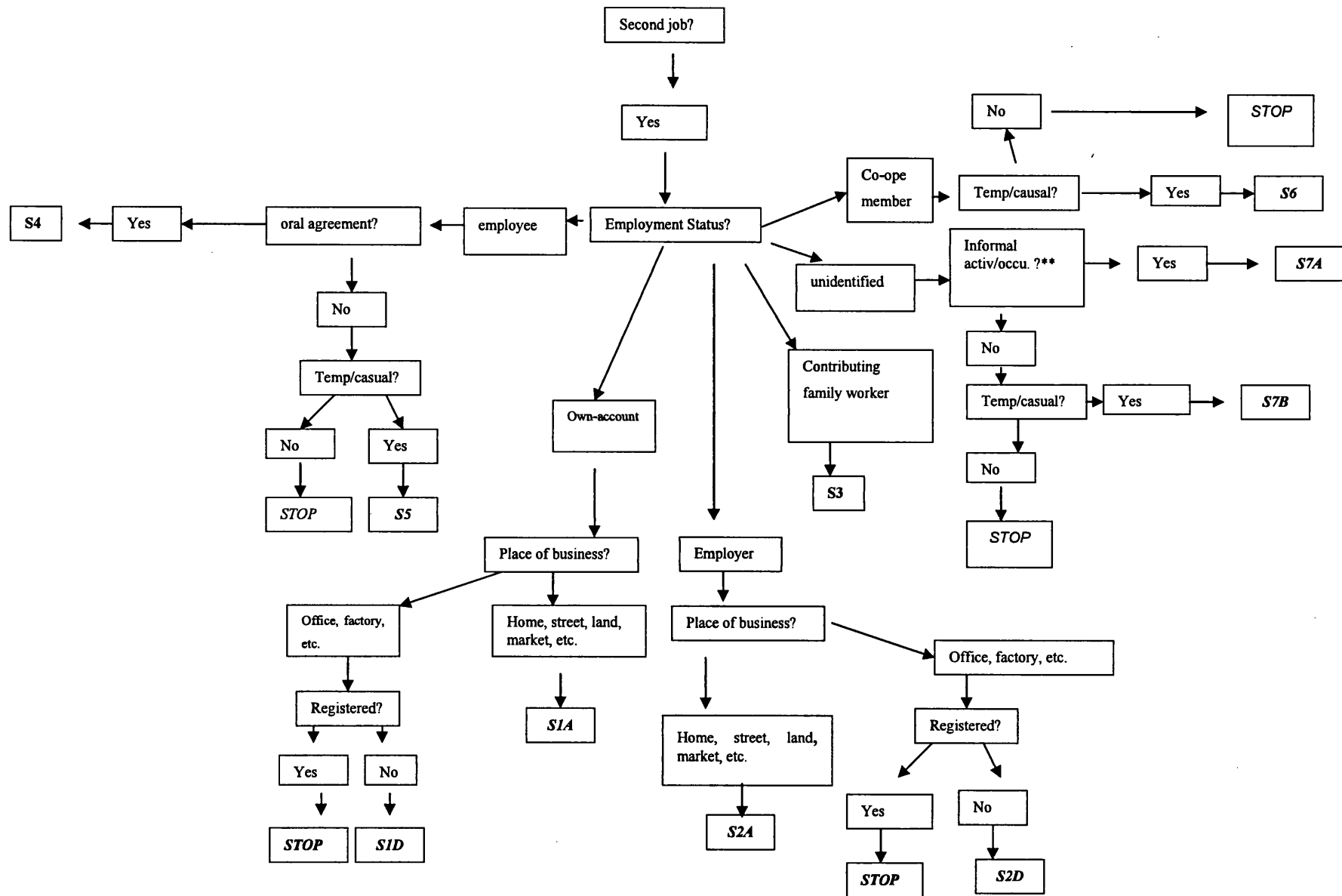


Figure 3.3 Informal employment: checking second job



3.5 SUMMARY

This chapter has presented a conceptual framework for the analysis of the informal sector in countries in transition. Chapter 2 revealed that there is no consensus worldwide over what constitutes the informal sector. In *transition countries*, not only has the term been interpreted differently, but also there has been no real discussion on what constitutes the informal sector; each individual piece of research has simply used the term to define its own area of interest. Thus the 'informal' ('underground', 'unofficial', or 'shadow', etc.) economy has included an extremely wide spectrum of activities such as tax evasion, corruption, money laundering, organised crime, bribery, subsistence farming, barter, petty trade, and the stealing of state property.

This chapter argued that although there is no need for a unique definition of the informal economy *per se*, for policy purposes it is important to distinguish small-scale income and employment-generating activities, which are undertaken to meet basic needs in the absence of formal employment opportunities and social protection, from those which are deliberately concealed from the authorities for the purpose of evading taxes or not complying with certain regulations. Building on the 1993 System of National Accounts (SNA), it developed a new conceptual framework for the 'hidden economy' that distinguished between four types of unregistered, unmeasured and/or unregulated activities: (1) *'informal'* activities, which are undertaken 'to meet basic needs' and are within the SNA production boundary; (2) *'underground'* activities, which are deliberately concealed from public authorities to avoid either the payment of taxes or compliance with certain regulations; (3) *illegal* activities, which generate goods and services forbidden by the law or which are unlawful when carried out by unauthorised producers; and (4) *household* activities, which produce goods and services for own-consumption and are outside the SNA production boundary.

Given the focus of this thesis on informal labour market activity, a typology of informal employment was presented for transition countries, which consisted of the following status in either the primary or secondary job: (1) own-account workers and employers in household enterprises (2) contributing family workers (3) non-regular employees (i.e. employees without stable contracts that ensure that the employing organization pays taxes and social security contributions), (4) others employed casually, temporarily or seasonally and (5) employees engaging in *left-hand work* (or the earning of informal income at the formal workplace).

This typology was then operationalised with an aim to identify individuals engaging in informal labour market activities through the Georgian LFS. The operational definition, which will form the basis for the empirical analysis of chapters 5 and 6 is the following: (1) informal self-

employed: own-account workers and employers working in household enterprises' (2) contributing family workers, (3) informal employees: employees with oral agreements, and employees employed casually or temporarily, (4) other informals: others (including members of producers co-operatives) working either casually, temporarily or in typically informal activities, and (5) informal secondary jobholders: workers with formal primary jobs and informal secondary jobs.

GEORGIA'S LABOUR MARKET

4.1 INTRODUCTION

Chapters 2 and 3 presented the theoretical core of the thesis. This chapter introduces the empirical analysis. It represents the first in-depth study of Georgia's labour market since the beginning of the transition period.⁶⁸ Its aim is to provide a general understanding of the characteristics and main issues with respect to the labour market in Georgia. It also examines one of the main questions of this thesis, namely whether the predictions regarding the role of unemployment in some models of the transition process have materialized in Georgia.

When the socialist system collapsed, models of the transition process, like that of Aghion and Blanchard (1993), predicted that the restructuring process would largely follow three stages. In the first stage state employment would fall as subsidies ceased, prices were liberalized and markets opened to competition. This would lead to the creation of a pool of unemployed, which would be a source of potential labour for the growing private sector. Spells of unemployment would be relatively short and the 'pool' would be characterised by high turnover rates (see Blanchard, et al. 1995; Commander, S and Coricelli 1995; Layard and Richter 1995). In the second stage, private firms would grow and would draw on the pool of unemployed to be the driving force behind economic growth. In the final stage, workers would be pulled directly out of the state sector into private enterprises (Aghion and Blanchard 1993). Thus, the rate of unemployment was seen as an indicator of the extent to which the restructuring process had got under way (see McAuley 1991, p.95).

Although this has been the experience of many countries of Central and Eastern Europe, in the newly independent states of the former Soviet Union, the dramatic falls in output were not matched by equally significant falls in employment and even less so by increases in unemployment (see Flemming and Micklewright 2000, p.890; Klugman, et al. 2002, p.23). One explanation presented for the lack of correlation between unemployment and restructuring has been that private firms have recruited directly from the state sector. This has been largely supported by evidence on Hungary and Russia (see Clarke 1999a; Commander, S and Yemtsov 1995; Layard and Richter 1995). Another explanation, has been labour hoarding; instead of laying workers off to adjust for the collapse in demand, enterprises reduce real wages and benefits, accumulate wage arrears, place workers on unpaid leave and reduce working hours (Commander, Simon and Tolstopyatenko 1997; Evans-Klock and Samorodov 1998; Layard and Richter 1995; Namazie 2002).

⁶⁸ A modified version of this chapter was published by UNDP (see Bernabè 2002b) and represents the first study to analyse the Labour Force Survey data (1998, 1999) and to present an in-depth analysis of the Georgian labour market since the beginning of transition.

The underlying question of this chapter is whether the pattern predicted by transition models has been observed in Georgia, namely whether (a) the collapse in output has been accompanied by a proportional increase in open unemployment⁶⁹ and (b) privatisation and restructuring have resulted in the growth of private firms, capable of absorbing the labour that is shed by the State sector. This chapter also asks whether labour hoarding could explain the lack of correlation between unemployment and restructuring. Although there is evidence of labour hoarding, chapter 5 will show that the relatively small increase in unemployment can largely be explained by a shift of labour into informal employment.

The chapter is organised as follows. Section 4.2 describes the characteristics of Georgia's labour force. Section 4.3, examines the trends and characteristics of the employed. Section 4.4 describes the characteristics of the self-employed, with a focus on agricultural self-employment. Section 4.5 examines the characteristics of paid employment, and discusses the issue of low wages and secondary employment. The characteristics of the unemployed are detailed in section 4.6, as is the reliability of unemployment data. This section also examines underemployment and evidence of labour hoarding. Section 4.7 uses multivariate regression to analyse in more detail the determinants of unemployment, underemployment and long-term unemployment, while controlling for a series of individual characteristics. The aim is to identify those individuals that are most at risk of poor labour market outcomes. Finally, section 4.8 summarises the main findings of this chapter.

4.2 THE LABOUR FORCE

The empirical analysis begins with an examination of labour force participation. Unless otherwise specified, this chapter is based on the analysis of the Georgia Labour Force Survey (LFS) data for 1998 and 1999. For a detailed description of the LFS data set, please refer to appendix A2.1.⁷⁰

Georgia's labour force participation rate is similar to that of other western industrialised countries. In 1999, 66% of the working-age population (aged 15 years and over) was economically active compared to 69% of that of the European Union (EU) for instance, where the working-age

⁶⁹ As discussed in chapter 1, by 1996, Georgia's GDP had shrunk to 29% of its 1991 value or to the equivalent of its value in 1963 (Samorodov and Zsoldos 1997, p.11).

⁷⁰ Note that all data and methodology issues are addressed in appendix 2. Also note that unless otherwise specified all figures in this and all subsequent sections are for 1999.

population included only individuals aged 15 to 64 years (EUROSTAT 2000, p.32).⁷¹ However these figures mask considerable age, gender and urban/rural disparities.

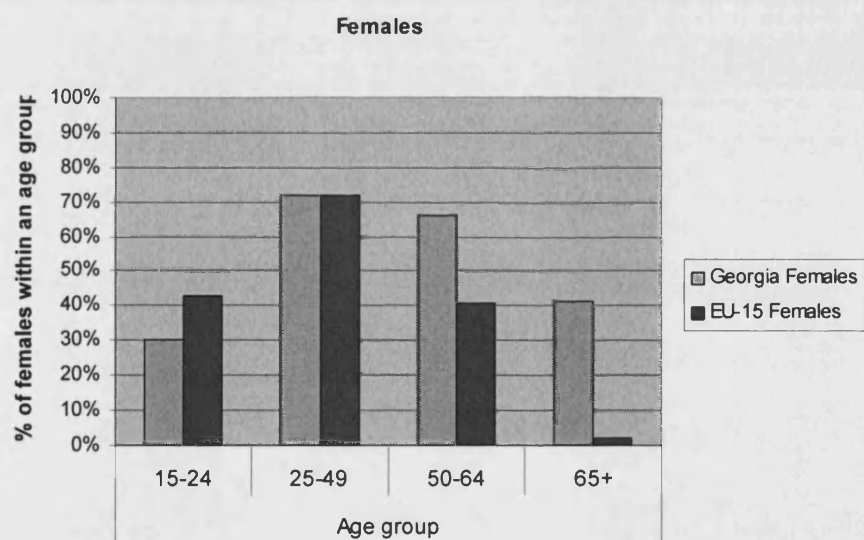
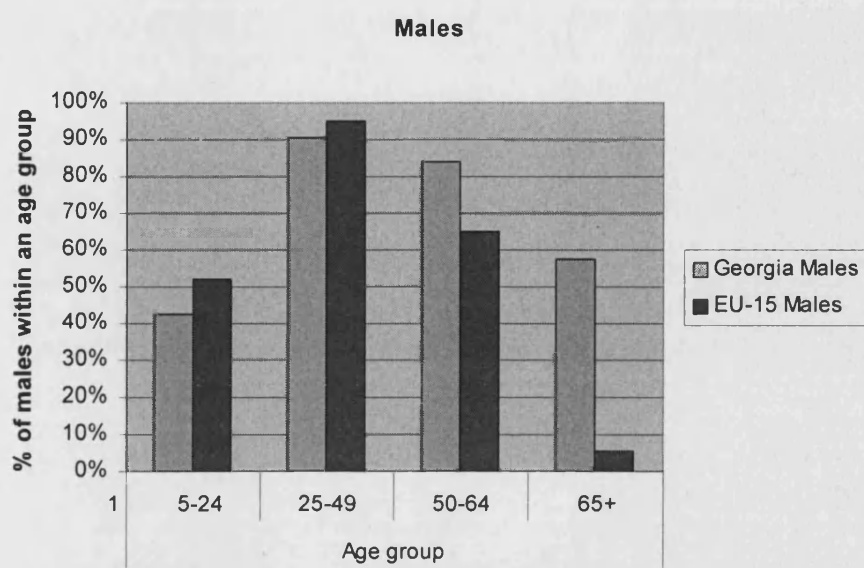
The most striking of these is the age dimension. Figure 4.1 presents labour force participation rates by gender and age group for Georgia and the EU-15.⁷² We can see that Georgia has exceptionally high rates of labour force participation for individuals above retirement age.⁷³ In 1999, 57% of Georgian men and 41% of Georgian women over 65 years of age were economically active. This is about 12 times the EU average for men and 20 times that for women. Similarly we see that 50-64 year olds in Georgia are considerably more economically active than their European counterparts. As will be shown, this is a result of the fact that most pensioners are obliged to continue working as the level of pension benefits, if paid at all, are far below the minimum subsistence level. Most engage in small-plot agriculture and other small-scale informal activities, offering support to the hypothesis that informal activities are coping strategies in the face of constraint (see appendix A4.3 for a description of Georgia's social security system).

⁷¹ In this thesis I use the terms labour force and economically active population interchangeably to mean the sum of the employed and unemployed in the reference week. For a more accurate definition please see Appendix A2.2. Moreover, the working age population in Georgia includes individuals over the age of 65 years, since a very high share is employed.

⁷² EU-15 refers to the European Union of 15 member states, namely Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

⁷³ Note that as of February 1996, the retirement age was increased from 55 years for females and 60 years for males to 60 years and 65 years respectively (IMF 2000, p.88).

Figure 4.1 Labour force participation rates by gender and age group. Georgia and EU-15 (1999)



Source: EU-15 figures: (EUROSTAT 2000, p.32, 40).

Georgia figures: Author's own analysis of Georgia Labour Force Survey (1999).

Notes:

- (a) Labour Force participation is defined as employed plus unemployed as a share of the working age population (15yrs+).
- (b) Using ILO relaxed unemployment criterion, which includes the discouraged unemployed. See appendix A2.2 for definition of variables.

These rates are symptomatic of the extent of poverty in the country. The majority of those over 65 live in rural areas, and most are self-employed in rural small-scale agriculture. One could argue

that the high labour force participation rates for over 65s could also be explained by the generous employment definition.⁷⁴ However, as we will see, pensioners that are employed in agriculture work an average (median) 28 hours per week (75% work more than 20 hours per week while 25% work more than 40 hours per week). Moreover, employed pensioners report 'working' rather than 'being a pensioner' as their main occupation. These findings suggest that the generous employment definition does not entirely explain the high employment rates amongst pensioners and that a more plausible explanation is that pensioners are indeed farming to meet basic needs.

Figure 4.1 also shows that Georgian youth, who live mainly in urban areas, tend to be less economically active than their European counterparts. Only 43% of 15-24 year old men are economically active, compared to an average of 52% in the EU-15. A closer look reveals that these youth are not students and nor do they belong to any other conventional 'economically inactive' category. These figures suggest that young men may not be entering the labour force, as they have no hope of finding a job. Another troubling aspect of youth participation in the Labour market is the decreasing level of economic participation young women. Figure 4.1 shows that only 30% of 15-24 year old women are economically active compared to 43% in the EU-15. This may be partly explained by the fact that 68% are students; however the lack of child-care facilities may also be to blame, particularly in urban areas where only 42% of 20-30 year old women are active.

During the Soviet period childcare facilities were widely available through state enterprises and female participation rates were extremely high (above 90%). These figures suggest that women are being forced to stay at home due to the breakdown of childcare facilities, as enterprises have cut back on all social security provision. Research has shown that the cut back in childcare facilities in the countries of the Former Soviet Union has been the most severe in the Caucasus region, where between 1989 and 1996, kindergarten enrolment rates fell by more than 25% (Micklewright 2000, p.15). Similarly, Yemtsov finds that the number of children below the age of 7 and the number of elderly within the household are significant factors reducing the probability of urban females participating in the labour force (Yemtsov 2001, p.17).

⁷⁴ According to the international definition of employment, anyone involved in 'some work' is employed. However, 'some work' may be interpreted as work for at least one hour during a reference period of one week or one day (Husmanns, et al. 1990, p.71). The Government of Georgia has chosen to use a reference period of one week, thus anyone working on a plot of land for at least one hour a week is considered self-employed. As most pensioners live in rural areas and most rural dwellers own a small plot of land, this definition could partially explain the high labour force participation rates for pensioners.

A third aspect of the age dimension of labour force participation to emerge from the data is the low level of participation of men at the peak of their working lives, between the ages of 25 and 49. Although the national participation rate for this age group is 90%, which is not far below the EU-15 rate of 95%, there are considerable urban/rural and regional disparities. The rate of inactivity of urban men between the ages of 25 and 49 is 12%, or twice as high as their rural counterparts and twice as high as the EU-15 average. These figures could be a further indication of disguised unemployment as men drop out of the labour force altogether.

Table 4.1 Labour force participation rates by urban and rural area; Georgia and EU-15 (1999)

	<i>% of population aged 15 years +</i>		
	Total	Urban	Rural
Georgia	66%	56%	79%
EU-15	56%	56%	56%

Source: EU-15 figures: EUROSTAT (2000, p.40,42).

Georgia figures: Author's own analysis of Georgia Labour Force Survey (1999)

Notes:

(a) uses ILO current unemployment definition

(b) for the definitions of all variables used in this thesis see appendix A2.2

In addition to age, another important dimension of labour force participation in Georgia is the urban/rural distribution. Although urban participation rates are comparable to those of EU countries, rural participation rates are significantly higher than the EU average. Table 4.1 reports labour force participation rates for urban and rural areas in Georgia and the EU-15. We see that in Georgia, 79% of the working-age population in rural areas is economically active, compared to only 56% in the EU-15. This is a result of very high employment rates in rural areas, mainly in small-scale agriculture. On the other hand, although Georgia's urban participation rate is the same as that of the EU-15, we will see that much of the urban economically active population is unemployed, as there are few formal jobs and limited possibilities for engaging in agriculture.

Together the findings on the age and the urban/rural composition of the Georgian labour force, highlight the fact that urban-rural migration has been very age-specific in Georgia and has altered the demographic composition of both shedding and receiving areas. While youth have been migrating from rural to urban areas in search of employment, pensioners have been migrating to rural areas to supplement their meagre pensions through subsistence agriculture.

Finally, the Georgian labour force has high levels of educational attainment, as 31% of 25-59 year olds had higher education compared to 21% in the EU-15 (EUROSTAT 2000, p.46). The level of education is particularly high in urban areas where approximately 43% of the labour force (both males and females) had higher education in 1999. Moreover, there appears to be a positive

correlation between the level of education and economic activity, particularly in urban areas, where only 23% of the economically inactive had higher education. However, as we will see, there is evidence that the Georgian labour force is losing its skills, as an increasing share of workers with higher education is either unemployed, or self-employed in low-skilled, small-scale, petty trade and small-plot agriculture.

4.3 EMPLOYMENT

This section examines trends in employment rates and the structure of employment over the past two decades and then analyses the characteristics of the employed in 1998, 1999.⁷⁵

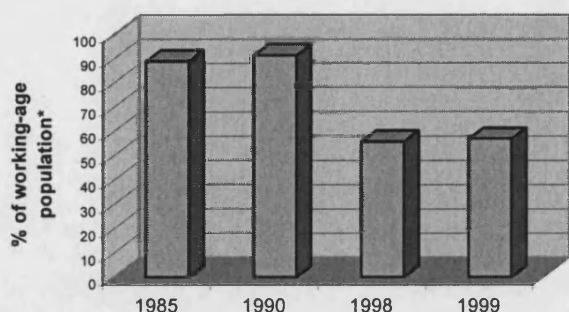
4.3.1 Trends in employment

First, Georgia has seen a sharp fall in the rate of total employment over the past decade. Figure 4.2 reports employment rates for 1985 to 1999. We see that the share of the working-age population to be employed fell from 91% in 1990 to 57% in 1999.⁷⁶ Although employment rates during the Soviet period were artificially high and are considered inappropriate for a market economy, Georgia's current rate of employment is still low, in comparison to the EU-15 rate of 62%. Moreover, it is exceptionally low if one considers Georgia's generous employment definition (see section 4.2). As previously argued, much of this decline could be explained by an increase in inactivity, which could suggest that individuals drop out of the labour market altogether as they have no hope of finding a job.

⁷⁵ Note that this chapter refers to total employment and does not distinguish between formal and informal employment. This distinction will be introduced in chapter 5.

⁷⁶ Only a small part of this difference can be explained by the difference in definition of working age population (16-55 for women and 16-60 for men in pre-transition years and 15+ for 1998, 1999). Although a higher proportion of 16-60 year olds are employed than are 15+, the population above 60 makes up 25% of the employed population, and must therefore be included in employment figures. This was not the case during the pre-transition period when the majority of pensioners were not employed.

Figure 4.2 Employment rates Georgia (1985-1999)



Sources: 1985, 1990 rates EUROSTAT (2000, p.39). For 1998, 1999 rates: author's own analysis of Georgia Labour Force Survey data

Notes: working-age population for 1985, 1990: 16-55 years for females, and 16-60 for males. For 1998, 1999: females and males aged 15years +.

Second, there has been a significant change in the structure of employment over the past decade. Although agriculture has always been a predominant sector of employment and income, it has more than doubled its share of total employment since the beginning of the transition period. As shown in table 4.2, agriculture's share of total employment increased from 26% in 1990 to 52% in 1999. Over the same time period, the employment shares of industry and construction collapsed from 20% to 8% and from 10% to 1% respectively. Industrial production is now essentially limited to electricity generation and bread making.

Although some of the growth in agricultural employment can be explained by the very loose definition of employment, we will see that most of the increase is explained by the lack of formal jobs and the inability of the social security system to ensure a minimum standard of living for pensioners, the unemployed, and other vulnerable groups. Individuals cannot afford to be unemployed or inactive and therefore turn to small-plot agriculture to meet basic needs. Indeed, we will see that expectations of increased unemployment during the transition period never materialised in Georgia, in part, because labour shifted into small-scale agricultural production.

In Bernabè (2002b), I find that the proportion of the Georgian labour force employed in agriculture is twelve times that of the EU-15, whereas the proportion of those employed in construction and manufacturing is less than 1/3rd and 1/6th of the EU-15 shares respectively. Even in Romania or Poland, two countries in the region with very large agricultural sectors, only 38% and 19% of the employed respectively work in agriculture (European Commission Employment and Social Affairs 2000, p.105-106). With such a large share of agricultural employment, it could

be argued that the current structure of Georgia's Labour market resembles more that of a developing country than that of a western industrialised one.

Table 4.2 also shows that, contrary to expectations, employment in trade has increased very little, and that services such as education and health care have maintained relatively stable levels of employment throughout the transition period. As will be shown in section 4.5.2, this is, in part, because organisations in these sectors have reduced and delayed the payment of wages and put workers on leave without pay instead of reducing employment. There has however, been a surprising increase in the share of employment in state administration. This could be a result of the establishment of a new state structure as well as an indication of increased State bureaucracy.

Table 4.2 Employment by sector of economic activity (1980-1999)

% of employed population

	1980	1986	1990	1998	1999
Agriculture, forestry, fishing (A, B)	31%	28%	26%	49%	52%
Industry (D)	19%	19%	20%	9%	8%
Construction (F)	8%	9%	10%	2%	1%
Trade and services (G)	7%	7%	7%	10%	10%
Transport and communications (I)	5%	5%	4%	4%	4%
State administration (L)	2%	2%	2%	7%	6%
Education, culture, sports (M)	10%	10%	11%	12%	11%
Health care (N)	6%	6%	7%	5%	5%
Others (C, E, H, J, K, O, P, Q)	13%	13%	14%	4%	3%
Total	100%	100%	100%	100%	100%

Source: State Department of Statistics of Georgia (2001, p.240)

Notes:

- (a) Letters in brackets refer to sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).
- (b) Others includes mining and quarrying (C), electricity, gas and water supply (E), hotels and restaurants (H), financial intermediation (J), real estate, renting and business activities (K), other community and personal services (O), private households with employees (P) and extra territorial organisations and bodies (Q).

Finally, a third significant employment trend is the reallocation of workers from the State to the private sector. In 1990, the State accounted for 86% of total employment (EUROSTAT 1996a, p.40). The LFS shows that by 1999, only 35% of all employed worked for the State. However, as we will see, most of the employment generated in the private sector has been self-employment in rural agriculture whereas the majority of urban employment still remains in the State sector.

4.3.2 Characteristics of the employed

There is strong urban/rural dimension to employment in Georgia. Table 4.3 shows that 75% of Georgia's rural working-age population is employed compared to only 42% of the urban population. In contrast, we see that in the EU-15 employment rates for both urban and rural areas

are approximately 50%. As has been previously argued, this is more a reflection of poverty than of a healthy rural economy, as people increasingly turn to agriculture to survive. It is also partly the result of the loose employment definition, which may be disguising some unemployment in rural areas (this issue will be addressed in section 4.6.2). In urban areas, the low employment rates are a reflection of high unemployment levels and a fall in urban labour force participation in urban areas. They could also be a result of under-reporting of informal activities, which are located mainly in urban areas, although the extent to which this may be the case is difficult to assess (see appendix A2.1.3 for a discussion on the reliability of the data).

Table 4.3: Urban and rural employment rates; Georgia and EU-15 (1998,1999)

% of working age population

	Georgia	EU-15
Urban	42%	51%
Rural	75%	50%

Source: Georgia figures: author's own analysis of Georgia Labour Force Survey, 1999. EU-15 figures: EUROSTAT (2000).

Table 4.4 analyses employment status by urban and rural areas. We see that rural areas are characterised by a majority of self-employed in agriculture; in 1999 80% of the employed were self-employed, of which 58% were contributing family workers, mostly on household farms, and the rest were own-account workers (mostly on family farms) with no employees. Indeed agriculture accounts for over three quarters of total rural employment. The only other significant sectors of rural employment are health and education, which together made up 8% of total rural employment in 1999, and trade, which accounted for only 4% of rural employment the same year.

On the other hand, table 4.4 suggests that urban areas are dominated by public paid-employment. We see that 74% of the urban employed are 'paid employees' and the majority (57%) of these work for the State. As discussed in section 4.5.2, paid employment for the state has been marred by extremely low wages and arrears. Interestingly, of the 26% of urban employed who are self-employed, more than half work on small urban agricultural plots (see section 4.4.1). This is further evidence that the extent of non-farm small enterprises is still very limited in Georgia.

Table 4.4 Employed by employment status and rural/urban area (1998, 1999)

% of employed population

	1998		1999	
	Urban	Rural	Urban	Rural
paid employees	74%	22%	74%	20%
self-employed	26%	78%	26%	80%
with employees	3%	1%	2%	1%
without employees	14%	28%	13%	32%
contributing family worker	8%	48%	8%	46%
co-operative member	1%	0%	1%	0%
other self-employed	1%	1%	2%	1%
Total	100%	100%	100%	100%

Source: Author's own analysis of Georgia Labour Force Survey, 1998, 1999.

Notes: see appendix A2.2 for the definitions of all variables used in this thesis.

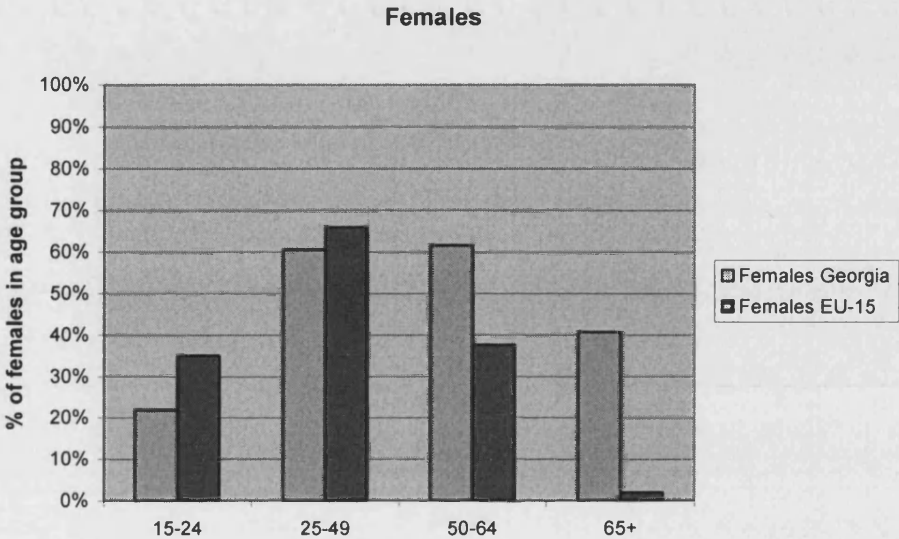
A second striking characteristic of employment in Georgia is age. On the one hand, employment rates are exceptionally high for both men and women in old age, while on the other, they are comparatively low for young and middle-aged Georgians. Figure 4.3 presents employment rates by gender and age group for Georgia and the EU-15. We see that 47% of Georgians aged 65 and over are employed. This share is even higher in rural areas where 70% of those aged 65 and over are employed. These figures are shockingly high - only 3% of Europeans (EU-15) in the same age group are employed. At the same time, only 27% of Georgian 15-24 year olds are employed compared to 39% in the EU-15.

As will be discussed in the multivariate analysis, this skewed employment distribution is symptomatic of barriers to labour market entry and of a dysfunctional social security system. As previously suggested, high employment rates amongst pensioners can be explained by the extremely low level of pension benefits, which represent only 11% of the minimum subsistence level, and by the extensive payment arrears (two thirds of pensioners suffered from arrears in 1999-2000) (TACIS, 2001, p.42). At the same time, low employment rates amongst young and middle-aged Georgians are a result of very limited formal employment opportunities, which are pushing people into unemployment and inactivity.

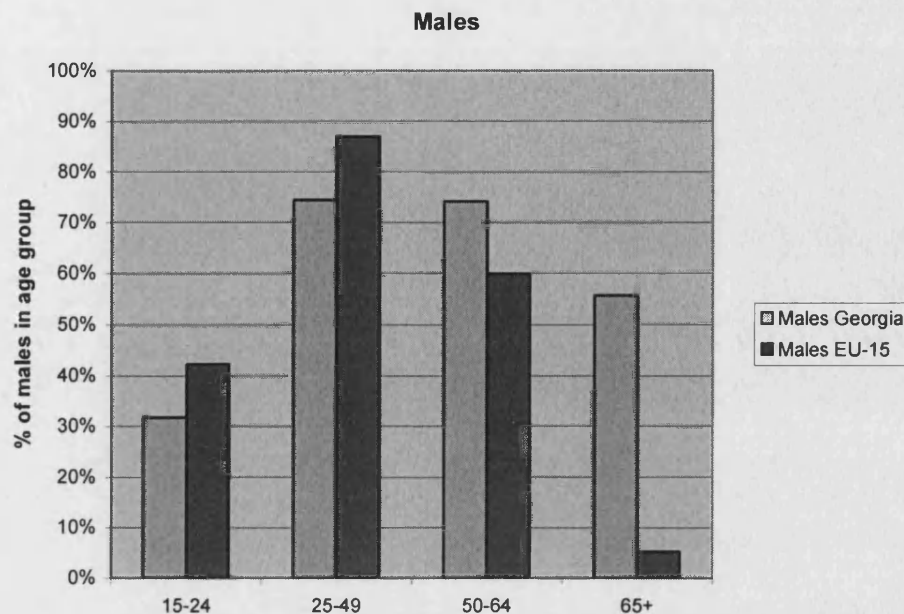
Figure 4.3 also presents employment rates disaggregated by gender. It shows that the gap between female and male employment rates is similar to that of the EU-15. Thus women have lower employment rates than men at all ages. However employment rates for old-age Georgian women are exceptionally high. If the proportion of Georgian men over 65 to be employed is eleven times that of European men, the proportion of Georgian women working over the age of 65 is twenty times that of their European counterparts. This could in part be due to the significant proportion of war widows in Georgia, following the civil war and the two territorial conflicts, but also to the

decline in life expectancy of males, characteristic of other countries of the FSU, partly as a result of drinking and an unhealthy lifestyle.⁷⁷ In fact, 18% of women over the age of 15 are widows compared to only 4% of men, and three quarters of them are over 60 years old. The fact that such a significant proportion of women over 65 are working is further indication that pensions are insufficient to guarantee a minimum standard of living, particularly in the absence of a partner.

Figure 4.3 Employment rates by gender and age group; Georgia and EU-15 (1999)



⁷⁷ In 2000 life expectancy was 69 years for males and 77 years for females (World Bank 2004).



Sources: EU-15 figures: (EUROSTAT 2000, p.72).

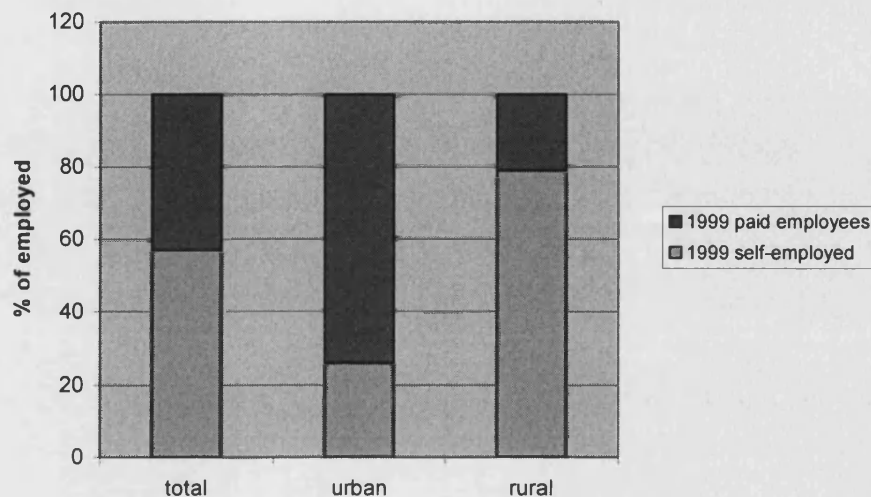
Georgia figures: Author's own analysis of Georgia Labour Force Survey, 1999.

Finally, the data also reveal a relatively strong gender bias in the distribution of employment by occupation. Women are under-represented in managerial and senior positions, occupying only 32% of such positions. On the other hand they are more likely to work in specialised professional positions, accounting for 64% of 'professionals and technicians', as well as in semi-skilled positions, such as sales clerks, of which over 80% are women. This marks a considerable deterioration if compared to the Soviet period when emphasis was placed on gender equality.

4.4 SELF-EMPLOYMENT

We now turn our attention to the self-employed. Figure 4.4 shows that overall, the self-employed account for 58% of the country's total employment. These figures are extremely high if compared to the EU-15, where only 14% of the employed are self-employed (European Commission Employment and Social Affairs 2000, p.85). Similarly, in other countries of both Central and Eastern Europe and the CIS, self-employment accounts for only a fraction of total employment; 9.7% in the Russian Federation and 14.4% in the Czech Republic (O'Leary, et al. 2001, p.16). The large majority (83%) of Georgia's self-employment is in rural areas where, as can be seen from figure 4.4, it accounts for 79% of total employment.

Figure 4.4 Employed by employment status (1999)



Source: Author's own analysis of Georgia Labour Force Survey, 1999.

Table 4.5 presents self-employment by sector of economic activity for urban and rural areas in 1998 and 1999. Self-employment in Georgia consists almost exclusively of subsistence agriculture and informal petty trade via street stalls and markets. Overall, 90% of the self-employed worked in agriculture in 1999. As a comparison, only 16% of the self-employed in Europe worked in agriculture, whereas the majority worked in services, and particularly in wholesale and retail trade (EUROSTAT 2000, p.96). Moreover, table 4.5 shows that in rural areas, between 1998 and 1999, the share of agriculture in self-employment increased by 3%, suggesting that other sectors of the economy are providing very little profitable opportunities.

Overall, our results show that small-plot agricultural production accounts for 51% of the country's total employment. This does not include employers or members of agricultural co-operatives; it only includes own-account workers and contributing family members working on their own plot of land. In fact only 2% of all self-employed in Georgia have employees, whereas the remaining 98% are own-account workers and contributing family workers. This is evidence that privatisation and restructuring have not succeeded in generating small and medium private enterprises capable of absorbing the labour that is shed from the state sector.

Table 4.5 also shows that the remainder of both urban and rural self-employment is concentrated in so-called 'wholesale and retail trade'. A closer look reveals that 76% of this is petty trade, taking place outside a formal store, either in the street or at a market place. These figures suggest that self-employment is more of a coping strategy than a way of life and productive employment.

*Table 4.5 Self-employed by sector of economic activity in urban/rural areas
(1998,1999)*

% of self-employed population

	1998		1999	
	Urban	Rural	Urban	Rural
Agriculture and fishing (A, B)	48.5	92.9	57.7	96.4
Mining (C)	0.1	0.0	1.3	0.1%
Manufacturing (D)	5.6	1.1	2.4	0.5
Construction (F)	1.8	0.2	1.7	0.1
Trade and repair services (G)	28.7	4.1	26.5	2.5
Hotels and restaurants (H)	0.5	0.0	0.4	0.0
Transport and communications (I)	6.7	0.4	5.9	0.2
Real estate, renting and business activities (K)	2.3	0.4	1.0	0.1
Private households with employed persons (P)	2.5	0.4	1.0	0.0
other self-employment (E+J+L+O)	3.7	0.5	2.2	0.2
Total	100%	100%	100%	100%

Source: Author's own analysis of Georgia Labour Force Survey, 1998, 1999

Notes:

- (a) Letters in brackets refer to sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).
 (b) Others self-employed include those working in electricity, gas and water supply (E), financial intermediation (J), public administration and defence (L) and in other community and personal services (O).

4.4.1 Agricultural self-employment

The extraordinary increase in agricultural self-employment, and particularly contributing family workers, suggests that the centrally planned system has not been replaced by a growing private sector able to absorb some of the released labour. At the same time, the State sector is unable to provide even minimum-subsistence wages and thus an increasing proportion of the population is turning to small-plot agricultural production to meet basic needs. In addition the poor state of public finances means that the state is unable to provide decent pensions and unemployment benefits, which is further pushing individuals into agricultural self-employment (see appendix A4.3 for a description of Georgia's social security system). The World Bank finds that half of those who moved into agriculture between the end of 1996 and 2000 were previously unemployed, suggesting that they could not afford to be unemployed, as benefits were extremely low or inexistent (World-Bank 2001, p.33).

At the same time, incomes in agriculture fell and productivity collapsed. Contrary to the Russian experience, where labour was hoarded in large agricultural enterprises during the first years of transition, Georgian agriculture very quickly underwent a profound restructuring. In 1999, 57% of agricultural land was privately owned and 27% was leased from the State for private use

(Government of Georgia 2000, p9). However the large majority of agricultural plots are very small (0.5-1hct). The size of these plots, coupled with the reduction in the use of capital equipment, tractors and fertilizers, as a consequence of the breakdown in industry and of trade links with other countries of the FSU, has led to a dramatic fall in productivity. Thus, between 1996 and 1997, despite a 16% growth in agricultural employment, agricultural output grew by only 2%. The very low level of productivity means that agriculture generates very low incomes, as reflected by the fact the agricultural self-employed make up 66% of the country's poor households (Yemtsov 2001, p.3).

There is also some indication that self-employment in agriculture may be disguising a certain amount of hidden unemployment or underemployment as a result of the generous employment definition, whereby anyone who works on a plot of land for at least one hour over the reference week is considered self-employed. However, we will see that this issue is not as important as one would initially suspect, as an analysis of hours worked shows that individuals work an average (mean) of 28 hours a week in agriculture (see section 4.6.2).

Finally, although agricultural work is predominantly rural, in 1999 it accounted for 58% of urban self-employment. Contrary to what one might expect, these are not individuals that are working their urban plot of land 'on the side' or after working hours. The LFS data reveals that the mean time worked per week on urban plots is 26 hours, suggesting that these are individuals who are employed at least part-time, if not full-time on their urban plot of land.⁷⁸ As discussed in chapter 2, many urban households have had access to small plots of land since the Soviet period, when these were allocated by the State and were considered one of the only 'legal' private activities. The use of subsistence plots by city residents became particularly widespread in the USSR during the late 1980s when, as a result of the deepening crisis, land was distributed to urban households. In Russia, for instance, by the early 1990s, enterprises began to rent fields on which their employees could grow potatoes, even providing transport and adapting the rhythm of industrial production to the demands of potato cultivation (Clarke 1999d, p.11). However whereas they were previously used as 'garden plots', to grow a few fruits or vegetables for household consumption, urban plots are now used as a principal source of employment for one seventh of Georgia's urban employed.

⁷⁸ Although the dispersion around the mean is quite large as $\sigma=13.03$.

4.4.2 Characteristics of the self-employed

Given that self-employment is largely agricultural and rural, those regions that are predominantly rural have a higher share of self-employment than those that are predominantly urban.

Table 4.6 Self-employment by region (1998,1999)

% of population

	Self employed		Total employed
	1998	1999	1999
Kakheti	14%	15%	11%
Tbilisi	5%	4%	18%
Shida Kartli	13%	12%	10%
Kvemo Kartli	13%	15%	13%
Samtsxe Javakheti	5%	6%	5%
Achara	8%	7%	9%
Guria	6%	6%	5%
Samegrelo	14%	13%	10%
Imereti	23%	21%	19%
Total	100%	100%	100%

Source: Author's own analysis of Georgia Labour Force Survey, 1998, 1999.

Table 4.6 shows that the capital, Tbilisi, accounts for only 4% of self-employment, despite the fact that it accounts for 18% of the country's total employment. Nevertheless, Tbilisi still has the largest share of urban self-employment, with 21% of the country's total. However, there has been a 30% fall in the total number of self-employed in Tbilisi over 1998-99. This is again a sign that self-employment in any sector but agriculture is difficult.

A second distinguishing characteristic of self-employment in Georgia is age. This reflects the findings from the labour force and employment analysis, which showed that Georgia has an abnormally high proportion of workers over retirement age, which are largely self-employed in small plot agriculture.

Table 4.7 presents the distribution of self-employed by age group for males and females. We see that almost one quarter of the self-employed in Georgia are over 65 years old, whereas overall over-65s represent about 19% of the working age population. One third is over 60. Almost all the self-employed over 60 years of age work in rural areas, and they account for 36% of rural self-employment. This is a strong indication that pensioners are obliged to continue working in order to generate income to meet basic needs and that at the same time, access to land may be a significant factor in generating livelihoods. Indeed it probes the question of how urban pensioners survive. A closer look at urban self-employment reveals that they are also employed in small-plot urban agriculture (81%) and petty trade via street stalls and markets (6%).

Table 4.7 Self-employed by age group, (1999)

% of self-employed

	Females	Males	Total
15-24	9.2	11.5	10.3
25-49	38.8	43.0	40.9
50-64	26.8	24.2	25.5
65+	25.2	21.3	23.3
Total	100.0	100.0	100.0

Source: Author's own analysis of Georgia Labour Force Survey, 1999

4.5 PAID EMPLOYMENT

According to the 1982 international definition of employment (ILO 1983), employment may be classified as either paid employment or self-employment. Paid employment includes all work performed for wage or salary, in cash or in kind, and therefore also includes all employees whose wages are in arrears. This section analyses the characteristics of paid employees and then turns to the issue of wages and secondary employment.

4.5.1 Characteristics of paid employees

Paid employment accounts for 42% of Georgia's total employment. Whereas the self-employed work mainly in rural areas, 71% of paid employees are in urban areas, where they make up almost three quarters of total employment. Tblisi, being the capital and largest urban centre, accounts for 36% of all paid employment, and 66% of its work force is employed by the State.

Table 4.8 presents the distribution of paid employment by sector of economic activity. We see that a significant share of paid employees work in the public sector. In particular we see that 19% of paid employees are employed in Education, an additional 10% is in Health and that Public Administration employs 14% of paid employees. Surprisingly, only 22% of paid employment is in the private sector. Of these, more than one third is employed in petty trade in street stalls and markets. These findings further confirm that formal private sector employment is still very limited in Georgia.

Table 4.8: Paid employees by sector of economic activity (1999)

% of paid employees

	Total
Agriculture and fishing (A, B)	4.8

Mining (C)	0.7
Manufacturing (D)	13.1
Electricity, gas, water supply (E)	2.8
Construction (F)	2.9
Trade and repair services (G)	10.2
Hotels and restaurants (H)	1.8
Transport and communications (I)	7.6
Financial intermediation (J)	1.4
Real estate, renting and business activities (K)	4.9
Public administration and defence (L)	14.4
Education (M)	18.6
Health and social work (N)	10.5
Other community and personal service activities (O)	5.3
Private households with employees (P)	0.7
Extra-territorial organisations (Q)	0.2
TOTAL	100

Source: State Department for Statistics of Georgia (2001, p.84).

Notes: Letters in brackets refer to the sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).

Paid employees tend to have higher levels of education and tend to be more 'specialised' than the self-employed. Whereas 70% of the self-employed have primary or secondary education, 72% of the paid-employed have higher or specialised secondary education.

Moreover, whereas the self-employed tend to be close to or above retirement age, paid employees are young or middle aged. Roughly two thirds of paid employees are between the ages of 25 and 54 and only 6% of paid employees are over 65 years of age compared to 23% of the self-employed. However, as with the self-employed, we observe that the majority of paid employees between the ages of 15 and 30 are men and the trend reverses after 35, when just over one half of paid employees are women. This reflects the previous findings, which suggested that women in childbearing age are being excluded from the labour market due to a breakdown of childcare facilities. We also find that the gender dimension extends to employment by sector of economic activity. Women make up 81% of paid employees in the traditionally female dominated sectors of health and education. On the other hand, they are underrepresented in traditionally male sectors, such as mining, construction and manufacturing (industry).

4.5.2 Low wages, arrears and secondary employment

Perhaps one of the most serious issues related to wage employment is that of low wages and wage arrears. Real wages for public sector employees, who represent the majority of employees, are extremely low. The salaries of state budgetary organisations ranged between GEL 20 (US\$10)

and GEL 66 (US\$33) in 2000, which is approximately 10-30% of the official minimum subsistence level for a family of four (TACIS 2001, p.33).⁷⁹

The minimum wage, of GEL 20 per month, was re-introduced in June 1999 with an aim to increase budgetary revenue.⁸⁰ However it constituted only 10% of the minimum subsistence level of GEL 191.8 for a family of four (TACIS 1999a, p.66-67). There is also high inequality between wages in different sectors. Table 4.9 shows that by 2000, nominal monthly salaries of education and health employees, which accounted for 30% of all wage employees, were approximately GEL 46 to GEL 47 (US\$23), compared to an average of GEL 85 (US\$42.5) across all sectors.

Table 4.9 Average nominal monthly wages in selected sectors of economic activity (2000)

	GEL
Education	45.60
Health	47.40
Transport and communications	105.00
Mining and processing industry	115.00
Construction	141.50
National average	85.40

Source: (TACIS 2001, p.33).

In addition to below-subsistence wages, many paid employees are faced with wage and benefit arrears. Although data on wage arrears is not readily available, the SDS estimates that in 1998 and 1999, wage arrears amounted to approximately GEL 50m (US\$25m) per quarter (TACIS 1999a, p.67). Employers have also continued to use unpaid leave as a solution for dealing with falls in production and lack of funds to pay wages. Official statistics report that in the third quarter of 1999, 36,000 people were on unpaid leave, many for indefinite periods (TACIS 1999a, p65). Low wages, wage arrears and unpaid leave are all signs of the substantial level of hidden unemployment (or underemployment) in the country (see section 4.6.2). If employees were let off instead of being paid token wages and put on unpaid leave, the level of unemployment in the country would increase significantly.

Faced with the inability to earn sufficient income through their primary formal employment, many paid employees resort to secondary occupations to meet basic needs. Although data on secondary employment must be approached with caution, as many respondents may be reluctant to reveal additional sources of income for fear of taxation, there is significant evidence that

⁷⁹ State budgetary organisations are those financed entirely from the State Budget.

⁸⁰ Since the minimum taxable income is GEL 9 (US\$4.5), many registered their income at the minimum to avoid paying payroll and income tax. By increasing the minimum monthly wage to GEL 20, the Government hoped to increase revenue collection.

suggests that many wage employees engage in secondary activities. We find that of those who said they had a secondary job, 91% were wage employees, and the large majority (80%) were women. Almost all respondents explained that they took on a secondary job because the income from their primary job was insufficient to support their families - 92% gave this as a reason. As discussed in chapter 3, the vast majority of secondary jobs are informal. Informal secondary jobholding will be discussed in more detail in chapter 5.

4.6 UNEMPLOYMENT

The ILO uses two definitions of Unemployment. According to the conventional (or 'strict criterion') definition, an individual is unemployed if he or she: (1) is 15 years of age or older, (2) was not employed within the studied week, (3) actively searched for work within the previous 4 weeks and (4) was ready to start work within the next two weeks. The ILO also allows for a '*relaxation*' of the 3rd criterion in cases, like Georgia, where the conventional means of seeking work are of limited relevance and where the labour force is largely self-employed. The so-called ILO 'relaxed' unemployment definition includes the discouraged unemployed, i.e. those who have 'given up' seeking work but are prepared to start work if they were to find one (ILO 1983, par.10).

According to the ILO 'strict' criterion, 13.8% of the labour force was unemployed in 1999, and according to the 'relaxed' criterion, 15.7% was unemployed.⁸¹ These rates are considerably higher than the EU-15 rate, which was 9.5% in the same year.

4.6.1 Reliability of unemployment data

There are several reasons to suspect that Georgia's unemployment rate is artificially low and may not provide an accurate picture of the labour resources left unused in the economy. First, as has been argued throughout, in line with international standards, the Labour Force Survey classifies as employed all persons working for one hour or more during the reference week. In rural areas, this means that anyone owning a plot of land, however small, and spending at least one hour cultivating it during the reference week will be considered self-employed. This is regardless of the fact that the income may be below the minimum subsistence level and that he or she may be looking for another job.⁸² Our results show that the mean number of hours worked by the self-

⁸¹ Note that unless otherwise specified, all unemployment rates are according to the ILO 'strict unemployment criterion'.

⁸² Georgia's Law on Employment stipulates that all people *and their family members*, owning 1hct or more of land, are automatically considered 'self-employed' (IMF 2000, p.8). This law has damaging implications for social security. The 1964 ILO Convention 122, which has been ratified by Georgia and all other 'transition' countries, urges countries to

employed in agriculture is 28 hours per week compared to 50 hours in the European Union. This indicates that agricultural self-employment is more than gardening but less than a sustainable full-time job. In fact, these results suggest that agricultural self employment is indeed a coping strategy for a significant share of Georgia's population.

Secondly, as will be discussed in more detail in section 4.6.2 below, due to labour hoarding, these figures disguise underemployment, in the form of workers on leave without pay, shortened working hours and wage arrears. A third reason to suspect the unemployment rate to be artificially low is that some of the economically inactive could also be considered 'hidden unemployed', as 12% are of working age and do not belong to any of the 'economically inactive' categories, such as 'student', 'pensioner', 'disabled', 'draftee' or 'person engaged in household duties'.

Another issue with respect to the reliability of unemployment data is that the official unemployment rate, as measured by the number of unemployed registered with the Employment Fund offices, is absolutely unrealistic. Table 4.10 compares the unemployment rate based on registration to that based on the ILO definitions. We see that although the registered unemployed rate has been increasing, it still remains completely unrealistic. Only 5% of the labour force was registered as unemployed in 1999, whereas 16% was considered unemployed according to the ILO relaxed criterion.⁸³ This is mainly due to the fact that less than 30% of the unemployed bothered to register with the Employment Fund offices in 1999, since unemployment benefits remain very low and mostly unpaid (less than 2% of registered unemployed received unemployment benefits) and the Employment offices have no record of successful job matching (see appendix A4.3 for a description of Georgia's social security system). In 1999, only 4% of the unemployed were searching for work through an Employment office, whereas 85% were looking through private contacts. We will return to table 4.10 below when we examine the rate of underemployment.

Table 4.10 Unemployment rates (1998, 1999): Official registrations vs. Labour Force Survey
% of labour force

formulate and implement an active policy promoting 'full, productive and freely chosen employment' (O'Leary, et al. 2001, p.1). If individuals owning 1 hectare of land are automatically considered self-employed, can it be said that they have 'freely chosen' employment? In being deprived of the right to be considered unemployed, they are also deprived access to unemployment benefits, training and job opportunities which may be offered through the Employment Offices to the 'officially' unemployed. This also means that they may be subject to social (27% of income) and other taxes as well as to relevant regulations.

⁸³ Note that this situation is not unique to Georgia. Indeed, in most countries in the CIS, official unemployment rates based on registered unemployment are completely unrealistic. In Russia for instance, Flemming and Micklewright show that whereas the unemployment rate as measured by the ILO/OECD criteria was around 9% in 1995, the rate based on the official register was only 3% (Flemming and Micklewright 2000, p.890).

	1998	1999
Registration at Employment Fund Offices	3.8	4.9
Labour Force Survey ILO 'strict' criterion	14.5	13.8
Labour Force Survey ILO 'relaxed' criterion	16.8	15.8
Underemployed (less than 41 hours p.w.)	/	51.3
Total labour resources left unused	/	67.1

Sources: Registered unemployed: State Department for Statistics of Georgia (2001, p.237). All other results are authors own analysis of LFS 1998, 1999.

Notes:

- (a) Total labour resources left unused refers to total unemployed (ILO relaxed criterion) plus total underemployed as a share of the labour force.
- (b) Underemployment is defined as consisting of all working-age individuals who are either: (1) employed full-time and (2) working for a total (in primary and multiple jobs) of less than 41 hours per week; or (1) employed part-time and (2) doing so involuntarily (see Appendix A4.1 for details).

4.6.2 Underemployment

Underemployment (working less than normal hours) is not uncommon in the countries of the former Soviet Union. As previously discussed, this was partly a result of so-called 'labour hoarding', by which enterprises used a variety of means to adjust for the large falls in demands without laying workers off. It was particularly common during the early years of the transition period and has been found to be an important factor in explaining why increases in open unemployment did not match the collapse in output in many countries of the former Soviet Union (see Commander, Simon and Tolstopiatenko 1997; Evans-Klock and Samorodov 1998; Layard and Richter 1995; Namazie 2002).⁸⁴

However, underemployment can also be a result of insufficiency in the volume of employment. This is particularly relevant in developing and transition countries where the lack of unemployment benefits means that few people can afford to be unemployed for any period time and that the bulk of the population must engage at all times in some economic activity, however little or inadequate it may be (see appendix A4.1 for a discussion of underemployment).

There is evidence that labour hoarding was widespread in Georgia during the early years of transition. Through a large-scale survey of Georgian enterprises, the ILO estimates that in 1996, 29% of the workers covered by the survey had been placed on unpaid leave (Samorodov and Zsoldos 1997, p.21). The reduction of working hours was also common, as estimates suggest that by mid-1996, 20% of all wage employees had an average workweek of less than 15 hours (Yemtsov 2001, p.9). A third form of labour hoarding was the reduction of real wages. By the end

⁸⁴ Klugman, Micklewright and Redmond (2002, p.32) suggest that although there was considerable labour hoarding in Russian enterprises at the beginning of the transition period, this did not entirely explain the low levels of open unemployment. They find that there was also high degree of labour turnover, but that this was concentrated largely in

of 1995, Yemtsov estimates that the average real wage in Georgia was one tenth of its pre-transition level (Yemtsov 2001, p.10). The reduction in real wages was accompanied by a high incidence of wage arrears. The ILO enterprise survey in 1996-1997, finds that 48% of all enterprises interviewed weren't able to pay wages 'a lot' or a 'few times'. Overall, 29% of the yearly wage bill of surveyed enterprises had not been paid on time (Samorodov and Zsoldos 1997, p.41, 42). The multivariate analysis (section 4.7.3) also finds evidence of on-going labour hoarding in the form of reduced working hours, particularly in manufacturing and municipal infrastructure services.

Following the approach of the ILO (see Hussmanns, et al. 1990) underemployment is defined here as consisting of all working-age individuals who are either: (1) employed full-time and (2) working for a total (in primary and multiple jobs) of less than 41 hours per week; or (1) employed part-time and (2) doing so involuntarily. Appendix II provides a discussion on the definition of underemployment.

Table 4.11 presents estimates of underemployment based on the standard 41-hour criterion and a stricter 35-hour criterion (full-time workers working less than 35 hours per week)⁸⁵. Looking at these figures we see that the ILO relaxed unemployment rate (16 percent in 1999) largely underestimate the labour resources left unused in the economy. Table 4.11 shows that 43% of the urban and 58% of the rural labour force was underemployed in 1999. Overall, 51% of the labour force was underemployed. If we cumulate the unemployed and underemployed, we find that in 1999, 67% of the labour resources were left unused (see table 4.10). Even if one uses the 35 hours per week cut-off, 35% of the labour force is still found to be underemployed (26% in urban areas and 44% in rural areas). These figures are shockingly high. It is important to recall, that these are all individuals who report working as their primary occupation and who are involuntarily working less than the normal duration of work.

These findings are confirmed by figure 4.7, which plots the cumulative distribution of hours worked per week for the full-time employed. We see that the majority (around 60%) of those employed full-time work less than 40 hours per week. Moreover, the shape of the distribution shows that there is a considerable degree of dispersion to the left of the median, indicating that underemployment is quite severe. We see for instance, that one quarter of those employed full-time work less than 25 hours per week.

low quality, low wage jobs as employers were unable to retain staff because of poor wages and working conditions. The result is that there is in fact a mixture of low quality labour mobility and a high degree of immobility.

⁸⁵ 35 hours per week is chosen as it corresponds to the EU directive on the working week.

In addition, the high underemployment rates in urban areas suggest that this issue is not limited to the agricultural sector (60% of the underemployed are in urban areas). As we will see in the multivariate analysis in section 4.7.3, there is evidence of continued labour hoarding, particularly in the manufacturing and municipal infrastructure sectors. These findings have serious implications. On the one hand, they indicate that there is a 'pool' not of unemployed but of underemployed, on which the growing private sector could draw to power economic growth. On the other, there is a risk that if the private sector does not begin to grow, this pool will become increasingly marginalized and de-skilled.

Table 4.11 Underemployment, 1999

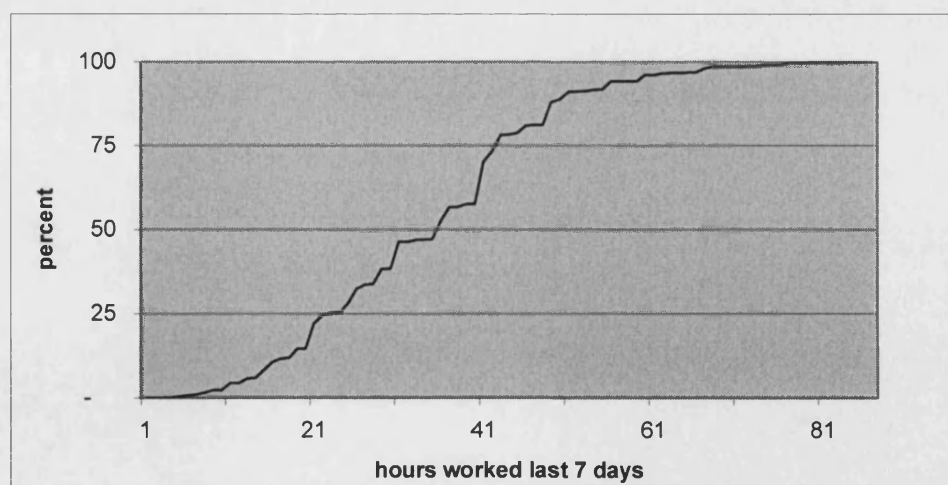
	Percentage of the Labour Force Underemployed		
	Total	Urban	Rural
Using 41 hours per week	51.3	43.3	57.9
Using 35 hours per week	35.3	25.5	43.6

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Underemployment is defined as consisting of all working-age individuals who are either: (1) employed full-time and (2) working for a total (in primary and multiple jobs) of less than 41 hours per week; or (1) employed part-time and (2) doing so involuntarily (see Annex A4.1 for details).
- (b) We present results based on two different criteria for full-time workers: working less than 41 hours per week and working less than 35 hours per week.
- (c) The reference period is the last 7 days.

Figure 4.7 Cumulative distribution of hours worked per week for full-time employed



Source: Author's own analysis of LFS 1999.

Notes:

- (a) Reference period is last 7 days
- (b) Refers only to individuals employed full-time

4.6.3 Characteristics of the unemployed

We now examine the characteristics of the unemployed. This section provides a brief profile of the unemployed using summary statistics, while section 4.7 uses multivariate regression to analyse the determinants of unemployment.

First, table 4.12 shows there is a strong urban/rural dimension to unemployment in Georgia, as there is essentially no unemployment in rural areas. As previously argued, this could largely be explained by the loose employment definition. We see that only 4% of the rural labour force was unemployed in 1998-99. In fact, 83% of the country's total unemployment was in urban areas in 1999. This is an indication that access to land in rural areas is generating livelihoods in the absence of adequate unemployment benefits. The focus here will therefore be on urban unemployment. On average, one quarter of the urban labour force is out of work, ready to work and actively seeking work. The unemployment rate is highest in Tblisi, where it reaches almost 30%. Although there has been a slight fall in urban unemployment over 1998-99, evidence discussed above, suggests that much of this reduction can be explained by an increase in inactivity (particularly amongst women), rather than by an increase in employment. Female inactivity can also partly explain the gender differences in urban unemployment rates, which are 27% for men and only 22% for women.

Second, as with employment, there is a significant age dimension. However, whereas there are a disproportionate number of pensioners amongst the employed, youth are over-represented amongst the unemployed.

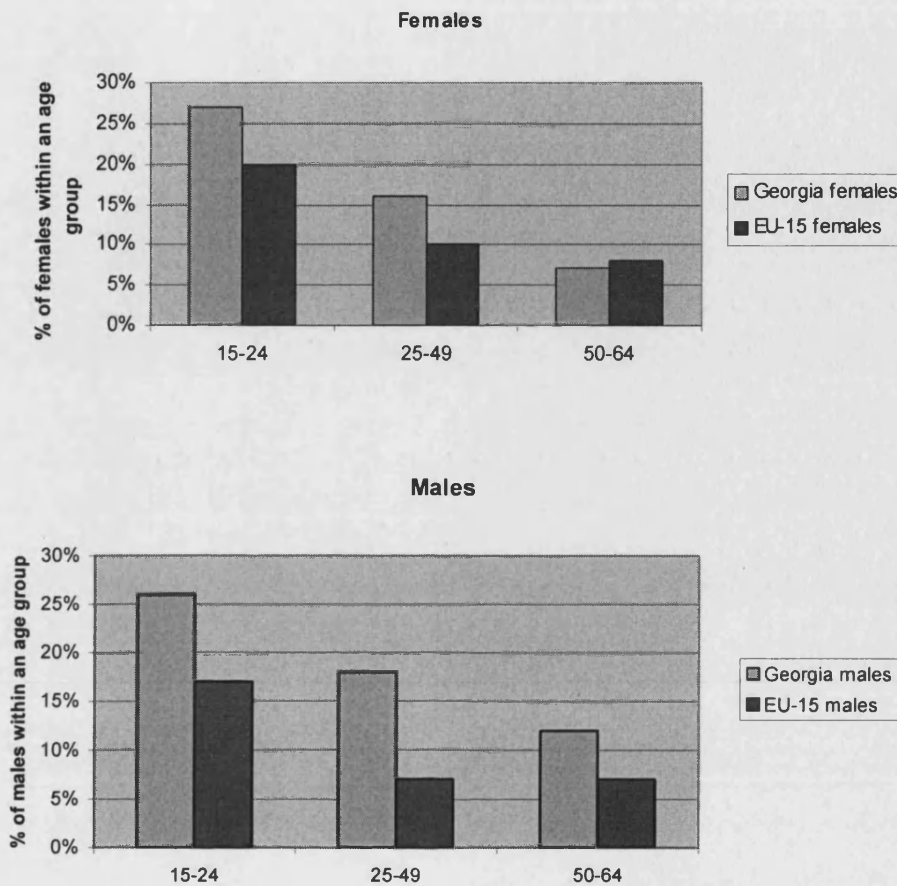
Table 4.12 Unemployment rates in urban and rural areas (1998, 1999)

% of labour force within a given area

	1998	1999
Total	15%	14%
Urban	26%	25%
Rural	4%	4%

Source: Author's own analysis of Georgia Labour Force Survey, 1998, 1999, using strict ILO unemployment criterion.

Figure 4.8 Unemployment rates by age group and gender; Georgia and EU-15 (1999)



Sources: EU-15 figures: (EUROSTAT 2000, p.176).

Georgia figures: Author's own analysis of Georgia Labour Force Survey, 1999, using strict ILO unemployment criterion.

Notes: we exclude the category of individuals aged 65years+ since they are either inactive or employed.

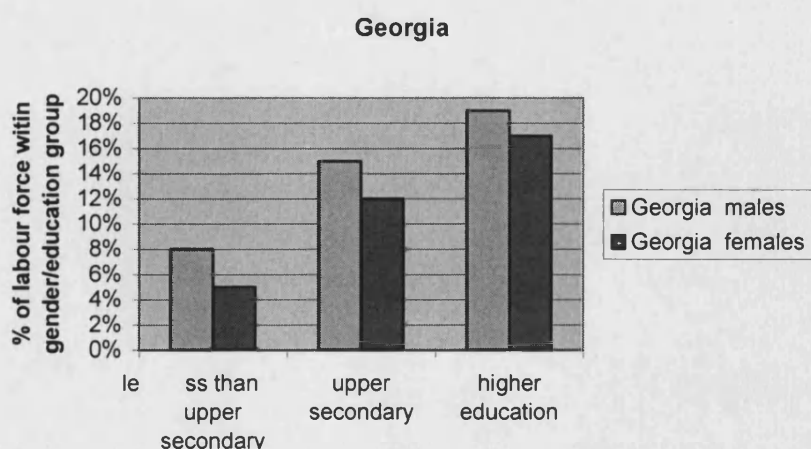
Figure 4.8 compares unemployment rates by age group and gender for Georgia and the EU-15. We can see that although youth unemployment is not uncommon in the EU-15, the rates in Georgia are exceptionally high, and particularly so for males. More than 26% of Georgian males aged 15 to 24 were unemployed, compared to only 17% of their European counterparts. Moreover, the rate reaches overwhelming levels for urban males in this age group, of which 45% are unemployed. These are not youth in full-time education. Only 7% were full-time students, whereas the rest are youth that were not in school and were actively looking for work during the four weeks preceding the survey. Of these 84% had never worked at all, suggesting that there are significant barriers to entering the labour market. Such high rates of unemployment could have very damaging implications for the country's longer-term social and economic development.

The unemployment rate for 15-24 year old urban women is even higher, reaching 50%. The majority of these women are highly educated, with 44% having higher education. On the other hand, unemployment rates for females above 25 are lower than for males, which is contrary to the EU-15 situation where female unemployment rates are higher than males at all ages. This can be explained by high rates of female agricultural self-employment in rural areas, and widespread female inactivity in urban areas.

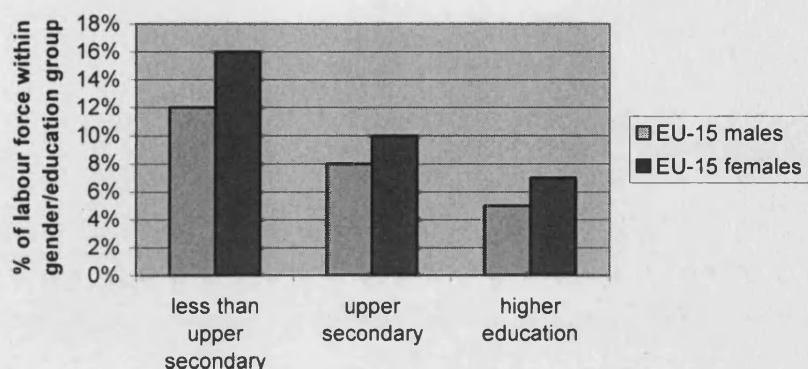
Figure 4.8 also shows that unemployment rates decrease as age increases. Thus pensioners have very low unemployment rates, not because they leave the labour market after a lifetime of work to live off their accumulated assets, but because they are continuing to be employed in small-plot agricultural production to ensure minimum subsistence of the household. The issue of working pensioners is discussed in more detail in chapter 6 and appendix A6.1. There is considerable anecdotal evidence which suggests that youth stay at home and continue to live with their parents well into their 30s, often with their spouse and children. Resources are thus shared amongst the household members and it is not uncommon for the household members of retirement age to continue working to support the younger members who may be inactive or unemployed.

Third, the unemployed in Georgia have high levels of education. Whereas the total number of unemployed fell over 1998-99, the number of unemployed with higher education increased by 10%, bringing the share of the unemployed with higher education to 36%. This is surprising when compared to the share of the employed having higher education which was only 27% and could be explained by the Russian financial crisis, which hit formal paid employees the hardest.

Figure 4.9 Unemployment rates by educational attainment level; Georgia and EU-15 (1999)



EU-15



Sources: Author's own analysis of Georgia Labour Force Survey, 1999, using strict ILO unemployment criterion. EU-15 figures: (EUROSTAT 2000, p.178).

Figure 4.9 presents unemployment rates by educational attainment for both Georgia and the EU-15. Two interesting patterns emerge from these figures: (1) In Georgia, higher levels of education are associated with higher unemployment rates, whereas the opposite is true of the EU-15, and (2) Georgian males have higher unemployment rates than females at all levels of education, whereas females have higher levels of unemployment than males in the EU-15. As the above chart demonstrates, in Georgia 19% of the male labour force and 17% of the female labour force with higher education is unemployed. This is significantly higher than the EU-15 rates of 5% and 7% respectively.

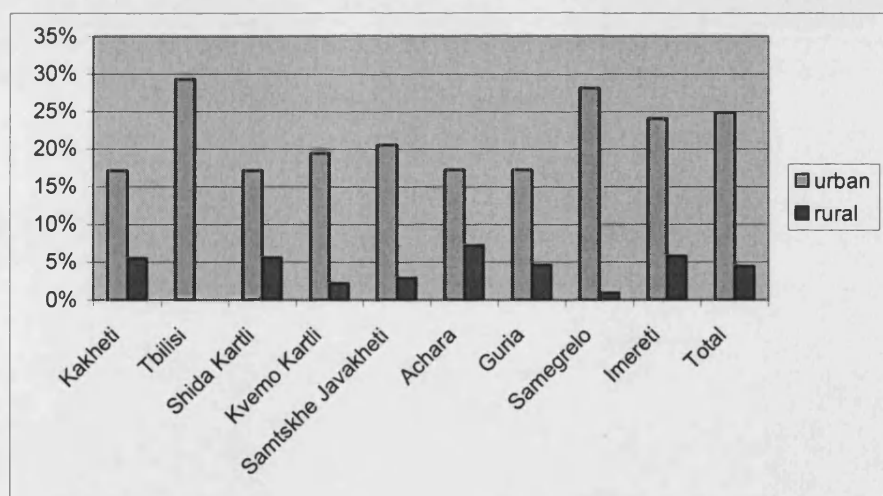
However, the apparent correlation between low levels of education and low level of unemployment is misleading as it masks a considerable amount of hidden unemployment and underemployment amongst those with lower education. In urban areas, 69% of the working age population with less than upper secondary education is inactive, and therefore not classified as unemployed. In rural areas, where the majority of the population has secondary education, most households own a plot of land (including garden plots), and by working on it for 1 hour or more during the reference week, they are automatically classified as employed.

Those with higher education are less likely to live in rural areas and more likely to be looking for formal, skilled work in urban areas, which as we have seen is extremely limited, hence the higher levels of unemployment. Indeed one quarter of the urban labour force with higher education is unemployed.

Fourth, long-term unemployment is becoming an issue in Georgia. The majority (62%) of the unemployed had been unemployed for more than a year, compared to only 46% of the unemployed in the EU-15. Moreover, 42% have been out of work for more than 3 years. Another indicator of long-term unemployment is the gap between the ILO 'strict' and 'relaxed' definition of unemployment. The latter includes all those who have not been looking for work during the four weeks preceding the survey because they have lost hope of finding any. What is disconcerting is that this gap is growing. Despite the fall in urban unemployment rates between 1998-1999, the fall in the 'relaxed-criterion' rate was considerably smaller than that of the rate including only those 'actively-seeking' employment.

Finally, there are significant regional disparities in unemployment rates. As we can see from figure 4.9, Tblisi has the highest unemployment rate, with 29.3% of the labour force unemployed. Other regions with particularly high urban unemployment rates included Samagrelo and Imereti. Together, Tblisi and Imereti account for 63% of the unemployed. The regional dimension to unemployment will be explored in more detail in the multivariate analysis that follows.

Figure 4.10 Urban and rural unemployment rates by region (1999)



Source: Author's own analysis of Georgia Labour Force Survey, 1999 using strict ILO unemployment criterion.

4.7 DETERMINANTS OF POOR LABOUR MARKET OUTCOMES

In order to identify which factors play a significant role in determining the probability of unemployment and other poor labour market outcomes, multivariate analysis can be used. Multivariate analysis is now used in order to isolate the impact of certain variables on the

probability of facing poor labour market outcomes, while controlling for demographic and human capital characteristics. For the purpose of this chapter poor labour market outcomes are defined as including unemployment, long-term unemployment and underemployment.

Three separate probit regression models are used to estimate the determinants of unemployment, long-term unemployment and underemployment. Technical details of probit analysis are presented in appendix A2.4.

4.7.1 Determinants of unemployment

A probit model is used to analyse the determinants of unemployment. The model is built on the regression model $U_i^* = \beta X_i + \varepsilon_i$, where U_i^* is the underlying continuous, unobserved, latent variable. X is a vector of individual, human capital and regional characteristics including gender, age, ethnicity, level of educational attainment and region. β is the parameter vector to be estimated and the unit of analysis (i) is the individual. The unobservable error term ε_i is defined as having $E(\varepsilon) = 0$ and $\text{Var}(\varepsilon) = \sigma^2$. The definition of all variables used can be found in appendix A2.2 and a detailed description of Probit analysis can be found in appendix A2.4.

The observed variable is U_i . $U_i = 1$ if an individual is unemployed and $U_i = 0$ otherwise. U_i is related to U_i^* in the following way: if $U_i^* > 0$, we observe $U_i = 1$ otherwise we observe $U_i = 0$.

The probit model is therefore defined as:

$$\begin{aligned} \text{Prob}(U_i = 1) &= \text{Prob}(\beta X_i + \varepsilon_i > 0) \\ &= \text{Prob}(\varepsilon_i > -\beta X_i) \\ &= 1 - \Phi(-\beta X_i / \sigma) \\ &= \Phi(\beta X_i / \sigma) \end{aligned}$$

Where $\Phi(\cdot)$ is the cumulative distribution function. For the purpose of this analysis it is assumed that ε follows a normal distribution. Two separate regressions are run for urban and rural areas respectively as it is expected that they should exhibit very different characteristics since, as we have seen, urban areas account for 83% of total unemployment. The resulting coefficients have been converted to marginal effects for ease of interpretation, and can be interpreted as the change in the probability of $U_i = 1$ for an infinitesimal change in each independent, continuous variable and, the discrete change in the probability for dummy variables.

The reference category is Georgian males aged 46 to 55 with higher education living in Kakheti. This is chosen as the base category as I am particularly interested in whether females, youth, non-

Georgians and individuals with lower educational attainment are significantly more likely to be unemployed, *ceteris paribus*. Kakheti is chosen as a reference category as it is considered the 'typical' Georgian region in terms of ethnic make-up, degree of urbanisation and standard of living.

Table 4.13 reports the results, which largely confirm the findings based on the analysis of summary statistics. First, we see that females are significantly less likely to be unemployed, everything else being equal, than males. As previously argued, this could be a reflection of the lower participation rates for women as a consequence of the breakdown of child care facilities, rather than an indication that females face a lower risk of unemployment. Second, we confirm that, *ceteris paribus*, youth are significantly more likely to be unemployed than older individuals. Indeed in urban areas, youth (aged 15 to 25) are 27% more likely to be unemployed than are middle-aged individuals (46 to 55 years). This has serious implications for the future of Georgia's human capital base. We also note that individuals aged 56 years and over are significantly less likely to be unemployed, *ceteris paribus*. This is not surprising as they are either inactive or employed in small-plot agriculture and it is unlikely that they should be looking for work.

Third, we see that overall, education does not have a particularly significant impact on the probability of being unemployed. Although the findings based on summary statistics showed that a significant share of the unemployed had higher education, the multivariate analysis reveals that higher education is not a significant determinant of unemployment, *ceteris paribus*. In fact, we see that in urban areas secondary education and higher technical education significantly increase the probability of being unemployed relative to higher education, *ceteris paribus*. In rural areas, the evidence is less conclusive. Higher technical education has a small positive effect on the probability of being unemployed, *ceteris paribus*, while technical secondary education appears to have a small negative impact.

Fourth, as regards ethnic identity, we see that in urban areas, Armenians are more likely to be unemployed than ethnic Georgians. Contrary to other ethnic minorities in Georgia, Armenians are more likely to live in urban centres and many are self-employed. Anecdotal evidence suggests that non-Georgians face significant barriers to entry for formal jobs and these findings could reflect this. However, we also see that in rural areas, Armenians are significantly less likely to be unemployed. This is a reflection of the fact that, like almost all other ethnic minorities, the Armenians that live in rural areas are largely self-employed in small-plot agriculture and are less likely to be searching for non-agricultural rural employment.

We also see that individuals of Azeri and Greek origin living in both urban and rural areas are less likely to be unemployed than those of Georgian origin. In urban areas, this can be explained by

the fact that 65% of them are 'employed' in urban agriculture, while the rest work in petty trade. In rural areas, the large majority of Azeris and Greeks also engage in agriculture. Given the one-hour employment criterion we would expect this group to be working very few hours a week on their urban plot, however we are surprised to find that they work a median of 28 hours a week, which is quite significant considering the fact that it is on an urban plot.

Fifth, we see that region plays a significant role in determining whether an individual will be unemployed. Table 4.13 shows that in urban areas, residing in Tbilisi or Samegrelo has a very strong positive impact on the probability of being unemployed, increasing the probability by 12% and 14% respectively relative to Kakheti. It is not surprising to find the capital associated with higher probability of unemployment, however in Samegrelo's unemployment is not necessarily a consequence of a large urban centre (the main urban centre is Poti; Georgia's main port along the Black Sea coast), but rather of the influx of tens of thousands of Internally Displaced People as a result of the Abkhazian conflict as well as the collapse of the lucrative tea industry, which in the pre-transition period was the backbone of its economy. Table 4.13 also shows that in rural areas most regions exert a significant negative impact on the probability of unemployment, although the magnitude of the effect is not particularly strong.

Given the significance of the regional variables, a separate probit regression for unemployment is carried out, controlling for the regional rate of unemployment. Results are presented in appendix 4, table A4.1. They show that the regional rate of unemployment is by far the strongest determinant of unemployment. Indeed, they show that in both urban and rural areas, individuals living in depressed areas, with high unemployment rates, are significantly more likely to be unemployed. In urban areas a one unit increase in the regional unemployment rate increases the probability of being unemployed by 58%, while in rural areas it increases by 44%. The strong impact of the regional unemployment rates, which is far greater than the impact of any individual characteristic, suggests that unemployment has more to do with the lack of employment opportunities in general and less to do with individual characteristics and attests the importance of stimulating labour demand as an effective way of reducing unemployment.

Table 4.13 Determinants of Unemployment (urban and rural), Probit results, 1999.

Dependent variable: unemployed (dummy)	urban	rural
<i>Individual Characteristics</i>		
Female	-0.0235 (0.0090)***	-0.0046 (0.0023)**
Age 15-25	0.2651 (0.0229)***	0.076 (0.0118)***
Age 26-45	0.058	0.0235

	(0.0120)***	(0.0047)***
<i>Age 46-55</i>	<i>f</i>	<i>f</i>
Age 56+	-0.0464 (0.0136)***	-0.0213 (0.0037)***
<i>Ethnic Identity</i>		
<i>Georgian</i>	<i>f</i>	<i>f</i>
Azeri	-0.1327 (0.0249)***	-0.0135 (0.0042)***
Abkhazian	-0.1063 (0.0517)**	0.0278 (0.0394)
Greek	-0.1474 (0.0207)***	-0.0145 (0.0067)**
Ossetian	0.1205 (0.0621)*	-0.0065 (0.0074)
Russian	-0.0048 (0.0272)	0.0108 (0.0164)
Armenian	0.048 (0.0208)**	-0.0201 (0.0026)***
Other	-0.0079 (0.0307)	0.0608 (0.0548)
<i>Region</i>		
Tblisi	0.1168 (0.0210)***	
<i>Kakheti</i>	<i>f</i>	<i>f</i>
Shida Kartli	-0.0068 (0.0235)	-0.0042 (0.0033)
Kvemo Kartli	0.0093 (0.0247)	-0.016 (0.0031)***
Samtskhe Javakheti	-0.0533 (0.0259)**	-0.0175 (0.0023)***
Achara	-0.031 (0.0212)	-0.0105 (0.0026)***
Guria	-0.0527 (0.0240)**	-0.0082 (0.0031)***
Samegrelo	0.1266 (0.0289)***	-0.0231 (0.0021)***
Imereti	0.0419 (0.0234)*	-0.0004 (0.0037)
<i>Education</i>		
Primary or Less	0.0428 (0.0450)	0.0019 (0.0081)
Incomplete Secondary	0.0299 (0.0284)	0.0079 (0.0058)
General Secondary	0.041 (0.0115)***	0.0022 (0.0032)

Technical Secondary	0.0392 (0.0185)**	-0.011 (0.0034)***
High Technical	0.0214 (0.0146)	0.011 (0.0048)**
<i>High General</i>	<i>f</i>	<i>f</i>
Observations	8019	12423
L ² .Chi2 (K-1.)	528.99(24)***	518.93(23)***

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Standard errors are in brackets.
- (b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- (c) The dependent variable for the probability model is whether an individual is unemployed.
- (d) Unemployed refers to ILO relaxed criterion definition.
- (e) The sample for the regression is all individuals in the labour force.
- (f) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discrete change from 0 to 1 for dummies.
- (g) The unit of observation is the individual.
- (h) *f* denotes variables omitted in the estimation (base categories).
- (i) L² Chi2 (K-1) refers to the likelihood ratio used to test the goodness of fit of the model and is compared to a Chi2 distribution on *k*-1 degrees of freedom, where *k* is the number of independent variables in our model (see appendix A2.4).
- (j) Analysis carried out using unweighted data.
- (k) Definitions of all variables can be found in appendix A2.2.

4.7.2 Determinants of long-term unemployment

We now examine the determinants of long-term unemployment. Long-term unemployment is defined here as being unemployed for more than 12 months. We have seen that a considerable share of Georgia's unemployed have been unemployed for more than 12 months and more than 40% have been out of work for more than 3 years. This is cause for concern as these individuals risk being excluded from the labour market altogether as their skills become obsolete and they lose hope of finding a job. This section seeks to identify which individuals face the highest risk of long-term unemployment.

As with the analysis of unemployment, a probit model is used to examine the determinants of long-term unemployment. The model is built on the regression model $U^*_i = \beta X_i + \varepsilon_i$ where U^* is the underlying continuous, unobserved, latent variable. X is the same vector of individual, human capital and regional characteristics as was used in the probit analysis for unemployment. We keep the same vector of explanatory variables despite the fact that some may not be significant in order to allow comparability with results from the analysis of unemployment. β is the parameter vector to be estimated and the unit of analysis (i) is the individual. The unobservable error term ε_i is defined as having $E(\varepsilon) = 0$ and $\text{Var}(\varepsilon) = \sigma^2$. The definition of all variables used can be found in appendix A2.2 and a detailed description of Probit analysis can be found in appendix A2.4.

The observed variable is U^{LT}_i . $U^{LT}_i=1$ if an individual is long-term unemployed and $U^{LT}_i=0$ otherwise. U^{LT}_i is related to U^*_i in the following way: if $U^*_i>0$, we observe $U^{LT}_i=1$ otherwise we observe $U^{LT}_i=0$.

The probit model is therefore defined as:

$$\begin{aligned} \text{Prob}(U^{LT}_i=1) &= \text{Prob}(\beta X_i + \varepsilon_i > 0) \\ &= \text{Prob}(\varepsilon_i > -\beta X_i) \\ &= 1 - \Phi(-\beta X_i / \sigma) \\ &= \Phi(\beta X_i / \sigma) \end{aligned}$$

Where $\Phi(\cdot)$ is the cumulative distribution function. For the purpose of this analysis it is assumed that ε follows a normal distribution. Two separate regressions are run for urban and rural areas respectively on the sample of all unemployed. The reference category is similar to the one used in the analysis of unemployment to enable comparison, namely males, aged 46 to 55, with higher education and living in Kakheti. Moreover, we control for ethnic identity with one binary variable (Georgian/non-Georgian, where non-Georgian is the base category). The resulting coefficients have been converted to marginal effects for ease of interpretation. Results are presented in table 4.14.

First, we see that gender does not appear to have a statistically significant impact on the probability of being unemployed for more than 12 months, *ceteris paribus*. Second, in urban areas, long-term unemployment is significantly associated with the control age group, namely individuals aged 46 to 55 years. All other age groups exert a significant negative impact on the probability of long-term unemployment, *ceteris paribus*. Individuals aged 15 to 25 years are 22% less likely to be unemployed for more than 12 months than are those aged 46 to 55, while 26 to 45 year olds are 13% less likely, *ceteris paribus*.

However, as shown in table 4.13, 46 to 55 year olds faced a lower probability of unemployment overall. What these findings suggest is that barriers to labour market entry, largely due to a lack of new employment opportunities, mean that the younger generation (those that were under 35 years of age when the transition began) face a higher risk of unemployment overall. However, middle-aged workers who, as a whole are less likely to be unemployed as they may have managed to retain their old jobs, once unemployed face a higher risk of being excluded from the labour market altogether as their skills may be obsolete in the new market economy. Finally, old-age workers are less likely to be long-term unemployed as they are either inactive or turn to agricultural self-employment to make-ends meet.

Third, table 4.14 shows that ethnic identity does not have a significant impact on the probability of being long-term unemployed, *ceteris paribus*. Region, however, does play a very important role, however only in rural areas. We see that simply living in certain regions, has a strong positive significant impact on the probability of being unemployed long-term, *ceteris paribus*. Imereti, Samegrelo, Guria, Achara and to some extent Samtskhe-Javakheti are particularly associated with higher probabilities of long-term unemployment. These regions are situated in the Western part of Georgia along the Black Sea coast and have suffered the greatest economic collapse since the beginning of the transition. During the Soviet period, they were amongst the most affluent, with strong agricultural economies particularly in the tea industry. As argued above, the complete collapse of the tea industry, coupled with the influx of refugees as a result of the Abkhazian conflict, has had a disastrous impact on the local economy. These findings confirm the previous conclusion that programs aimed at stimulating labour demand, with a regional dimension, may be the most effective means of reducing unemployment. Finally, table 4.14 shows that educational attainment does not have a statistically significant impact on the probability of being long-term unemployed, *ceteris paribus*,

Thus, amongst the unemployed, the individuals most at risk of remaining unemployed and of eventually being excluded from the labour market are middle-aged workers, whose skills may no longer be relevant to new market economy jobs, and individuals living in regions where employment opportunities are severely limited. As discussed by Micklewright and Stewart (2001, p.2), long-term unemployment is a strong risk factor for social exclusion both because of the impact it has on skills of individuals, and therefore on future employment possibilities, but also because of the lack of social interaction that would otherwise come with employment.

Table 4.14. Determinants of Long-Term Unemployment for Urban and Rural areas, Probit results, 1999.

	urban	rural
<i>Individual Characteristics</i>		
Female	-0.0234 (0.0236)	-0.0185 (0.0430)
Age 15-25	-0.2168 (0.0445)***	-0.1197 (0.0791)
Age 26-45	-0.1258 (0.0336)***	0.0303 (0.0709)
Age 46-55	<i>f</i>	<i>f</i>
Age 56+	-0.1324 (0.0495)***	-0.0045 (0.1066)
Georgian	0.0465 (0.0362)	0.106 (0.1049)

Region		
Tblisi	0.0085 (0.0520)	
<i>Kakheti</i>	<i>f</i>	<i>f</i>
Shida Kartli	-0.0423 (0.0689)	0.0515 (0.0567)
Kvemo Kartli	-0.0327 (0.0683)	-0.2109 (0.1155)*
Samtskhe Javakheti	-0.1103 (0.0948)	0.12 (0.0643)*
Achara	0.0089 (0.0639)	0.2236 (0.0387)***
Guria	0.0459 (0.0787)	0.1759 (0.0456)***
Samegrelo	-0.0293 (0.0625)	0.1432 (0.0681)**
Imereti	-0.0962 (0.0642)	0.1581 (0.0461)***
Education		
Primary or Less	-0.0501 (0.1093)	0.0414 (0.1340)
Incomplete Secondary	-0.0454 (0.0650)	-0.0326 (0.0860)
General Secondary	-0.017 (0.0276)	0.0345 (0.0569)
Technical Secondary	0.0306 (0.0410)	-0.0372 (0.1275)
High Technical	-0.0176 (0.0365)	0.0263 (0.0625)
<i>High General</i>	<i>f</i>	<i>f</i>
Observations	1637	469
L².Chi2 (K-1.)	44.23(18)***	55.37(17)***

Source: Author's own analysis of LFS 1999.

Notes:

- (a) Standard errors are in brackets.
- (b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- (c) The dependent variable for the probability model is whether an individual is long-term unemployed (more than 12 months).
- (d) The sample for the regression is all unemployed individuals.
- (e) Unemployed refers to ILO relaxed criterion definition.
- (f) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discrete change from 0 to 1 for dummies.
- (g) The unit of observation is the individual.
- (h) *f* denotes variables omitted in the estimation (base categories).
- (i) L² Chi2 (K-1) refers to the likelihood ratio used to test the goodness of fit of the model and is compared to a Chi2 distribution on *k*-1 degrees of freedom, where *k* is the number of independent variables in our model (see appendix A2.4).
- (j) Analysis carried out using unweighted data.
- (k) Definitions of all variables can be found in appendix A2.2.

4.7.3 Determinants of underemployment

We now turn our attention to the determinants of underemployment. In the descriptive analysis, we saw that a considerable share of the employed in Georgia are underemployed, or involuntarily

working less than the normal duration of work. Given the inadequacy of the social security system, and of pensions and unemployment benefits in particular, individuals cannot afford to be pensioners or unemployed and therefore undertake a variety of activities, particularly in agriculture, to survive. They are considered employed if they work more than one hour a week. In these circumstances unemployment figures cannot fully describe the employment situation. Moreover, we saw that rather than laying workers off, enterprises have dealt with fluctuations in demand by hoarding labour. Vulnerability in the labour market can therefore not be limited to the unemployed, but must also consider the underemployed.

This section identifies those individuals that are at greatest risk of underemployment. Appendix A4.1 provides a discussion on what is meant by underemployment. Recall, that underemployment is defined here as consisting of all working-age individuals who are either: (1) employed full-time and (2) working for a total (in primary and multiple jobs) of less than 41 hours per week; or (1) employed part-time and (2) doing so involuntarily. I also examine whether changing condition (2) to working less than 35 hours per week, as per the EU directive on the length of a working week, makes a difference to our results.

Again, a probit model is used to examine the determinants of underemployment and it is built on the regression model $W_i^* = \beta X_i + \varepsilon_i$ where W^* is the underlying continuous, unobserved, latent variable. X is the same vector of individual, human capital and regional characteristics as was used in the probit analysis for unemployment; however, it also includes controls for sector of economic activity. β is the parameter vector to be estimated and the unit of analysis (i) is the individual. The unobservable error term ε_i is defined as having $E(\varepsilon)=0$ and $\text{Var}(\varepsilon)=\sigma^2$. The definition of all variables used can be found in appendix A2.2 and a detailed description of Probit analysis can be found in appendix A2.4.

The observed variable is W_i^θ . $W_i^\theta=1$ if an individual is underemployed and using θ number of hours (i.e. 41hours or 35 hours per week) and $W_i^\theta=0$ otherwise. W_i^θ is related to W_i^* in the following way: if $W_i^* > 0$, we observe $W_i^\theta=1$ otherwise we observe $W_i^\theta=0$.

The probit model is therefore defined as:

$$\begin{aligned} \text{Prob}(W_i^\theta=1) &= \text{Prob}(\beta X_i + \varepsilon_i > 0) \\ &= \text{Prob}(\varepsilon > -\beta X) \\ &= 1 - \Phi(-\beta X / \sigma) \end{aligned}$$

$$= \Phi(\beta X/\sigma)$$

Where $\Phi(\cdot)$ is the cumulative distribution function. For the purpose of this analysis it is assumed that ε follows a normal distribution. Four separate regressions are run each for urban and rural areas for $\theta = 41$ hours per week and $\theta = 35$ hours per week. The sample is all employed individuals. The reference category is similar to the one used in the analysis of long-term unemployment, namely non-Georgian males, aged 46 to 55, with higher education, living in Kakheti and employed in transport and communication. Transport and communication is chosen as a reference category because it is expected to be the least associated with underemployment. The resulting coefficients have been converted to marginal effects for ease of interpretation.

Results from the probit regression for underemployment are presented in table 4.15. A separate set of regressions is also run for the determinants of underemployment (using both 35 hours and 41 hours per week) only for the urban wage employed in order to examine labour hoarding. Results are presented in appendix 4, table A4.2 and are largely consistent with the analysis based on the sample of all employed. They will be discussed below.

First, table 4.15 shows there is a strong gender bias, as females are significantly more likely to be underemployed than males are, both in urban and rural areas, *ceteris paribus*. This result is particularly important since a control for sector of economic activity is included and that therefore the findings cannot be explained by the higher share of females in education or other female-dominated sectors where working hours are inferior to the average. This is taken as an indication that females are more likely to have their working hours restricted and more likely to turn to subsistence agriculture because of a lack of sustainable full-time work opportunities.

Second, we see that underemployment is negatively associated with age. In particular, youth (aged 15 to 25) are significantly more likely to be underemployed than middle-age workers (46 to 55 years old) in both urban and rural areas. However old-age workers (over 56 years) in urban areas are also significantly more likely to be underemployed than middle-aged workers. Given that a control for sector of economic activity is included and that youth and old-age workers are largely employed in agriculture, the higher risk of underemployment for both these age groups suggests that they are likely to be engaging in agriculture as a coping strategy, rather than as freely chosen full-time employment.

Third, underemployment is concentrated in certain sectors of economic activity. As suggested in the descriptive analysis, agriculture is strongly associated with underemployment, regardless of the definition used. The average (mean) number of hours worked in agriculture is 28 hours. This

is both a result of the one-hour employment criterion and the inadequate social security system which means that individuals cannot afford to be unemployed or inactive and must engage in some economic activity to survive. Table 4.15 also reveals individuals employed in manufacturing and municipal infrastructure (electricity, gas and water supply) are significantly more likely to be underemployed than those employed in our reference category (transport and communication). This is particularly the case in manufacturing where, everything else being equal, it increases the probability of underemployment by 11% in rural areas and approximately 6% in urban areas. This suggests that labour hoarding, which characterised the early years of transition, has not altogether disappeared and that an important share of workers is still being placed on shortened working hours or unpaid leave.

The results also show that employment in construction and domestic services significantly increases the probability of underemployment, regardless of the definition used. The only sector to be associated with a significant lower probability of underemployment is trade, which is dominated by small-scale 'petty' trade. This confirms anecdotal evidence that individuals self-employed in petty trade work long-hours and manage to generate livelihoods in the absence of formal employment. Finally, we see that employment in education, health and social work has a very strong positive impact on the probability of being underemployed. These findings should be approached with caution, as it is common for employees in these sectors to work shorter hours.

Fourth, table 4.15 shows that ethnicity is also an important determinant of underemployment. Non-Georgians, in both urban and rural areas, face a significantly higher risk of underemployment than Georgians do. This suggests that non-Georgians may be more likely to have their working hours reduced and that barriers to sustainable full-time employment mean that they are more likely to turn to subsistence agriculture to survive. Fifth, we see that higher education is significantly associated with an increased probability of underemployment, *ceteris paribus* in both urban and rural areas, regardless of the definition used. This could be an indication that in the absence of formal work opportunities, individuals with higher education turn to agriculture as 'coping strategy' and therefore work shorter hours, whereas those with lower education do so as a 'freely chosen' full-time employment.

Sixth, table 4.15 reveals that underemployment is significantly associated with private sector employment in both urban and rural areas. One could expect this result to be driven by the large share of self-employed. However, when I perform the regression on the sample of urban wage employed (see table A4.2 in the appendix 4), the results reveal that (using a cut-off of 35 hours per week) private sector wage employment is significantly and positively associated with

underemployment. This provides evidence for the previous suggestion that private sector firms adjust to falls in demand by rationing working hours rather than employment.

Finally, underemployment has a strong regional dimension. In particular, we see that although the capital, Tblisi, has the highest level of unemployment, underemployment does not appear to be a serious issue. Indeed, living in Tblisi decreases the probability of underemployment by 14% to 19% depending on whether 35 or 41 hours per week are used. Guria is also associated with a lower probability of underemployment (but only when 35hrs per week cut-off is used). In contrast, we see that living in Imereti and Shida Kartli, everything else being equal, has a significant positive impact on the probability of underemployment in both urban and rural areas. Finally employment in Samtskhe Javakheti, Achara and Samegrelo, increases the probability of underemployment in rural areas but decreases it in urban areas (except for Samegrelo where urban results are not significant).

Table A4.2 in appendix 4 takes a closer look at the probability of underemployment for the urban wage employed. It shows that results are very similar to those discussed above for the sample of all employed. In particular, females and old-age workers (over 56 years) are significantly more likely to be underemployed, everything else being equal. Those with higher education also face a higher risk of underemployment, all things being equal. Similarly, certain sectors of economic activity are associated with a high probability of underemployment for the urban wage employed, particularly manufacturing, municipal infrastructure, construction, finance, education, health and social work and domestic services. We also see that Tblisi is still associated with a lower probability of underemployment and that Imereti and to some extent Shida Kartli and Kvemo Kartli are both associated with higher probabilities of underemployment amongst the urban wage employed.

Table 4.15 Determinants of Underemployment, Probit results, 1999.

	using 41 hrs pw		Using 35 hrs pw	
	Urban	Rural	Urban	Rural
<i>Individual Characteristics</i>				
Female	0.0892 (0.0140)***	0.0127 (0.0096)	0.0469 (0.0139)***	0.0228 (0.0099)**
Age 15-25	0.0391 (0.0279)	0.0462 (0.0178)***	0.0992 (0.0298)***	0.0691 (0.0190)***
Age 26-45	0.0066 (0.0170)	0.064 (0.0137)***	0.0194 (0.0168)	0.0623 (0.0147)***

<i>Age 46-55</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Age 56+	0.0406 (0.0195)**	-0.0307 (0.0144)**	0.0356 (0.0197)*	-0.024 (0.0150)
Georgian	-0.0516 (0.0190)***	-0.039 (0.0172)**	-0.0754 (0.0202)***	-0.0532 (0.0181)***
<i>Education</i>				
Primary or Less	-0.1246 (0.0491)**	-0.1181 (0.0219)***	-0.0523 (0.0425)	-0.0389 (0.0215)*
Incomplete Secondary	-0.0269 (0.0393)	-0.1064 (0.0196)***	0.0318 (0.0375)	-0.0332 (0.0193)*
General Secondary	-0.102 (0.0172)***	0.0127 (0.0142)	-0.0407 (0.0164)**	0.0536 (0.0147)***
Technical Secondary	-0.0996 (0.0253)***	-0.0225 (0.0226)	-0.022 (0.0234)	-0.0199 (0.0233)
High Technical	-0.0816 (0.0211)***	-0.0525 (0.0175)***	-0.0433 (0.0196)**	-0.0223 (0.0180)
<i>High General</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
<i>Sector of Economic Activity</i>				
Agriculture, Fishing (A, B)	0.1447 (0.0283)***	0.4231 (0.0373)***	0.2579 (0.0328)***	0.334 (0.0368)***
Manufacturing (D)	0.0605 (0.0293)**	0.1144 (0.0402)***	0.0661 (0.0328)**	0.109 (0.0538)**
Electricity, Gas, Water Supply (E)	0.0916 (0.0457)**	0.0359 (0.0674)	-0.0852 (0.0499)*	0.0259 (0.0843)
Construction (F)	0.1271 (0.0388)***	0.0558 (0.0637)	0.0955 (0.0475)**	0.0553 (0.0779)
Wholesale and retail trade (G)	-0.0984 (0.0301)***	0.0517 (0.0429)	-0.0439 (0.0293)	-0.0034 (0.0527)
Hotels, restaurants (H)	-0.0716 (0.0588)	-0.1241 (0.0941)	-0.0329 (0.0564)	-0.0349 (0.0992)
<i>Transport (I)</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Financial intermediation, real estate (J, K)	0.0523 (0.0356)	0.1346 (0.0473)***	0.0713 (0.0404)*	-0.0019 (0.0693)
Public Administration and defence	-0.013 (0.0329)	0.052 (0.0438)	-0.1404 (0.0304)***	-0.0935 (0.0546)*

Education (M)	0.2781 (0.0237)***	0.2715 (0.0244)***	0.4764 (0.0291)***	0.3749 (0.0360)***
Health, social work (N)	0.1258 (0.0313)***	0.1939 (0.0355)***	0.107 (0.0380)***	0.0865 (0.0596)
Other community and personal services (O)	0.1774 (0.0326)***	0.1545 (0.0459)***	0.0827 (0.0423)*	0.0686 (0.0696)
Private Households with employees (P)	0.2735 (0.0480)***	-0.0022 (0.1490)	0.4527 (0.0615)***	0.0259 (0.1622)
Other (C, Q)	0.1599 (0.0719)**	0.2581 (0.0506)***	-0.1924 (0.0621)***	0.214 (0.0981)**
Region				
Tblisi	-0.1363 (0.0280)***		-0.1896 (0.0234)***	
<i>Kakheti</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Shida Kartli	0.0862 (0.0303)***	0.1871 (0.0145)***	0.0142 (0.0302)	0.2117 (0.0176)***
Kvemo Kartli	0.0497 (0.0312)	-0.0287 (0.0198)	-0.0857 (0.0274)***	0.0148 (0.0206)
Samtskhe Javakheti	-0.0395 (0.0405)	0.2051 (0.0148)***	-0.0802 (0.0342)**	0.1135 (0.0194)***
Achara	-0.0868 (0.0317)***	0.1201 (0.0168)***	-0.0897 (0.0264)***	0.0551 (0.0199)***
Guria	-0.0392 (0.0371)	-0.0352 (0.0189)*	-0.1378 (0.0274)***	-0.1798 (0.0179)***
Samegrelo	0.044 (0.0329)	0.0765 (0.0164)***	-0.0434 (0.0304)	0.1788 (0.0178)***
Imereti	0.2388 (0.0242)***	0.0673 (0.0168)***	0.1868 (0.0305)***	0.0811 (0.0187)***
Private	0.0421 (0.0177)**	0.0182 (0.0236)	0.1367 (0.0174)***	0.0809 (0.0250)***
Observations	6353	11708	6353	11708
L ² Chi2 (K-1)	919.55(32)***	1258.88(31)***	1506.17(32)***	1583.64(31)***

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

(a) Standard errors are in brackets.

(b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.

(c) The dependent variable for the probability model is whether an individual is underemployed.

(d) Underemployment is defined as all working-age individuals who are (1) employed full-time and (2) working for a total (in primary and multiple jobs) of less than 41 (or 35) hours per week. OR (1) employed part-time and (2) doing so involuntarily (see Appendix A4.1. for details).

- (e) The sample for the regression is all employed individuals.
- (f) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discrete change from 0 to 1 for dummies.
- (g) The unit of observation is the individual.
- (h) f denotes variables omitted in the estimation (base categories).
- (i) L^2 Chi2 (K-1) refers to the likelihood ratio used to test the goodness of fit of the model and is compared to a Chi2 distribution on $k-1$ degrees of freedom, where k is the number of independent variables in our model (see appendix A2.4).
- (j) Analysis carried out using unweighted data.
- (k) Definitions of all variables can be found in appendix A2.2.
- (l) Letters in brackets refer to sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).
- (m) Category G also includes repair of motor vehicles. Category K also includes renting and business activities. Category C refers to mining and quarrying and category Q refers to extra territorial organisations and bodies.

4.8 SUMMARY OF MAIN FINDINGS

The findings of this chapter can be summarised in the following thirteen points.

1. When central planning collapsed, many western economists predicted that privatization and restructuring would lead to a fall in state employment and a growth in the private sector, which would draw from the pool of unemployed and be the driving force behind economic growth. However, contrary to expectations, this chapter found that neither unemployment nor private firms have grown significantly in Georgia. The results indicate that this is in part because labour has shifted directly into small-scale agricultural self-employment, and also because of labour hoarding on the part of enterprises. I argued that the main reason for the shift into agricultural self-employment is the overwhelming inadequacy of the pension and unemployment benefit system, which has meant that individuals cannot afford to be pensioners or unemployed for any length of time.

The findings showed that agriculture's share of total employment increased from a quarter of the labour force in 1990 to over one half in 1999, whereas employment levels in industry and construction collapsed from 20% to 8% and 10% to 1% respectively. Agricultural employment accounts for 90% of all the self-employment (compared to only 16% in the EU-15), and is largely limited to small (0.5-1 hct), low-productivity, household plots.

2. There has been virtually no creation of small off-farm enterprises capable of generating employment. In 1999, only 2% of the self-employed had employees. These findings suggest that, contrary to expectations, privatization and restructuring have not been successful in generating a dynamic private sector capable of absorbing the labour shed by the state sector and of being the driving force behind economic growth. On the contrary,

they suggest that the private sector in Georgia is largely dominated by subsistence agriculture.

3. This chapter argued that unemployment rates are artificially low. The unemployment rate is found to be approximately 16%, varying between an average of 4% in rural areas and 25% in urban areas. However, there is considerable evidence that the rural rate is entirely unreliable and that even the urban rate may be concealing some hidden unemployment. Three factors support this assumption.

First, there is reason to believe that an important share of the rural labour force is underemployed. The Government has chosen to apply the international '*one-hour-employment-criterion*' to a one-week reference period, which implies that anyone working for at least one hour during the reference week is considered employed. This has serious implications in rural areas, where the majority of households have received a small (0.5-1hect) plot of land, as part of the land privatisation programme. This is further supported by the Employment Law of Georgia which specifies that anyone owning 1 hectare or more of land is considered self-employed, regardless of whether they may consider themselves unemployed or may actively be seeking another job. The result is that 78% of the rural working-age population is considered self-employed in agriculture and that only 4% of the rural labour force is considered unemployed. Therefore, although these individuals are not unemployed, nor can they be considered employed. They are simply temporarily surviving in the hopes of finding a job in the future.

Second, the high and increasing rates of inactivity could be an indication that, having lost hope of finding a job, people drop out of the labour force altogether - thereby further disguising the true level of unemployment. This is particularly the case for women in childbearing age, who no longer have access to childcare facilities, as well as young men who are discouraged from entering the labour force as there are no jobs available. This chapter also found increasing rates of inactivity amongst urban men at the peak of their working lives. This is a further indication that job creation in urban areas is very limited.

Third, there was also evidence of continued labour hoarding, particularly in manufacturing and municipal infrastructure services. Workers are put on extended unpaid leave, reduced working hours, or suffer reduced wages and wage arrears. Private sector employees are more likely to be underemployed than employees in the state sector, suggesting that private firms are continuing to adjust to falls in demand by rationing working hours rather than employment.

If we consider all those working less than normal working hours, we find that over one half of the labour force is underemployed. Compounding the underemployed and unemployed suggests that as much as 67% of the labour resources are left unused in the Georgian economy. Moreover, these findings indicate that there is a 'pool' not of unemployed but of underemployed, on which the growing private sector could draw to power economic growth. However, there is a risk that if the private sector does not expand, this pool will become increasingly marginalized and de-skilled.

4. Long-term unemployment is widespread and there are signs that it may be increasing. This chapter found that approximately 42% of the unemployed have been out of work for more than 3 years. The gap between the unemployed who have been actively-seeking employment, and those who have not because they have lost hope of finding any, has widened - a further indication of the increase in long-term unemployment. Middle-aged workers, whose skills may no longer be relevant to new market economy jobs, and individuals living in regions where employment opportunities are severely limited face the greatest risk of being long-term unemployed and of eventually being excluded from the labour market.
5. Those who are employed have extremely low incomes. On the one hand, paid-employees, who work mainly in urban areas, are largely employed by State budgetary organisations, and the severe fiscal crisis has meant that they have been suffering from below subsistence wages and substantial payment arrears. Salaries, which ranged between GEL20 (US\$10) and GEL66 (US\$33) in 2000, were only 10% to 30% of the official minimum subsistence level. In the absence of alternatives (as we have seen unemployment is not an alternative) many paid employees have resorted to secondary jobs to meet basic needs. On the other hand, there is evidence that the self-employed, 98% of which work in agricultural small-plots, may have even lower incomes. This is a result of very low productivity, due to the very small size of the plots (on average 0.5-1hectare), the lack of fertilizers, tractors and other modern machinery. Much of agricultural self-employment may, in fact, be subsistence agriculture.
6. The inadequacy of pensions means that pensioners are forced to continue working. Economic activity rates for individuals over the age of 65 years are 57% for men and 41% for women, compared to only 5% and 2% for men and women in the EU-15. The majority is self-employed in rural agriculture, where they account for almost one quarter of the

self-employed, while the rest engage in petty trade via street stalls and markets. In rural areas, 70% of those aged 65 and over are employed. This chapter also found that the high employment rates cannot fully be explained by the generous employment definition, as rural pensioners work an average of 27 hours per week. This suggests that the main reason for their employment is indeed the very low pensions (GEL14 or US\$ 7.5 a month), which, if paid at all, account for only 11% of the poverty line.

7. On the one hand, the Georgian workforce has relatively high levels of educational attainment, with 31% of adults aged 25-59 having higher education, compared to only 21% in the EU. On the other, it is increasingly losing its skills. The lack of formal employment opportunities means that a growing number of workers with higher education are either unemployed or self-employed in small-plot agriculture and petty trade. After more than 13 years, many may already have lost their skills. At the same time, those who have not lost their skills may find that their skills have become obsolete in the new market economy. This is particularly the case for middle-aged individuals who already had professions at the beginning of the transition period (see 12 below). This could present an obstacle to economic growth, as there may be insufficient workers with market-economy skills to support the growing private sector.
8. Poor labour market outcomes (unemployment, long-term unemployment and underemployment) are strongly associated with certain groups. In particular, this chapter found that individuals living in depressed regions, youth, females and to some extent middle-aged workers were especially vulnerable.
9. Individuals living in regions with high unemployment rates face the highest risk of unemployment and long-term unemployment. In urban areas, a one-unit increase in the regional unemployment rate increases the risk of individual unemployment by 57%. These findings attest to the importance of programmes aimed at stimulating labour demand at the regional level as an effective way of reducing unemployment.
10. Youth also face a high risk of poor labour market outcomes. There is evidence that youth are being marginalized from the labour market as their participation rates decline and unemployment rates increase. Only 30% of 15-24 year old females and 43% of 15-24 year old males are currently economically active, compared to 43% and 53% respectively in the EU. The youth that are economically active are largely unemployed. Youth (aged 15 to 24) are significantly more likely to be unemployed than are older individuals, *ceteris paribus*. Unemployment rates reach 45% for young urban males and 50% for their

female counterparts. These do not include students; they are youth who are without work and actively looking for work. Employed youth are also more likely to be underemployed. These findings could have very damaging implications for the future human capital and the longer-term social and economic development of the country.

11. There is evidence of a gender bias in the labour market. Females are more likely to be underemployed than males. They are significantly more likely to have their working hours restricted and to turn to subsistence agriculture than males are. Females are also over-represented in semi-skilled positions (80% of clerks are females) and under-represented in senior positions (only 32% of managers are females). Finally, although they are less likely to be unemployed, everything else being equal, females are increasingly inactive. This is particularly the case for females in child bearing and rearing age (particularly in urban areas) that are staying out of the labour market due to a breakdown in childcare facilities, which were previously widely available.
12. Middle-aged individuals (aged 46 to 55) face the highest risk of long-term unemployment than any other age group, *ceteris paribus*. Although they are less likely to be unemployed as a whole, once unemployed they face a higher risk of being excluded from the labour market altogether. This suggests that they are most at risk of having skills that have become obsolete in the new market economy and highlights the urgent need for re-training, particularly of middle-aged individuals as a means of slowing down the increase in poverty and vulnerability.
13. Finally, there appears to be an important age-related pattern to the labour market in Georgia. A rather pessimistic age-based portrait of the labour market could be the following: (1) Youth are being excluded from the job market because of the lack of new formal employment opportunities; (2) middle aged-workers are holding on to their pre-transition jobs, mainly as (low-paid) wage employees, but once they lose their jobs, they face a high risk of being excluded from the labour market altogether as their skills have become obsolete in the new market economy; (3) older age groups, close to or above retirement age, are no longer working in their pre-transition jobs but cannot afford to live off the very low pension benefits, and are therefore self-employed in small-scale trade activities or subsistence agriculture to make ends meet.

INFORMAL LABOUR MARKET ACTIVITY IN GEORGIA

The aim of this chapter is to measure the scale of informal labour market activity in Georgia and to provide a profile of the informally employed. Chapter 4 showed that despite the large-scale collapse in output, which accompanied the first few years of transition in Georgia, open unemployment did not increase as expected. This chapter tests the hypothesis that one of the reasons for which open unemployment did not match the collapse in output is that labour shifted directly into informal employment.

To this end, the operational framework developed in Chapter 3 is used to identify individuals that are informally employed through the Labour Force Survey (1999). Recall that the operational framework consists of the following categories of informal employment: (1) informal self-employed; (2) contributing family workers; (3) informal employees; (4) others informally employed; and (5) secondary job-holders (for a detailed description see chapter 3).

In sections 5.1 and 5.2, the operational framework is used to estimate the size and composition of informal labour market activity in Georgia and the findings are compared to those obtained using the classic ILO definition of informal sector employment. Section 5.3 provides a descriptive analysis of the characteristics of formal and informal employment. Section 5.4, uses multivariate analysis to examine the determinants of informal employment by category of informal employment and identifies which individuals face the highest risk of informal employment. Finally, section 5.5, summarises the main findings and highlight which individuals face the highest cumulative risk of informal employment. Section 5.7 draws some conclusions.

5.1 THE SCALE OF INFORMAL EMPLOYMENT

The operational framework developed in Chapter 3 is used to identify individuals in the Labour Force Survey data (1999) that are informally employed. Table 5.1 presents rates and frequencies of formal and informal employment both including and excluding agricultural workers. We see that the majority of the Georgian employed population works informally. In 1999, 52% of the employed (about 900,000 people) worked informally.⁸⁶ Although the majority was involved in

⁸⁶ Recall that individuals with an informal primary job or a formal primary job and an informal secondary job are considered to be informally employed. The rest is considered to be formally employed. Individuals with a formal primary job and informal secondary job are categorised as informal because engaging in an informal secondary activity is a result of the same factors that lead individuals into informal primary employment, namely lack of adequate formal employment opportunities (which pay sufficient wages on a regular basis). I recognise that this may underestimate the scale of formal employment and provide rates excluding informal secondary job-holders where appropriate. However, given that the ultimate aim of the analysis is to assess whether informal labour market activity provides a social safety net, I feel that it is more appropriate to consider these individuals informally employed.

agriculture, even if we exclude all agricultural workers from our sample, table 5.1 shows that 34% and of the Georgian non-agricultural employed population was working informally.⁸⁷

Table 5.1 also presents the rate of informal employment using the standard ILO informal sector definition as outlined in the 1993 'Resolution Concerning Statistics in the Informal Sector' (ILO 1993b) As discussed extensively in Chapter 2, the ILO defines the informal sector in terms of characteristics of 'units' (or enterprises). Informal enterprises are a subset of household unincorporated enterprises with certain characteristics including, amongst other things, small-scale production, family ownership, and the use of labour intensive technologies. In this sense, informal sector employment comprises all persons employed in 'informal sector enterprises'. In contrast, the conceptual framework devised in this thesis is based on 'activities' instead of 'units'.⁸⁸ As discussed in chapter 3, this means that all individuals who engage in informal activities are considered informally employed, regardless of the units in which these activities take place, thereby also including those who are employed in 'formal sector' enterprises.

Table 5.1 shows that informal sector employment, as defined by the ILO, accounted for a little under one quarter of Georgia's employed (including agricultural workers) in 1999. Appendix A5 provides an extensive discussion of the ILO definition of informal sector and present frequencies and rates for 'total informal employment' and 'ILO informal sector employment' as well as for the different categories of informal employment for 1999. The frequencies and rates are broken down by gender and quarter and calculated both including and excluding agriculture.

Table 5.1 Formal and informal employment (1999)

Rates and frequencies

	Formal		Informal		ILO Informal Sector Employment	
	%	1000s	%	1000s	%	1000s
All employed	47.9	830	52.1	902	23.7	410
Non-agricultural employed	65.9	551	34.1	285	30.1	252

Source: author's own analysis of Georgia Labour Force Survey, 1999.

Notes:

- (a) % refers to percentage of employed in given category.
- (b) Annual rates and frequencies are averages of quarterly rates and frequencies.
- (c) 'all employed' and 'non-agricultural employed' refers to the sample used for calculating rates and frequencies.
- (d) 'ILO informal sector' refers to the ILO definition of informal sector employment, which includes only individuals employed in 'informal sector enterprises' (i.e. non-agricultural enterprises located at home, outside home, in a street booth, construction site, market place, at a customer's home or in a non-fixed location). See Appendix A5 for the ILO definition of the informal sector and its operationalisation.

⁸⁷ Note that unless otherwise specified all figures, in this chapter are for 1999.

⁸⁸ As discussed in chapter 3, the term 'activities' is used here in the sense of economic activities as in the SNA (1993) and the 'International Standard Industrial Classification of All Economic Activities (ISIC) (ILO 1989).

5.2 COMPOSITION OF INFORMAL EMPLOYMENT

Table 5.2 presents the composition of informal employment by type of informal employment. It shows that the majority of informal employment consists of contributing family workers. In 1999, such workers represented approximately 59% of all informal workers. As we will see, contributing family workers, who by definition are not paid wages, are often females, youth and old-age workers working on household agricultural plots. As shown in table 5.2, the informal self-employed ('own-account workers' and 'employers' whose activities are based at home, in the street, in a market, at a customer's home, on an urban or unregistered plot of land) accounted for 17% of total informal employment. Small-plot agricultural production and petty trade accounted for almost 98% of all self-employment (both formal and informal).

Table 5.2 also shows that informal employees make up roughly 14% of total informal employment. These are 'paid employees', working casually, temporarily, or with an oral agreement, and often in trade and manufacturing. The fourth category of informal employment, the formally employed with informal secondary jobs, accounted for approximately 8% total informal employment in 1999. These were mainly state employees with (formal) primary jobs in public administration, education and health, and informal secondary jobs mainly in agriculture.⁸⁹

Finally, the fifth category of informal employment, 'others informally employed', identifies temporary and casual co-operative members or workers for whom status in employment is unknown, but who are either casually employed, or work in 'typical informal activities'. As the number of observations for this group is very small (they represented only 0.8% of total employment in 1999) it will not be possible to draw any significant conclusions on their characteristics, and they will therefore be excluded from most of the analysis in this chapter.

Table 5.2: Informally Employed by type of informal employment (1999), % of total informal employment

Category of Informal Employment	1999
Informal self-employed	17
Contributing family workers	59
Informal employees	14
Other informals	2
Informal secondary job holders	8
Total	100

Source: author's own analysis of Georgia Labour Force Survey, 1999.

Notes: For definition of categories of informal employment see chapter 3 and appendix A2.2.

⁸⁹ Note that the scale of both informal self-employment and informal secondary jobs may be underestimated, as it is likely that individuals engaging in these activities, particularly in informal trade, may be reluctant to accurately report them. See appendix A2.1.3 for a discussion of data quality.

5.3 CHARACTERISTICS OF FORMAL AND INFORMAL EMPLOYMENT

The analysis of the Labour Force data reveals that there are significant disparities between formal and informal employment and between categories of informal employment, depending on state or private sector, sector of economic activity, rural or urban setting, region, ethnic background, level of educational attainment, profession, gender and age of individuals. Each of these dimensions will be analysed in turn.

5.3.1 State and private sector

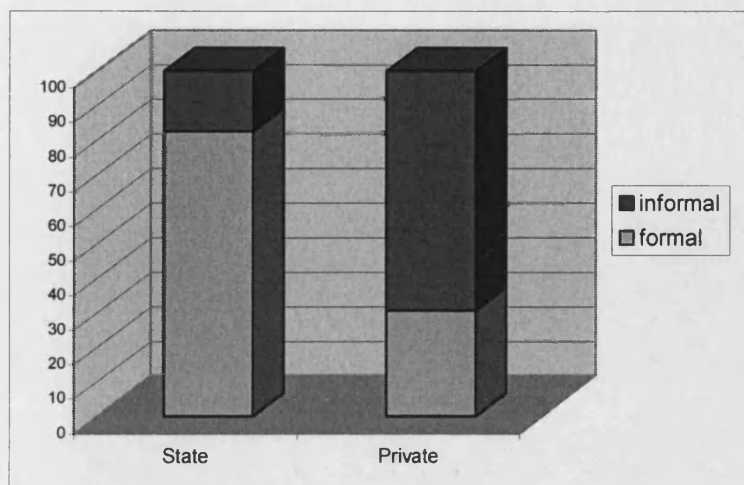
The most obvious and significant distinguishing feature of informal employment in Georgia is the public/private dimension. Figure 5.1 shows the composition of state and private sector employment by formal/informal sector. We see that in 1999, approximately 80% of state sector employment was formal whereas almost 70% of private sector employment was informal. Wage-employment was concentrated in the state sector, with only 27% of wage-employees working in the private sector. Moreover, more than 60% of formal private sector employment was own-account agricultural work, which means that the private sector was essentially limited to registered, small-plot agriculture and informal employment.

It is also surprising that as much as 20% of formal State employees also worked informally.⁹⁰ Two thirds of these are secondary jobholders: mainly professionals who have formal primary jobs in public administration, health or education, and informal secondary jobs in agriculture. As previously argued, the exceptionally low wages and arrears in budgetary organisations means that workers are obliged to supplement their income through informal employment. Another third of informal state employment consists of informal employees: mostly low skilled workers in state-owned manufacturing (mainly tea and bread) enterprises, as well as in agriculture.

Nevertheless, apart from the informal secondary jobholders, there was a clear dual dimension to Georgian employment: on the one hand, there were the formal, mostly urban, state employees, while on the other there were the informal, mostly rural, private self-employed.

⁹⁰ Recall that anyone with a formal primary job and an informal secondary job is categorised here as informal.

Figure 5.1 State and private employment by formal/informal status (1999)



Source: author's own analysis of Georgia Labour Force Survey, 1999

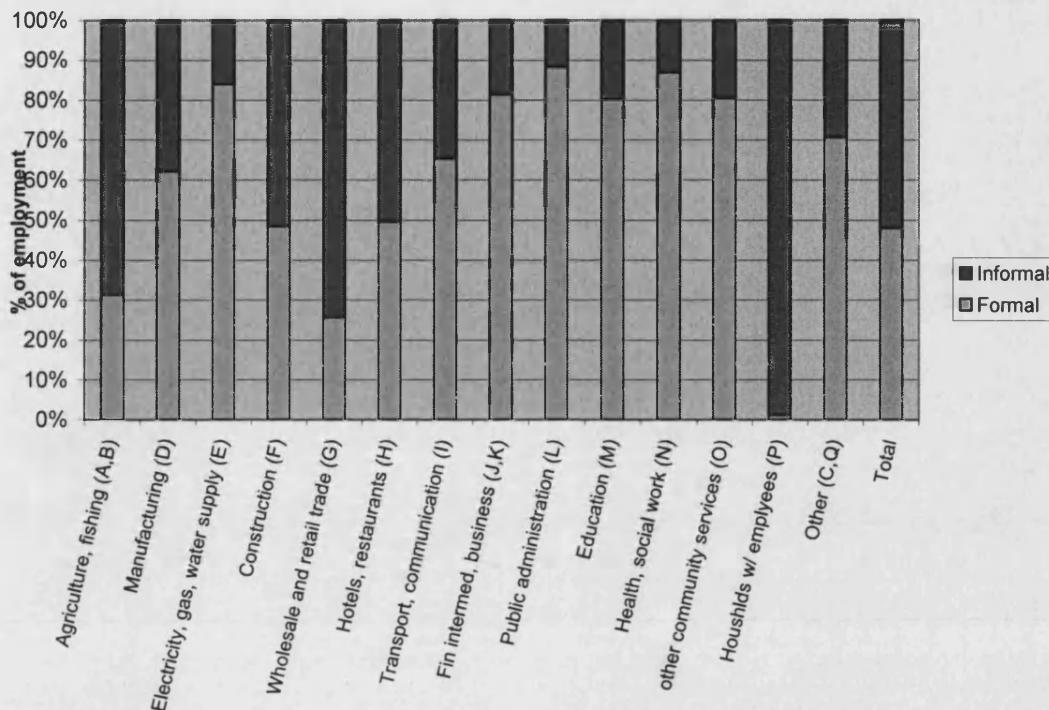
5.3.2 Branch of economic activity

Given this dual dimension to Georgia's employment, we can expect to find that formal and informal workers are employed in different sectors of economic activity. Figure 5.2 presents sector of economic activity by formal/informal composition. We see that individuals employed as domestic employees, in agriculture, trade, and to some extent construction and hotel and restaurant services are largely informal whereas those employed in public administration, education, health and other community services are largely formal. These eight sectors together account for 85% of total employment. The results are not surprising as education, health, and public administration are almost exclusively in the state sector while employment in private households, agriculture, construction and trade is largely private self-employment and contributing family work.

Figure 5.2 shows that approximately 70% of agricultural employment was informal. In fact, agriculture accounted for 69% of total informal employment compared to only 34% of formal employment. Most agricultural workers were contributing family workers and self-employed working on small household plots. Many were also employed on urban plots. As discussed in chapter 4, although these have existed since the Soviet period, when they were allocated by the State as 'garden plots', they now represent the primary source of employment for one seventh of the urban employed population (Bernabè 2002b).⁹¹

⁹¹ The descriptive analysis in this chapter draws on Bernabè (2002).

Figure 5.2 Formally/Informally employed by sector of economic activity (1999)



Source: author's own analysis of Georgia Labour Force Survey, 1999.

Notes: Letters in brackets refer to sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).

5.3.3 Urban and rural

If agriculture is included, then three quarters of informal employment was located in rural areas. However, if agriculture is excluded, then almost 60% of informal work was in urban areas. Nevertheless, rural non-agricultural employment was still found to be largely informal with one half of rural non-agricultural workers informally employed.

The data reveal an interesting symmetry; whereas in urban areas 62% of the employed worked formally, in rural areas 62% were informally employed. As shown in Chapter 4, there were significant rural – urban disparities in the labour market as a whole. Where the urban labour market was characterised by low employment rates, high unemployment rates (especially for youth), and wage employment in the State sector, the rural labour market featured exceptionally high employment rates (particularly for old-age workers) and self-employment in agriculture.

Tables 5.3 and 5.4 illustrate the composition of urban and rural informal employment, respectively, by type of informal employment and sector of economic activity. We see that most

urban informal employment consisted of informal self-employed and informal employees. Approximately 40% of urban informal self-employed worked in wholesale and retail trade, which was almost entirely limited to retail sale through street stalls and markets, and more than one third worked on urban plots. The rest were employed as informal taxi drivers and in home-based manufacturing (mainly of bread).

The second substantial category of informal employment in urban areas is that of informal employees, which accounted for 33% of total urban informal employment. Table 5.3 shows that 36% were employed in wholesale and retail trade in street stalls and markets, 19% were in manufacturing and a further 10% were casual employees on urban agricultural plots. Finally, two other noteworthy groups of informal employees are those working as construction workers, who made up 7% of informal wage employment in urban areas, and domestic employees, 90% of whom worked on the basis of oral agreements, and who accounted for 4% of informal wage employment in urban areas.

Table 5.3 Urban informal employment and sector of economic activity (1999)

% within groups

	Informal self-employed	Contributing family workers	Informal employees	Others informally employed	Informal secondary job holders: primary job	Total urban Informal Employment
Urban Informal Employment	36.9	20.8	32.6	3.9	5.4	100
Agriculture, fishing (A, B)	35.5	92	10.2	6.3	7.6	36.3
Manufacturing (D)	5.7	1.2	18.5	2.5	5.3	8.8
Electricity, gas, water supply (E)	0	0	0.4	0	3.8	0.3
Construction (F)	2.7	0.3	6.6	1.8	2.2	3.4
Wholesale and retail trade (G)	40.5	4.4	36.0	69.4	2.5	30.4
Hotels, restaurants (H)	1.3	0.4	4.7	0	2.4	2.2
Transport, communication (I)	8.9	0.6	5.8	4.1	9.5	6
Financial intermediation, real estate (J, K)	1.6	0.2	2.6	8.5	5.2	2.1
Public administration and defence (L)	0.1	0.1	2.9	0.7	9.5	1.6
Education (M)	1	0.1	2.9	1.6	23.5	2.7
Health, social work (N)	0.2	0.1	1.9	0	20.1	1.8
Other community and personal services (O)	1.1	0.4	3.1	0.7	6.1	1.9
Private Households with employees (P)	1.2	0.4	4.2	4.1	0	2.1
Other (C, Q)	0.1	0	0.3	0.4	2.2	0.3
Total	100	100	100	100	100	100

Source: author's own analysis of Georgia Labour Force Survey, 1998, 1999.

Notes:

- (a) Letters in brackets refer to sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).
 (b) Category G also includes repair of motor vehicles. Category K also includes renting and business activities. Category C refers to mining and quarrying and category Q refers to extra territorial organisations and bodies.

Table 5.4 presents informal employment rates by sector of economic activity and type of informal employment for rural areas. We see that contributing family workers made up almost three quarters of rural informal employment and that 99% of them worked in agriculture. As we will see, a relatively high proportion were females over the age of 65, and young males aged 15-24. In addition to contributing family workers, 9% of rural informal workers were informal self-employed. Although more than half worked in agriculture, almost one third were petty traders in street stalls and markets.

An additional 9% of informal rural employment consisted of formal employees with informal secondary jobs. Table 5.4 reveals that most secondary job holders had a primary job in education, public administration, health, and agriculture. The fact that informal secondary job holding was more prevalent in rural areas (only 5% of urban informal employment consisted of secondary jobholders) and that 86% of it was in agriculture, suggests that rural areas offer access to informal

income earning opportunities in agriculture for low-income workers, which are less prevalent in urban areas. Finally, the remaining 7% of informal rural employment was made up of informal employees working in manufacturing, agriculture, and petty trade.

Table 5.4 Rural informal employment by sector of economic activity (1999)

% of rural informal employment

	Informal self-employed	Contributing family workers	Informal employees	Others informally employed	Informal secondary job holders: primary job	Total Rural Informal Employment
Rural Informal Employment	9.2	73.8	7.1	0.8	8.7	100
Agriculture, fishing (A, B)	57.4	99.4	21.6	20.4	16.2	82.1
Manufacturing (D)	4.1	0.2	26.2	8.1	7.3	3.0
Electricity, gas, water supply (E)	0.1	0.0	2.4	0.0	2.4	0.4
Construction (F)	0.9	0.0	5.8	2.2	1.3	0.6
Wholesale and retail trade (G)	32.1	0.3	21.6	57.6	3.1	5.4
Hotels, restaurants (H)	0.5	0.0	2.8	0.0	0.7	0.3
Transport, communication (I)	2.6	0.0	5.8	7.6	6.0	1.3
Financial intermediation, real estate (J, K)	1.1	0.0	2.4	2.6	4.0	0.7
Public administration (L)	0.0	0.0	2.1	0.0	12.8	1.3
Education (M)	0.2	0.0	3.5	0.0	32.2	3.2
Health, social work (N)	0.1	0.0	0.8	0.0	8.6	0.9
Other community services (O)	0.5	0.0	1.0	0.0	4.5	0.5
Private Households with employees (P)	0.0	0.0	2.6	1.4	0.1	0.2
Other (C, Q)	0.5	0.1	1.3	0.0	0.6	0.3
Total	100	100	100	100	100	100

Source: author's own analysis of Georgia Labour Force Survey, 1998, 1999.

Notes:

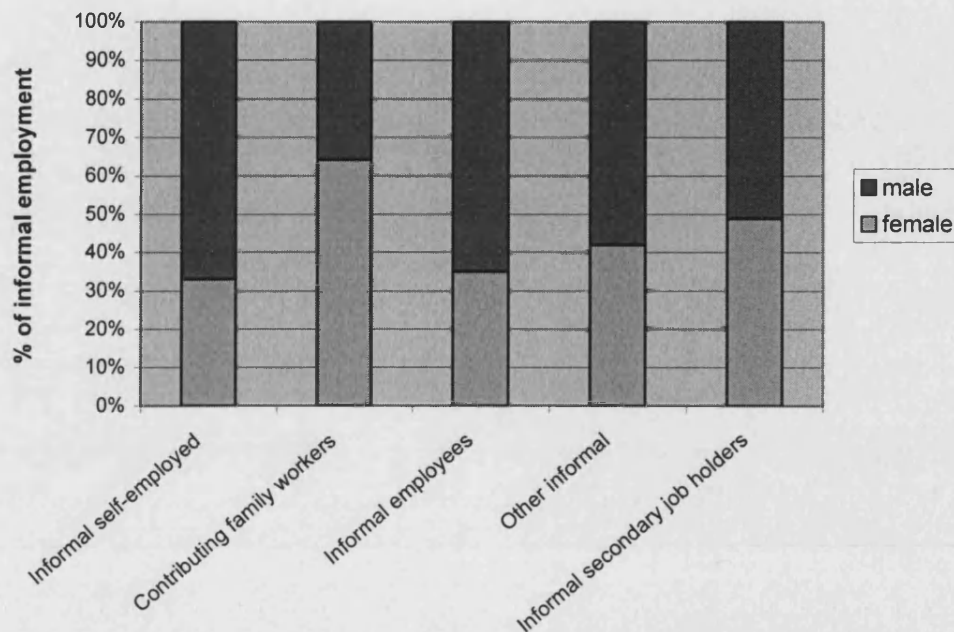
- (a) Letters in brackets refer to sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).
 (b) Category G also includes repair of motor vehicles. Category K also includes renting and business activities. Category C refers to mining and quarrying and category Q refers to extra territorial organisations and bodies.

5.3.4 Age and gender

Chapter 4 found that there was no significant gender difference in labour market participation as a whole, although there was a gender bias in the distribution of employment by occupation, with women being under-represented in managerial and senior positions and over-represented in low-skilled positions. Similarly, although females were only slightly over-represented amongst informal workers, a gender imbalance emerges when type of informal employment is analysed. As illustrated by figure 5.3, 64% of contributing family workers were females (roughly 364,000 individuals; see Appendix A5, table A5.1 for frequencies), whereas only 33% of self-employed and 35% of informal employees were females. Much of this difference can be explained by the fact that both male and female household members may work for an equivalent number of hours in the same household enterprise, but the male, head of household, may be considered 'self-

employed' (i.e. own-account worker or employer), while the female will be classified as a 'contributing family member'.

Figure 5.3 Type of informal employment by share of males and females (1999)



Source: author's own analysis of Georgia Labour Force Survey, 1998, 1999.

Table 5.5 illustrates formal and informal employment rates by age group and type of informal employment. We see that three quarters of the employed 15-25 year olds worked informally, mostly as contributing family workers on family farms. As seen in Chapter 4, compared to their European counterparts, Georgian youth had higher unemployment rates and lower labour force participation rates. These results suggest that the youth that were employed worked almost entirely informally.

At the same time, chapter 4 found exceptionally high employment rates (formal and informal) for both males and females over 50 years of age, and particularly over 65. The vast majority of old-age workers also worked in agriculture, both formally and informally. Table 5.5 shows that 49% of employed over-65 year olds worked informally in 1999. Whether formal or informal, such high employment rates amongst over 65s suggests that pensioners cannot afford to live off their extremely low pensions and therefore turn to subsistence agriculture to survive.

Finally, as shown in table 5.5, whereas youth and old-age workers are particularly active as contributing family workers, middle-age workers, appear to work more in formal jobs as well as informal self-employment, informal wage-employment and informal secondary jobs.

Table 5.5 Employed by category of formal/informal employment and age group (1999)

% within age group

	Formal	Informal	Informal self-employed	Contributing family workers	Informal employees	Other informals	Informal secondary job holders
15-25	24	76	4	61	9	1	1
26-35	46	54	7	33	9	1	4
36-45	50	50	11	23	10	1	5
46-55	53	47	9	21	9	1	7
56-65	51	49	10	29	5	1	4
66-100	52	49	10	35	2	0	2
All Employed	48	52	9	31	7	1	4

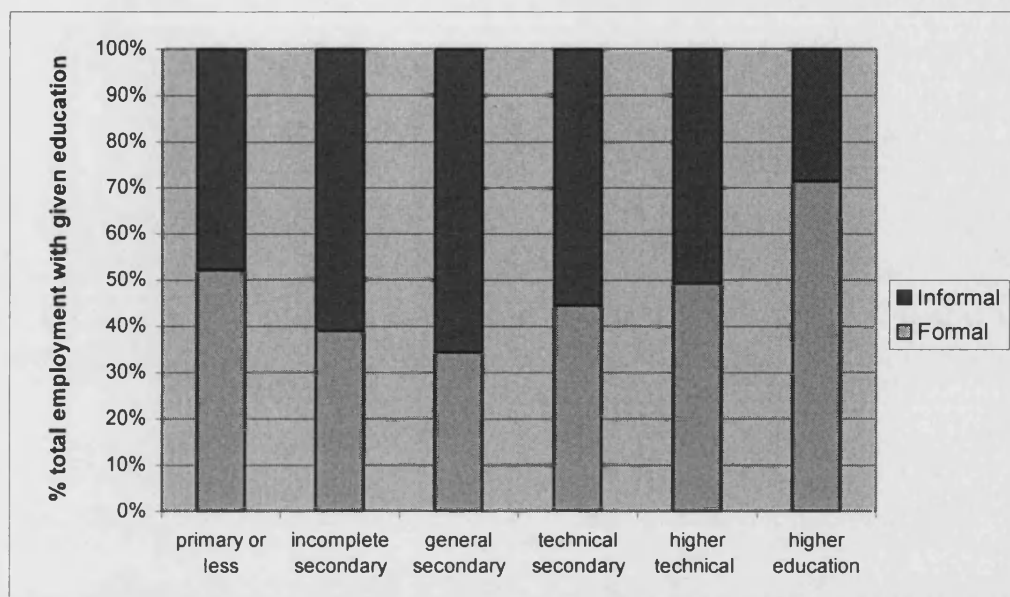
Source: author's own analysis of Georgia Labour Force Survey, 1999.

Notes: rates refer to percentage within age group. Rates for 'all employed' refer to the total employed population.

5.3.5 Education

Overall, higher education is associated with formal employment while lower education is associated with informal employment. Figure 5.4 illustrates the formal/informal composition of employment according to educational attainment. We see that 71% of those with higher education worked formally, whereas only 34% of those with general secondary and 44% of those with technical secondary education did so. Even if agriculture is excluded, results show that only 26% of the informally employed had higher education compared to 55% of formal workers. Moreover, although half of those with primary education worked formally, they were almost exclusively self-employed in agriculture.

Figure 5.4 Employed by educational attainment and formal/informal status (1999)

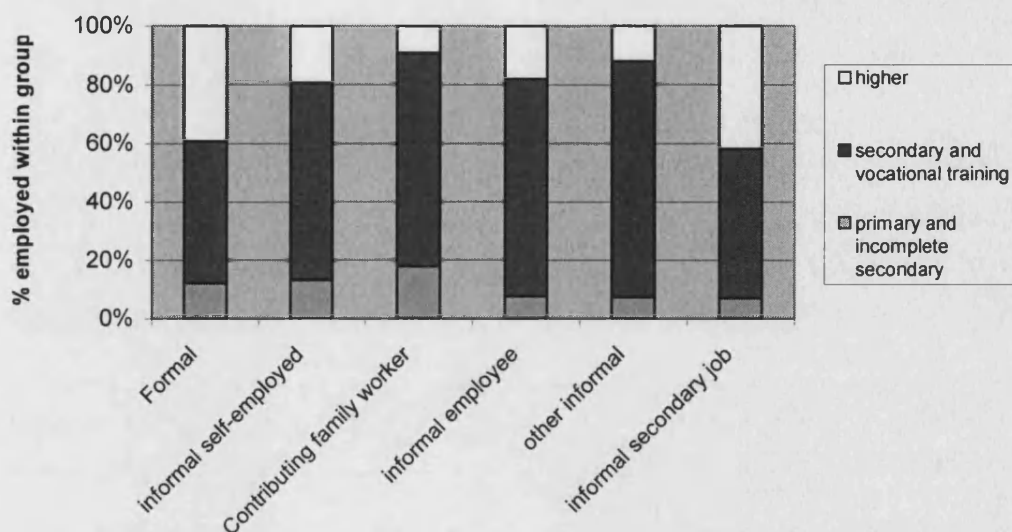


Source: author's own analysis of Georgia Labour Force Survey, 1998, 1999.

Educational attainment also varies with type of informal employment. Figure 5.5 presents the distribution of formal and informal employment by category of informal employment and educational attainment. We see that an exceptionally high proportion of informal secondary jobholders had higher education. This is not surprising as they have formal primary jobs and, as we have seen, individuals with formal primary jobs have higher levels of education. Nevertheless, a higher share of secondary job-holders had higher education than do formal workers (42% vs. 39%). In contrast, 91% of contributing family workers had either secondary or primary education. However, given that they represent such a large share of the employed, contributing family workers actually accounted for 10% of the country's higher-educated workers.

For the informal self-employed and paid-employees, the relationship with education is less clear. Whereas two-thirds of the self-employed had secondary education, almost 20% had higher education. If only the non-agricultural self-employed are included, then more than one quarter had higher education and 60% of these worked as street and market vendors. Similarly, almost one fifth of informal wage employees had higher education, while the rest had secondary education. Those with higher education also worked as petty traders or as informal employees, on the basis of oral agreements in bread, tea and other manufacturing industries.

Figure 5.5 Type of formal/informal employment by educational attainment (1999)



Source: author's own analysis of Georgia Labour Force Survey, 1998, 1999.

Notes: 'Higher', 'general vocational and special secondary' and 'primary, incomplete primary and incomplete secondary' refer to highest level of educational attainment.

As previously noted, the Georgian labour force as a whole has particularly high levels of educational attainment. However, these results show that one third of those with higher education were employed in low-skilled, precarious, employment. These findings are a further indication that, as suggested in chapter 4, the lack of formal employment opportunities mean that a growing number of workers with higher education are either unemployed or self-employed in low-skilled informal activities and small-plot agriculture and therefore risk being deskilled, thereby undermining the country's future human capital base.

5.3.6 Regularity of employment and number of hours worked

Informal workers worked longer hours than their formal counterparts, with the exception of those employed in agriculture, who worked particularly short hours. Table 5.6 presents the mean hours of work by type of informal employment, both including and excluding agriculture. We see that on average non-agricultural informal workers worked 42 hours per week, compared to 40 hours per week in the formal sector. However, informal workers in agriculture worked an average (mean) of 29 hours per week, compared to 32 hours per week for formal workers. These results confirm the suggestion from chapter 4 that informal agricultural employment is more than 'gardening' and also that there is considerable underemployment in agriculture.

There are considerable disparities in the regularity and time worked between categories of informal employment. The informal self-employed worked amongst the longest hours and the most regularly. As illustrated in table 5.6 if agriculture is excluded, then the self-employed worked an average of 44 hours per week. More than three quarters worked full-time and on a regular basis. In contrast, contributing family workers, who work primarily in agriculture, worked the shortest hours and had the largest proportion of part-time workers. They worked an average of 31 hours per week and almost 40% worked part-time, although almost all worked on a regular basis. Informal employees, who by definition work temporarily, casually, seasonally or on the basis of an oral agreement, worked particularly long hours, with an average of 44 hours per week, and 22% worked more than 51 hours per week. Finally, those formally employed with informal secondary jobs worked almost entirely full-time and regularly. They worked shorter hours in their primary jobs (an average of 35 hours per week), but worked, on average, an additional 20 hours per week in their secondary job.

Table 5.6 Mean hours worked per week. Formal and Informal workers (1999)

(hours)

	All employed	Non-agricultural employed
Formal	38	40
Informal	34	42
Informal self-employed	37	44
Contributing family workers	31	40
Informal employees	44	44
Informal secondary job holders -primary job	35	35
Informal secondary job holders -second job	20	20

Source: author's own analysis of Georgia Labour Force Survey, 1998, 1999.

Notes:

(a) 'all employed' and 'non-agricultural employed' refers to the sample used to calculate hours worked.

(b) Mean hours refer to seven days preceding the survey.

An important result of the analysis of the number of hours worked per week is that it enables us to reject the hypotheses, suggested chapter 4, that the definition of employment (as including anyone working for at least one hour during the reference week) could partly explain the large numbers self-employed in agriculture. In fact, less than 2.5% of the Georgians worked less than 10 hours a week and that only 13% worked less than 20 hours per week. Therefore the increase in agricultural self-employment noted chapter 4 could indeed be explained by the absence of social security, and formal employment opportunities, which led people to agricultural self-employment and petty trade to meet basic needs.

5.3.7 Regions and ethnic background

There were significant regional differences in the rates of informal employment. Tblisi had the highest share of formal workers. As illustrated in table 5.7, whereas in Tblisi more than three quarters of the employed were formal, in every other region the majority was informal. This is to be expected, as most public administration, health and education work (the three largest sectors of non-agricultural formal employment) is located in the capital. Informal employment in Tblisi consisted mainly of informal self-employment in petty trade and informal wage-employment also in petty trade and domestic services.

Moreover, certain regions had a particularly high proportion of informal employment, namely Samegrelo, Guria Imereti and Samtsxe-Javakheti, ranging from 70% of total employment in Samegrelo to 59% in Imereti. Although these are all agricultural regions, and hence could be expected to have a significant share of informal employment in agriculture, even if all agricultural workers are excluded, more than half the employed were still informal. The regional aspect will be explored in detail in the multivariate analysis that follows.

Table 5.7 Share of formal and informal employment by region (1999)

% of total regional employment

	Kakheti	Tblisi	Shida Kartli	Kvemo Kartli	Samtsxe-Javakheti	Achara	Guria	Samegrelo	Imereti	Total
Formal	44	78	48	45	39	48	34	30	41	48
Informal	57	22	52	55	61	52	66	70	59	52
Informal self-employed	9	10	11	8	8	7	5	13	7	9
Contributing family workers	33	1	32	34	37	27	42	44	43	31
Informal Employees	7	10	6	5	3	16	6	9	5	8
Other informals	0	1	1	1	0	1	1	2	1	1
Informal secondary job holders	7	1	2	7	14	1	11	3	3	4
Total	100	100	100	100	100	100	100	100	100	100

Source: author's own analysis of Georgia Labour Force Survey, 1998, 1999.

We also find a sharp ethnic dimension to informal employment. Table 5.8 presents formal and informal employment by ethnic identity and type of informal employment. We see that whereas only 51% of ethnic Georgians worked informally, 70% of Azeris, 72% of Greeks and 59% of Armenians did so. Azeris and Greeks, who represent 6% and 2% of Georgia's population respectively, are highly concentrated in agricultural communities in the region of Kvemo Kartli and over 50% of their employed populations worked as contributing family workers. Armenians, who represent 8% of the country's population, are concentrated in rural regions of Samtskhe-Javakheti and in Tblisi. They had high rates of informal agricultural employment in Samtskhe-Javakheti, and of informal self-employment in Tblisi, particularly in petty trade. Finally Russians,

Ukrainians and other Slavic ethnic groups represent roughly 7% of the population and live mainly in the cities. As shown in table 5.8, they were more likely to be informal self-employed or informal employees. The regional and ethnic dimension will be explored in more detail in the multivariate analysis that follows.

Table 5.8 Formal and informal employment by ethnic group (1999)

% of total employment

	Georgian	Azeri	Greek	Russian	Armenian	Other	Total
Formal	49	30	28	60	41	46	48
Informal	51	70	72	40	59	54	52
Informal self-employed	8	9	9	11	16	22	9
Contributing family workers	30	53	52	14	27	1	30
Informal employees	8	3	2	11	9	30	8
Other informals	1	2	1	1	1	1	1
Informal secondary job holders	4	4	7	3	6	0	4
Total	100	100	100	100	100	100	100

Source: author's own analysis of Georgia Labour Force Survey, 1998, 1999.

5.4 DETERMINANTS OF INFORMAL EMPLOYMENT

Having described the characteristics of the informally employed, multivariate analysis is now used to isolate the impact of specific variables on the probability of informal employment, while controlling for other individual characteristics. Given the importance of agriculture in the Georgian labour market, the informal self-employed are separated into two groups; those employed in agriculture, which will be called 'informal farmers' and those working outside agriculture, which will be called 'informal non-agricultural self-employed'. Moreover, given the very small number of 'others informally employed' (less than 1% of the sample), they will be excluded from the multivariate analysis. In summary, the categories of informal employment for this section are the following: (1) informal non-agricultural self-employed; (2) informal farmers; (3) contributing family workers; (4) informal employees; (5) informal secondary job-holders.

Moreover, whereas the previous section was based exclusively on the analysis of the Labour Force Survey (LFS), in this section, the LFS is merged with the Survey of Georgian Households (SGH) data in order to obtain information on hourly wages which will be needed in examining the determinants of informal secondary job holding. Details on the merged sample are provided in Appendix A2.1. Although the sample size is reduced by one half (as half the LFS sample is common to both the LFS and the SGH) this has no effect on the use of weights as the SGH is designed to be nationally representative. The only possible effect is on the reliability of results at

the regional level, as the original SGH sample was doubled for the LFS in order to obtain more representative data at the regional level. However, as will be shown, the reduction in the sample size does not affect the results as the multivariate analysis largely confirms the descriptive analysis based on the larger sample.

Seven separate probit models are used to estimate the effect of a number of variables on the probability of informal employment in each of the categories of informal employment. The seven probit regressions are the following: (1) probability of urban informal employment, estimated on the sample of all urban employed; (2) probability of rural informal employment estimated on the sample of all rural employed; (3) probability of informal wage employment estimated on the sample of all wage employed; (4) probability of informal non-agricultural self-employment estimated on the sample of all non-agricultural self-employed; (5) probability of informal farming estimated on the sample of all farmers; (6) probability of employment as a contributing family worker estimated on the sample of all employed; (7) probability of having an informal secondary job estimated on the sample of all wage employed.

Technical details on probit analysis are presented in appendix A2.4. The seven models are built around the regression model $I_i^{\theta*} = \beta X_i^{\theta} + u_i$, where $I_i^{\theta*}$ is the underlying continuous, unobserved, latent variable. X_i^{θ} is a vector of individual, human capital and labour market characteristics for each of the seven probit regressions ($\theta=1,2,..7$). These are characteristics that were found to be relevant in the descriptive analysis, namely gender, age, ethnic identity, level of educational attainment, sector of economic activity, region, type of settlement, private or public sector of employment, and wage in the primary job (the last characteristic is only for secondary job holders). β is the parameter vector to be estimated and the unit of analysis (i) is the individual. The unobservable error term u_i is defined as having $E(u)=0$ and $Var(u)=\sigma^2$. The definition of all variables used can be found in appendix A2.2.

The observed variable is I_i^{θ} . $I_i^{\theta} = 1$ if an individual belongs to informal employment category ($\theta=1,2,..7$) and $I_i^{\theta} = 0$ otherwise. I_i^{θ} is related to $I_i^{\theta*}$ in the following way: if $I_i^{\theta*} > 0$, we observe $I_i^{\theta} = 1$ otherwise we observe $I_i^{\theta} = 0$.

The probit model is therefore defined as:

$$\begin{aligned} \text{Prob}(I_i^{\theta} = 1) &= \text{Prob}(\beta X_i + u > 0) \\ &= \text{Prob}(u > -\beta X) \end{aligned}$$

$$= 1 - \Phi(-\beta X/\sigma)$$

$$= \Phi(\beta X/\sigma)$$

Where $\Phi(\cdot)$ is the cumulative distribution function. For the purpose of this analysis it is assumed that u follows a normal distribution. The resulting coefficients have been converted to marginal effects for ease of interpretation, thus they can be interpreted as the change in the probability of $I=1$ for an infinitesimal change in each independent, continuous, variable and, the discrete change in the probability for dummy variables. The reference category is the same as that used in the multivariate analysis of unemployment of chapter 4, namely Georgian male, aged 46 to 55 years, with higher education, working in transport and communication and residing in Kakheti.

Results are reported in Table 5.9. The results of the seven separate regressions are analysed in sections 5.4.1 to 5.4.6 and the major determinants of informal employment are then summarized in section 5.6.

5.4.1 All informally employed (urban and rural)

Results of the model for the probability of informal employment in urban and rural areas are presented in columns 1 and 2 of table 5.9. We see that many variables in the model achieve statistical significance at the 1% level. In particular, we see that, everything else being equal, gender, age, level of education, ethnic identity, region, and sector of economic activity were all highly significant in explaining informal employment, supporting the findings of the descriptive analysis.

Table 5.9 shows that, everything else being equal, gender had a significant impact on the probability of being informally employed in rural areas, but not in urban areas. Holding all other variables constant, females in rural areas were 35% more likely to be informally employed than males were. This is a considerable difference. As we will see below, this is an indication that there may be cultural or social barriers to entering the formal labour market along gender roles and would confirm anecdotal evidence that following the break-up of the Soviet Union, Georgia has reverted to a more traditional division of gender roles in the labour market.

Age was another important determinant of informal employment. All else being equal, in urban areas youth (aged 15 to 25) were 11% more likely to be informally employed than were individuals aged 46 to 55 and in rural areas they were 44% more likely to be informally employed. Individuals aged 26-45 were also significantly more likely to be informally employed than the reference category in both urban and rural areas. It is important to note that only 9% of employed youth were also studying. This means that the majority of youth that worked

informally, did so as their main occupation, suggesting that there may be barriers to formal labour market entry. As we will see, the lack of formal employment opportunities means young people are either unemployed, or they attempt to find other means of generating an income in the informal sector.

There was also a significant ethnic dimension. Greeks were 28% more likely to be informally employed in urban areas and 11% more likely in rural areas than Georgians were, *ceteris paribus*. Azeris, Abkhazians and Armenians were also more likely to be informally employed in rural areas and Russians, who live mainly in cities, were more likely than Georgians to be informally employed in urban areas. In contrast, Ossetians were significantly less likely to be informally employed, everything else being equal. This could be explained by the fact that Ossetians have traditionally had high levels of education and have occupied professional and often senior (formal) positions both in Georgia and major cities of the USSR. However overall these findings suggest that ethnic minorities in Georgia are not participating to the same extent in the formal economy as ethnic Georgians are, and could suggest that there are also barriers to formal labour market entry for non-Georgians.

The results also show that there were significant returns to education, particularly in urban areas where individuals with higher education were significantly less likely to be informally employed than any other group, confirming the findings of the descriptive analysis. Indeed having general secondary education increased the probability of being informally employed in urban areas by 20% relative to those with higher education, everything else being equal. Thus in urban areas, higher education still increased access to formal, protected jobs, although wages were not necessarily higher or more reliable. In rural areas, we see that having primary education or less significantly reduced the probability of informal employment relative to higher education. Although this may seem counter intuitive, we will see that it can be explained by the fact that individuals with primary education were more likely to engage in formal agriculture.

The multivariate analysis reveals some interesting results in terms of sector of economic activity. We see that certain sectors have a strong positive impact on the probability of informal employment. In particular, all else being equal, individuals employed in construction, both in urban and rural areas, were roughly 25% more likely to be working informally than those employed in the reference category (transport and communication). These were largely men hired as casual labour without a formal agreement. Trade was also associated with a high probability of informality, confirming the previous findings that most of the trade sector is comprised of small-scale, unregistered activities in street stalls and markets rather than in formal, registered shops. Finally we see that working as a domestic employee was of course associated with a high degree

of informality as the very large majority were employed without a written agreement. In contrast, typical public sector jobs were associated with a lower probability of informality. Thus, being employed in municipal infrastructure services (electricity, gas and water supply), public administration and defence, education, health and social work, other services and financial and real estate services, all significantly decreased the probability of informal employment in both urban and rural areas, *ceteris paribus*.

Region also played a fundamental role in determining informality. This dimension will be explored in detail in subsequent sections, however we note here that there are two main groups of regions: The first group consists of those regions located on the west coast of Georgia (Achara, Samegrelo and Guria), which were significantly associated with a strong positive impact on the probability of informality, particularly in urban areas. The second group, located mainly in south and south-eastern Georgia (Shida Kartli, Kvemo Kartli and Samtskhe Javakheti), had a significant negative impact in urban areas but a positive one in rural areas.⁹²

Finally, and perhaps most significantly, we see that relative to the state sector, working in the private sector, all else being equal, increased the probability of working informally by 46% in urban areas and 54% in rural areas.

5.4.2 Informal Employees

We now turn to the results of the probit regression for the probability of informal wage employment reported in column 3 of table 5.9. The probit model was estimated on the sample of all wage employed. The estimated coefficients therefore indicate the impact of the different variables on the probability of being an informal wage employee vs. a formal wage employee.

The results show that there is a strong age dimension to informal wage employment. Youth (aged 15 to 25) were 9% more likely to be employed informally (without a written agreement) than were middle aged workers, *ceteris paribus*. Individuals aged 26 to 45 were also significantly more likely to engage in informal wage employment, whereas old age workers (over 56 years) were significantly less likely. As we have seen, old age workers are retired individuals who supplement their meagre pensions with income from self-employment, largely in agriculture, so it is not surprising that they should be less likely to work as informal wage employed. However, the fact that youth are more likely to work precariously, without a written agreement, confirms previous suspicions that there may be barriers to labour market entry. Indeed, chapter 4 found that youth were also more likely to be unemployed, long-term unemployed and underemployed. All these

findings support anecdotal evidence that youth are increasingly excluded from formal employment and chose either to stay in higher education, work informally, be unemployed or drop out of the labour market altogether.

We see that wage employees who are Russian, all else being equal, were significantly more likely to be informally employed than those who are Georgian. This is surprising seeing that during the Soviet period Russians typically held senior (formal) positions. Russians were more likely to be informal wage employed in all sectors of economic activity, but primarily in trade, hotel and restaurant services, and in transport and communication. They also worked as domestic employees and as informal agricultural wage employed. These findings suggest some degree of discrimination against Russians in formal wage employment, which is in contrast to the widely held view that Russians are not discriminated against in Georgia. Contrary to expectations, belonging to an ethnic minority other than Russian, did not increase the probability of working as an informal wage employee. As we will see, this is not because ethnic minorities are more likely to be engaging in formal wage employment, but rather because they are more likely to be informal non-agricultural self-employed or farmers.

The results show that higher education reduces the risk of informal wage employment. We see that the wage employed with incomplete secondary and general secondary education were 22% and 15% more likely to be working informally than were those with higher education, *ceteris paribus*. Therefore higher education still gave access to formal, protected and stable employment. However, as we will explore in chapter 6, this is not a guarantee of higher income. Indeed, formal (largely public) wage employment is characterised by extremely low wages and persistent wage arrears, which means that, for instance, formal wage employment is associated with greater poverty than informal self-employment. Nevertheless, formal wage employment is stable and offers access to a variety of benefits that are not available to the informal wage employed. Moreover, there is a large body of evidence that suggests that individuals continue to work, even if they are not paid, also for reasons of social status as well as in hope that the situation will improve (see Zinovieva 1998).

Informal wage employment was also significantly determined by the sector of economic activity. In particular, everything else being equal, wage employees in agriculture, manufacturing, trade, hotel and restaurant services and domestic employees were significantly more likely to be working without a written agreement than were those in the reference category (transport and communication). The strongest impact was that of domestic employees, which were 67% more

⁹² Residing in Kvemo Kartli did not have a significant impact on the probability of being informally employed in rural

likely to be informally employed. Being wage employed in agriculture, trade and construction increased the probability of informal employment by roughly 20%-25%. All of these sectors are dominated by small, private enterprises, which are most likely to use informal employment agreements. On the other hand, wage employees working in largely public sectors such as municipal infrastructure services, public administration, education and health and social work were, everything else being equal, significantly less likely to be informally employed.

Certain regions were also associated with a lower probability of informal wage employment. Residing in Tblisi, Shida Kartli, Kvemo Kartli, Samtskhe Javakheti and Imereti all reduced the probability of informal wage employment relative to Kakheti, everything else being equal. As previously discussed, Samtskhe Javakheti is one of the poorest and least developed regions in Georgia with few private enterprises that would provide opportunities for informal wage employment; less than 2% of the country's manufacturing employment is located in this region. Moreover, as we will see, agriculture in Samtskhe-Javakheti is more of the small-plot self-employment variety.

Shida Kartli, Imereti, Kvemo Kartli and, of course, Tblisi, have some large urban centres where much of the country's non-agricultural private sector enterprises are located. It is therefore surprising to find that the wage employed in these regions had a lower probability of being informally employed. This suggests that our reference category (Kakheti) had a particularly high incidence of informal wage employment. Examining Kakheti's informal employment in detail, we find that one fifth is in the agricultural sector. Kakheti, located in Eastern Georgia, is a rich agricultural region, which since the Soviet period concentrated on the production of wine. These findings suggest that there may be considerable informal wage employment in the viticulture industry. One quarter of Kakheti's informal wage employment was in wholesale and retail trade, mostly in Kakheti's numerous markets and street stalls, particularly in Telavi, the region's capital. Another quarter of informal wage employment was in manufacturing, particularly in bread manufacturing, and more than 10% was in construction. These results suggest that no particular sector of economic activity can explain the prevalence of informal wage employment in Kakheti and that it must be a result of other factors specific to this region.

Finally, it is not surprising that, everything else being equal, being wage-employed in the private sector increases the probability of informal employment by 29% relative to the wage-employed in the public sector.

5.4.3 Informal non-agricultural self-employed

The fourth column of table 5.9 reports estimated coefficients for the probit model of informal non-agricultural self-employed. The coefficients give the impact of the different variables on the relative probability of being informal non-agricultural self-employed vs. formal non-agricultural self-employed. Recall that informal non-agricultural self-employed includes own-account workers working from home, in a street stall, market place, construction site, non-fixed location or in a customer's home, and employers working in an unregistered enterprise. They do not include individuals engaging in agriculture. Formal non-agricultural self-employment consists of all self-employed working in registered enterprises.

We see that gender is a significant determinant of informal non-agricultural self-employment. Self-employed females are 6% more likely to be working informally than their male counterparts. This means women are more likely to be working in small-scale income generating activities, whereas men are more likely to own registered shops and professional activities. This is a further indication that Georgian society is returning to a more traditional division of gender roles in the labour market, since the break-up of the Soviet Union. Entrepreneurship is regarded as a 'male' sector and women who engage in self-employment are more likely to engage in what is seen as 'temporary' income-generating activities to 'make ends meet' rather than as 'entrepreneurship'. Indeed Georgia's markets and streets are filled with women selling fruits and vegetables as well as home baked bread and other goods. Qualitative research by Dourglishvili (1995) suggests that Soviet ideology only affected gender equality in the public sphere, whereas the traditional division of roles between men and women within the household remained untouched.⁹³ Therefore what we could be observing in our results is the extension of this traditional gender balance to the public sphere (see Dourglishvili 1997, p.10).

Everything else being equal, ethnic identity was also very significant in determining whether or not the non-agricultural self-employed worked informally. In fact, table 5.9 shows that Azeri, Abkhazian and Greek individuals were dropped from the sample because they predicted success perfectly. That is to say that all non-agricultural self-employed Azeris, Abkhazians and Greeks in the sample worked informally. Given that the large majority of Azeris and Greeks worked in agriculture, this finding indicates that almost all those who did not work in agriculture engaged in small scale informal activities.⁹⁴

⁹³ Traditionally, Georgian families are patriarchal. In feudal families, inheritance was distributed amongst sons and marriage, raising children, and running the house were the women's key responsibilities. All major decision-making within the household was the responsibility of men. Dourgliashvili (1997, p.2) argues that this traditional, feudal and patriarchal family structure has been practically left in tact.

⁹⁴ As regards the Abkhazians, given that the LFS and SGH do not cover the region of Abkhazia, where the majority of Abkhazians live, I assume that the Abkhazians covered in the survey are mainly IDPs and that this sample is therefore

We also see that, all else being equal, self-employed Russians were significantly more likely to be informally employed than Georgians were. This reflects anecdotal evidence, that Russians, and especially pensioners, have suffered a particularly harsh fall in living standards as a result of the contraction of formal employment and social security provision, and consequently engage in small-scale informal income generating activities to survive. The results also suggest that non-Georgians may not have access to the same social network and contacts that are required to successfully tackle the bureaucratic obstacles to formal enterprise establishment.

Table 5.9 shows that education also had a significant impact on the probability of informal non-agricultural self-employment, *ceteris paribus*. More specifically, general secondary education and higher technical education increased the probability of informality amongst the self-employed by 7% and 10% respectively relative to general higher education. As we have seen, this is partly because individuals with higher education were still more likely to be in professional wage employment, particularly in public organisations. However, it may also be a reflection of the fact that individuals with higher education are more likely to have the social network required to establish and operate formal enterprises.

It is surprising that, everything else being equal, sector of economic activity is not a significant determinant of informal non-agricultural self-employment. Only domestic employment is a strong determinant of informal non-agricultural self-employment (indeed it has been dropped from the sample as it predicts success perfectly). The only other variables that have a significant (negative) impact on the probability of informal non-agricultural self-employment are those sectors that are typically associated with wage employment (i.e. manufacturing, public administration, health and social work and other services). I would have expected to find that employment in trade, which is almost exclusively informal, should have a significant positive impact on the probability of informality amongst the self-employed. This suggests that, everything else being equal, the sector of economic activity in itself does not significantly affect informality, and that other factors such as ethnic identity, age and gender are more important determinants.

Finally, region also plays an important role in determining informality amongst the self-employed. Everything else being equal, living in Tbilisi increases the probability of being an informal non-agricultural self-employed by 14% relative Kakheta (the reference category). This is probably a consequence of migration from poorer rural areas where employment opportunities are scarce to the capital where informal self.-employment opportunities in the streets and markets are

not representative. One must therefore exert extreme caution in drawing conclusions. Nevertheless, it is not surprising

more abundant. Shida Kartli and Samegrelo also have a higher probability of informal non-agricultural self-employment. In both these cases, it could be a result of the large numbers of IDPs, as these regions border South Ossetia and Abkhazia respectively.

5.4.4 Informal farmers

The results of the probit model for informal farmers are presented in column 5 of table 5.9. Recall that informal farmers are defined as individuals self-employed on an unregistered rural plot of land or in urban agriculture. The coefficients estimated by the model provide information as to the impact of the different characteristics on the relative probability of an individual working on an unregistered or urban plot of land rather than on a registered rural plot.

The results indicate that gender and age are again particularly significant in determining informal employment amongst farmers. Everything else being equal, female farmers were 32% more likely to be informally employed compared to their male counterparts. Females were not only more likely to be farming an urban plot of land but they were also more likely to be working on unregistered rural plots. The fact that they were more than a third more likely to be farming informally could be an indication that, as with the self-employed, females are more likely to be engaging in farming as a coping strategy rather than as a form of freely chosen employment.

Young farmers were also more likely to be informally employed. These were individuals aged 15 to 25, who classify themselves as 'employers or own-account workers' on agricultural plots, so they were not 'helping out' on family plots. The results show that they were 28% more likely to be farming unregistered plots than the reference category (individuals aged 46 to 55 years). Farmers aged 26-45 were also significantly more likely to be working informally than the reference category. This could be an indication that many youth, particularly the highly educated, engage in agriculture as a last resort, when unemployment is the only alternative, and not as a chosen profession. On the other hand, old-age farmers (above 56 years) are significantly less likely to be working informally. This is counter intuitive as one would expect that given the extremely low pensions, individuals above retirement age should be working on 'household plots' to make ends meet. These results suggest that pensioners continue to work past retirement age, as a result of low and unpaid pensions. However, they do not engage in informal farming, but rather have access to formal, registered land.⁹⁵ They also explain why the descriptive analysis found that

that Abkhazian IDPs are more likely to be generating income in small scale informal activities than Georgians are.

⁹⁵ Note that the same result is obtained if the regression is run on the sample of rural farmers. Therefore it is not the case that pensioners are less likely to be working as informal farmers because they live in rural areas and are therefore less involved in urban farming, which accounts for 53% of informal farming.

although an exceptionally high share of individuals above retirement age was employed, a relatively small share was working informally.

Another interesting finding is that ethnic minorities were again significantly more likely to be farming informally than are ethnic Georgians. In particular, we see that Abkhazians and Greeks were 14% more likely to be farming informally and Azeris and Armenians were 5% more likely. Given that the large majority of these groups, and of Azeris and Greeks in particular, engage in agriculture, this raises some questions regarding the land registration procedure. It suggests that there could be some degree of ethnic discrimination in the registration of agricultural land. Agricultural reform started in 1992 and by 1997 67% of arable and perennial plot land had been handed out to residents. However, some have pointed out that the privatisation process, which began during the civil war, was not carried out with sufficient planning and was characterised by gross violations and land grabbing (see Didebulidze 1997, p. 39-40).

Informal farming was also strongly associated with certain regions. Samegrelo and Imereti were associated with a high probability of informal farming. As we have seen, these two regions in Western Georgia have particularly suffered from the complete disintegration of the lucrative tea and fruit plantations and the influx of internally displaced people from the war in Abkhazia. Farming in Imereti and Samegrelo increased the probability of being informal by 21% and 18% respectively relative to the reference category (Kakheti). Other regions associated with a high probability of informal farming were Shida Kartli, Kvemo Kartli, Samtskhe Javakheti, Achara and Guria. All these regions, with the exception of Achara, are traditionally poor and largely agricultural regions. Moreover, the majority of the populations of Kvemo Kartli and Samtskhe Javakheti are ethnic minorities (Azeris and Greeks in Kvemo Kartli and Armenians in Samtskhe Javakheti).

Finally we note that relative to higher education, primary education or less decreased the probability of informal farming. This is an indication that individuals with primary education were more likely to engage in farming as a profession and therefore to work on formal, registered land, whereas those with higher education engaged in agriculture to 'make end meet' and were therefore more likely to be farming an urban or small scale unregistered plot. We also note that living in a rural area significantly reduces the probability of informal farming, since by definition, as all urban farming is informal.

5.4.5 Contributing family workers

A separate probit model is estimated for contributing family workers on the sample of all employed. Results are reported in column 6 of table 5.9. Once again, gender and age were

significant determinants for contributing family workers. In particular, females were 26% more likely to be working as contributing family workers than males were. As previously argued, this is a reflection of a traditional division of gender roles within the household.

Youth and old-age workers, all else being equal, were also more likely to be working as contributing family workers. This was particularly the case for youth, who were 51% more likely to be working as contributing family workers than were middle-aged individuals, *ceteris paribus*. Once again it must be highlighted that these are not students working on the family farm 'on the side'. These individuals reported working as their main occupation. Individuals aged 26 to 45 were also 14% more likely to be contributing family workers than were middle-aged individuals. In contrast, individuals over 56 years of age were only 3% more likely. These findings are partly a reflection of the structure of the Georgian household, where the (usually male) head of household is considered to be the 'main bread winner' or self-employed farmer, and other individuals (females and youth) are 'unpaid help'.

As with informal farmers, there was a strong ethnic dimension to contributing family workers. Greeks, Abkhazians, Armenians and Azeris were all significantly more likely to be contributing family workers than Georgians were. Everything else being equal, being ethnically Greek increased the probability of working as a contributing family worker by almost 40% relative to Georgians. Azeris were 23% more likely to be contributing family workers, while being Abkhazian and Armenian increased the probability by 15% and 9% respectively. As we have seen, these ethnic minorities are concentrated in rural areas of certain regions. Greeks and Azeris live mainly in Kvemo Kartli and are mostly involved in agriculture, while the Abkhazians in our survey are largely IDPs living in Samegrelo and Guria and the Armenians are mainly located in Samtskhe Javakheti, although there is considerable Armenian community in Tblisi.

Education also plays a significant role in determining whether individuals will work as contributing family workers. Individuals with higher education, everything else being equal, were significantly less likely to be working as contributing family workers than any other group was. Indeed those with incomplete secondary or general secondary education were more than 20% more likely to be working as contributing family workers than were individuals with higher education. This is a further confirmation that there are returns to education, even if these are not necessarily monetary. Higher education was still regarded as very valuable in Georgian society, as was formal, skilled employment. Thus, although formal employment (largely wage employment in the public sector) was associated with even lower incomes than self-employment, these results demonstrate that individuals with higher education were still more likely to engage in formal employment rather than turn to farming or any type of informal employment.

Finally, there was a strong regional dimension to contributing family work. Living in western Georgia increased the probability of working as a contributing family worker the most. In particular those living in the poorer agricultural regions of Imereti, Samegrelo and Guria were significantly more likely to be working as contributing family workers than the reference category (Kakheti). On the other hand, Tblisi, Kvemo Karli and Achara were associated with a lower probability of contributing family workers. The fact that Tblisi and Achara have large urban centres can explain why they don't have a high probability of contributing family work as it is mainly associated with agriculture, however Kvemo kartli is surprising as it is a largely agricultural region, with a high concentration of Azeris and Greeks who typically live in larger than average households and work mainly in agriculture. These results suggest that, everything else being equal, it is not living in Kvemo Kartli that determines whether an individual works as a contributing family worker, but whether he or she belongs to an ethnic minority.

Finally, we see that living in a rural area, everything else being equal, increases the probability of being a contributing family worker by 27%, which confirms that contributing family workers work largely in agriculture rather than on non-agricultural household enterprises.

5.4.6 Informal secondary job holders

Finally the results of the probit model for informal secondary jobholders are reported in the last column of table 5.9. Recall that anyone with a formal primary job and informal secondary job is considered to be informal. A probit regression for the probability of having an informal second job and formal primary job is carried out on the sample of all wage employed, as almost all those with secondary jobs are wage employed in their primary job. A control for the wage in the primary job is included, although results must be interpreted with caution as there is evidence that data on wages is not entirely reliable (see appendix A2.1.3). The aim is to identify individual characteristics that increase the probability of having an informal second job.⁹⁶

The results indicate that the strongest impact is given by ethnic and regional identity as well as settlement type. However, when interpreting these results, one must always bear in mind that individuals may be reluctant to reveal secondary sources of income, mainly for fear of taxation, and that certain groups may be more likely to admit to having a secondary source of income than others. In particular, it may be the case that certain regions are more open about secondary sources of income than others and that this may not necessarily reflect a higher probability of secondary employment.

⁹⁶ Note that the large majority of second jobs are informal.

As shown in table 5.9, Guria and Samtskhe-Javakheti were associated with a high probability of secondary employment, whereas Tblisi, Shida Kartli, Achara, Samegrelo and Imereti were associated with a lower probability. Living in Guria and Samtskhe Javakheti increased the probability of having a second job by 30% and 13% respectively. As we have seen, these are particularly poor regions with a high proportion of rural population. Low earnings in the primary sector and agricultural opportunities could be incentives for individuals to take on second jobs. The second group, with the exception of Samegrelo, are amongst Georgia's richer and to some extent more urban regions, which would indicate that individuals have perhaps less access to land to engage in as a secondary activity.

The ethnic dimension can be explained by similar reasoning. We see that Greeks and Ossetians were significantly more likely to have a secondary job than Georgians were, *ceteris paribus*. Being Greek increased the probability by 27% compared to being Georgian, and Ossetians were 20% more likely to have a second job. The vast majority of Georgia's Greek population lives in the region of Kvemo Kartli and has traditionally lived of agriculture, and are therefore more likely to have access to farming as a secondary activity. As regards Ossetians, previous findings showed that they were more likely to be formally employed in urban centres, a reflection of their traditionally high level of education, so these results could suggest that they were more likely to engage in urban farming to supplement low formal incomes.

An unexpected finding is that the wage in the primary sector was significantly and positively correlated with the probability of having a second job. However the magnitude of the impact was very small; a one-unit increase in the log of the primary job wage increased the probability of secondary employment by almost 2%. One could have expected secondary job holding to be associated with lower wages in the primary sector, however caution must be exercised when in drawing conclusions as this does not include information on wage arrears, and as noted in appendix A2.1, the quality of income data is not entirely reliable. It could be the case, for instance, that secondary employment was significantly correlated with wage arrears in the primary sector, so that the positive impact of the wage in the primary job does not necessarily imply that individuals with higher real wages are more likely to have second jobs. Interestingly, secondary employment was not associated with any particular primary sector of employment. The results indicate that only health and social work achieve any kind of statistical significance and still only at the 10% level. Moreover, the impact is not very strong.

On the other hand, the type of settlement had a stronger impact. Living in a rural area increased the probability of having a secondary job by almost 20%. This finding is very meaningful, as it

would indicate that access to land is perhaps the most important determinant of secondary employment.

Contrary to other types of informal employment, secondary job holding was associated with middle-age. Youth were significantly less likely to have an informal second job, which is not surprising as youth were less likely to have a formal primary job. Finally, education did not appear to be particularly significant in determining informal secondary employment. Individuals with primary education or less were significantly less likely to have a secondary job than were those with higher education. This finding probably reflects the fact that individual's with primary education were less likely to be in formal wage employment in the first place.

Table 5.9 Determinants of Informal Employment, probit results 1999

	All informals Urban	All informals Rural	Informal employees	Informal non- agricultural self- employed	Informal farmers	Contributing family worker	Informal secondary job holders
Demographic Characteristics							
Female	0.0079 -0.0204	0.3474 (0.0102)***	-0.0124 -0.0091	0.0568 (0.0229)**	0.3236 (0.0096)***	0.2655 (0.0071)***	-0.0094 -0.0101
Age 15-25	0.1126 (0.0422)***	0.4416 (0.0114)***	0.0869 (0.0250)***	0.0145 -0.0447	0.2812 (0.0079)***	0.5108 (0.0149)***	-0.086 (0.0087)***
Age 26-45	0.0893 (0.0239)***	0.202 (0.0154)***	0.0259 (0.0103)**	0.0085 -0.0277	0.1897 (0.0112)***	0.1366 (0.0110)***	-0.0444 (0.0106)***
Age 46-55	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Age 56+	0.0038 -0.0287	-0.0854 (0.0164)***	-0.0219 (0.0118)*	0.0365 -0.032	-0.0511 (0.0136)***	0.0245 (0.0114)**	-0.0044 -0.0124
Ethnic Background							
Georgian	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Azeri	0.0931 -0.0833	0.0787 (0.0319)**	-0.0046 -0.0354	<i>psp</i>	0.0449 (0.0232)*	0.2281 (0.0281)***	0.0424 -0.0446
Abkhazian	0.1895 -0.1291	0.2264 (0.0937)**	0.0129 -0.0741	<i>psp</i>	0.1421 (0.0471)***	0.1507 (0.0748)**	-0.0644 -0.0602
Greek	0.2766 (0.1150)**	0.2158 (0.0410)***	0.1557 -0.1032	<i>psp</i>	0.1424 (0.0206)***	0.3938 (0.0333)***	0.2749 (0.0849)***
Ossetian	-0.1906 (0.0670)***	0.068 -0.0489	0.011 -0.0558	-0.3755 (0.1381)***	0.0518 -0.0347	0.0533 -0.0373	0.1986 (0.0997)**
Russian	0.1347 (0.0563)**	-0.0708 -0.0572	0.0601 (0.0337)*	0.1325 (0.0274)***	-0.0058 -0.0481	-0.1027 (0.0249)***	-0.0276 -0.0272
Armenian	0.0554 -0.0408	0.0614 (0.0289)**	0.0042 -0.0207	0.0077 -0.047	0.0576 (0.0199)***	0.0956 (0.0213)***	0.0263 -0.0268
Other	0.1787 (0.0656)***	-0.088 -0.1085	0.1054 (0.0505)**	0.0006 -0.0989	-0.1427 -0.1186	-0.1227 (0.0449)***	-0.0166 -0.0409
Educational Attainment							
Primary or Less	0.0813 -0.0841	-0.0727 (0.0242)***	0.0618 -0.0455	0.0998 (0.0580)*	-0.0866 (0.0223)***	0.1056 (0.0193)***	-0.0657 (0.0175)***
Incomplete Secondary	0.2595 (0.0647)***	0.034 -0.0215	0.2285 (0.0464)***	0.0326 -0.0606	-0.0227 -0.0185	0.2136 (0.0174)***	-0.0141 -0.025
General Secondary	0.2024 (0.0234)***	0.0702 (0.0166)***	0.1504 (0.0151)***	0.0746 (0.0248)***	0.0011 -0.0144	0.2019 (0.0103)***	-0.0145 -0.0115
Technical Secondary	0.0314 -0.0344	0.0602 (0.0254)**	0.0474 (0.0189)**	0.0161 -0.0339	0.0169 -0.0221	0.1237 (0.0180)***	-0.005 -0.016
High Technical	0.0808 (0.0303)***	0.017 -0.0206	0.0021 -0.0129	0.1062 (0.0226)***	-0.0072 -0.0189	0.0758 (0.0136)***	-0.0117 -0.0119
Higher General	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Sector of Economic Activity							
Agriculture, Fishing (A, B)	0.5433 (0.0324)***	-0.0559 -0.049	0.2598 (0.0370)***	<i>psp</i>			0.0182 -0.0267
Manufacturing (D)	0.0205 -0.037	0.0192 -0.0537	0.088 (0.0228)***	-0.2242 (0.0627)***			0.0097 -0.0218

Electricity, Gas, Water Supply (E)	-0.2348 (0.0538)***	-0.0192 -0.0907	-0.0465 (0.0195)**	-0.4823 (0.2813)*			-0.0244 -0.0241
Construction (F)	0.2443 (0.0515)***	0.2734 (0.0515)***	0.2173 (0.0424)***	-0.0552 -0.0842			-0.0011 -0.0297
Wholesale and retail trade (G)	0.1543 (0.0363)***	0.1401 (0.0476)***	0.1819 (0.0304)***	0.0506 -0.0393			-0.0259 -0.021
Hotels, restaurants (H)	0.1042 -0.0673	-0.1584 -0.097	0.0707 (0.0408)*	-0.038 -0.0807			0.0009 -0.0428
<i>Transport, communication (I)</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Financial intermediation, real estate (J, K)	-0.1157 (0.0432)***	-0.1236 (0.0712)*	-0.0086 -0.0208	-0.1932 (0.1038)*			0.0299 -0.0277
Public administration and defence (L)	-0.2002 (0.0398)***	-0.3774 (0.0470)***	-0.0734 (0.0123)***	-0.6309 (0.2602)**			0.0015 -0.0201
Education (M)	-0.219 (0.0379)***	-0.4833 (0.0280)***	-0.0867 (0.0124)***	-0.0651 -0.123			0.033 -0.0229
Health, social work (N)	-0.1687 (0.0435)***	-0.5254 (0.0212)***	-0.0674 (0.0139)***	-0.6309 (0.1535)***			0.0461 (0.0265)*
Other community and personal services (O)	-0.1135 (0.0447)**	-0.2923 (0.0627)***	-0.027 -0.0185	-0.4664 (0.1082)***			0.002 -0.0256
Private Households with employees (P)	0.5222 (0.0616)***	0.4357 (0.0355)***	0.6662 (0.1232)***	psp			-0.0211 -0.0623
Other (C, Q)	-0.1183 -0.1094	0.204 (0.0960)**	0.0119 -0.0464	psp			0.053 -0.0524
Region							
Tblisi	-0.0306 -0.0441		-0.0906 (0.0123)***	0.1452 (0.0255)***		-0.2613 (0.0097)***	-0.089 (0.0130)***
<i>Kakheti</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Shida Kartli	-0.0826 (0.0478)*	0.0672 (0.0199)***	-0.0482 (0.0133)***	0.0724 (0.0307)**	0.0639 (0.0146)***	-0.0055 -0.0138	-0.0825 (0.0091)***
Kvemo Kartli	-0.0971 (0.0474)**	0.0114 -0.0245	-0.0833 (0.0098)***	0.0505 -0.0394	0.037 (0.0187)**	-0.0818 (0.0140)***	0.0225 -0.0197
Samtskhe Javakheti	-0.1386 (0.0582)**	0.0755 (0.0217)***	-0.0546 (0.0145)***	-0.0179 -0.0558	0.0827 (0.0149)***	0.0084 -0.0155	0.1338 (0.0297)***
Achara	0.2314 (0.0499)***	0.0355 -0.0224	0.007 -0.0176	0.0344 -0.0363	0.068 (0.0163)***	-0.0616 (0.0130)***	-0.1166 (0.0074)***
Guria	0.1902 (0.0633)***	0.0414 (0.0212)*	-0.0248 -0.0178	-0.0128 -0.0576	0.0775 (0.0144)***	0.0675 (0.0163)***	0.3056 (0.0416)***
Samegrelo	0.1687 (0.0530)***	0.2611 (0.0166)***	0.0286 -0.0214	0.1375 (0.0207)***	0.1856 (0.0095)***	0.082 (0.0153)***	-0.0333 (0.0148)**
Imereti	-0.0358 -0.0476	0.2562 (0.0167)***	-0.0528 (0.0132)***	-0.0106 -0.0417	0.2147 (0.0088)***	0.1492 (0.0152)***	-0.059 (0.0113)***
Self-employed	0.3663 (0.0258)***	-0.0456 -0.0325					
Private	0.4616 (0.0205)***	0.5447 (0.0189)***	0.2924 (0.0175)***				-0.0319 (0.0122)***
log hourly wage primary job							0.0161

Rural			-0.0012	0.0253	-0.3096	0.2734	0.1945	(0.0053)***
			-0.0096	-0.025	(0.0058)***	(0.0074)***	(0.0140)***	
Observations	6378	11952	6707	1202	10150	18330	5343	
L2 Chi2 (K-1)	5315.02 (39)***	5149.47 (38)***	2777.46(39) ***	206.11(32)* **	3896.47(24) ***	6251.70(25) ***	1298.10 (40)***	
Sample	All urban employed	all rural employed	all employees	all non- agricultural self- employed	All farmers	all employed	all wage employed	

Source: Author's own analysis of LFS 1999 and SGH 1999.

Notes:

- (a) Standard errors are in brackets.
- (b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- (c) The dependent variable for the probability models are whether an individual is: (1) informally employed in an urban area; (2) informally employed in a rural area; (3) informal wage employed; (4) informal non-agricultural self-employed; (5) informal farmer; (6) contributing family worker; (7) secondary job holder;
- (d) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discrete change from 0 to 1 for dummies.
- (e) The unit of observation is the individual
- (f) *f* denotes variables omitted in the estimation (base categories).
- (g) *psp* indicates that the given variable has been dropped from the regression equation because it predicts success perfectly.
- (h) Blank cells refer to variables that have been omitted from the regression because they are not relevant.
- (i) Sample refers to the sample used for the regression.
- (j) L² Chi2 (K-1) refers to the likelihood ratio used to test the goodness of fit of the model and is compared to a Chi2 distribution on *k*-1 degrees of freedom, where *k* is the number of independent variables in our model (see appendix x).
- (k) Letters in brackets for the sector of economic activity refers to the International Standard Industrial Classification of All Economic Activities (ISIC) (ILO 1989).
- (l) Category G also includes repair of motor vehicles. Category K also includes renting and business activities. Category C refers to mining and quarrying and category Q refers to extra territorial organisations and bodies.
- (m) Analysis carried out using unweighted data.
- (n) Definitions of all variables can be found in appendix A2.2

5.5 SUMMARY OF MAIN FINDINGS

The descriptive analysis revealed that the informal sector represents a fundamental part of Georgia's labour market. First, it showed that the majority of Georgia's employment is informal; 52% of the employed work informally, and if we exclude agricultural workers, 34% are informally employed. Overall, almost 70% of Georgia's employed work either informally or are self-employed on small agricultural plots. The findings of this chapter suggest that the growth in these two sectors can largely explain why open unemployment did not increase when output collapsed.

Informal employment in Georgia consists largely of own-account workers and contributing family workers in unregistered agricultural plots, petty trade, home-based bread manufacturing, informal taxi services and some unregistered, 'under-the-table', low-skilled, wage employment in tea processing, construction, domestic services, and hotel and restaurant services.

Second, the descriptive analysis revealed a dual (rural/urban) dimension to employment in Georgia. On the one hand there is a formal, state, and largely urban sector, which employs the majority of wage-employees, while on the other there is an informal, private, and largely rural sector, comprised mostly of the self-employed.

Third, it found that very little private sector employment is formal. Results show that 70% of private sector employment is informal, and consists almost exclusively of own-account and contributing family workers. More than three quarters of the little formal private sector employment that exists, consists of own-account workers in small-plot agriculture. Thus Georgian employment seems to be reduced to wage-employees in health, education, and public administration; own-account workers in registered small-plot agriculture; and informal employment. These findings seriously question the success of the transition process and of labour market models that predicted that privatisation and restructuring would result in the creation of a private sector capable of generating employment and growth.

Fourth, results suggested a possible deskilling of the labour force. One third of Georgia's population with higher education worked either in small-plot agriculture or in low-skilled informal employment. This suggests that the lack of formal employment opportunities oblige people to turn to subsistence agriculture and informal employment to survive. After more than 10 years, many have lost their skills and if they haven't, their skills may have become obsolete. This poses a serious threat to the country's future economic growth, as there will be insufficient workers with adequate skills. Moreover, as small-plot agriculture and informal employment are associated with low, volatile incomes, it increases vulnerability and poverty.

The multivariate analysis revealed that informal employment is not evenly distributed amongst the population. In fact, it found that it is concentrated amongst certain groups. Table 5.11 provides a summary of the most important determinants of informal employment, by type of informal employment. We see that gender, age, level of educational attainment, region and ethnic identity are the most significant determinants of informal employment.

First of all, everything else being equal, gender is not a significant determinant of informal wage employment or of secondary employment, the two types of informal employment that can be said to be associated with wage employment. However, amongst farmers and the self-employed, gender is highly significant in determining informality. Business is still a male-dominated environment, and formal enterprises are still more likely to be owned by men. However, poverty and the necessity to generate livelihoods, means that women engage in small-scale informal activities (both in agriculture and outside of it), which are regarded more as a way of 'making

ends meet' than a 'real job'. Similarly, women are more likely to be regarded as 'helping out' on family farms or enterprises rather than as entrepreneurs or farmers in their own right.

Moreover, as shown in chapter 4, women are less likely to hold positions of responsibility and more likely to work in semi-skilled jobs. Chapter 4 also found that they were more likely to stay out of the labour market altogether as a result of the breakdown of the previously widely available child-care facilities. These findings confirm other research, which suggests that transition has been accompanied by a return to more traditional gender division of roles in the Georgian labour market.⁹⁷ I say return, because one of the characteristics of Soviet society was the considerable participation of women in public life and in positions of responsibility. However, qualitative research has shown that Soviet ideology had left the traditional, patriarchal and male-dominated family structure untouched (see Dourglishvili 1997).

Second, the multivariate analysis found that youth also face a high risk of informal employment. Table 5.11 shows that relative to middle-aged workers, they are more likely to be working as informal employees, informal farmers and contributing family workers, *ceteris paribus*. As we have seen, these are not young people who are studying and working on the side. They are employed full-time. Moreover, chapter 4 revealed that youth also face a significant risk of unemployment, particularly in urban areas. These results are worrying as they suggest that there are serious barriers to labour market entry. It would seem that in urban areas, Georgian youth stay at home and engage in higher education, partly because of the lack of employment opportunities. Unable to find formal employment after the completion of their studies, anecdotal evidence suggests that youth stay at home well into their thirties, often married with children, and continue to be unemployed, in the hope of finding some kind of professional, formal wage employment. Alternatively, they take on informal wage jobs in construction, trade and domestic employment and some turn to farming of urban household plots. In rural areas, in the absence of formal alternatives, they are likely to stay with their parents and work on family farms.

These results raise serious concerns regarding the country's future human capital stock and economic development. By working in low-skilled informal jobs and agriculture, Georgian youth are losing their skills and potential to fill the professional positions required to foster economic growth and run, amongst other things, the country's administration, health and education systems. Moreover, informal and agricultural employment produces low, unreliable incomes and is

⁹⁷ Note that Georgia is not unique in this respect. The gender equality achieved by the socialist system has been wearing off in many countries of the CIS and CEE, revealing gender discrimination in the home, workplace and in political structures (see UNICEF 1999, p.22).

therefore associated with poverty and vulnerability. Georgia's human capital is one of its principal assets and unless this trend is reversed, there is a risk it will be entirely eroded.

Third, the multivariate analysis found that there are still considerable returns to higher education in terms of formal employment. The results suggest that this is both because of the higher qualifications and the social network that higher education confers; two important prerequisites for obtaining formal jobs. This reflects the results of a recent opinion poll carried out in Georgia, which found that the general public perceives that getting a good job has everything to do with one's network of friends and contacts (UNDP 2002, p.10). Individuals with less than higher education were significantly more likely to work as informal employees, informal non-agricultural self-employed, and contributing family workers, everything else being equal. Higher education was significantly associated with formal wage employment. This is a reflection of the fact that there is little semi-skilled and low-skilled formal wage employment in Georgia, as a result of the complete collapse of the manufacturing sector, so that formal wage employment is almost entirely limited to the state sector in public administration, defence, health and education. In contrast, services, trade and construction are largely based on precarious informal wage agreements.

Higher education was also significantly associated with formal non-agricultural self-employment. This suggests that formal entrepreneurship is limited to a small group of highly educated, and usually highly connected, individuals. Finally, the only sector for which primary education increases the probability of formality is farming. This supports our hypothesis that informal farming is a 'survival' activity as individuals with higher education are more likely to be informal farmers, whereas those with primary education are more likely to choose farming as a profession and therefore work on registered established plots.

Fourth, the multivariate analysis has revealed a very strong ethnic dimension to informal employment in Georgia. All things being equal, non-Georgians are significantly more likely to be informally employed than Georgians are. Georgia is historically a multi-ethnic society. Azeris, Armenians, Jews, Greeks, Abkhazians, Ossetians, Slavic peoples (including Russians, Ukrainians and Byelorussians), Kurds, Avarians, Kists, and others, have been living in Georgia for centuries. Nevertheless ethnic Georgians still represent over 70% of the total population. The findings suggest a clear segmentation of the labour market along ethnic lines. In particular, formal employment (not only wage employment, but farming and self-employment as well) seems to be limited to ethnic Georgians. Indeed ethnic identity was revealed to be the most frequently significant variable in determining informality. In particular, Greeks, Azeris, Armenians and Abkhazians are, everything else being equal, significantly more likely to be informal non-

agricultural self-employed, informal farmers and contributing family workers. These findings reflect those found in other studies that highlight the lack of integration between Georgians and other ethnic groups (see for example Dourglisvili 1997)

Azeris and Greeks, who are highly concentrated in Southern Georgia in the region of Kvemo Kartli, were found to be largely employed in informal agriculture and petty trade. Indeed, as pointed out by Gachechiladze (1995, p.92) 'a typical sight in the Kolkhoz bazaars of Eastern Georgia is Azeri women selling vegetables'. Azeris live in large mono-ethnic communities in the districts of Marneuli (Kvemo Kartli), Sagarejo and Dedoplistskaro (Kakheti) in South-central Georgia along the border with Azerbaijan. They have historically engaged in agriculture, and are not particularly integrated with the Georgian population in that few speak Georgian or Russian (see Gachechiladze 1995, p.92). Greeks, who are mainly concentrated in the district of Tsalka in Kvemo Kartli, to where they emigrated from Anatolia in the 19th century and where they constitute the absolute majority of the population, are also principally employed in agriculture.

Armenians, who have been present in Georgia for centuries and have played and continue to play a very important role in Georgian urban life (see chapter 1), are also highly concentrated, particularly in the rural areas of Samtskhe-Javakheti region along the Armenian border, where they represent the large majority of the population. This is a mountainous region, with very harsh climate and poor land, providing few opportunities for agriculture. Moreover, this region is also deprived of any kind of manufacturing sector. With few formal opportunities, it is not surprising that Armenians are significantly more likely to engage in informal farming or contributing family work. However, it is significant that they are more likely to be engaging in informal work, even when we control of region.

The fact that non-Georgians are more likely to be farming unregistered land or urban plots is an indication that there may be ethnic barriers to the land registration process. This is worrying as land registration is also a precondition for the right to sell land, lease it or use it as a security against a bank loan (EBRD 1999). Moreover, the findings also suggest that there could be ethnic barriers to formal self-employment as individuals from ethnic minorities may not have access to the same social network that is required in order to successfully tackle the bureaucratic obstacles to establishing formal enterprises. This could be the case for ethnic Russians, for instance, who were found to be more likely to be working as informal non-agricultural self-employed and informal wage employed. This finding is quite surprising as Russians live mainly in urban centres and generally have a high level of education (approximately one quarter of employed Russians have higher education and 80% have secondary education or more). Moreover, during the Soviet period they would definitely have occupied formal, professional positions. One question that

springs to mind when analysing these results is to what extent the nationalism, which characterised the first years of independence under General Ghamzakurdia (see chapter 1), is still present?

Finally, the multivariate analysis has found that informality is significantly associated with region. Everything else being equal, simply living in a certain region increases the probability of informal employment considerably. The most significant impact is on the probability of farming informally. Living in all regions significantly increases the probability of informal farming relative to living in our reference region Kakheti, all else being equal. In some regions, such as Imereti and Samegrelo, the probability increases by almost one fifth. This suggests that the land-registration process may have progressed faster in some regions than others. Certain regions also cumulate a higher probability of different types of informal employment. In particular, western Georgia, (Imereti, Samegrelo or Guria) was associated with significant increases the probability of informal farming, contributing family work and secondary job holding. Samegrelo was also associated with a higher probability of informal non-agricultural self-employment.

Imereti, Samegrelo and Guria, located in Western Georgia on the Black Sea coast, are regions with a similar history, economy, ethnic composition, climate and culture. Historically poor, marshy and malaria infested regions, they were revived during the Soviet period (late 1920s) when their sub-tropical climate was exploited to develop extensive tea and citrus fruit plantations to supply the Soviet market (see chapter 1). As part of the Soviet strategy to achieve 'tea independence of the USSR', 95% of tea and 100% of citrus fruits were produced in this region (Gachechiladze 1995, p.10). This brought the region exceptional levels of welfare, no less because it provided ample opportunities for '*left-hand*' work. According to the 1989 population census these regions had amongst the highest standards of living in the country (Gachechiladze 1995, p.121-122). However the collapse of the Soviet Union and consequent disintegration of the agricultural sector, compounded with the impact of the war in neighbouring Abkhazia and influx of more than 100 thousand IDPs have led to one of the sharpest falls in economic activity and living standards in all of Georgia.⁹⁸ UNDP (2002) found that Guria and Imereti had the lowest HDI ranking of any region in Georgia. Samegrelo's economy was particularly hard hit as it was the epicentre of the civil war, as reflected by its particular effect on the probability of informal employment. These findings suggest that land privatisation in these regions has created small, subsistence plots, as individuals are more likely to be farming informal plots than in any other region.

⁹⁸ One interesting statistic in this respect is given by Gachechiladze (1995, p.13); whereas at the end of the 1980s, a kilo of tangerines bought three litres of petrol, after the liberalisation of prices, a litre of petrol bought three kilos of tangerines.

Samtskhe-Javakheti was also associated with an increased probability of informal farming and secondary job holding. As discussed above, this very poor region has limited agricultural opportunities (other than potato and fruit production). A socio-economic survey of Javakheti found that up to 70% of households interviewed said they did not eat fruit or meat even once a week and most considered the lack of food to be their greatest concern (Tbilisi State University 1999). These findings confirm anecdotal evidence that the largely Armenian population engages in subsistence agriculture both as a main and secondary job. Finally, we also saw that the reference category, Kakheti, was significantly associated with a higher probability of informal wage employment and secondary job holding, relative to most other regions.

Table 5.10 Summary of Most Important Determinants of Informal Employment, 1999

Individual Characteristics	Type of Informal Employment				
	Employees	Self-Employed	Farmers	Contributing Family Workers	Secondary Job Holders
Females		x	x	x	
Youth (15-25 years)	x		x	x	
Old-age workers (56 years+)				x	
Less than primary education				x	
Less than higher education	x	x		x	
Rural				x	x
Azeri		x	x	x	
Greek		x	x	x	x
Armenian			x	x	
Abkhazian		x	x	x	
Russian	x	x			
Tbilisi		x			
Samtskhe Javakheti			x		x
Achara			x		
Guria			x	x	x
Samegrelo		x	x	x	x
Imereti			x	x	x

Source: Based on results displayed in table 5.9.

Notes: x means statistically significant at 1% level.

5.6 CONCLUSIONS

Informal employment is strongly associated with certain vulnerable groups in Georgian society. Females, youth, ethnic minorities and people living in certain depressed regions were all found to be more likely to be informally employed, *ceteris paribus*. This is worrying as these groups face a multitude of other vulnerabilities as well. Chapter 4 found that females, youth and individuals living in depressed regions also faced a higher risk of unemployment, long-term unemployment

and underemployment. These findings highlight the importance of targeted labour market and social assistance programmes.

The results concerning youth are particularly worrying, since they represent Georgia's future. Like other former Soviet states, Georgia has a highly educated population, and although participation in higher education is decreasing and the quality of education is declining, as extremely low wages are forcing the best teachers and professors to leave academia, by international standards Georgia still has a highly educated workforce. Indeed, it could be argued that given the complete collapse of its economy, Georgia's human capital base could be one of its greatest assets. In this context, the findings of this analysis are extremely worrying as they suggest that this human capital base is being seriously eroded as youth face only two alternatives in the labour market: unemployment or low-skilled, precarious and unprotected informal employment.

Moreover, the lack of formal skilled employment opportunities mean that overall, more than one third of the employed with higher education was working in agriculture and small-scale informal activities. After more than ten years, many people have either lost their skills or their skills have become obsolete in the new market economy. If this trend continues, there is a risk that the transition will have led to the establishment of an economy structured along the lines of a developing country rather than those of a developed, market economy, with all the implications in terms of poverty and social development.

At the same time this chapter has revealed what could be termed a 'capture' of the formal sector by individuals with higher education. Formal wage employment is almost entirely limited to jobs in public administration, education and health, for which higher education is required. Similarly, given the bureaucratic obstacles and corruption associated with the private sector, formal non-agricultural self-employment is limited to a small group of highly educated and highly connected individuals who have the network required to establish and operate businesses in Georgia. Within this context, it is important that support be given to the development of industry and services for the creation of formal, and particularly semi-skilled jobs, and that the process of private enterprise establishment be simplified and made more transparent.

The findings related to gender are also worrying as they suggest a reversal of the gender equality achieved, at least in the public sphere, by the Soviet system. As discussed by Mars and Altman (1983), Georgian society has traditionally been male-dominated. As a consequence of the Soviet emphasis on gender equality, Georgian women participated widely in public life and had positions of responsibility, although there is evidence their position within the household remained widely unchanged (Dourglisvili 1997). The findings of this chapter suggest that this trend has been

reversing as the more traditional division of roles that exists within the household are being extended to the public sphere. Working-age women were found to be more likely to be out of the labour market and when in the labour market, they were, everything else being equal, more likely to be unemployed or informally employed. Again, this suggests an erosion of the country's human capital base.

Finally the results of this chapter with respect to regions and ethnic minorities are significant not only from a social welfare point of view, but also from that of security. As discussed in chapter 1, Georgia has already been scarred by two regional conflicts in Abkhazia and South Ossetia and it is widely known that there are also some groups within Achara and Samtskhe-Javakheti that would like to see these regions secede. Within this context, it seems crucial that regional and inter-ethnic inequalities be minimized. Moreover, during the Soviet period, regional labour market and welfare inequalities were offset by transfers from the Tblisi. Resentment toward Tblisi and nationalist sentiment is likely to be heightened as people see inequalities increasing and feel abandoned by the capital. Indeed, it would seem that given the widespread increase in poverty and the major infrastructure problems, not least the rationing of water, heat and electricity, that are building frustration and dissatisfaction amongst the population in general, an important strategy for maintaining social cohesion in Georgia, should be to minimize ethnic and regional inequalities.

It would be impossible to understand the Georgian labour market without understanding the informal sector. More than half of all employment is unregistered, in small-scale and largely 'subsistence' activities. There are indications that the informal sector is providing a social safety net as this chapter has found that in the absence of an adequate social security system, it is absorbing unemployment and replacing pensions. However, the concentration of informal employment amongst certain groups suggests that the informal sector is not a transitional phenomenon, which temporarily absorbs the unemployed and provides a source of income while new formal jobs are being created. On the contrary, these findings indicate that the informal sector may become more entrenched as certain vulnerable groups are excluded from the formal labour market altogether. Thus young people, women, individuals belonging to ethnic minorities and those living in regions with few formal employment opportunities, will only have one alternative to unemployment; informal employment.

DOES INFORMAL EMPLOYMENT PROVIDE A SOCIAL SAFETY NET?

The main purpose of this chapter is to gain some insight into why informal employment is so widespread in Georgia and into the underlying question of this thesis, namely whether informal labour market activity is providing a social safety net in the absence of formal employment opportunities and adequate social protection. In other words, this chapter produces evidence that is consistent with the view that individuals work informally principally because (a) there are no formal employment opportunities and (b) social benefits are inadequate and individuals cannot afford to be unemployed or inactive.

To this end, I assume that if individuals were not working informally they would either be working formally or they would be unemployed or inactive. I then build on utility theory and on the theory of rational choice, and assume that (a) individuals aim to maximize utility and (b) they make rational choices. The relationship between labour market status and welfare can then be examined and it can be argued that if every category of informal employment is associated with lower welfare than the corresponding category of formal employment, *ceteris paribus*, then one can conclude that individuals work informally because there is no formal alternative. Moreover, if informal employment is found to be associated with greater welfare than unemployment and inactivity, *ceteris paribus*, and the social benefit system is found to be poorly targeted and unable to meet basic needs, then it can be concluded that individuals also chose to work informally because they cannot afford to be unemployed or inactive and because they are better off being informally employed. If both of these hypotheses are confirmed, then it can be concluded that informal employment is undertaken because of constraint rather than choice.

This chapter also seeks to examine more generally the relationship between household welfare, labour market status and social protection, with a focus on informal employment, by addressing the following questions: Does the welfare of the household depend on the labour market status of the household head? Who are the poor in the labour market? Is informal employment associated with higher poverty risks than formal employment, *ceteris paribus*? Is formal social protection effective at targeting the poor and the most vulnerable groups in the labour market and, if not, are informal networks compensating for the inefficiencies of the formal social protection system?

This chapter is organised as follows: Section 6.1 briefly outlines the methodology used, including the choice of welfare indicator, equivalence scale index and poverty line. It also discusses poverty statistics and multivariate analysis techniques used.⁹⁹ Section 6.2, examines poverty risks and consumption quintiles by the labour market status of the household head (comprising type of formal and informal employment, unemployment and inactivity). It also examines both poverty

⁹⁹ See appendix A2.3 for details of methodology.

risks and consumption quintiles by the labour market status of individuals. In section 6.3, multivariate analysis is used to analyse the impact of the labour market status of the household head on household welfare, *ceteris paribus*, by means of both OLS (mean) and quantile regression techniques. Probit regression analysis is applied in section 6.4 to examine the impact of the labour market status of the household head on poverty status, *ceteris paribus*. Sections 6.5 and 6.6 analyse the relationships of formal and informal social protection respectively with poverty incidence and labour market status in order to assess how well targeted these are and to inform on the extent to which they impact on poverty risks. Section 6.7 summarises findings and draws some conclusions.

Some additional analysis is performed in order to test the robustness of findings, the results of which are reported in appendix A6.2. This includes: (a) an analysis of consumption quintiles and the determinants of poverty using the number of household members in each employment category (rather than the status of the household head); (b) an analysis of poverty risks, consumption quintiles and all multivariate analyses using the World Bank (WB) and Georgian State Department of Statistics (SDS) poverty lines, equivalence scales and economies of scale indexes, in order to test the sensitivity of results to the choice of equivalence scales and economies of scale indexes; and (c) a sensitivity analysis for the choice of economies of scale index (θ), reported in appendix A2.3.4.

6.1 DEFINING, MEASURING AND ANALYSING HOUSEHOLD WELFARE AND POVERTY

This section presents a brief overview of the methodology, however a detailed discussion of the choice of welfare indicator, poverty line, economies of scale index, equivalence scale index as well as the definitions of all variables used can be found in appendix A2.3.

The measure of household welfare used here is consumption per adult equivalent. Consumption per adult equivalent is equal to total household consumption divided by the number of individuals in the household, adjusted for economies of scale and for the composition of the household. In other words:

$$CPA = \frac{C}{(A + \alpha K)^\theta}$$

where CPA is consumption per adult equivalent, C is total household consumption, A is the number of adults, K is the number of children, α is a parameter representing the cost of a child relative to an adult and θ is a parameter representing the extent of economies of scale. Details of how consumption is measured are presented in appendix A2.3.1.

The economies of scale index used here is $\theta = 0.75$, which reflects moderate economies of scale. No adjustment is made for differences in needs between adults and children (i.e. $\alpha = 1$). In appendix A2.3.2 the choice of economies of scale index (θ) and equivalence scale index (α) is discussed in detail. It shows that adjusting for differences in consumption needs between adults and children, as well as between males and females, makes no difference to the results. Section A2.3.4 also shows that the results are not very sensitive to the choice of θ and that considerable assumptions regarding the degree of economies of scale must be made before the ranking of the labour market categories is affected, suggesting that setting θ equal to 0.75 is appropriate.

A relative poverty line equal to 2/3 of median consumption per equivalent adult and an 'extreme' poverty line equal to 1/2 of median consumption per equivalent adult are used here. There is considerable discussion in Georgia regarding the setting of a realistic absolute poverty line. The official poverty line, used by the Georgian State Department of Statistics (SDS) amounts to approximately GEL100 (US\$50) per equivalent adult per month, while the World Bank (WB) poverty line is set at just over half that amount (GEL 55 or US\$25 per equivalent adult per month). This discussion is summarised in appendix A2.3.3. The relative poverty line used in this thesis is equivalent to approximately GEL48 (US\$24) per equivalent adult in 1999, which is just slightly lower than the World Bank poverty line.

Appendix A6.2 presents results of the same analysis based on both the WB and SDS methodology, which adjust for differences in gender and age, make stronger assumptions regarding the degree of economies of scale within the household and use two different absolute poverty lines. The results are discussed in the main text and are largely consistent with the findings based on the methodology adopted in this thesis.

Summary of main assumptions:

- *Indicator of well-being*: consumption per equivalent adult;
- *Economies of scale index*: $\theta = 0.75$;
- *Equivalence scale index*: $\alpha = 1$;
- *Poverty line (relative)*: 2/3 of median consumption per adult equivalent;
- *"Extreme" poverty line (relative)*: 1/2 of median consumption per adult equivalent.

The analysis is based on a number of poverty statistics. The first of these is the head count index, which gives the fraction (or percentage) of individuals with equivalent consumption below the poverty line. The others are the poverty gap (or poverty deficit) and the severity of poverty (see Foster, et al. 1984). The poverty gap takes into account how far, on average, the poor are below the poverty line. It captures the mean aggregate consumption shortfalls of the poor relative to the poverty line across the whole population.¹⁰⁰ Poverty severity is the square of the poverty gap. It takes into account not only the distance separating the poor from the poverty line but also the inequality among the poor by giving more weight to those that are furthest from the poverty line. This chapter also examines consumption quintiles (the consumption distribution is divided into five percentiles) and uses a number of multivariate analysis techniques to analyse the determinants of household welfare and poverty.

As information about consumption is given at the household level, the above poverty measures and consumption quintiles are derived on a household basis. The labour market status of the head of household is then used to examine in some detail poverty profiles by labour market status. The labour market categories are those developed in chapters 4 and 5, however in this chapter a distinction is made between the non-agricultural self-employed and farmers (as per the multivariate analysis of chapter 5). Moreover informal secondary job holders are not included as the focus here is the relationship between the main labour market status of the household head and poverty. Thus the labour market categories used here are the following: (1) formal employees; (2) formal non-agricultural self-employed; (3) formal farmers (4) informal employees; (5) informal non-agricultural self-employed; (6) informal farmers; (7) contributing family workers; (8) unemployed and (9) inactive.

Focusing the analysis on the labour market status of the household head represents a departure from the previous chapter, which focused on all individuals and not exclusively on the head of household. I recognize that this change in emphasis may partially distort the picture in the sense that a head of household's labour market status position may be different from the status of other members of the household. However, given that consumption data is collected at the household level and that there is no information on intra-household distribution of resources, a precise measure of individual welfare cannot be obtained. The best alternative is to examine the labour market status of the household head or the number of household members in each labour market category.

I analyse poverty risks, consumption quintiles and determinants of household welfare from both perspectives and find little difference in results. This is because household size is relatively small in Georgia (mean size is 3 individuals). Results based on household head are reported in the main text, while those based on number of individuals in each labour market category are reported in appendix A6.2. Finally, despite the fact that results based on individual measures of welfare are less accurate, I also examine poverty risks and consumption quintiles by the labour market status of individuals and find that they are entirely consistent with the results based on the household head. Again, this is because average household size is small in Georgia.

Three different techniques are exploited in the multivariate analysis. First, a conventional mean regression (or OLS) procedure is used. However, this only provides average point estimates for the variables of interest and these may provide poor estimates for those households at the bottom end of the consumption distribution. Second, in order to address the potential for non-robustness in the OLS estimation procedure in this regard, the analysis is complemented using a quantile regression approach (see appendix A2.4 for details on quantile regression). A set of quantile regression models are estimated at the 10th, 25th, 50th, 75th and 90th percentiles to allow insights in the effects of key variables at different points of the conditional distribution. Third, a conventional probit model is used to examine the effect of selected labour market variables on the probability of being below the relative poverty line.

The consumption (dependent) variable is expressed in logarithmic form and the poverty incidence variable is coded one if consumption is below the relative poverty line and zero otherwise. A standard set of controls is included in the regression models. These include controls for the age of the head of household, household size, the age-structure of household members, ethnic identity of household head, and a set of regional controls. Definitions of all variables used in the multivariate analysis can be found in appendix A2.2. The main focus is on the role that labour market status exerts on consumption and on the incidence of poverty, and I also briefly examine the role played by gender and some human capital variables. All the explanatory variables that provide the focus of this chapter's interest are binary (or dummy) variables.

Finally, two binary social protection variables are constructed: one for receipt of formal social protection and another for receipt of informal social protection. These are coded 1 if the household receives formal or informal social protection respectively, and zero otherwise. The magnitude of social protection received is not included, as the data on size was found to be unreliable (see appendix A2.1.3 for a discussion of the quality of the data). Formal social

¹⁰⁰ The poverty gap is obtained by adding up all the shortfalls of the poor (considering the non-poor as having a

protection refers to a series of benefits, namely pensions for the elderly, pensions for the disabled, allowance for non-working pensioners living in households without a legal breadwinner, stipends for students in full-time higher education or secondary education, allowance for temporary disablement, income from social insurance funds, allowance for childbirth, allowance for single parents, child allowance, unemployment benefits, pensions for war veterans, social aid for single pensioners and disabled persons. Informal social protection is comprised of: alimony, money received from non-family members from abroad, inheritance or other money received from relatives, money borrowed from a private source for household needs, and monetary gifts received from family members temporarily abroad. Poverty risks and consumption quintiles are examined by labour market status of the household head and receipt of formal/informal social protection.

The data used for this analysis is the merged data set of SGH and LFS for 1999.¹⁰¹ As discussed in appendix A2.1, the LFS is based on the same sample as the SGH, but includes double the number of households. As the SGH is designed to be nationally representative, dropping half the households by merging the data does not affect the weights. As mentioned in chapter 5, the only possible effect would be on the reliability of results at the regional level, which is not relevant in this case.

6.2 INFORMAL ACTIVITY AND POVERTY RISKS

The analysis begins with an examination of poverty risks by labour market activity of the household head. Table 6.1 shows that the poverty risks are by far the highest for households headed by the unemployed and the inactive where the incidence of extreme poverty is also relatively high. Compared to an overall relative poverty rate of 27%, households headed by unemployed and inactive individuals face poverty rates of 41% and 38% respectively. Moreover over one fifth of these households live in extreme poverty with consumption per equivalent adult of less than 50% of the median.¹⁰² Their poverty is also twice as severe as any other group's indicating that their consumption is twice as far from the poverty line than that of any other group.

shortfall of zero) and dividing the total by the population.

¹⁰¹ This is the same data set used for the multivariate analysis of chapter 5.

¹⁰² This corresponds to a risk of extreme poverty for unemployed headed households which is roughly 1.53 times the overall risk. As a point of reference, Klugman, Micklewright and Redmond (2002, p.6) show that in the EU, unemployed headed households have poverty risks that are 2.38 times that of the average household, while in the CIS overall, the ratio is 1.32 (where poverty in the EU is defined as 50% of mean expenditure and 50% of median expenditure in the CIS and $\theta=0.75$).

Although having an employed head of household decreases the risk of poverty, employment is not a guarantee against poverty. Poverty risks vary considerably with type of employment. Table 6.1 reveals two main findings concerning the poverty risks of households headed by employed individuals. First, all types of informal activity are associated with higher poverty risks than the corresponding set of formal activities, although the differences are not always statistically significant. Whereas 24% of households headed by formal employees are 'poor', 28% of those headed by informal employees live below the poverty line. However, the 95% confidence interval for formal employees is 0.22 to 0.27, while that for informal employees is 0.22 to 0.33, so the difference is not statistically significant. Nevertheless, as we will see, when we control for other household and individual characteristics, we find that informal wage employment significantly increases the probability of being poor relative to formal wage employment. Similarly, poverty rates for formal non-agricultural self-employed are 14% vs. 18% for informal non-agricultural self-employed and those for formal farmers are 16% v.s.18% for informal farmers, however none of these differences are statistically significant.

Second, regardless of whether formal or informal, employees face by far the highest risks of poverty amongst the employed. On the one hand, high poverty risks associated with informal wage employment can be explained by the fact that it is characterised by a lack written contracts in low-skilled, precarious employment. On the other hand, the high poverty rates amongst formal employees are a consequence of the persistence of low wages and wage arrears in the public sector.¹⁰³ Another interesting finding is that households headed by informal farmers (owning an unregistered or urban plot of land) are not only considerably poorer than those headed by formal farmers (owning a registered plot of land), but also their poverty is more severe than that of any other employed group.

¹⁰³ Note that research has shown similar findings for other transition countries, and most notably those of Central Asia. In her comparative study of welfare in Central Asia, Falkingham finds that although employment reduces poverty risks with respect to unemployment, it is by no means a guarantee against poverty as many wage employees are poor due to substantial wage arrears and forced unpaid leave (see Falkingham 1999b, p.22).

Table 6.1 Labour Market Categories and Poverty Incidence, 1999

Employment Categories of the Household Head	Poverty (%)			Extreme Poverty (%)		
	Head Count	Poverty Gap	Poverty Severity	Head Count	Poverty Gap	Poverty Severity
Total	27.4	9.1	4.5	15.3	4.9	2.5
Formal						
Employees	24.3	7.4	3.6	13.1	4.0	1.9
Non-agricultural self-employed	14.2	5.2	2.5	9.2	3.0	1.2
Farmers	15.6	5.2	3.0	8.7	3.1	2.1
Informal						
Employees	27.8	7.5	3.1	12.5	3.2	1.3
Non-agricultural self-employed	17.7	5.1	2.4	7.9	2.5	1.4
Farmers	18.1	7.3	4.7	10.8	5.0	3.6
Contributing family workers	13.4	3.3	1.3	5.5	1.2	0.5
Unemployed	41.3	13.6	6.4	23.0	6.8	3.4
Inactive	38.5	13.6	6.8	22.9	7.6	3.9

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Poverty line is set at 2/3 of median consumption per equivalent adult ($\theta = 0.75$).
- (b) Extreme poverty line is set at 1/2 of median consumption per equivalent adult.
- (c) Head Count is the share of household heads whose consumption falls below the poverty line.
- (d) The poverty gap provides information on the distance from the poverty line. It captures the mean aggregate consumption shortfall relative to the poverty line across the poor population.
- (e) Poverty Severity captures the inequality among the poor by effectively giving more weight to households that are further away from the poverty line.
- (f) Unemployed refers to ILO relaxed criterion definition (see appendix A2.2 for details).

Table 6.2 shows the labour market composition of consumption quintiles. The results largely reflect the analysis of poverty risks. We see that households headed by unemployed or inactive individuals are more heavily represented in the lowest consumption quintiles whereas those headed by employed individuals, whether formal or informal, are more heavily represented in the higher consumption quintiles. Together, the unemployed and inactive head roughly 60% of households in the poorest consumption quintile compared to only 20% of those in the richest quintile. In contrast, only 39% of households in the poorest consumption quintile are headed by employed individuals compared to 77% of households in the richest quintile. Similar results are obtained if consumption quintiles are examined by the number of individuals in each labour market category rather than by the labour market status of the household head. As shown in table A.6.1 in appendix A6.2, the average number of inactive individuals per household decreases as consumption quintiles increase, whereas the average number of employed (both formal and informal) increases. The evidence regarding the number of unemployed is inconclusive.

Although Table 6.1 revealed that poverty rates were highest for the unemployed, Table 6.2 shows that the households headed by the inactive make up the largest share in the poorest consumption quintile. Whereas overall they account for only 34% of households, inactive individuals head over 50% of households in the poorest consumption quintile. Approximately 45% of these are one or two member pensioner households, while the rest are larger households including extended family

members. These findings reflect the deep inadequacy of pension and unemployment benefits, which as we have seen amount to approximately 11% of the minimum subsistence level (see appendix A4.3 for a description of Georgia's pension system).

As regards the employed, table 6.2 shows that agricultural employment is associated with higher consumption levels. Whilst formal farmers and contributing family workers represent only 7% and 4% respectively of household heads in the poorest quintile, they account for 22% and 17% of those in the richest quintile.¹⁰⁴ Moreover, we table A6.1 in appendix A6.2 finds that the average number of household members employed in agriculture increases with consumption quintiles, whereas this is not the case for any other sector of economic activity. This finding further in the multivariate analysis below, however it could be partly explained by the way in which consumption is calculated, particularly since agricultural employment is limited to small plot subsistence agriculture (average plot size is 0.75 ha).¹⁰⁵

Table 6.2 Labour Market Categories and Consumption, 1999

Labour Market Status of the Household Head	Consumption Quintiles					
	Total	Poorest	2	3	4	5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Formal	34.9	24.2	31.5	37.1	38.2	43.7
Employees	19.5	16.3	18.9	20.8	21.4	20.3
Non-agricultural self-employed	0.8	0.5	0.3	1.0	0.6	1.5
Farmers	14.6	7.4	12.3	15.4	16.2	21.8
Informal	24.5	14.5	19.3	24.3	31.1	33.4
Employees	5.4	4.8	5.9	5.5	5.4	5.4
Non-agricultural self-employed	5.2	2.9	5.2	6.2	6.0	5.5
Farmers	4.5	3.0	2.4	4.5	7.6	5.1
Contributing family workers	9.4	3.8	5.7	8.1	12.2	17.3
Unemployed	6.5	10.3	8.1	7.4	3.4	3.3
Inactive	34.0	51.0	41.2	31.2	27.3	19.6
Sample size (N)	4949	984	987	992	997	986

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Total refers to the proportion of households in the population whose heads are in each of the labour market categories.
- (b) The other entries refer to the proportions of these labour market categories in the different quintiles of the consumption distribution.
- (c) Analysis carried out using weighted data. N= number of unweighted observations.
- (d) The consumption measure is per capita adult equivalent household consumption.
- (e) The mean consumption levels per adult equivalent in Georgian Lari for formal employment, informal employment, unemployment, and inactivity are 98, 90, 78 and 70 respectively.
- (f) Unemployed refers to ILO relaxed criterion definition.

¹⁰⁴ Contributing family workers who are heads of household tend to be old-age pensioners living in agricultural households.

¹⁰⁵ There are a couple of reasons to expect that the way in which consumption has been aggregated could result in apparently higher consumption levels for agricultural households. When computing the consumption variable, the State Department of Statistics uses market prices (mean quarterly prices derived from the SGHH) to impute the value of consumption of own-production rather than farm-gate prices, which are generally lower. Moreover, regional/national prices are used instead of local (urban/rural) prices.

Poverty rates and consumption quintiles are now examined from the perspective of individuals rather than that of the household head. As previously noted, consumption per equivalent adult is calculated at the household level, so it is now assumed that each household member consumes an equal share of equivalised household consumption. Results are presented in tables 6.3 and 6.4. Given the small size of households in Georgia, these results largely confirm our findings based on the household head. Table 6.3 presents poverty headcount, gap and severity by labour market characteristics of individuals and provides a more detailed analysis of labour market status. Once again we see that the unemployed face the highest poverty risk and their poverty is by far the deepest. The inactive also have a high poverty rate and poverty severity. We see that amongst the unemployed, it is those who have been unemployed for over 6 months that face the highest poverty risks. It should be noted however, that although individuals who have been unemployed for 6-12 months appear to face the highest poverty risk, the sample size is not very large as the majority (75%) of the unemployed are long-term unemployed (over 12 months). Nevertheless, the differences in poverty rates between different groups of unemployed are statistically significant. The confidence interval for those unemployed 0-6 months is 0.25 to 0.35, while that for those unemployed for 6-12 months is 0.41 to 0.54 and that for those unemployed more than 12 months is 0.38 to 0.42.

Interestingly, the registered unemployed face the lowest poverty risk. However, given the extremely low level of unemployment benefits, which amount to less than 11% of the minimum subsistence level, the payment arrears and the bureaucratic hurdles to accessing the benefits, it is questionable whether this is a sign of a successful unemployment benefit program or whether it is a reflection of the types of individuals who register. It should also be recalled that the registered unemployed make up less than 5% of the labour force. The sample size may therefore be too small to draw any reliable conclusions at the population level. Table 6.3 also provides poverty rates by type of inactivity and we see that amongst the inactive, it is pensioners, the disabled and draftees who face the highest poverty risks.

The analysis from the perspective of individuals also confirms previous findings that employment reduces poverty risks. Employed individuals face half the poverty risk of the unemployed as well as less than half the poverty severity. Table 6.3 also shows that the wage employed face higher poverty risks than the self-employed. There seem to be some returns to private sector wage employment, as employees in the private sector face poverty risks that are 4% lower than those in the public sector. However, contrary to the analysis based on the household head, we see that formal self-employment is not associated with a lower poverty risk than formal paid-employment.

In terms of formal vs. informal employment, table 6.3 confirms that for every type of employment, individuals who are informally employed face higher poverty risks than those who are formally employed. It also confirms that agricultural employment, whether formal or informal considerably reduces the poverty risk of individuals. However, there are significant discrepancies between wage and self-employed in agriculture, with the wage-employed facing poverty risks that are 50% higher than the self-employed.

Table 6.3 Labour Market Characteristics of Individuals and Poverty Incidence, 1999.

	Poverty, in %			Extreme Poverty, in %		
	Head Count	Poverty Gap	Poverty Severity	Head Count	Poverty Gap	Poverty Severity
<i>Population 15+</i>	25.8	7.9	3.5	14.1	3.9	1.7
Labour market status						
Inactive	33.1	10.5	4.8	18.8	5.3	2.4
Unemployed	39.1	12.5	5.6	21.7	6.2	2.6
Employed	19.7	5.7	2.5	10.3	2.7	1.2
Unemployment duration						
0-6 months	29.8	10.1	5.1	17.9	5.6	2.9
6-12 months	47.5	15.9	7.3	26.5	8.4	3.5
12 months+	39.8	12.9	5.8	22.9	6.5	2.7
Type of unemployed						
Searching for job	39.1	12.5	5.6	21.6	6.2	2.6
Discouraged	39.2	12.4	5.5	22.1	6.2	2.6
Registered	28.5	8.4	3.3	15	3.9	1.2
Type of inactivity						
Student	24.6	7.6	3.5	13.7	3.8	1.7
Pensioner	39.2	12.6	5.8	22.2	6.5	2.9
Merit pensioner	26.3	6	1.7	8	1.3	0.3
Disabled	37.1	11.5	5.1	20.5	5.4	2.3
Caring for children	30.7	9.5	4.2	17.2	4.6	2
Draftee	45.7	18.5	10.1	31.2	11.9	5.9
Type of employment						
Wage employed	23.4	6.7	2.8	12.2	3	1.2
Self-employed	17	5	2.3	8.9	2.5	1.2
Formal	20	5.8	2.6	10.4	2.7	1.2
Informal	19.4	5.5	2.5	10	2.6	1.2
Private	18	5.3	2.4	9.4	2.6	1.2
Public	23.5	6.7	2.8	12.2	3	1.2
Type of formal employment						
Wage-employed public	22.8	6.6	2.8	11.9	3	1.2

Wage-employed private	18.6	5.1	2.1	8	2.3	1
Non-agricultural self-employed	23.4	6.1	2.6	11.6	2.6	1.2
Farmers	15.5	4.9	2.4	8.6	2.6	1.4
Type of informal employment						
Wage employed	30.2	8.3	3.4	16.1	3.7	1.4
Non-agricultural self-employed	26.1	7	2.8	12.6	2.8	1.1
Farmers	18.9	5.8	2.9	9.9	3.2	1.8
Contributing family workers	15.4	4.5	2.1	8	2.3	1.1
Sector of employment						
Agriculture, fishing (A, B)	16.2	4.8	2.2	8.6	2.4	1.2
Manufacturing (D)	28.7	8.1	3.2	14	3.5	1.3
Electricity, gas, water supply (E)	23.1	7.3	3.7	14.5	3.6	2.1
Construction (F)	22.7	6.1	2.3	10.3	2.4	0.9
Wholesale and retail trade (G)	24.6	6.8	2.8	12.4	3	1.2
Hotels and restaurants (H)	24	8.6	4.1	14.9	5	2.1
Transport and communication (I)	26.8	7	2.5	14.3	2.5	0.7
Financial intermediation, real estate, other business activities (J, K)	21.3	6.2	2.7	11.7	2.7	1.3
Public administration and defence (L)	22.1	6.5	2.8	12.2	3.1	1.3
Education (M)	19.9	5.7	2.5	9.3	2.7	1.3
Health, social work (N)	22.7	6.6	2.8	11.5	2.9	1.2
Other community, personal service activities (O)	18.5	5.7	2.4	10	2.8	1.1
Private households with employees (P)	47.1	13.2	4.9	27.6	5.3	1.4
Other (C, Q)	16.8	4.5	2	7.3	2.1	1.1
Employed in agriculture						
Self-employed	15.7	4.7	2.3	8.4	2.4	1.3
Wage-employed	23.7	5.9	2	12.4	1.9	0.5

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- Poverty line is set at 2/3 of median consumption per equivalent adult ($\theta = 0.75$).
- Extreme poverty line is set at 1/2 of median consumption per equivalent adult.
- Head Count* is the share of individuals whose consumption falls below the poverty line.
- The poverty gap* provides information on the distance from the poverty line. It captures the mean aggregate consumption shortfall relative to the poverty line across the poor population.
- Poverty Severity* captures the inequality among the poor by effectively giving more weight to households that are further away from the poverty line.
- Unemployed refers to ILO relaxed criterion definition.
- Letters in brackets refer to sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).
- Category G also includes repair of motor vehicles. Category K also includes renting. Category C refers to mining and quarrying and category Q refers to extra territorial organisations and bodies.

Table 6.4 examines consumption quintiles by labour market characteristics of individuals. The results confirm the findings from the analysis based on the labour market status of the household head. In particular, we see that the poorest quintiles have the highest share of unemployed and inactive individuals. Moreover, the share of long-term unemployed decreases as consumption quintiles increase. We also confirm that being a pensioner is associated with lower well-being, as the share of pensioners in the lowest consumption quintile is close to double that in the richest quintile.

As far as the employed are concerned, table 6.4 confirms that wage employment is associated with lower levels of welfare. Whereas the majority of the employed in the poorest quintile are wage employed, the majority in the richest quintile are self-employed. We also note that the informal non-agricultural self-employed are also more significant in the poorest segments of society. Interestingly, we see that the share of formal and informal employment is relatively stable throughout the consumption distribution. Finally, table 6.4 examines consumption quintiles by sector of employment and shows that the share of agriculture in total employment increases with consumption quintiles. It also shows that although the large majority of agricultural employment is self-employment, the agricultural wage employed make up a higher share of the poorest quintiles of the consumption distribution.

Table 6.4 Labour Market Characteristics of Individuals and Consumption, 1999

(percent)

	Consumption Quintiles				
	Poorest	2	3	4	5
Labor market status	100	100	100	100	100
Inactive	44.1	37	36	27.5	25
Unemployed	13.1	10	8.4	5.2	4.1
Employed	42.8	53	56	67.3	71
Unemployment duration	100	100	100	100	100
0-6 months	10.1	13	16	15.3	19
6-12 months	11.2	10	9.8	5.3	6.3
12 months+	78.7	77	74	79.4	74
Type of unemployed	100	100	100	100	100
Searching for job	95.9	95	94	91.2	96
Discouraged	0.7	1.1	0.6	1.2	0.8
Registered	3.4	3.7	5.7	7.7	3.6
Type of inactivity	100	100	100	100	100
Student	18.8	23	28	32	37
Pensioner	43.6	39	35	31.5	24
Merit pensioner	1.4	2.4	1.3	0.8	2.5
Disabled	10.7	9.7	8.5	8.2	7.6
Caring for children	23.6	25	26	26.3	28
Draftee	2	1.4	0.9	1.3	0.8
Type of employment	100	100	100	100	100
Wage employed	50.5	46	45	37.8	37
Self-employed	49.5	54	56	62.2	63
Formal	53.6	52	51	51.3	52
Informal	46.4	48	49	48.7	48
Private	59.7	65	67	70	70
Public	40.3	35	34	30	30
Type of formal employment	100	100	100	100	100
Wage-employed public	66.8	59	59	54.7	54
Wage-employed private	6.3	11	11	7.7	5

Non-agricultural self-employed		1.8	2.5	2.9	2.8
Farmer	23.9	29	27	34.7	38
Type of informal employment	100	100	100	100	100
Wage employed	23.9	21	17	10.7	12
Non-agricultural self-employed	18.1	14	13	9.8	10
Farmer	3	5.9	7.8	9.5	7.9
Contributing family worker	50.7	59	62	70.1	71
Sector of employment	100	100	100	100	100
Agriculture, fishing (A, B)	41.5	48	48	57.3	59
Manufacturing (D)	9.5	7.4	7.2	5.4	4.8
Electricity, gas, water supply (E)	1.6	0.7	2.4	1	0.8
Construction (F)	1.8	2	2	0.9	1.6
Wholesale and retail trade (G)	11.7	12	10	8.2	6.9
Hotels, restaurants (H)	1.4	0.9	1.5	0.7	0.7
Transport, communication (I)	5.7	4.1	4.5	2.9	3.6
Financial intermediation, real estate, other business activities (J, K)	3.3	3.1	3	2.6	3
Public administration and defense (L)	6.8	5.6	6	4.9	6.7
Education (M)	7.7	7.8	7.3	8	7.2
Health, social work (N)	5.4	4.7	4.4	4.7	4.3
Other community, personal service activities (O)	2.3	2.9	2.6	2.7	1.4
Private households with employees (P)	1	0.3	0.4	0.2	0.2
Other (C, Q)	0.4	0.7	0.4	0.4	0.4
Employed in agriculture	100	100	100	100	100
Self-employed	94.8	96	98	96	97
Wage-employed	5.3	3.6	2	4	2.9

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) The entries refer to the proportions of labour market categories in the different quintiles of the consumption distribution.
- (b) The consumption measure is per capita adult equivalent household consumption.
- (c) The average consumption levels per adult equivalent in Georgian Lari for formal employment, informal employment, unemployment, and inactivity are 98, 90, 78 and 70 respectively.
- (d) Unemployed refers to ILO relaxed criterion definition.
- (e) Letters in brackets refer to sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).
- (f) Category G also includes repair of motor vehicles. Category K also includes renting. Category C refers to mining and quarrying and category Q refers to extra territorial organisations and bodies.

The findings of the analysis of poverty risks and consumption quintiles by labour market status can be summarised as follows. First, given the low level of benefits as well as the unreliability in their payment, inactivity and unemployment are associated with the highest poverty risks of any labour market category. Moreover, these groups make up a significant share of the poorest households and their share decreases as consumption increases. Second, employment, whether formal or informal, considerably decreases poverty risks and the share of households headed by employed individuals increases with consumption. Third, informal employment is associated with higher poverty risks than formal employment for every category of employment. However, formal employment is not a guarantee against poverty. The low level of public sector wages and arrears in their payment means that formal wage employment is associated with higher poverty risks and greater concentration at the bottom end of the consumption distribution than informal self-employment. Nevertheless, informal wage employees are by far the poorest of any employed

group. Finally, agricultural self-employment, and particularly formal self-employment (i.e. on a registered rural plot) is associated with lower poverty risks, however, as we will see, this could be a result of the way in which consumption of own-production is valued.

6.3. LABOUR MARKET STATUS AND DETERMINANTS OF HOUSEHOLD WELFARE, OLS AND QUANTILE REGRESSION

In this section two multivariate analysis techniques (OLS and Quantile regression) are used to examine in more detail the relationship between household welfare and labour market status. Details on both techniques are presented in Appendix A2.4. The use of multivariate analysis enables the testing of some of the findings in the previous section by examining the effect of, *inter alia*, the labour market status of the heads of household on per capita measure of household welfare while controlling for a variety of other household characteristics.

To this end the following multivariate model for consumption per equivalent adult is specified:

$$\text{Ln}Y_i = \beta X_i + u_i$$

Where $\text{Ln}Y_i$ is the natural logarithm of consumption per adult equivalent (recall that $\theta=0.75$). The vector X_i is a vector of demographic, education and labour market characteristics relating to the household or the household head. The demographic characteristics include gender, age and ethnicity of the household head as well as variables controlling for region, household size and composition. Education characteristics refer to the educational attainment of the household head, and labour market status also refers to the household head and includes variables for type of formal and informal employment (employee, non-agricultural self-employed, farmer, contributing family worker) as well as unemployment and inactivity. β is the parameter vector to be estimated, u_i is the unobservable error term, and the unit of analysis (i) is the household. A definition of all variables used can be found in appendix A2.2. All the variables of interest (mainly labour market and also human capital) are binary (dummy) variables.

The reference category is Georgian male heads of household living in Kakheti, who have primary education and work as formal employees. The choice of reference category is explained in chapter 5, however here the education reference category is changed from higher education to primary education as I am interested in examining whether higher education is associated with an increase in household welfare, *ceteris paribus*.

First, I estimate the parameters using an ordinary least squares (OLS) regression (see appendix A2.4 for details). Two separate regressions for urban and rural households are run as it is expected that these exhibit very different labour market and educational characteristics. Results for urban households are reported in table 6.5, while those for rural households are reported in table 6.6.

As we can see from table 6.5, the equation fit for the urban mean model is satisfactory; the Adjusted R^2 tells us that the model explains 23% of the variation in (log) consumption per equivalent adult, and the F ratio, which is used to test goodness of fit, shows that our model is significant at the 1% level. We also see that most of our labour market estimates achieve statistical significance at the 5% or 1% level, indicating that labour market activity of the head of household is significant in determining household welfare. The results confirm the findings in section 6.2. Having a head of household that is unemployed or inactive significantly decreases consumption per equivalent adult by 19% and 14% respectively compared to households headed by formal employees, *ceteris paribus*. At the same time, the consumption of households headed by formal employees is significantly lower, everything else being equal, than that of almost all other employed groups except informal employees. Households whose heads are informal employees have consumption per equivalent adult levels which are 9% lower than those headed by formal employees, confirming previous findings which suggest that there are lower returns to informal paid employment.

The results on the self-employed also confirm previous findings as self-employment (both formal and informal) is associated with a significant positive and quite substantial increase in household welfare everything else being equal. Table 6.5 shows that having a head of household that is non-agricultural self-employed, formally or informally, increases consumption per equivalent adult by 21% and 11% respectively relative to households headed by formal employees, *ceteris paribus*.

Finally, it is interesting to note that estimates for informal farmers are statistically significant and that the coefficient is sizeable and positive.¹⁰⁶ As previously mentioned, this could be explained by the way in which consumption of own-production is valued as it is expected that most of what is farmed on urban plots is used for own-consumption. I suspect this to be the case, as it seems unlikely that households headed by individuals whose main occupation is to farm an urban plot of land should have welfare levels that are close to a third higher than those headed by formal employees, *ceteris paribus*. These figures should therefore be approached with caution, as they could be misleading. The issue of small-plot urban farming in the former Soviet Union has received some attention in the past few years as observers have been puzzled by its widespread

use (see for example Clarke 1999d). The findings in this thesis suggest that whereas during the soviet period urban farming was a means of supplementing income and ‘communicating with nature’ (Gordon and Klopov, 1972 quoted by McAuley 1979a, p.76) it is now a main source of income and employment for approximately 4.5% of household heads.

With regards to the impact of education on household welfare, table 6.5 indicates that, in urban areas, the level of educational attainment of the household head is significant in determining household welfare, *ceteris paribus*. Everything else being equal, households whose heads have general secondary, higher technical or higher general education have consumption levels which are 10%, 16% and 26% higher than those headed by individuals with primary education or less.

Quantile regression analysis is now used to provide some insights into the effects of the selected set of variables at different points of the consumption distribution. As discussed above, quantile regression enables the estimation of parameter coefficients at different points of the (log) consumption per equivalent adult distribution. Methodological details of this approach are presented in appendix A2.4. Essentially, quantile regression is similar to OLS, however, instead of estimating the mean of the dependent variable, quantile regression estimates the θ th quantiles, which in our case are the 10th, 25th, 50th, 75th, and 90th quantiles of the (log) consumption distribution.¹⁰⁷ Moreover, it is less sensitive to outliers than OLS, as its aim is to find the regression plane that minimizes the sum of the absolute residuals rather the sum of the squares of the residuals. It is also more appropriate in cases where it is suspected that the residual distribution is characterised by a non-normal distribution.

The following model for consumption per equivalent adult at the θ th quantile for all households $i=1, \dots, N$ is estimated:

$$\text{Ln } Y_i = X_i \beta_\theta + u_{\theta i}, \quad \text{Quant}_\theta(y_i | x_i) = x_i \beta_\theta$$

Where $\text{Ln } Y$ is the natural logarithm of consumption per equivalent adult, $\text{Quant}_\theta(y_i | x_i)$ denotes the conditional quantile of y_i , conditional on the regressor vector X_i , β_θ is the vector of coefficients to be estimated, and θ is θ th quantile (i.e. 0.10, 0.25, 0.50, 0.75, 0.90). The error term, u_θ is left unspecified and the only assumption made is that u_θ satisfies the quantile restriction $\text{Quant}_\theta(u_\theta | x_i) = 0$ (see appendix A2.4 for more details on quantile regression techniques).

¹⁰⁶ Recall that the ‘informal farmer’ variable includes, amongst others, individuals whose main occupation is farming an urban plot of land (see chapter 3).

¹⁰⁷ Thus, for example, in estimating the 50th quantile, quantile regression estimated the median of the dependent variable.

The parameter estimates can be interpreted in much the same way as those estimated with OLS procedure, namely the marginal change in the θ^{th} conditional quantile of y due to a marginal change in the independent variable of interest, controlling for all other independent variables.

Table 6.5 reports these results for urban areas. Before turning to the results however, a test is performed to assess to what extent the effects of the variables are the same at the different quantiles and to what extent the changes in the coefficients of the model are statistically significant. Again, details are discussed in appendix A2.4. Using a Wald test, the hypothesis that the coefficients are jointly equal at the 25th and 75th percentiles for both urban and rural areas can be rejected at the 95 percent confidence level. This indicates that the explanatory variables have a different impact at different parts of the (log) consumption distribution.

The results of the quantile regression for urban areas are reported in table 6.5. First, we note that the median regression estimates for labour market and education variables ($\theta=0.50$) are similar to the mean (OLS) estimates in significance, magnitude and sign, thereby confirming the robustness of the mean results. Second, the quantile regression results show that having an unemployed head of household exerts a significant and strong negative impact on household welfare that is more or less equal at all five points of the consumption distribution. The quantile regression results also confirm that having an inactive head of household exerts a significant, strong, negative effect on household welfare, although it further shows that the effect is stronger at the bottom quantiles of the distribution. Table 6.5 shows that whereas at the 10th percentile, households headed by the inactive had consumption per equivalent adult levels that were 20% lower than those headed by formal employees, *ceteris paribus*, at the 75th and 90th percentiles, they had consumption levels that were 15% and 11% lower.

Third, the quantile regression results provide some interesting insight into the effect of self-employment on household welfare. For both formal and informal non-agricultural self-employed, the positive effect on household welfare is significant only at the bottom end of the distribution, namely at the 10th, 25th and 50th percentiles, and the magnitude of the impact decreases as consumption increases. Moreover, the magnitude of the effect on household consumption is much smaller for informal than for formal self-employment, thereby confirming our previous finding that there are lower returns to informal self-employment. These findings could also indicate that at the bottom end of the distribution, where formal wage employees with extremely low wages are concentrated, self-employment has a significant positive impact on household welfare, whereas at the top end of the distribution, where perhaps the better paid formal employees are located, everything else being equal, self-employment exerts no particular impact on household welfare.

Fourth, the results show that having a head of household who is an informal employee has a significant negative impact on household welfare, relative to those headed by formal employees, at all quantiles (with the exception of the 0.10th quantile), showing the robustness of results based on OLS estimation. Fifth, the results would suggest that having a head of household whose main occupation is to farm an urban plot of land (informal farming) significantly increases household welfare at all five quantiles of the distribution. As noted above, it is unclear to what extent urban plots are indeed an important source of welfare for all households, regardless of income, and to what extent this result is driven by the way in which consumption of own-production is valued.

Finally, with regards to the effect of education on household welfare, the quantile regression results show there are significant returns to education, confirming the robustness of the mean regression results. Moreover, they show that in urban areas, with the exception of higher education, returns to general secondary and technical secondary education are significant only for households at the 10th, 25th and 50th percentiles. They also show that the positive effect of secondary or higher education is strongest at the bottom end of the consumption distribution. Most importantly, however, we see that higher education has a significant positive impact on household welfare at all five quantiles of the distribution.

Overall, our quantile regression estimates show that in urban areas, the head of household's level of educational attainment and labour market status are significant determinants of household welfare at the bottom end of the consumption distribution, but are generally not very significant at the top end. This is not a surprising finding, as we can expect that at the top end of the distribution, household welfare may depend on other factors other than labour market status or education, including assets and other (at times 'unofficial') sources of income.

Table 6.5 Determinants of Household Consumption, OLS and Simultaneous Quantile Regression Results (Urban)

<i>Dependent variable: natural logarithm of consumption per adult equivalent ($\theta=0.75$)</i>	Mean (OLS)	Percentiles				
		10 th	25 th	50 th	75 th	90 th
Demographic Characteristics						
Region						
Tblisi	0.1924 (0.0567)***	0.1815 (0.1144)	0.0849 (0.0665)	0.1272 (0.0558)**	0.2326 (0.0644)***	0.2506 (0.0851)***
<i>Kakheti</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Shida Kartli	0.005 (0.0657)	-0.0641 (0.1224)	-0.0676 (0.0941)	0.0102 (0.0690)	0.0698 (0.0831)	0.0732 (0.1278)
Kvemo Kartli	0.3087	0.2505	0.2462	0.3827	0.3744	0.322

	(0.0665)***	(0.1397)*	(0.0863)***	(0.0604)***	(0.0881)***	(0.1029)***
Samtskhe Javakheti	-0.3992	-0.8065	-0.7837	-0.4461	-0.1403	0.077
	(0.0850)***	(0.2107)***	(0.1128)***	(0.1249)***	(0.2061)	(0.1966)
Achara	0.4383	0.4798	0.4047	0.4126	0.4115	0.4329
	(0.0649)***	(0.1331)***	(0.1022)***	(0.0591)***	(0.0725)***	(0.1047)***
Guria	-0.2133	-0.3444	-0.3049	-0.185	-0.1344	-0.1324
	(0.0811)***	(0.1366)**	(0.0841)***	(0.0739)**	(0.0874)	(0.1044)
Samegrelo	-0.1492	-0.1837	-0.2617	-0.1564	-0.1088	-0.1276
	(0.0657)**	(0.1238)	(0.0890)***	(0.0572)***	(0.0362)***	(0.0877)
Imereti	-0.2598	-0.2556	-0.3152	-0.2569	-0.2114	-0.2534
	(0.0624)***	(0.1056)**	(0.0585)***	(0.0461)***	(0.0791)***	(0.0832)***
Gender of Household Head (female=1)	-0.0925	-0.0657	-0.0803	-0.0579	-0.0682	-0.0739
	(0.0287)***	(0.0664)	(0.0465)*	(0.0334)*	(0.0428)	(0.0671)
Age of Household Head	-0.006	-0.006	-0.0027	-0.0116	-0.01	-0.0108
	(0.0054)	(0.0131)	(0.0083)	(0.0091)	(0.0065)	(0.0108)
Age squared of Household Head	0	0	0	0.0001	0.0001	0.0001
	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Ethnic Background of Household Head						
<i>Georgian</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Azeri	0.0256	0.2944	0.0831	-0.0669	-0.1962	-0.0715
	(0.1431)	(0.1493)**	(0.0923)	(0.1065)	(0.1764)	(0.3526)
Abkhazian	0.0357	0.0311	-0.0671	-0.1409	0.156	0.2255
	(0.1724)	(0.1779)	(0.1338)	(0.1953)	(0.3658)	(0.3248)
Greek	-0.1021	-0.0282	-0.1032	-0.2847	-0.2142	-0.1324
	(0.0918)	(0.1802)	(0.1282)	(0.0855)***	(0.1037)**	(0.1418)
Ossetian	-0.1261	0.2234	0.0403	-0.0274	-0.1325	-0.2801
	(0.1088)	(0.4791)	(0.1614)	(0.1172)	(0.1326)	(0.1980)
Russian	-0.2007	-0.2267	-0.2053	-0.1731	-0.1818	-0.2156
	(0.0623)***	(0.1577)	(0.1099)*	(0.0687)**	(0.0631)***	(0.0913)**
Armenian	-0.1304	-0.1191	-0.1555	-0.1021	-0.139	-0.1612
	(0.0484)***	(0.0990)	(0.0850)*	(0.0563)*	(0.0709)*	(0.0786)**
Other	-0.0341	-0.0348	-0.0429	-0.0328	-0.027	0.0102
	(0.0927)	(0.1306)	(0.1034)	(0.1144)	(0.0979)	(0.1139)
Number of adults	-0.0167	0.0061	0.0028	-0.0052	-0.0449	-0.0661
	(0.0111)	(0.0113)	(0.0154)	(0.0122)	(0.0099)***	(0.0199)***
Number of children aged 6 years or less	-0.1028	-0.1002	-0.0917	-0.107	-0.0909	-0.1156
	(0.0248)***	(0.0491)**	(0.0350)***	(0.0278)***	(0.0246)***	(0.0450)**
Number of other children	-0.0735	-0.0385	-0.0676	-0.074	-0.0876	-0.1201
	(0.0149)***	(0.0245)	(0.0227)***	(0.0149)***	(0.0155)***	(0.0253)***
<i>Education Level of Household Head</i>						
<i>Primary or less</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Incomplete secondary	0.0199	0.0379	0.1201	0.1039	0.0798	-0.0306
	(0.0634)	(0.1669)	(0.0933)	(0.0893)	(0.0761)	(0.1362)
General secondary	0.1044	0.1707	0.1528	0.1329	0.0495	0.0207
	(0.0445)**	(0.0791)**	(0.0641)**	(0.0493)***	(0.0681)	(0.0951)
Technical secondary	0.0306	0.1514	0.118	0.1048	-0.0332	-0.1444

	(0.0612)	(0.1161)	(0.0692)*	(0.0529)**	(0.0659)	(0.0933)
High technical	0.1604	0.2378	0.2045	0.1561	0.0445	0.0227
	(0.0525)***	(0.1047)**	(0.0763)***	(0.0681)**	(0.0684)	(0.0963)
High general	0.262	0.3938	0.2891	0.2624	0.1613	0.1611
	(0.0470)***	(0.0855)***	(0.0687)***	(0.0528)***	(0.0591)***	(0.0912)*
Labour market Status of Household Head						
<i>Formal employee</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Formal non-agricultural self-employed	0.2102	0.3337	0.2584	0.1887	0.1635	0.1717
	(0.0867)**	(0.1273)***	(0.1242)**	(0.0848)**	(0.1028)	(0.1111)
Formal farmer	-0.172	0.3849	0.1607	-0.2312	-0.3331	-0.6067
	(0.2979)	(0.1148)***	(0.1186)	(0.0892)***	(0.1083)***	(0.1243)***
Informal employee	-0.0926	-0.0198	-0.1202	-0.1521	-0.1576	-0.1102
	(0.0442)**	(0.0660)	(0.0535)**	(0.0444)***	(0.0594)***	(0.0642)*
Informal non-agricultural self-employed	0.1107	0.2289	0.1286	0.084	0.0482	0.1259
	(0.0456)**	(0.0524)***	(0.0483)***	(0.0314)***	(0.0534)	(0.1000)
Informal farmer	0.2874	0.2329	0.398	0.3071	0.2194	0.1268
	(0.0504)***	(0.1039)**	(0.0877)***	(0.0336)***	(0.0493)***	(0.0595)**
Contributing family worker	-0.0075	0.1104	-0.0622	-0.0938	-0.0904	0.021
	(0.0700)	(0.0798)	(0.0706)	(0.0699)	(0.1094)	(0.1107)
Unemployed	-0.1923	-0.1717	-0.2039	-0.1968	-0.206	-0.2063
	(0.0377)***	(0.0569)***	(0.0427)***	(0.0461)***	(0.0492)***	(0.0582)***
Inactive	-0.1366	-0.2043	-0.18	-0.1595	-0.1456	-0.1101
	(0.0309)***	(0.0649)***	(0.0622)***	(0.0292)***	(0.0331)***	(0.0672)
Constant	4.4357	3.513	4.0033	4.5533	4.9794	5.4464
	(0.1602)***	(0.3778)***	(0.2216)***	(0.2718)***	(0.2351)***	(0.3531)***
Observations	2357	2357	2357	2357	2357	2357
Adjusted-R2/Pseudo-R2	0.23***	0.1695	0.1517	0.1515	0.1352	0.1192
F ratio (<i>k</i> -1, <i>n</i> - <i>k</i>)	21.80 (34,2322)					

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- Standard errors are in brackets.
- *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- The dependent variable is the natural log of consumption per adult equivalent ($\theta=0.75$).
- Mean refers to the OLS regression.
- The quantile regressions were performed at the 10th, 25th, 50th, 75th and 90th percentiles.
- The unit of observation is the household and gender, education, ethnicity, and labour market status refer to the head of household.
- f* denotes variables omitted in the estimation (base categories).
- Unemployed refers to ILO relaxed criterion definition.
- F ratio (*k*-1, *n*-*k*) denotes the F-statistic with *K*-1, *n*-*k* degrees of freedom, where *k* is the number of independent variables in our model and *n* is the total number of observations. This statistic is used to test the Null Hypothesis (H_0): $\rho^2=0$ (see appendix A2.4 for details).
- Analysis carried out using unweighted data.
- Definitions of all variables can be found in appendix A2.2.

The results of the mean (OLS) and quantile regressions for rural areas are reported in table 6.6. The equation fit for the model is satisfactory; as the model accounts for approximately 23% of the variation in (log) consumption per adult equivalent, and it is significant (i.e. the null hypothesis

that the model explains none of the variation in consumption per adult equivalent in the population can be rejected). Despite the significance of the model, fewer of the estimates for the labour market and education variables achieve statistical significance.¹⁰⁸ This can be explained by the less heterogeneous nature of the labour market in rural areas, which is largely focused on agricultural activities. Thus we see that households headed by formal farmers or contributing family workers have, on average, 5% and 15% higher levels of consumption per equivalent adult than do those headed by formal employees. None of the other employment status variables achieve statistical significance at the mean. However, once again we see that, as with urban areas, unemployment and inactivity are significant in determining household welfare, *ceteris paribus*. We see that the effect of having an unemployed or inactive head of household is very strong. Compared to household headed by formal employees, those headed by the unemployed or inactive have consumption per equivalent adult levels that are 27% and 22% lower respectively, *ceteris paribus*.

As far as education is concerned, the OLS estimates show that in rural areas only higher education has a significant impact on household welfare. Households headed by individuals with higher education, everything else being equal have consumption per equivalent adult levels that are 21% higher than those headed by individuals with primary education, suggesting that the returns to higher education are significant in both urban and rural areas.

Results of the quantile regressions for rural areas are presented in table 6.6. First of all, we see that although the mean estimates showed that formal farming is significant at the 10% level, the quantile estimates show that it is only significant at the 10th percentile. Thus the significant mean effect is largely driven by the effect of the 10th percentile, indicating the importance of focusing on other parts of the distribution other than the mean regression. This could perhaps be explained by the fact that formal employees are concentrated at the bottom end of the consumption distribution in rural areas and that given their very low level of wages, formal farming significantly increases the level of household consumption relative to formal wage employment only at the bottom end of the distribution.

¹⁰⁸ Note that I checked for a high degree of multicollinearity, which could possibly explain why the model is significant but not many of the estimated parameters are, but found no evidence of this. In particular, I tried running the regression omitting the ethnicity variable, as in rural areas most ethnic minorities are concentrated in specific regions, and it could therefore be expected that the ethnicity variable could be highly correlated with the regional variables. However, this neither improved the fit of the model (as measured by the Adjusted R²-in fact R² decreased), and nor did it increase the number of significant parameters. I also tried to run the OLS regression without the regional variables as I suspected a high degree of multicollinearity between the regional variables and the labour force variables since chapters 4 and 5 found region to be a determinant of both informal employment and unemployment. However, this did not result in an increase in significance in any of the labour market variables and actually worsened the fit of the model as measured by the Adjusted R².

Second, although informal farming and informal non-agricultural self-employment were not significant determinants of household welfare when estimated using OLS procedure, they have a significant negative impact when applying the quantile regression approach. However, they are only significant at the top end of the distribution. Contributing family workers in contrast, exert a positive effect on household welfare at all levels of the distribution. Contributing family workers that are household heads are typically old-age (male) individuals who live with their extended family and are therefore considered the household head but not the main breadwinner. The association with a higher level of welfare could be an indication that these are larger households that are perhaps farming larger plots of land. Third, as is the case in urban areas, we see that the impact on household welfare of having a head of household who is either unemployed or inactive is important and negative at all levels of the consumption distribution but particularly so for the bottom quantiles.

Finally, the level of education of the head of household also appears to have a less significant impact on household welfare in rural areas. The quantile regression results confirm the findings based on OLS estimation and show that higher general education has a significant and strong positive impact at all levels of the consumption distribution. They also show that higher technical education and general secondary education are significant determinants of household welfare at around the median (50th and 75th percentiles).

Overall, the results from the rural regressions suggest that the employment status of the household head in rural areas is not as significant in determining household welfare as it is in urban areas, although labour market status as a whole is significant (i.e. unemployment and inactivity are associated with significantly lower levels of welfare). Region seems to be a more important determinant of household welfare in rural areas. Almost all regional variables achieve significance at the 1% level, with some regions having a strong positive influence on consumption (e.g. Shida Kartli, Kvemo Kartli, Samegrelo), while others have a strong negative influence (e.g. Samtskhe Javakheti, Achara). These findings attest to the importance of the regional dimension in Georgia in determining not only welfare but also, as we have seen, informal employment and unemployment.

Table 6.6 Determinants of Household Consumption, OLS and Simultaneous Quantile Regression Results (Rural)

Dependent variable: natural logarithm of consumption per adult equivalent ($\theta=0.75$)	Mean (OLS)	Percentiles				
		10 th	25 th	50 th	75 th	90 th
Demographic Characteristics						
Region						
Tblisi	0 (0.0000)	0 (0.0000)	0 (0.0000)	0 (0.0000)	0 (0.0000)	0 (0.0000)
Kakheti	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Shida Kartli	0.2606 (0.0451)***	0.2188 (0.0862)**	0.2457 (0.0455)***	0.2592 (0.0403)***	0.259 (0.0397)***	0.2601 (0.0446)***
Kvemo Kartli	0.3257 (0.0543)***	0.3015 (0.0734)***	0.2668 (0.0834)***	0.2441 (0.0726)***	0.293 (0.0719)***	0.3919 (0.0628)***
Samtskhe Javakheti	-0.1308 (0.0519)**	-0.3931 (0.1585)**	-0.1222 (0.0659)*	0.0165 (0.0514)	0.1177 (0.0612)*	0.1096 (0.0656)*
Achara	-0.1212 (0.0533)**	-0.4851 (0.1357)***	-0.2061 (0.0764)***	-0.0482 (0.0493)	0.0166 (0.0461)	0.1007 (0.0544)*
Guria	0.1585 (0.0516)***	0.2046 (0.0747)***	0.1438 (0.0447)***	0.1567 (0.0443)***	0.1387 (0.0444)***	0.1557 (0.0487)***
Samegrelo	0.2447 (0.0474)***	0.2336 (0.0623)***	0.3162 (0.0643)***	0.2518 (0.0418)***	0.1972 (0.0480)***	0.1847 (0.0569)***
Imereti	0.0587 (0.0486)	0.0578 (0.0796)	0.1172 (0.0481)**	0.0761 (0.0441)*	0.0356 (0.0456)	0.0385 (0.0483)
Gender of Household Head (female=1)	-0.1566 (0.0301)***	-0.196 (0.0603)***	-0.1947 (0.0495)***	-0.1453 (0.0291)***	-0.1071 (0.0201)***	-0.0455 (0.0231)**
Age of Household Head	0.0223 (0.0054)***	0.015 (0.0104)	0.0211 (0.0104)**	0.0236 (0.0077)***	0.0191 (0.0050)***	0.0188 (0.0082)**
Age squared of Household Head	-0.0001 (0.0000)***	-0.0001 (0.0001)	-0.0001 (0.0001)	-0.0002 (0.0001)**	-0.0001 (0.0000)***	-0.0001 (0.0001)**
Ethnic Background of Household Head						
Georgian	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Azeri	-0.4211 (0.0774)***	-0.7226 (0.1499)***	-0.478 (0.1236)***	-0.2092 (0.0839)**	-0.1153 (0.0810)	-0.2403 (0.1143)**
Abkhazian	-0.2242 (0.3091)	0.2165 (0.2764)	-0.0045 (0.2072)	-0.5524 (0.3086)*	-0.6294 (0.3599)*	-0.2485 (0.3442)
Greek	-0.3594 (0.1354)***	-0.2604 (0.8542)	-0.2229 (0.1075)**	-0.2988 (0.0909)***	-0.3649 (0.1078)***	-0.1946 (0.3945)
Ossetian	-0.018 (0.1085)	-0.3577 (0.3328)	0.0803 (0.2937)	0.154 (0.0839)*	0.0271 (0.0546)	-0.1689 (0.0926)*
Russian	0.148 (0.1033)	0.3351 (0.3571)	0.2419 (0.1214)**	0.2697 (0.2062)	0.3045 (0.1211)**	0.1381 (0.0881)
Armenian	0.0011 (0.0650)	0.1979 (0.1090)*	0.0348 (0.1208)	-0.0257 (0.0651)	-0.1137 (0.0499)**	-0.1727 (0.0882)*
Other	0.1662 (0.1666)	0.3214 (0.2955)	0.3264 (0.2826)	0.1156 (0.1549)	0.0936 (0.1612)	-0.0109 (0.1902)
Number of adults	-0.0641 (0.0110)***	-0.0178 (0.0215)	-0.0489 (0.0152)***	-0.0872 (0.0151)***	-0.0922 (0.0136)***	-0.096 (0.0143)***

Number of children aged 6 years or less	-0.0805 (0.0230)***	-0.1107 (0.0432)**	-0.1163 (0.0344)***	-0.0771 (0.0245)***	-0.0928 (0.0199)***	-0.0693 (0.0284)**
Number of other children	-0.0887 (0.0136)***	-0.0689 (0.0341)**	-0.0856 (0.0120)***	-0.1077 (0.0153)***	-0.1207 (0.0137)***	-0.1055 (0.0161)***
Education Level of Household Head						
<i>Primary or less</i>						
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Incomplete secondary	0.0046 (0.0418)	0.034 (0.0904)	-0.0657 (0.0722)	0.0248 (0.0511)	0.04 (0.0418)	0.0296 (0.0647)
General secondary	0.0499 (0.0374)	0.097 (0.0876)	0.0231 (0.0681)	0.0828 (0.0386)**	0.1009 (0.0407)**	0.0639 (0.0523)
Technical secondary	0.0734 (0.0636)	0.0678 (0.1262)	0.0545 (0.0989)	0.0976 (0.0597)	0.04 (0.0754)	-0.0293 (0.1365)
High technical	0.0867 (0.0497)*	0.0945 (0.0963)	0.0857 (0.0975)	0.1259 (0.0531)**	0.1697 (0.0687)**	0.1992 (0.0656)***
High general	0.2089 (0.0501)***	0.2575 (0.1201)**	0.1714 (0.0698)**	0.2471 (0.0473)***	0.2345 (0.0503)***	0.1462 (0.0582)**
Labour market Status of Household Head						
<i>Formal employee</i>						
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Formal non-agricultural self-employed	0.1215 (0.1209)	0.3296 (0.4060)	0.0172 (0.1197)	0.1426 (0.2324)	0.1739 (0.1805)	0.1322 (0.0925)
Formal farmer	0.0509 (0.0281)*	0.1361 (0.0691)**	0.0393 (0.0431)	0.0154 (0.0378)	-0.0041 (0.0381)	-0.0405 (0.0452)
Informal employee	0.0387 (0.0563)	-0.1254 (0.1212)	-0.0211 (0.0718)	0.04 (0.0625)	0.0236 (0.0482)	0.0861 (0.0743)
Informal non-agricultural self-employed	-0.0611 (0.0650)	-0.1109 (0.1226)	-0.0808 (0.0780)	-0.148 (0.0628)**	-0.049 (0.0572)	-0.1553 (0.0465)***
Informal farmer	-0.0523 (0.0494)	0.0149 (0.1008)	0.0186 (0.0522)	-0.0149 (0.0425)	-0.1469 (0.0386)***	-0.2037 (0.0519)***
Contributing family worker	0.1543 (0.0360)***	0.136 (0.0558)**	0.1006 (0.0575)*	0.1289 (0.0338)***	0.1386 (0.0387)***	0.0723 (0.0436)*
Unemployed	-0.2676 (0.0741)***	-0.3535 (0.1193)***	-0.3602 (0.1834)**	-0.1743 (0.1118)	-0.2293 (0.0568)***	-0.2707 (0.0775)***
Inactive	-0.2198 (0.0345)***	-0.2861 (0.0628)***	-0.2072 (0.0516)***	-0.1809 (0.0425)***	-0.178 (0.0369)***	-0.1759 (0.0425)***
Constant	3.7278 (0.1681)***	3.0771 (0.2586)***	3.457 (0.3165)***	3.8061 (0.2367)***	4.2625 (0.1977)***	4.6353 (0.3053)***
Observations	2546	2546	2546	2546	2546	2546
Adjusted-R2/Pseudo-R2	0.18***	0.1317	0.1035	0.12	0.1292	0.1318
F ratio (k-1, n-k)	17.76 (33,2512)					

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

(a) Standard errors are in brackets.

(b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.

(c) The dependent variable is the natural log of consumption per adult equivalent ($\theta=0.75$).

(d) Mean refers to the OLS regression.

(e) The quantile regressions were performed at the 10th, 25th, 50th, 75th and 90th percentiles.

- (f) The unit of observation is the household and gender, education, ethnicity, and labour market status refer to the head of household.
- (g) F denotes variables omitted in the estimation (base categories).
- (h) Unemployed refers to ILO relaxed criterion definition.
- (i) F ratio (k-1, n-k) denotes the F-statistic with K-1, n-k degrees of freedom, where k is the number of independent variables in our model and n is the total number of observations. This statistic is used to test the Null Hypothesis (Ho): $\rho^2=0$ (see appendix A2.4 for details).
- (j) Analysis carried out using unweighted data.
- (k) Definitions of all variables can be found in appendix A2.2.

6.4 LABOUR MARKET STATUS AND DETERMINANTS OF POVERTY, PROBIT ANALYSIS

A probit model is now estimated to examine the effect of labour market status of the household head on the probability of a household being poor. Technical details on probit analysis are presented in appendix A2.4. The relative poverty line, equal to two thirds of median consumption per adult equivalent, is used (see section 6.1). The model is built around the regression model $Y^*_i = \beta X_i + u_i$, where Y^* is the underlying continuous, unobserved, latent variable. X is the same vector of demographic, human capital and labour market characteristics as in the OLS model, β is the parameter vector to be estimated and the unit of analysis (i) is the household. The unobservable error term u_i is defined as having $E(u)=0$ and $\text{Var}(u)=\sigma^2$. The unobservable error term u_i is defined as having $E(u)=0$ and $\text{Var}(u)=\sigma^2$. All variables of interest (mainly labour market but also human capital) are dummy variables. The definition of all variables used can be found in appendix A2.2.

The observed variable is Y_i . $Y_i=1$ if a household is poor and $Y_i=0$ otherwise. Y_i is related to Y^*_i in the following way: if $Y^*_i > 0$, we observe $Y_i=1$ otherwise we observe $Y_i=0$.

The probit model is therefore defined as:

$$\begin{aligned}
 \text{Prob}(Y_i=1) &= \text{Prob}(\beta X_i + u_i > 0) \\
 &= \text{Prob}(u_i > -\beta X) \\
 &= 1 - \Phi(-\beta X / \sigma) \\
 &= \Phi(\beta X / \sigma)
 \end{aligned}$$

Where $\Phi(\cdot)$ is the cumulative distribution function. For the purpose of this analysis it is assumed that u follows a normal distribution. Two separate regressions, for urban and rural areas respectively, are run as it is expected that they exhibit very different characteristics. The resulting coefficients have been converted to marginal effects for ease of interpretation, thus they can be

interpreted as the change in the probability of $y=1$ for an infinitesimal change in each independent, continuous, variable and, the discrete change in the probability for dummy variables.

Table 6.7 reports the results. As with the mean regression model, the probit model is significant at the 1% level (the likelihood ratio on a chi-squared distribution is used to test the hypothesis joint hypothesis that all coefficients in the population, with the exception of the intercept, are equal to 0). However, L^2 does not allow us to make any inference regarding the degree of fit of the model (see appendix A2.4).

The probit regression estimates largely confirm the previous findings. First, households headed by the unemployed or inactive are significantly more likely to have consumption per adult equivalent levels below the poverty line than those headed by formal employees, *ceteris paribus*. However, contrary to the OLS results, having an unemployed head does not appear to have a significant impact on household poverty in rural areas, whereas in urban areas households headed by the unemployed are 15% more likely to be poor than those headed by formal employees. This can be explained by the very small numbers of unemployed in rural areas.

Second, urban households headed by informal farmers and informal non-agricultural self-employed are significantly less likely to be poor than those headed by formal employees. This is also consistent with the mean regression results. However, results for the formal non-agricultural self-employed are not significant at a conventional level. This is in contrast to the mean regression, which found that households headed by the non-agricultural self-employed, whether formal or informal, had higher consumption per equivalent adult levels than those headed by formal employees.

Third, the previous findings that in rural areas, households headed by formal farmers or contributing family workers are significantly less likely to be poor are also confirmed. Fourth, the probit results confirm the returns to higher education. Having a head of households with general higher education significantly reduces the probability of being poor by 16% in urban areas and 6% in rural areas, everything else being equal. However, contrary to the mean results, general secondary education is not a significant variable in determining poverty.

Table 6.7 Determinants of Household Consumption, Probit Regression Results

Dependent variable: poor (dummy)	Urban	Rural
<i>Demographic Characteristics</i>		
Region		
Tblisi	-0.1151 (0.0444)***	
<i>Kakheti</i>	<i>f</i>	<i>f</i>
Shida Kartli	-0.0217 (0.0528)	-0.0861 (0.0215)***
Kvemo Kartli	-0.1671 (0.0422)***	-0.1021 (0.0240)***
Samtskhe Javakheti	0.2399 (0.0769)***	0.0033 (0.0302)
Achara	-0.2632 (0.0299)***	0.0845 (0.0364)**
Guria	0.1206 (0.0721)*	-0.0602 (0.0260)**
Samegrelo	0.1083 (0.0579)*	-0.087 (0.0224)***
Imereti	0.1926 (0.0560)***	-0.0211 (0.0279)
Gender of Household Head (female=1)	0.0407 (0.0242)*	0.0457 (0.0200)**
Age of Household Head	0.0069 (0.0045)	-0.0071 (0.0030)**
Age squared of Household Head	0 (0.0000)	0.0001 (0.0000)**
Ethnic Background of Household Head		
<i>Georgian</i>	<i>f</i>	<i>f</i>
Azeri	-0.2104 (0.0975)**	0.2402 (0.0687)***
Abkhazian	0.0141 (0.1498)	0.0947 (0.2496)
Greek	0.051 (0.0896)	-0.0982 (0.0767)
Ossetian	0.0766 (0.0953)	0.069 (0.0831)
Russian	0.1933 (0.0577)***	-0.0035 (0.0686)
Armenian	0.0722 (0.0421)*	0.1388 (0.0496)***
Other	0.1093 (0.0800)	-0.0859 (0.0632)
Number of adults	-0.0069 (0.0093)	0.005 (0.0068)
Number of children aged 6 years or less	0.0833 (0.0204)***	0.0542 (0.0132)***
Number of other children	0.0388	0.0314

	(0.0125)***	(0.0080)***
Education Level of Household Head		
<i>Primary or less</i>	<i>f</i>	<i>f</i>
Incomplete secondary	-0.0181 (0.0502)	0.0392 (0.0275)
General secondary	-0.0464 (0.0356)	-0.0015 (0.0231)
Technical secondary	-0.0129 (0.0497)	-0.0198 (0.0370)
High technical	-0.0689 (0.0396)*	-0.0017 (0.0305)
High general	-0.1627 (0.0341)***	-0.0595 (0.0263)**
Labour market Status of Household Head		
<i>Formal employee</i>	<i>f</i>	<i>f</i>
Formal non-agricultural self-employed	-0.0977 (0.0670)	-0.0482 (0.0605)
Formal farmer	0.0453 (0.2744)	-0.0603 (0.0180)***
Informal employee	0.1136 (0.0403)***	-0.0036 (0.0335)
Informal non-agricultural self-employed	-0.0956 (0.0356)***	0.0318 (0.0413)
Informal farmer	-0.1923 (0.0295)***	0.0124 (0.0321)
Contributing family worker	0.0624 (0.0618)	-0.0687 (0.0202)***
Unemployed	0.1527 (0.0338)***	0.0852 (0.0520)
Inactive	0.1155 (0.0260)***	0.0499 (0.0229)**
Observations	2366	2568
L² Chi2 (k-1)	474.32 (34)***	218.33 (33)***

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Standard errors are in brackets.
- (b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- (c) The dependent variable for the probability model is whether a household is below the relative poverty line (2/3 median consumption per equivalent adult).
- (d) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discrete change from 0 to 1 for dummies.
- (e) The unit of observation is the household and gender, education, ethnicity, and labour market status refer to the head of household.
- (f) *F* denotes variables omitted in the estimation (base categories).
- (g) Unemployed refers to ILO relaxed criterion definition.
- (h) L² Chi2 (K-1) refers to the likelihood ratio used to test the goodness of fit of the model and is compared to a Chi2 distribution on *k*-1 degrees of freedom, where *k* is the number of independent variables in our model (see appendix x).
- (i) Analysis carried out using unweighted data.
- (j) Definitions of all variables can be found in appendix A2.2.

Finally, the robustness of the results can be checked by testing whether analysing poverty from the perspective of the labour market status of all individuals in the household, and not just the household head, makes a difference in the findings. A test can also be performed for the sensitivity of the results to the choice of poverty line, equivalence scales and economies of scale indexes used to adjust for household size and composition in the derivation of household consumption per equivalent adult.

First, I test whether the number of formal, informal, unemployed or inactive individuals in the household is significant in determining household poverty rates. The results are reported in table A.6.3 in appendix A6.2. They show that an increase in the number of individuals employed formally or informally has a negative significant impact on poverty, confirming that the findings based on the household head are robust. However the number of inactive or unemployed individuals does not appear to have a significant impact on the poverty rate. This can be explained by the small size of households in Georgia. The average size of households that include inactive or unemployed individuals was less than 3 members in 1999, which is close to the mean. In this case it is therefore more instructive to look at the labour market status of the household head.

Second, the results of this chapter are compared to those obtained using the World Bank and Georgian State Department of Statistics methodology. As previously mentioned, the WB and SDS use equivalence scales to account for age and gender differences between household members, they make stronger assumptions regarding economies-of-scale, and they use a lower (absolute) poverty line.¹⁰⁹ Tables A.6.4 to A.6.8 in appendix A6.2 report findings using the WB and SDS methodologies. They show that results based on the continuous variable ‘consumption per equivalent adult’ are entirely consistent with the findings of this chapter, thereby confirming their robustness.

The different approach does however make a difference in results based on the discrete variable, ‘poor/non-poor’. This is to be expected. Applying different equivalence scales and economies of scale index results in a re-ranking of households. Despite the difference in ranking observed in the analysis of poverty statistics by labour market status of the household head (see table A6.4 in appendix A6.2), all the coefficients estimated in the probit analysis (for poor/non-poor) are consistent with the analysis of this chapter, except for the estimates for informal employees,

¹⁰⁹The World Bank and SDS apply $\theta=0.54$ and $\alpha=0.64$ for children aged <7years; $\alpha=1$ for children aged 7-16 years; $\alpha=1$ for male adults aged 16-60 years; $\alpha=0.84$ for female adults aged 16-60 years; $\alpha=0.88$ for male adults aged 60+; and $\alpha=0.76$ for female adults aged 60+. The *official poverty line* (used by the SDS) is equal to 100 GEL (US\$50) per equivalent adult per month. The World Bank poverty line is set at 55 GEL (US\$25) per month per equivalent adult. See appendix A2.3.4 for details. Also recall that we set $\alpha=1$ and $\theta=0.75$ and use a relative poverty line equal to 2/3 of median consumption per adult equivalent, which in 1999 was equal to about GEL 48 (US\$24) per month.

which using the WB poverty line are not significant (table A.6.8 appendix A6.2). However, appendix A2.3.4 (sensitivity analysis for the choice of theta) shows that this can be explained by the difference in the value of θ . The analysis of this chapter is therefore robust.

Third, I perform a sensitivity analysis to test the sensitivity of poverty rates to the choice of economies of scale index (θ) (see appendix A2.3.4). The results show that considerable assumptions about economies of scale must be made before re-ranking occurs (re-ranking occurs around $\theta=0.5$ to $\theta=0.4$) and therefore confirm that applying a $\theta=0.75$ is appropriate and realistic.

In summary, sections 6.3 and 6.4 have shown that labour market status of the household head significantly determines household welfare. In particular, inactivity and unemployment are significantly associated with a very high poverty risk while employment (both formal and informal) significantly reduces the risk of being poor, *ceteris paribus*. The impact of unemployment and inactivity on poverty and household welfare can be explained by the poor quality of the social security system in Georgia. Not only is the value of unemployment benefits and pensions extremely low, but also these are seldom paid on time and several months of arrears are very common.

Support was found for the hypothesis that individuals engage in informal employment because there is no formal alternative. The results showed that for every category of employment, working informally was associated with lower levels of welfare and higher poverty rates than for the corresponding category of formal employment. More specifically, the findings showed that households headed by individuals who are informally employed have higher poverty rates and lower levels of consumption per equivalent adult than those headed by individuals working in similar jobs in the formal sector, *ceteris paribus*. Assuming that individuals are utility-maximizing and that they make rational choices, it can be concluded that individuals who work informally do so because they have no formal alternative. This conclusion was supported by the findings of the multivariate analysis, which showed that for every category of employment, informal employment was associated either with a greater negative impact or a smaller positive impact on welfare than the corresponding category of formal employment, relative to the reference category.

Section 6.3 and 6.4 also found that not all informal employment is associated with a lower level of welfare than formal employment. In fact, households headed by informal non-agricultural self-employed and informal farmers had higher levels of consumption per equivalent adult and faced a lower probability of being poor, than did those headed by formal employees, *ceteris paribus*. This is because extremely low wages in the state sector (which makes up the bulk of formal wage

employment) and extensive arrears in their payment means that many formal employees are poor. Nevertheless, households headed by informal wage employees face the greatest poverty risks of any of the employed groups and have lower levels of welfare than those headed by formal employees, *ceteris paribus*.

Support was also found for the hypothesis that individuals also work informally because they cannot afford to be unemployed or inactive and are better off being informally employed. The results showed that, *ceteris paribus*, unemployment and inactivity were associated with lower levels of welfare and higher poverty risks than any type of informal employment. Moreover, the multivariate analysis revealed that informal employment was associated with a smaller negative impact (or a positive impact) on welfare than unemployment or inactivity, *ceteris paribus*. Again, assuming that individuals are utility-maximizing and that they make rational choices, it can be concluded that individuals work informally, in part, because they are better off than being unemployed or inactive. Section 6.5 will further test the adequacy of formal social protection by assessing whether it is successfully targeting the poorest groups in the labour market and section 6.6, will complement this analysis with an assessment of whether informal networks are compensating for the inefficiencies of the formal social protection system.

6.5 LABOUR MARKET STATUS, FORMAL SOCIAL PROTECTION AND POVERTY

As discussed extensively in Chapter 1, the absence of economic growth and the inadequate nature of the fiscal system have constrained the government's ability to provide social security. However, at the same time, the adverse social consequences that have accompanied the economic transformation and re-structuring, have increased the pressure on the social protection system. The current formal social protection system (excluding assistance to IDPs) has been reduced to (purely symbolic) unemployment and pension benefits and a family allowance for a very small vulnerable group, namely non-working pensioners who live alone and have no legal breadwinner (see appendix A4.3 for details).

This section explores the relationship between formal social protection and poverty incidence by labour market status of the household head. The primary motivation for this examination is to get some sense of how well targeted social protection currently is and to inform on the extent to which it impacts on poverty risk. It will be particularly interesting to see whether the receipt of formal social protection is associated with lower poverty risks for the unemployed and inactive. This information will provide further evidence in testing our hypothesis that individuals engage in

informal labour market activities because they cannot afford to rely on the social protection system.

Formal social protection is defined here to include the following state benefits: pensions for the elderly, pensions for the disabled, allowance for non-working pensioners living in households without a legal breadwinner, student scholarship, allowance for temporary disablement, income from social insurance fund, allowance for childbirth, allowance for single parents, child allowance, unemployment benefits, pensions for war veterans, social aid for single pensioners and disabled persons. The receipt of formal social protection is constructed as a binary variable and the labour market categories are divided on this basis. Thus, no information is used on the monetary size of the public transfer but only on whether the household received a transfer or not.¹¹⁰ Caution must be exercised when interpreting the findings in such analysis given that the causality could run in either direction. In other words, public transfers might be one of the determinants of poverty but equally, poverty could determine the receipt of such transfers, although social benefits in Georgia are largely untargeted and are not means-tested to any great extent.

The poverty statistics used in section 6.2 are used here, namely poverty head count, poverty gap and severity by labour market status of the household head depending on whether or not the household receives formal social protection. The results are presented in table 6.9. However before turning to these results, table 6.8 briefly examines the proportion of households that receive formal social protection by labour market status of the head. We see that approximately one-half of Georgian households receive formal social protection of one kind or another. Over one half of these are headed by individuals that are inactive. Indeed, whereas three quarters of inactive-headed households receive formal social protection, we find that only one quarter of those headed by the unemployed does. This is a reflection of the inefficiencies of the unemployment benefit system discussed above. It also indicates that, although pension benefits are extremely low and rarely paid on time, coverage appears to be reasonable.

Another interesting feature of table 6.8 is that 40% of households whose head is engaged in informal activity are also recipients of some kind of formal social protection, compared to 37% of those whose head is formally employed. This is an indication that households that are collecting pension and unemployment benefits are also engaging in informal activities. It also suggests that informal activity has not led to the complete alienation of households from the formal social protection network. However overall, we see that a high proportion of households headed by

employed individuals receive formal social protection, particularly if we compare to those headed by the unemployed that, as we have seen, are most vulnerable.

Table 6.8 Percentage of Household Heads that Receive Formal and Informal Social Protection by Labour Market Category, 1999

Activity of Household Head	Receive Formal Social Protection	Receive Informal Social Protection
All	50.0	31.8
Formal	36.7	24.8
Informal	40.3	21.8
Unemployed	25.7	47.5
Inactive	75.2	43.2

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Formal social protection includes: pensions for the elderly, pensions for the disabled, allowance for non-working pensioners living in households without a legal breadwinner, student scholarships, allowance for temporary disablement, income from social insurance funds, allowance for childbirth, allowance for single parents, child allowance, unemployment benefits, pensions for war veterans, social aid for single pensioners and disabled persons.
- (b) Informal social protection includes: alimony, money received from non-family members from abroad, inheritance or other money received from relatives, money borrowed from a private source for household needs, and gifts (monetary) received from family members temporarily abroad.

Table 6.9 to sheds some light on the effectiveness of the formal social protection system in addressing the needs of the more vulnerable groups in society. This table explores the extent to which the receipt of formal social protection is associated with lower poverty risks by labour market categories of the household head. In other words, it compares the poverty risks for those with and without formal protection to see if the receipt of such protection is associated with lower poverty risks. This approach does not provide a complete insight into the efficacy of targeting since evidence of reduced poverty risks for those in receipt of social protection does not imply anything about the well off. For instance, the well off may be as likely to receive social protection as the poor but it will not impact on the poverty risk.

As we can see, the poverty risks for households whose heads are employed (both formally and informally) are higher amongst those who do not receive formal social protection. Of greater interest, however, are the poverty risks of the unemployed and inactive. We see that that the exact opposite is true; not only is receipt of formal social protection not associated with lower poverty risks, but it is actually associated with higher poverty risks. Whereas 45% of the unemployed and 40% of the inactive that receive formal social protection are poor, poverty rates for the unemployed and inactive that do not receive formal social protection are 39% and 32% respectively. Moreover, table 6.9 shows that receipt of formal social protection is also associated with higher extreme poverty rates for unemployed and inactive-headed households as well as more severe poverty than non-receipt. Although one must be cautious when interpreting these

¹¹⁰ This is recognised as a limitation, however the quality of the data on the magnitude of the transfer was considered to be too unreliable to undertake an analysis based on the size of the transfer.

results, they would suggest that the poor do benefit from formal social protection, however the targeting may not be very effective nor efficient.

Table 6.9 Poverty Measures by Formal Social Protection and Labour Market Categories, 1999

	Poverty, in %			Extreme Poverty, in %		
	Head Count	Poverty Gap	Poverty Severity	Head Count	Poverty Gap	Poverty Severity
Total	27.4	9.1	4.5	15.3	4.9	2.5
Receive formal social protection						
Formal employment	18.2	5.7	2.7	10.7	3.0	1.4
Informal employment	16.7	4.3	1.9	7.3	2.0	0.9
Unemployed	45.4	13.2	5.3	24.4	5.5	2.1
Inactive	40.2	13.6	6.4	23.7	7.2	3.3
Do not receive formal social protection						
Formal employment	21.4	6.6	3.3	11.1	3.7	2.0
Informal employment	19.4	5.9	2.9	9.3	3.0	1.7
Unemployed	39.2	12.8	5.7	21.7	6.2	2.7
Inactive	32.4	12.3	6.6	19.4	7.5	4.1

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Poverty line is set at 2/3 of median consumption per equivalent adult ($\theta = 0.75$).
- (b) Extreme poverty line is set at 1/2 of median consumption per equivalent adult.
- (c) *Head Count* is the share of household heads whose consumption falls below the poverty line.
- (d) *The poverty gap* provides information on the distance from the poverty line. It captures the mean aggregate consumption shortfall relative to the poverty line across the poor population.
- (e) *Poverty Severity* captures the inequality among the poor by effectively giving more weight to households that are further away from the poverty line.
- (f) Unemployed refers to ILO relaxed criterion definition.
- (g) Formal social protection includes: pensions for the elderly, pensions for the disabled, allowance for non-working pensioners living in households without a legal breadwinner, student scholarships, allowance for temporary disablement, income from social insurance funds, allowance for childbirth, allowance for single parents, child allowance, unemployment benefits, pensions for war veterans, social aid for single pensioners and disabled persons.

Table 6.10 examines the labour market and social protection composition of consumption quintiles. We see that overall, the poorest benefit most from formal social protection, however a significant share of the rich also benefit from formal social protection. The share of households that receive formal social protection decreases as consumption quintiles increase. Whereas 56% of households in the poorest consumption quintile receive formal social protection, this share decreases only to 48% for the richest quintile.

The high proportion of richer households receiving formal social protection is mainly accounted for by heads over retirement age that receive pension benefits and work at the same time. We see from table 6.10 that close to three quarters of the heads in the richest quintile that receive formal social protection are employed (either formally or informally). Appendix A6.1 examines in more detail the issue of working pensioners and we find that 80% of pensioners who are employed also receive formal social protection.¹¹¹ In addition, appendix A6.1 reveals that individuals above

¹¹¹ Note that the fact that working pensioners who also receive a pension appear to make up a large share of the richer households must be interpreted with caution. As discussed in appendix A6.1, the majority of working pensioners are

retirement age that do not receive a pension are more likely to be employed than those who do, *ceteris paribus*. This further confirms the hypothesis that it is indeed the inadequacy of the pension benefit system that is pushing pensioners into employment. Pensioners are employed mainly in agriculture and appendix A6.1 shows that, everything else being equal, employment amongst pensioners is associated with a significant positive impact on household welfare, suggesting that in the absence of adequate pension benefits, agriculture is an important source of livelihoods for pensioner households.

Table 6.11 examines the shares of household that receive formal social protection by labour market category of the head and consumption quintile. We see that for households whose heads are employed (both formally and informally), the proportion in receipt of formal social protection increases with consumption quintiles. At the same time, the share of inactive and unemployed that receives formal social protection decreases with consumption quintiles. This suggests that an important share of individuals above retirement age are collecting pension benefits and supplementing their income through formal and informal employment, and that this is particularly the case amongst the richer households.

We also see that households headed by the unemployed appear to be less likely to receive formal social protection than are those headed by the employed or inactive. Only 28% of the unemployed in the poorest quintile and 15% of those in the richest quintile receive formal social protection. In contrast, more than one third of the poorest households headed by the (formally and informally) employed receive formal social protection and as many as 48% and 43% of those headed by the informally and formally employed in the richest quintile do so. The unemployed being by far the poorest group in the labour market, these findings suggest that formal social protection is indeed ineffective at reaching the poorest. This situation cannot be considered satisfactory, particularly if one considers the limited resources available for the provision of social protection.

employed in agriculture and it is unclear whether agricultural employment is associated with higher levels of welfare or whether this is driven by the methodology used to compute aggregate consumption and value consumption of own-production in particular.

Table 6.10 Consumption Quintiles by Formal Social Protection and Labour Market Categories, 1999

	Consumption Quintiles				
	Poorest	2	3	4	5
Total	100.0	100.0	100.0	100.0	100.0
Receive formal social protection	56.0	55.4	46.6	44.1	48.0
Formal employment	8.4	10.7	13.1	13.3	18.8
Informal employment	4.6	8.9	8.5	11.4	16.0
Unemployed	2.9	2.7	1.8	0.5	0.5
Inactive	40.2	33.2	23.3	18.9	12.8
Do not receive formal social protection	44.0	44.7	53.4	55.9	52.0
Formal employment	15.7	20.8	24.1	25.0	24.9
Informal employment	10.0	10.4	15.8	19.7	17.4
Unemployed	7.3	5.4	5.6	2.8	2.8
Inactive	10.9	8.0	7.9	8.4	6.9
Sample size (N)					

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Entries refer to the proportions of the labour market categories in the different quintiles of the consumption distribution.
- (b) The consumption measure is per capita adult equivalent household consumption.
- (c) Formal social protection includes: pensions for the elderly, pensions for the disabled, allowance for non-working pensioners living in households without a legal breadwinner, student scholarships, allowance for temporary disablement, income from social insurance funds, allowance for childbirth, allowance for single parents, child allowance, unemployment benefits, pensions for war veterans, social aid for single pensioners and disabled persons.
- (d) Unemployed refers to ILO relaxed criterion definition.

Table 6.11 Proportion that Receives Formal Social Protection by Labour Market Categories and Consumption Quintiles, 1999

	Poorest	2	3	4	5
Receive formal social protection	56.0	55.3	46.6	44.1	48.0
Formal employment	34.9	34.0	35.2	34.7	43.0
Informal employment	31.5	46.1	35.0	36.7	47.9
Unemployed	28.4	33.3	24.3	15.2	15.2
Inactive	78.7	80.6	74.7	69.2	65.0

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Entries refer to the proportions within the labour market category and consumption quintile that receive formal social protection.
- (b) The consumption measure is per capita adult equivalent household consumption.
- (c) Formal social protection includes: pensions for the elderly, pensions for the disabled, allowance for non-working pensioners living in households without a legal breadwinner, student scholarships, allowance for temporary disablement, income from social insurance funds, allowance for childbirth, allowance for single parents, child allowance, unemployment benefits, pensions for war veterans, social aid for single pensioners and disabled persons.
- (d) Unemployed refers to ILO relaxed criterion definition.

These findings suggest that although formal social protection is relatively extensive in terms of coverage, its accuracy in targeting the poor (or indeed the very poor) appears at least sub-optimal. The evidence suggests that the poor targeting implies that many in need (namely the unemployed and to some extent the inactive) will not receive support, while many not in need actually receive support. The targeting failures appear to be particularly serious in the case of the unemployed.

6.6 LABOUR MARKET STATUS, POVERTY AND INFORMAL SOCIAL PROTECTION

This section wishes to assess whether informal networks are compensating for the inefficiencies of the formal social protection system. As discussed in chapter 2, informal networks were already common during the Soviet period and assumed an even greater social role with the demise of central planning and the emergence of a poorly developed market system with weak institutions. The empirical work of Cox, Eser and Jimenez (Cox, et al. 1997) examined private transfers in Russia during the early part of the transition and concluded that they were extensive, responded to the correlates of poverty, and had a positive re-distributive effect. Their findings suggest that a greater degree of information on need exists within informal systems than can be captured by state agencies administering formal systems. This could also be taken to suggest that the informal systems have a greater potential for efficacy in reducing poverty.

In order to gain some insight into the extent to which this is the case in Georgia, this section explores the coverage of informal social protection by labour market status of the household head, and examines the extent to which such protection is associated with poverty risk. A conventional problem encountered in regard to private transfers is that, in comparison to public transfers that are regular payments, they can be infrequent in nature. The definition of informal social protection used here refers to cash transfers received from relatives or friends in the last three months. More specifically it includes: alimony, money received from non-family members from abroad, inheritance or other money received from relatives, money borrowed from a private source for household needs, and monetary gifts received from family members temporarily abroad. The motives for the private transfers are not recorded. In-kind transfers (food and non-food gifts) are not included here as these are more likely to capture barter exchange activity between households than informal social protection. However they are included in appendix A6.2 (table A6.9) and show that even when in-kind transfers are included, results are robust. Finally, as with the analysis of formal social protection, a binary variable for whether a household received an informal transfer or not is used, and information on the size distribution of the transfer is not exploited.¹¹²

Returning to table 6.8, we see that just under one third of all households in Georgia receive some form of informal social protection. If in-kind transfers are included, then some 54% of households receive informal transfers. Although a similar share of households headed by the formally and the informally employed receive informal transfers (the share is slightly higher for the formally

¹¹² Again this is due to the questionable quality of the data on size of transfers.

employed), we see that households headed by the unemployed benefit the most from informal transfers. This is in sharp contrast to formal social protection, which benefited mostly the employed. Thus, whereas 48% of the unemployed receive informal social protection, only 22% of the informally employed and 25% of the formally employed do so. These findings suggest that informal transfers are indeed making up for the deficiencies of the formal unemployment benefit system. Table 6.8 also shows that the inactive, three-quarters of who receive formal social protection, also rely considerably on informal transfers, with 43% of inactive headed households receiving some form of informal social protection. This also suggests that pension benefits are insufficient to meet basic needs and that inactive-headed households rely on informal transfers to make ends meet. The contrast with employed-headed households provides further evidence for this claim.

Table 6.12 presents poverty rates for each of the four possible labour market categories of the head of household and compares those in receipt of informal social protection and those that are not. Again, caution must be exercised when interpreting these results since, as with formal transfers, the causality could run either way and therefore the potential endogeneity makes inferences extremely difficult. We see that the receipt of informal transfers does not appear to be associated with lower poverty risks. Indeed, if anything, the poverty risks are slightly higher for those who receive informal social protection for all categories. This is resonant of the findings noted for formal social protection. The poverty rate for households headed by the unemployed who receive informal transfers is 45% compared to 37% for those who do not. This could be an indication that informal social protection is somewhat effective at targeting the poorest. However, as previously noted extreme caution must be taken when interpreting these results. If we look at extreme poverty rates we find that for households headed by the unemployed, there is little difference in poverty risks across the protection boundary.

Receiving informal social protection is also associated with higher poverty risks for households headed by the formally employed, and particularly for those that are below the extreme poverty line. Whereas 15% of households who are headed by the formally employed and receive informal social protection are 'extreme' poor, only 10% of those that do not receive informal transfers are 'extreme' poor. As previously discussed, the formally employed are likely to be public wage employees facing extremely low wages and arrears, who rely on informal networks of friends and family to make ends meet.

Table 6.12 Poverty Measures by Informal Social Protection and Labour Market Categories, 1999

	Poverty, in %			Extreme Poverty, in %		
	Head Count	Poverty Gap	Poverty severity	Head Count	Poverty Gap	Poverty severity
Total	27.4	9.1	4.5	15.3	4.9	2.5
Receive informal social protection						
Formal employment	25.0	7.9	3.7	14.5	4.2	1.9
Informal employment	20.4	6.1	2.9	9.4	3.1	1.6
Unemployed	45.4	13.9	5.9	21.8	6.1	2.7
Inactive	38.4	13.4	6.5	22.1	7.3	3.4
Do not receive informal social protection						
Formal employment	18.6	5.7	2.9	9.8	3.1	1.7
Informal employment	17.7	5.1	2.4	8.2	2.4	1.3
Unemployed	36.7	11.9	5.3	23.0	6.0	2.5
Inactive	38.1	13.2	6.5	23.0	7.2	3.5

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Poverty line is set at 2/3 of median consumption per equivalent adult ($\theta = 0.75$).
- (b) Extreme poverty line is set at 1/2 of median consumption per equivalent adult.
- (c) *Head Count* is the share of household heads whose consumption falls below the poverty line.
- (d) *The poverty gap* provides information on the distance from the poverty line. It captures the mean aggregate consumption shortfall relative to the poverty line across the poor population.
- (e) *Poverty Severity* captures the inequality among the poor by effectively giving more weight to households that are further away from the poverty line.
- (f) Unemployed refers to ILO relaxed criterion definition.
- (g) Informal social protection includes: alimony, money received from non-family members from abroad, inheritance or other money received from relatives, money borrowed from a private source for household needs, and gifts (monetary) received from family members temporarily abroad.

Table 6.13 looks at households who receive informal social protection by labour market status of the household head and consumption quintiles. We see that overall, the poor benefit the most from informal transfers. Thus, 39% of households in the poorest quintile receive informal transfers whereas only 24% of those in the richest quintile do. The information in this table is used to calculate the shares of households that receive informal social protection by labour market status of the head and consumption quintiles. These shares are presented in table 6.14. We see that contrary to formal social protection, informal social protection appears to effectively target the poorest no matter what the labour market status of the household head. The shares of households receiving informal social protection decrease steadily as consumption quintiles increase. This is in contrast to the receipt of formal social protection, which saw the share of employed households receiving formal social protection increasing with consumption quintiles. We also see that the targeting appears to be most effective for households headed by the unemployed, as the share that receives informal social protection almost halves between the poorest and richest quintiles.

Finally, table 6.14 shows that the share of inactive-headed households that receive informal transfers remains relatively constant throughout the distribution at around 41% to 44%. This could indicate that households headed by pensioners are more likely to receive informal transfers from other family members regardless of their level of welfare. It could be a wider reflection of social

norms and the responsibility that the extended family has to 'take care' of the elder members of the family.

Table 6.13 Consumption Quintiles by Informal Social Protection and Labour Market Categories, 1999

	Consumption Quintiles				
	Poorest	2	3	4	5
Total	100.0	100.0	100.0	100.0	100.0
Receive informal social protection	39.4	35.7	29.4	30.1	24.4
Formal employment	7.9	8.1	7.1	10.2	10.1
Informal employment	3.6	5.3	5.7	7.0	5.3
Unemployed	5.5	3.7	3.9	1.4	0.9
Inactive	22.5	18.8	12.9	11.5	8.0
Do not receive informal social protection	60.6	64.3	70.6	70.0	75.6
Formal employment	16.2	23.4	30.0	28.0	33.6
Informal employment	11.1	14.0	18.7	24.2	28.1
Unemployed	4.7	4.4	3.6	2.0	2.4
Inactive	28.6	22.4	18.3	15.8	11.6

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Entries refer to the proportions of the labour market categories in the different quintiles of the consumption distribution.
- (b) The consumption measure is per capita adult equivalent household consumption.
- (c) Informal social protection includes: alimony, money received from non-family members from abroad, inheritance or other money received from relatives, money borrowed from a private source for household needs, and gifts (monetary) received from family members temporarily abroad.
- (d) Unemployed refers to ILO relaxed criterion definition

Table 6.14 Proportion Receiving Informal Social Protection by Labour Market Category and Consumption Quintile, 1999

	Poorest	2	3	4	5
Receive informal social protection	39.4	35.7	29.4	30.1	24.4
Formal employment	32.8	25.7	19.1	26.7	23.1
Informal employment	24.5	27.5	23.4	22.4	15.9
Unemployed	53.9	45.7	52.0	41.2	27.3
Inactive	44.0	45.6	41.3	42.1	40.8

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Entries refer to the proportions within the labour market category and consumption quintile that receive informal social protection.
- (b) The consumption measure is per capita adult equivalent household consumption.
- (c) Informal social protection includes: alimony, money received from non-family members from abroad, inheritance or other money received from relatives, money borrowed from a private source for household needs, and gifts (monetary) received from family members temporarily abroad.
- (d) Unemployed refers to ILO relaxed criterion definition.

It would appear that the informal networks that developed during the Soviet period are very much alive today. Approximately one third of households in Georgia rely on some form of informal monetary transfers from friends and family. Moreover, informal social protection appears to be more effective at targeting the most vulnerable groups in the labour market (more specifically the

inactive and unemployed). In particular, for households headed by the unemployed, informal social protection appears to be making up for the serious deficiencies of the formal unemployment benefit system.

6.7 SUMMARY OF MAIN FINDINGS AND CONCLUSIONS

This chapter has aimed to gain some insight into why informal employment is so widespread in Georgia and into whether it is providing a social safety net. More specifically, it has produced evidence that is consistent with the view that, in general, individuals work informally (a) because there are no formal alternatives and (b) because of the inadequacy of the formal social protection system, which means that they cannot afford to be unemployed or inactive.

To this end, this chapter examined the relationship between economic activity of the household head and household welfare. It was specifically interested in assessing (1) whether the labour market status of the household head, was a significant determinant of household welfare, *ceteris paribus*; (2) whether informal employment was associated with greater poverty risks and lower levels of welfare than formal employment, *ceteris paribus*; (3) whether unemployment and inactivity were associated with particularly high poverty risks and whether informal employment decreased poverty risks and increased household welfare relative to unemployment and inactivity, *ceteris paribus*; and (4) the extent to which formal social protection was effectively targeting the poor in the labour market and the extent to which informal networks were compensating for the possible inefficiencies of the formal social protection system.

With respect to these questions, the findings showed that first, the welfare of the households depends on the labour market status of the head, *ceteris paribus*. More specifically, it was found that inactivity and unemployment are associated with very high poverty risks, while employment (both formal and informal) significantly reduces the risk of being poor, *ceteris paribus*. This chapter therefore deduced that employment is an important means of escaping poverty.

Second, the findings show that, in general, informal employment is associated with lower levels of welfare and greater poverty risks than formal employment. The results showed that for every category of employment (employee, non-agricultural self-employed, farmer), being informally employed was associated with higher poverty risks than being formally employed. Moreover, the multivariate analysis revealed that the positive impact on household welfare of the formal employment categories was always stronger than was the impact of the corresponding informal employment category. These findings suggest that, everything else being equal, informal

employment is associated with lower welfare and a greater level of poverty than formal employment.

Third, the results showed that inactivity and unemployment are associated with the highest poverty risks of any labour market group and that their poverty is almost twice as severe. Moreover, the multivariate analysis revealed that, *ceteris paribus*, unemployment and inactivity were associated with lower levels of welfare and higher poverty risks than any type of informal employment, thereby suggesting that individuals are better off being informally employed than they are relying on the social protection system.

Fourth, this conclusion was confirmed by the analysis of formal social protection, which showed that it is ineffective at targeting the poorest groups in the labour market (namely the unemployed and inactive). The poor targeting implies that many of those in need (particularly the unemployed) are not receiving support, while many not in need (the employed both formally and informally) are actually receiving support. Indeed results show that amongst households headed by the employed, the richest quintile receives the highest share of formal social protection. Although formal social protection seems to be reasonably effective at targeting the inactive, as three quarters of inactive-headed households receive some type of formal transfer, the extremely low levels of pensions, and very high poverty rates for inactive-headed households indicate that many are forced to work to survive. Indeed it was found that 80% of pensioners who receive pension benefits also worked, and that employed pensioners were less likely to be poor than those who were not employed, *ceteris paribus*. In contrast, it was found that informal transfers do protect the most vulnerable groups in the labour market, and particularly the unemployed.

Together these findings suggest that the low level of social benefits, the extensive arrears in their payment and the poor targeting of the benefit system, imply that individuals cannot afford to be unemployed or inactive, and that, everything else being equal, they are better off working informally. They also suggest that, *ceteris paribus*, individuals are better off being formally employed. If one assumes that individuals are utility maximising and that they make rational choices, then it can be concluded that those working informally do so because there is no formal alternative and because they cannot afford to be unemployed or inactive.

This chapter has also revealed some other interesting findings. Although overall informality is associated with lower welfare levels, not all types of informal employment are associated with a lower level of welfare than formal employment. In fact, households headed by informal non-agricultural self-employed and informal farmers had higher levels of consumption per equivalent adult and faced a lower probability of being poor, than did those headed by formal employees,

ceteris paribus. This is because extremely low wages in the state sector (which makes up the bulk of formal wage employment) and extensive arrears in their payment means that many formal employees are poorer than most other groups in the labour market. Nevertheless, households headed by informal wage employees face the greatest poverty risks of any of the employed groups and have lower levels of welfare than those headed by formal employees, *ceteris paribus*.

The examination of the role of human capital in determining household welfare found that there are considerable returns to education, particularly in urban areas where they are especially significant for those at the bottom end of the consumption distribution. As regards the relationship between type of employment and household welfare, this chapter also found that although agriculture is associated with considerable underemployment, it is an important source of livelihoods. The results show that formal farming is associated with lower poverty rates than other labour market activities and that the share of households headed by formal farmers increases with consumption quintiles. Moreover, it was found that agricultural employment is an important coping strategy for the inactive as it reduces the risk of poverty for inactive-headed households by almost one quarter. However these findings must be interpreted with caution, as they could be influenced by the methodology used to value consumption of own-production, particularly since agricultural employment is limited to very small-plots (0.75 ha. on average). Further research is necessary to draw robust conclusions regarding the role of agriculture in reducing poverty risks in Georgia. It can however be concluded that there are considerable discrepancies between the wage and self-employed in agriculture, with the wage-employed facing a 50% higher poverty risk than the self-employed.

Overall this chapter suggests that as a result of the economic collapse and the slow economic recovery, which have resulted in a severe contraction of formal employment opportunities and provision of social protection, individuals engage in informal labour market activity to survive. Informal employment has been found to be significantly associated with poverty and a lower level of welfare than formal employment. Therefore this chapter does not find support for the claim that informal activities could represent an important source of government revenue and, for the most part, nor does it find support for the claim that informal activities are potential capitalist enterprises. This chapter has shown that informal labour market activity can largely be characterised as survival activities undertaken in the absence of formal employment opportunities and an adequate social protection system.

CONCLUSIONS

This thesis provides the first in depth study of poverty and the labour market in Georgia, as well as the first analysis of the scale and nature of the country's informal labour market. It is also the first piece of research to analyse the Georgian Labour Force Survey data and provides the first comprehensive review of 'informal sector' literature, which spans developing, western industrialised, socialist and transition countries. In doing so, this thesis has made three significant contributions to the existing body of knowledge. First, it has developed a new conceptual framework for the study of informal labour market activity in transition countries, which distinguishes it from other types of untaxed, unregulated and/or unmeasured activities (i.e. illegal, underground and household activities). Second, it has demonstrated that one reason why the increase in open unemployment did not match the collapse in output, which accompanied the beginning of transition in Georgia was, in part, because of a transfer of labour into informal employment. Third, it showed that in the absence of formal employment and adequate social protection, informal labour market activity provides a social safety net in Georgia.

This concluding chapter is organised as follows. Section 7.1 begins by briefly reviewing the research questions and hypotheses, and by recalling the motivations for the research. Section 7.2 then outlines how the thesis has answered these questions, and the limits of those answers. Section 7.3 highlights the major findings and conclusions, while section 7.4 discusses their implications for policy. Finally, section 7.5 examines how the findings of this research contribute to the existing debate on the informal sector and section 7.6 highlights what the implications are for a future research agenda.

7.1. MOTIVATION FOR THE RESEARCH: WHAT WERE THE MAIN QUESTIONS AND HYPOTHESES?

At the beginning of the 1990s, following the collapse of the socialist systems in Central and Eastern Europe and the disintegration of the Soviet Union, many analysts predicted that unemployment would be a key adjustment mechanism in the transition to a market economy. They argued that a pool of unemployed would be needed in order to have enough labor to fill the new jobs. Models of the transition process, like that of Aghion and Blanchard (1993), predicted that the restructuring process would lead to a fall in employment and an increase in open unemployment. As private firms would grow, they would draw from the pool of unemployed and power economic growth. Eventually workers would be pulled directly out of the state sector into private enterprises (Aghion and Blanchard 1993).

Although this has been the experience of many countries of Central and Eastern Europe, in the newly independent states of the former Soviet Union, the dramatic falls in output were not matched by equally significant falls in employment and even less so by increases in unemployment. One explanation presented for the lack of correlation between unemployment and restructuring has been labour hoarding (see for example Commander, S, et al. 1996; Commander, Simon and Tolstopiatenko 1997; Evans-Klock and Samorodov 1998; Layard and Richter 1995). Another explanation, supported largely by evidence in Hungary and Russia, has been that private firms have recruited directly from the state sector, (see Clarke 1999a; Commander, S and Yemtsov 1995; Layard and Richter 1995).

This thesis asked whether, in Georgia, the increase in open unemployment matched the scale of the collapse in output and set forth the hypothesis that it did not, in part, because labour shifted into informal employment. The second hypothesis concerned the motivation for the shift into informal employment, namely that the unexpected scale of the collapse in output crippled the government's ability to provide social security and led to a contraction of formal employment opportunities, leaving individuals with no alternative but to generate income through informal labour market activities. The thesis set out to assess the validity of these two hypotheses and to answer some related questions, namely: What do we mean by informal employment/informal sector and how can we measure it? What are the implications for social and economic development and what, if anything should be done about it? It also sought to contribute to some of the existing debates in the literature, including whether the informal sector undermines government revenue, whether the main cause of the informal sector is poverty or excess regulation, whether there exists a dualistic relationship between the formal and informal sectors (i.e. a poor/informal sector vs. a rich/formal sector), and whether the informal sector is a transitory phenomenon, which will disappear with the creation of a market economy.

7.2 HOW HAS THIS THESIS AIMED TO ADDRESS THESE QUESTIONS AND WHAT WERE THE LIMITATIONS?

First, in order to understand what the informal sector is, chapter 2 reviewed existing literature on the informal ('shadow', 'black', 'underground', 'unrecorded', 'hidden', 'irregular', 'subterranean', 'parallel') economy in developing, western industrialised, socialist and transition countries. This literature review revealed that in transition countries, the term 'informal sector' has been used by researchers to define their own particular area of interest without building on the extensive body of research on the definition of the informal sector that exists in developing, western industrialised and socialist countries. The result is that the term has been used to define a

wide range of activities, which have little in common with one another, from subsistence farming to drug trafficking and barter trade.

Second, in order to examine the informal sector, chapter 3 developed a new conceptual framework that distinguishes informal activities from other 'hidden' economic activities, namely illegal, underground and household activities. This conceptual definition of the informal sector was operationalised and a typology of informal employment was developed for transition countries. Informal employment is comprised of: (1) self-employed in household enterprises; (2) self-employed on urban or unregistered rural plots of land; (3) unpaid contributing family workers; (4) wage employees working on the basis of oral agreements; (5) secondary job holders with formal primary jobs and informal secondary jobs.

The research was based on the quantitative analysis of the Georgian Labour Force Survey data (1998, 1999) and the Survey of Georgian Households (1998, 1999). I constructed a number of standard labour market variables as well as informal employment variables for each of the above types of informal employment. Chapter 4 and 5 then used descriptive statistics to analyse the characteristics of the labour market as well as the scale and characteristics of formal and informal employment. Multivariate regression analysis was used to analyse the determinants of different types of informal employment and of poor labour market outcomes (unemployment, underemployment and long-term unemployment).

In order to analyse the relationships between informal employment and poverty, chapter 6 presented estimates of a number of poverty statistics, namely the head-count index, poverty gap and poverty severity and analysed the poverty profile by labour force status of the household head. It also computed consumption quintiles by labour force status of the household head. A variety of multivariate regression techniques were then used (namely OLS, probit and quantile regression) to examine in detail the relationship between household welfare and labour force status of the household head, while controlling for a variety of other household characteristics. Finally, I also constructed two binary social protection variables, for receipt of formal and informal social protection respectively, and examined both the poverty profiles and distribution by consumption quintiles for each type of social protection by labour force status of the household head.

A number of interesting and important issues could not be fully addressed because of methodological and data limitations. First, I was unable to examine one very interesting aspect of informal labour market activity, namely '*left-hand work*', due to a lack of data on such activities. *Left-hand work* refers to the earning of unofficial income at the formal workplace (see chapter 3).

Anecdotal evidence suggests that this type of informal activity, which was very common during the Soviet period, is still widespread in Georgia. However, neither the LFS, nor the SGH had questions that would have enabled the identification of such activities in the data.

Second, the lack of information on the motivation for informal labour market activity has posed some similar limitations. Since the LFS and SGH do not collect direct information on why individuals engage in the type of activity they do, the operationalisation of the informal sector definition (chapter 3) had to be based on assumptions as to which activities are undertaken to meet basic needs (informal activities) and which are undertaken to deliberately avoid the payment of taxes or regulations (underground activities). Moreover, it also meant that chapter 6 had to assume that individuals are utility-maximizing and that they make rational choices in order to conclude that they engage in informal labour market activity because there is no formal alternative and because the social security system is inadequate. If the surveys had provided information on the motivation for type of employment, such as 'can't get a formal job' and 'can't live off unemployment benefits' for instance, then the argument regarding the role of the informal labour market activity as a social safety net would have been strengthened.

Third, due to the lack of reliable data on incomes, and particularly wages, I was not able to examine the relationship between wages and informal employment. The quality of data on incomes is questionable both because of low response rate and the underreporting of incomes (particularly in the case of the self-employed), but also because the arrears in the payment of wages means that questions regarding last months wages may not fully capture actual wages received. This can be because, for instance, individuals may report their official wage, despite not having been paid in the last month, or they may report the full amount received, after having been paid 6 months worth of wages all at once. This meant that I was not able to examine whether informal employment is a significant determinant of low wages. I did however examine whether the wage in the primary sector was a significant determinant of secondary jobholding but highlighted that results must be interpreted with extreme caution, given the unreliability of wage data.

A fourth (and related) limitation was posed by the fact that, as with all analysis of poverty and labour market activity, consumption data is provided at the household level while labour force data is provided at the individual level. This means that assumptions have to be made about intra-household distribution of resources and about economies of scale in order to derive an estimate of individual welfare. It also implies that any analysis of the relationship between labour force status and welfare must control for household characteristics, and particularly for the labour force status of other members within the household. This has meant that the focus of the analysis had to be

changed from the labour market status of the individual in chapters 4 and 5 to that of the head of household in chapter 6, in order to analyse the relationship with poverty.¹¹³ This partially distorts the picture, as the head of household's labour force status may be different from that of the other members of the household and means that conclusions could not be drawn on the direct impact of labour force status on poverty, and that inferences could only be made on the impact of labour force status of the household head.

7.3 MAJOR FINDINGS

The empirical analysis has resulted in some significant findings, which can be summarised in five main points:

1. Open unemployment did not match the scale of the collapse in output because the decline in output led to a fiscal crisis, which squeezed social spending and meant that individuals could not afford to be unemployed.
2. At the same time, state employment declined but there was very little growth in private sector firms capable absorbing the labour shed from the state sector.
3. With limited formal job creation and no adequate social benefits, labour shifted, in part, into informal employment. The informal sector thus provides a social safety net.
4. Another reason why open unemployment did not increase is that, given the inadequacy of social benefits, all individuals must engage in some form of economic activity, no matter for how little, in order to survive, resulting in considerable underemployment.
5. The informal sector is also associated with some detrimental consequences for Georgia's social and economic development: It is contributing to deskilling the Georgian labour force, it risks further marginalizing certain vulnerable groups and its concentration amongst ethnic minorities and underprivileged regions could contribute to undermining Georgia's stability.

Each of these five points will be discussed in turn.

1. *Open unemployment did not match the scale of the collapse in output because the decline in output led to a fiscal crisis, which squeezed social spending and meant that individuals could not afford to be unemployed.*

¹¹³ Note that, I also examined the impact of the number of formally employed, informally employed, unemployed and inactive individuals in the household on household welfare and found that results based on the household head were robust. I chose to focus on the head of household, as households in Georgia are very small and therefore the number of individuals in each labour force category is less significant (mean size is 3 individuals).

Between 1989 and 1995, Georgia's output fell by more than 70% and gross domestic investment decreased to just 3% of GDP (World Bank 1997, p.174-176; 2004, p.1). Chapter 4 found that, contrary to expectations; open unemployment did not increase proportionally. By 1999 open unemployment had increased to only 15% of the labour force. The scale of the decline in output resulted in an enormous contraction of tax revenue and crippled the Government's ability to provide social security. In 1999, tax revenue was just 14% of GDP (EBRD 1999, p.168), one of the lowest levels in the world, and the majority went to servicing external debt, which absorbs 60% of total government revenue (World Bank 2004, p.11). As a result, unemployment and pension benefits, if paid at all, were absolutely inadequate, amounting to only 11% of the minimum consumption basket. In addition, the system was marred by considerable arrears and only a small fraction of the unemployed actually receive benefits (IMF 2001, p.51-52).

Consequently, the unemployed and inactive face the highest poverty risks of any group in the labour market. Chapter 6 revealed that having an unemployed or inactive head of household had a strong significant positive impact on the probability of being poor, *ceteris paribus*. Households headed by the unemployed had not only the highest poverty rates but also by far the most severe. Moreover, the targeting of the formal social projection system was found to be poor, as many of those in need (particularly the unemployed) did not receive support, while many not in need (the employed) did.¹¹⁴

2 *At the same time, state employment declined but there was very little growth in private sector firms capable absorbing the labour shed from the state sector.*

Although there has been a significant reallocation of labour from the state to the private sector, this thesis found that growth in private sector employment was largely limited to subsistence agriculture and small-scale informal activities. Whereas in 1990, the state accounted for 86% of total employment (EUROSTAT 1996a, p.40), the results show that in 1999 only 35% of all employed worked for the state. However, we find that more than 90% of all private sector employment was accounted for by small-scale informal activities and own-account workers in small-plot agriculture. Moreover, there was virtually no creation of small enterprises capable of generating employment. It was found that in 1999, only 2% of the self-employed had employees.

¹¹⁴ In contrast, chapter 6 found that informal transfers do protect the most vulnerable groups in the labour market, and particularly the unemployed. The results shows that approximately one third of households in Georgia rely on some form of informal monetary transfers from friends and family. Informal social protection was found to be more effective at targeting the most vulnerable groups, particularly the unemployed and the inactive.

As far as larger private enterprises are concerned, the results showed that less than 30% of wage employees worked in the private sector and the large majority (70%) worked informally, on the basis of precarious oral agreements. These findings seriously question the success of the transition process and of transition models that predicted that privatisation and restructuring would result in the creation of a private sector capable of absorbing the labour shed by the state sector and of being the driving force behind economic growth.

Why has restructuring failed (so far) to create private firms capable of generating employment? This question goes well beyond the scope of this thesis, however some possible explanations have been mentioned, not least was the disruption of inter-republican trade links, which resulted in a sudden loss of markets for both inputs and outputs. Under the centrally planned system, most enterprises produced intermediate and capital goods and had a single buyer for their output and a single supplier for their inputs. Moreover, given the focus on very large enterprises, there was little diversification of production within republics so that after independence, the economies of newly independent states such as Georgia, were suddenly reliant on a few gigantic enterprises. Following the dismantlement of trade links, enterprises found they were unable to find new trading partners, as many of the intermediate goods they produced were of no use to western markets and their quality did not meet world standards. Moreover, new marketing channels could not be established over-night, especially in the highly competitive international market. In addition, given the weakness of Georgia's economy and the unstable security situation, investment (and particularly foreign direct investment) has been very limited. The weak banking sector, complicated legal and bureaucratic hurdles and pervasive corruption have done anything to facilitate the growth of the private sector.

3. *With limited formal job creation and no adequate social benefits, labour shifted, in part, into informal employment. The informal sector thus provides a social safety net.*

This thesis has shown that, in general, individuals work informally because there is no formal alternative and because they are better off than being unemployed or inactive. It found that informal employment is associated with higher poverty risks than formal employment, *ceteris paribus*. For any category of employment, individuals who are informally employed are more likely to be poor than are those who are formally employed, everything else being equal. At the same time, informal employment significantly decreases the risk of poverty with respect to unemployment and inactivity, *ceteris paribus*. Building on utility theory and the theory of rational choice, I assumed that individuals are utility-maximizing and that they make rational choices and deduced that, on average, individuals work informally because there is no formal alternative and

because it is better than being unemployed or inactive. I therefore conclude that the informal sector is indeed providing a social safety net.

The majority of Georgia's employment was found to be informal. In 1999, 52% of the employed (or almost 1 million people) worked informally, and if agricultural workers are excluded, then 34% were found to be informally employed. Of all the informally employed, roughly 17% were self-employed, 59% were unpaid contributing family workers, and 14% were wage employees working on the basis of temporary and/or oral agreements. We also found that, given the extremely low wages in the state sector, approximately 8% of the informally employed were wage employees with formal primary jobs and an informal secondary job. The remaining 2% were others informally employed, working on a casual basis or in typical informal activities.

While it is likely that this represents a considerable increase in the scale of informal employment in Georgia with respect to the pre-transition period, its growth cannot be measured due to lack of comparable data. Nevertheless, the literature relates that although secondary employment was widespread during the Soviet period, the vast majority of primary employment was formal (state) employment, suggesting that the share of informal primary employment has grown considerably.

4. Another reason why open unemployment did not increase is that, given the inadequacy of social benefits, all individuals must engage in some form of economic activity, no matter for how little, in order to survive, resulting in considerable underemployment.

Chapter 4 argued that there are a number of reasons to suspect that unemployment may be underestimated and that there may be considerable underemployment (working less than normal hours) in Georgia. First, the Government has chosen to apply the international 'one-hour-employment-criterion' to a one-week reference period, which implies that anyone working for at least one hour during the reference week is considered employed. Given the inadequacy of unemployment and pension benefits, a significant share of the population engages in both formal and informal agriculture to meet basic needs. If they work for more than one hour, they are considered self-employed. Thus, only 4% of the rural labour force is unemployed. Second, the findings showed high and increasing rates of inactivity, particularly for youth and females in childbearing age, which could be an indication that, having lost hope of finding a job, individuals drop out of the labour force altogether - thereby further disguising the true level of unemployment. Third, there is evidence of continued labour hoarding in the form of reduced working hours, unpaid leave and reduced real wages particularly in manufacturing and municipal infrastructure services.

Taking account of all those working less than normal working hours, it was found that over one half of the labour force is underemployed. Compounding the underemployed and unemployed suggests that as much as 67% of the labour resources were left unused in the Georgian economy in 1999. This indicates that there is a 'pool' not of unemployed, but of underemployed, on which the growing private sector could potentially draw to power economic growth.

5. *The informal sector is also associated with some detrimental consequences for Georgia's social and economic development: It is contributing to deskilling the Georgian labour force, it risks further marginalizing certain vulnerable groups, and its concentration amongst ethnic minorities and underprivileged regions could contribute to undermining Georgia's stability.*

First, this thesis showed that although the Georgian labour force has high levels of educational attainment and there are significant returns to education, it is quickly losing its skills and existing skills are becoming obsolete.

On the one hand, the Georgian labour force was found to be highly educated relative to the EU-15 for instance, and higher education was found to be associated with a lower probability of unemployment, *ceteris paribus*. On the other, more than one third of the employed with higher education worked in agriculture and low-skilled informal activities. After more than ten years, there is a risk that many may have already lost their skills. At the same time, those who have not lost their skills may find that their skills have become obsolete in the new market economy. This thesis argued that, given the state of Georgia's economy, its human capital is one of its principal assets and that unless this trend is reversed, there is a risk it will be entirely eroded. This could present an obstacle to economic growth, as there may be insufficient workers with adequate skills to support the growing private sector. With an unskilled workforce and a large informal and agricultural sector, Georgia's economy would resemble more that of a developing country than that of a developed market economy, with all the implications in terms of poverty, vulnerability and limited economic growth.

Second, this thesis found that informal employment is strongly associated with certain vulnerable groups in Georgian society. Females, youth, individuals with lower educational attainment, ethnic minorities and individuals living in depressed regions were all more likely to be informally employed, *ceteris paribus*. This is worrying as these groups face a multitude of other vulnerabilities as well, including a greater risk of unemployment, underemployment and long-term unemployment.

The results concerning youth are particularly worrying; they suggest that youth are being marginalized from the formal labour market. The analysis showed that relative to middle-aged workers, youth (aged 15 to 24) were significantly more likely to be working informally, *ceteris paribus*. Moreover, it found evidence that, having lost hope of finding a job, some youth were dropping out of the labour market altogether. It was highlighted that these results do not include students; these are young people that are either working full time or are without work and actively looking for work.

These findings raise serious concerns regarding the country's future human capital stock and economic development. By being unemployed or working in low-skilled informal jobs, Georgian youth, who still have a high level of education relative to the European counterparts, are quickly losing their skills. This has damaging implications for living standards and economic growth, since, as has been argued above, there may not be sufficient skilled workers to fill the new private sector jobs as well as to run the country's administration, health and education systems. Furthermore, since we found that, *ceteris paribus*, both unemployment and informal employment were strongly associated with lower levels of welfare, there is a risk that poverty will increase and deepen as these individuals continue to be excluded from the formal labour market, placing even greater demands on the limited resources of the state and further dampening economic growth.

This thesis also found that certain types of informal employment were associated with a considerable degree of gender inequality. Amongst the self-employed and farmers, females were more likely to be working informally than males, *ceteris paribus*, although gender was not a significant determinant of informal employment amongst wage employees. These findings suggest a degree of marginalisation of females in the labour market, which is confirmed by some of the other results: females were more likely to be underemployed, *ceteris paribus*; they are over-represented in semi-skilled positions (80% of clerks are females) and under-represented in senior positions (only 32% of managers are females), and; females (particularly those in childbearing age) were increasingly inactive as a result of the break-down of child-care facilities that had been previously widely available.

The results reflect those of other research that suggests that transition has been accompanied by a reversal of the gender equality that had been achieved (at least in the public sphere) by the socialist system and a return to a more traditional division of gender roles in the Georgian labour market. Dourglishvili (1997), for instance, has argued that the gender equality achieved in the public sphere by the socialist system actually left the patriarchal, male-dominated family structure untouched. These findings suggest this traditional division of roles that exists within the household is being extended to the public sphere.

Finally, this thesis revealed that individuals with lower education also face a risk of being marginalized from the formal labour market. Individuals with less than higher education were significantly more likely to work as informal employees, informal self-employed, and contributing family workers than were those with higher education, *ceteris paribus*. Indeed, it was suggested that there is a sort of 'capture' of the formal sector by individuals with higher education, both because of the higher qualifications and the social network that higher education confers; two important prerequisites for obtaining formal jobs. The findings showed that formal wage employment is almost entirely limited to jobs in public administration, education and health, for which higher education is required. Similarly, given the bureaucratic obstacles and corruption associated with the private sector, formal self-employment is limited to a small group of highly educated and highly connected individuals who have the network required to establish and operate businesses in Georgia. In this context, the danger is that individuals with lower education will only have access to informal employment opportunities that, as we have seen, are associated with lower levels of welfare.

Third, the findings suggest a segmentation of the labour market along ethnic and regional lines, which could have negative repercussions on Georgia's stability.

All things being equal, non-Georgians were significantly more likely to be informally employed than Georgians were, *ceteris paribus*. Formal employment (not only wage employment, but farming and self-employment as well) seems to be limited to ethnic Georgians. Ethnic identity was revealed to be the most frequently significant variable in determining informality. These findings reflect those of other studies that highlight the lack of integration between Georgians and other ethnic groups (see for example Dourglisvili 1997). These results suggest that individuals from ethnic minorities may not have access to the social network and 'connections' that are required to establish formal enterprises or obtain formal public sector jobs.

Informality was also found to be significantly associated with certain regions. In particular, everything else being equal, residing in western Georgia, (Imereti, Samegrelo or Guria) significantly increased the probability of informal farming, contributing family work and secondary job holding. Thanks to the extensive tea and citrus fruit plantations, these regions had amongst the highest standards of living during the Soviet period. However, following the break up of collective and state farms and the war in Abkhazia, which resulted in the influx of tens of thousands of refugees, this region has suffered one of the sharpest falls in economic activity. The findings show that as a result there are few formal employment opportunities and households rely on subsistence farming for a living. The regional analysis also revealed that Samtskhe-Javakheti is

associated with a significant increase in the probability of informal farming and secondary job holding, *ceteris paribus*. This southern region, largely populated by Armenians, is very poor, has limited economic opportunities, and is seen by Tblisi as a potential source of instability. In addition, it was found that certain regions were also associated with very high levels of unemployment, and that the regional unemployment rate had by far the strongest positive and significant impact on the probability of individual unemployment, *ceteris paribus*.

This thesis argued that the findings on ethnic minorities and regions are not only significant from a social welfare point of view, but also from that of the country's stability. As discussed in chapter 1, Georgia has already been scarred by regional conflicts in Abkhazia and South Ossetia, where fragile peace agreements are still in place. It is widely known that there are factions within Achara and Samtskhe-Javakheti that have secessionist intentions. Moreover, during the Soviet period, regional labour market and welfare inequalities were offset by transfers from Tblisi. Resentment toward Tblisi and nationalist sentiment is likely to be heightened as people see inequalities increasing and feel abandoned by the capital. Indeed, it would seem that given the widespread increase in poverty and the major infrastructure problems, not least the rationing of water, heat and electricity, that are building frustration and dissatisfaction amongst the population in general, an important strategy for maintaining social cohesion in Georgia, should be to minimize ethnic and regional inequalities.

Therefore, although the informal sector was found to be providing a social safety net in the absence of formal employment opportunities and adequate social security, it was also found to be associated with the deskilling of the Georgian labour force, with the marginalisation of certain vulnerable groups and with a potential source of instability. Within this mixed context, the challenge for policy will be how to benefit from the informal sector's capacity to provide a social safety net, while minimizing its longer-term potentially detrimental consequences.

7.4 WHAT ARE THE IMPLICATIONS FOR POLICY?

This section discusses the implications for policy rather than make specific policy recommendations. It would be inappropriate to make specific policy recommendations as this thesis has not analysed existing policies in Georgia in any extensive way, and nor has it examined policies in other countries or regions that could be appropriate for Georgia's situation. I therefore limit the discussion to how the findings of this thesis are relevant for policy formulation. As argued by Roland, theoretical and empirical research can lead to general policy conclusions,

however there is still considerable distance between general policy conclusions and direct policy recommendations (Roland 2000a, p.343-344).

The policy implications can be grouped under four main points:

1. *Policies should distinguish between small-scale informal activities, which generate employment and livelihoods for half of the Georgian workforce and represent a relatively small loss in government revenue, from larger scale underground and illegal activities, which generate comparatively little employment but are an important source of potential tax revenue.*

This is particularly important in connection with policies aimed at improving tax revenue collection. The Georgian Government and IFIs have highlighted the extremely low level of fiscal revenue as the single biggest obstacle to Georgia's economic development, and have called for an improvement in tax administration and in efforts to combat tax evasion. In this respect, the Government's and IFI's current approach identifies a 'large informal sector' as one of the main causes of the low level of fiscal revenues and makes no distinction between small-scale employment-generating activities and large-scale tax evasion (see World Bank 2004). However, this thesis has shown that the informal sector provides an important social safety net in the absence of formal jobs and adequate social security. It argued that attempting to tax or eradicate small-scale informal activities could have damaging implications for livelihoods while raising no additional income. It is therefore critical that a distinction be made between informal, underground and illegal activities in order to effectively combat tax evasion and increase government revenue without undermining social security.

2. *Policies should support (or at least tolerate) the informal sector in the short run, while actively aiming to phase it out through the creation of formal jobs and the provision of social security in the longer-run.*

In the absence of adequate tax revenue, an effective social security system, and adequately paid formal employment opportunities, the informal sector is currently providing a social safety net and should therefore be encouraged, or at least tolerated, by the authorities. However, this thesis argues that it is undesirable to encourage the informal sector as a social safety net in the long run for several reasons.

First, it was found that the informal sector is strongly associated with certain vulnerable groups and there is a risk that in the longer-run a dual labour market is created with a poor, marginalized

and vulnerable informal sector and a rich, protected formal sector. Second, it was found that the informal sector contributes to the deskilling of the Georgian labour force, thereby undermining longer-term growth as there will not be enough skilled workers to fill new private and public sector jobs. Third, the high level of education amongst informal workers reflects qualitative and anecdotal evidence that suggests that many informal sector workers do not perceive informal activities as desirable longer-term employment opportunities, but rather as temporary means of survival in the hopes of finding adequate, skilled, formal jobs. Fourth, policy should not encourage pensioners to engage in informal activities to survive, but should rather aim to allow pensioners to enjoy the fruits of a lifetime of work. Finally, informal activities are characterised by low-skills and low-productivity and represent a very limited source of employment and economic growth.

The focus in the longer-run should therefore be to create formal employment opportunities and provide adequate social security so that the informal sector is phased out. Moreover, informal enterprises that have a potential to grow into formal enterprises should be encouraged to do so through favourable policies such as access to credit, tax benefits and a reduction of bureaucratic obstacles.

3. *Policies should actively aim to minimize inequalities in access to the formal labour market.*

This thesis revealed a strong regional imbalance in the distribution of formal employment. Policies should therefore aim to stimulate formal job creation specifically in regions where a significant share of the workforce is unemployed or informally employed. The results also suggested that there are considerable barriers to formal labour market entry for certain marginalized groups, particularly in the form of social networks and 'connections'. It was found that, everything else being equal, higher education, Georgian ethnicity, middle-age and being male, were all associated with an increased probability of formal employment (both for the self-employed and wage employees), and it was suggested that this was because these groups had access to invaluable 'connections' and social networks. Policies should therefore aim to increase transparency in both the hiring of formal wage employees as well as in the bureaucratic procedures for establishing formal enterprises. Finally, labour market policy should also adopt an 'affirmative action' approach toward these specific groups that are currently being discriminated against in the formal labour market in order to actively integrate them into the formal labour market.

4. *Policies aimed at reducing poverty should take into account the significant role that employment generation can play. However, they should also recognise that not all employment reduces poverty to the same extent.*

First, the findings showed that labour force status of the household head significantly determines household welfare, *ceteris paribus*. Most importantly, households headed by the unemployed and the inactive (mainly pensioners) faced the highest poverty risks of any group in the labour market, *ceteris paribus*. Thus, formal job creation and the provision of adequate social security to pensioners and the unemployed could be the two most significant policy initiatives in efforts to reduce poverty in Georgia.

Second, although it was found that, in general, informal employment is associated with higher poverty risks than formal employment, *ceteris paribus*, poverty is not limited to the informal sector. A poverty reduction strategy must recognise the heterogeneity of the informal sector, which means that certain groups within the informal sector are better off than some groups in the formal sector. In particular, it was found that, given the extremely low level of real wages in the state sector, the informal self-employed and informal farmers faced lower poverty risks than did formal wage employees, *ceteris paribus*. Nevertheless, amongst the wage employed, those employed informally still face the highest poverty risks.

Poverty reduction efforts should therefore target the wage employed, by focusing on the payment of adequate and timely public sector wages and by encouraging the formalisation of all wage employment through the enforcement of the labour code and particularly the use of written employment agreements, the payment of adequate wages and social security contributions, and the provision of standard benefits. At the same time, the findings of this thesis imply that while efforts to reduce poverty should also encourage informal self-employment and farming as important sources of livelihoods in the short-run, a distinction should be made between informal activities that have the potential to grow into formal enterprises and those that are temporary survival activities. In the longer-run, the first should be encouraged to formalise through favourable tax policies and access to credit for instance, while efforts should be made to phase out survival activities by extending social protection and creating formal employment opportunities.

7.5 HOW DOES THIS THESIS CONTRIBUTE TO THE ON-GOING DEBATE ABOUT THE NATURE AND CAUSES OF THE INFORMAL SECTOR?

Chapter two discussed the main aspects of the informal sector debate in developing countries, which is where most of the conceptual debate on the informal sector has been taking place. We saw that in this region, the informal sector has been largely associated with unregistered and unregulated micro-enterprises that generate income and employment for the urban poor. There have been two main parts to the informal sector debate in developing countries: The first focused on the informal-formal sector relationship. Those who support the 'duality' approach argue that there are two distinct urban economies (the poor/informally unemployed vs. the rich/formally employed), while their critics see these as two aspects of the same, single, capitalist economy. The second part of the debate was between those who find that the primary cause of the informal sector is poverty and those who find that it is excess regulation.

How has this research contributed to these debates? As regards the first part of the debate, it finds a certain degree of support for both sides. First, the findings reveal that, on the one hand, the informal-formal sector relationship can generally be characterised by the duality approach, in that for every type of employment, being informally employed is associated with higher poverty risks than being formally employed, *ceteris paribus*. On the other hand, it found that the informal/poor formal/rich interpretation is not entirely correct. There are groups amongst the formally employed that face a higher risk of poverty than groups within the informally employed, thereby reducing the duality theory. More specifically it was found that because of the very low real wages and wage arrears in the state sector, formal wage employees face higher poverty risks than the informal self-employed.

Second, this thesis finds some support for those who reject the dualist approach and argue that formal and informal activities are not separate and independent, but rather parts of one overall capitalist system in which informal activities are subordinate to, and dependent on, the formal sector. In particular, informal wage employees and secondary job-holders are highly integrated with the formal sector and, as argued by Allen (1998, p.9), informal wage employees provide a pool of cheap and flexible wage labour to the formal sector. It also found some support for the view that the informal self-employed, essentially petty traders, are integrated with the formal economy in that they provide cheap goods and services to the labour force, thereby subsidizing the formal economy and enabling large firms and government to pay low wages. However, it was found that some parts of the informal sector are marginal and independent of the formal economy, namely the self-employed in (subsistence) agriculture.

As regards the second part of the informal sector debate, this thesis finds support mainly for those who claim that poverty is the main (but not only) cause of the informal sector. Although certain informal labour market activities are probably motivated by excessive regulation and bureaucratic obstacles, the findings of this thesis show that in Georgia the main motivation for informal employment is the lack of formal employment opportunities and the inadequacy of social protection. This does not deny that there are major bureaucratic and regulatory obstacles to the development of formal private firms, and that these should be removed in order to create formal employment opportunities and therefore, indirectly reduce informal employment.

However, this thesis does not find support for de Soto's view that the main cause of informal labour market activity is excess regulation and state bureaucracy, and that removing these obstacles will allow 'potential capitalist entrepreneurs' to flourish (de Soto 1989, p.11). Although further research is needed to assess whether or not informal activities have the potential to grow into formal enterprises, the findings suggest that given the high level of education amongst the informally employed, the informal sector in Georgia would be better described as consisting of temporary survival activities rather than potential capitalist enterprises. This is supported by qualitative research, which shows that in Georgia individuals work as petty traders and in subsistence agriculture to 'make ends meet', while waiting to either to return to their previous jobs or find new formal skilled employment (see Dudwick 1999; Tblisi State University 1999).

Finally, this research has also shed some light on two questions that have dominated the informal sector literature in transition countries, namely whether the informal sector undermines government revenue and whether it is a transitional phenomenon or 'here to stay'. First, given the definition of the informal sector adopted here, little support is found for the claim that it undermines government revenue. This is not to say that tax evasion is not widespread in Georgia (as we have seen it is probably the single biggest obstacle to Georgia's development), however the suggestion here is that more than 50% of the workforce engages in small-scale activities which do not appear to seriously undermine government revenue, but do generate livelihoods and provide a critical source of social security in the absence of formal social benefits. This thesis suggest that the bulk of tax evasion is to be found in the underground and illegal sectors, which in contrast generate little employment and social security. Further research is needed, however, to confirm this.

Second, it was argued that after ten years, the informal sector is showing signs of becoming more entrenched rather than of disappearing. The results show that informal employment is not evenly distributed amongst the population, but rather strongly associated with certain vulnerable groups. As these groups continue to engage in low-skilled informal activities, the risk is that they become

increasingly marginalized and that the informal sector becomes increasingly entrenched. Thus, instead of being a temporary source of income and employment while formal jobs are being created, Georgia's informal sector will become part of a 'developing-country' style dual labour market, with a high-skilled, protected formal sector and a low-skilled, vulnerable informal sector.

7.6 IMPLICATIONS FOR FUTURE RESEARCH

This thesis has taken a step toward understanding the nature and causes of the informal sector in transition countries. Further research is now needed to fully assess the informal sector's potential as a social safety net as well as a source of government revenue and economic growth. Given the limited extent of the literature on the informal sector in transition countries, the research agenda is substantial. I highlight only a few possible directions for future research, which stem directly from the findings of the analysis.

First, this thesis has provided a conceptual framework with which to study informal labour market activity in transition countries. It has argued for the need to distinguish between small-scale informal activities undertaken to meet basic needs and larger scale underground activities whose objective is the evasion of taxes or non-compliance with certain regulations. More specifically, it has distinguished between four types of unmeasured, untaxed and/or unregulated 'hidden' economic activities: informal, underground, illegal and household activities. Further research is now needed to assess the size of each of these sectors in terms of income and employment. In particular, research could assess how much the informal and underground sectors contribute to tax evasion on the one hand and employment and social security on the other. These findings will be significant in designing effective policies to combat tax evasion, reduce poverty and strengthen the rule of law.

This thesis has already made a significant contribution in this respect as it has measured the extent of informal employment in Georgia and evaluated its role as a social safety net. It has also suggested that given the types of activities involved, the informal sector is unlikely to represent an important loss of government revenue. However, further research is needed to assess how much the informal sector effectively contributes to GDP and how much the underground sector contributes to both GDP and employment in Georgia. Efforts have already been made to quantify the underground economy in terms of GDP in transition countries, namely those using the 'macro-electrical approach' (see Kaufmann, D and A Kaliberda 1996), however these do not yet distinguish between small-scale informal activities and larger-scale underground activities. This

research agenda should also be extended beyond Georgia to other transition countries and also to developing countries, where the informal/underground distinction has not really been made.

Second, this thesis has attempted to extend the concept of informal sector beyond the standard ILO definition, which is based on units or enterprises, to include all activities that are undertaken to meet basic needs and are measured in GDP, regardless of the type of unit within which they take place. It has argued that this is important for several reasons. First of all, limiting the informal sector to units excludes agricultural production for own consumption, which constitutes an important share of total agricultural production (and is therefore included in GDP) and represents a very important source of employment and income in many transition and developing countries. Also, extending the concept of informal sector to activities means that all persons engaging in such activities are considered informally employed, including casual workers in formal enterprises, contributing family workers, and all unregistered workers who are not protected by labour regulations and have no access to social protection. This seems particularly important in transition but also developing countries where there has been a growing informalisation of the labour market and an increase in self-employment, subcontracting and moonlighting.

Further research is now needed to adopt a single definition of informal employment, which will allow cross-country comparisons and will enable the sharing of 'good practices' as far as policies targeting the informal sector are concerned. Work within the ILO, in preparation for discussions on the informal economy at the 90th International Labour Conference held in June 2002, has already headed in this direction, proposing to distinguish between 'informal sector employment' and 'total informal employment', which would also include other types of employment that is not subject to standard labour legislation, taxation and social protection (see Hussmanns 2001). Other research undertaken as background for the above discussions, including a paper prepared by this author, also attempted to widen the concept of informal sector beyond 'units'.

Third, this thesis has found that informal self-employment is largely limited to petty trade and subsistence agriculture. However further research is needed to assess which, if any, informal enterprises have the potential to grow into formal enterprises. Could some of these informal enterprises be 'potential capitalist' enterprises (to use de Soto's terminology) capable of generating employment and being the driving force behind economic growth? In this respect, it will be important to map out informal enterprises and identify those that have a potential for growth and could therefore be supported by favourable taxation and other economic policies and those that are temporary survival activities, which should be phased out and targeted by social welfare programmes. Moreover, research is needed to understand what are the barriers to the

growth and formalisation of informal enterprises (e.g. access to credit, complicated bureaucratic procedures, corruption)? Detailed qualitative research is also needed to understand what kind of taxes and licensing fees informal entrepreneurs already pay, as anecdotal evidence suggests that many pay informal fees for selling in a street market for instance. Qualitative analysis could provide additional insight into the main motivation for informal enterprises (excess regulation or survival?). Finally, it could also provide information on '*left-hand work*' (the earning of unofficial income at the formal workplace), which this thesis was not able to explore through the data analysis, and could be a valuable source of information on the informal social networks, which support the informal sector.

Fourth, further research is needed to assess the role of agriculture in reducing poverty in Georgia. This research has shown that agricultural employment, which is almost exclusively small-plot, is associated with a decrease in poverty risks. However, it noted that part of these findings could be explained by the methodology used to construct the welfare metric (consumption) and in particular by how consumption of own production was valued. There are reasons to expect that the way in which consumption has been aggregated could result in apparently higher consumption levels for agricultural households. When computing the consumption variable, the Georgian State Department of Statistics uses market prices to impute the value of consumption of own-production rather than farm-gate prices, which are generally lower. Moreover, regional and national prices are used rather than local (urban/rural) prices. Future research could re-compute aggregate consumption and examine whether employment in agriculture is indeed associated with higher levels of welfare, *ceteris paribus*.

This thesis has examined the informal sector from a labour market and social security perspective, however the nature and role of the informal sector within the socio-economic system cannot be fully understood without a multi-sectoral approach. Future research should examine the role of the informal sector from other perspectives such as the macro-economy, the policy-regulatory environment, the household and from the perspective of power relations. Research efforts could examine, for instance, the impact of macroeconomic restructuring on the informal sector as well as the impact of the informal sector on macroeconomic programmes. Research efforts could also focus on the policy and regulatory environments, assessing which policies and regulations encourage informalisation (of both wage and self-employed) and which discriminate against small firms and the self-employed. Finally, to fully understand the causes of the informal sector, research should also address one of the most critical yet often neglected variables, that of power. Who benefits and who loses through specific regulations, policies and programmes and what are the vested interests that make reform and change difficult?

7.7 CLOSING REMARKS

The findings of this thesis are deeply troubling. More than two thirds of Georgia's workforce is employed in low-skilled informal activities or small-scale (subsistence) agriculture. The rest is largely employed in the state sector and receives below-subsistence wages. These figures are symptomatic of the extent of poverty and economic collapse in the country. Although the Soviet Union was characterised by many economic inefficiencies, it had also achieved some exceptional results in the social sector, not least a relatively low level of poverty and inequality and a high level of education. It is disconcerting to witness the complete economic collapse and reversal of these achievements. After more than ten years of 'transition', we should now accept that the reform has (so far) failed to increase the standard of living of the population in this region and draw some lessons for the future.

Moreover, it is worth remembering that one of the main motivations for embarking on the reform process was to increase the standard of living of the population with an aim to reach a level of social and economic development comparable to that of western market economies. We must therefore beware of revising the aims and lowering standards, as is often the case when results fail to justify the means. Within this context, the informal sector should not be considered a potential solution to the problem of poverty or a replacement for formal social security. There is no place for a large informal sector in a developed market economy. The aim should therefore be to create a functioning formal labour market and an adequate social security system, and not to encourage the creation of a 'developing country' style dual labour market, with all its implications in terms of poverty, vulnerability, social exclusion, and limited potential for economic growth.

APPENDICES

**APPENDIX 1:
ABBREVIATIONS, ACRONYMS AND CURRENCY EQUIVALENTS**

A1.1 Abbreviations and Acronyms

CEE	Central and Eastern Europe
CIS	Commonwealth of Independent States
CPI	Consumer Price Index
EBRD	European Bank for Reconstruction and Development
EU	European Union
EU-15	European Union (15 member states)
GDP	Gross Domestic Product
GEL	Georgian Lari
FSU	Former Soviet Union
HDI	(UNDP) Human Development Index
IDP	Internally Displaced Person
ILO	International Labour Organisation
IMF	International Monetary Fund
OECD	Organisation of Economic Cooperation and Development
PAYG	Pay-As-You-Go
SDS	(Georgian) State Department for Statistics
SOE	State Owned Enterprise
TACIS	Technical Assistance for the Commonwealth of Independent States
UNDP	United Nations Development Programme
US\$	United States Dollar

A1.2 Currency Equivalents

(Exchange Rate effective 29 June 2001)

GEL 1 =US\$ 0.49

US\$1 =GEL 2.05

APPENDIX 2: DATA AND METHODOLOGY

A2.1 Data

A2.1.1 The Survey of Georgian Households (SGH) (1999).

The Survey of Georgian Households (SGH) replaced the Soviet 'Family Budget Survey' in 1995, was co-designed by a team of Georgian statisticians and a team from Statistics Canada, and financed by the World Bank. Survey implementation began in 1996 and is on-going. The survey covers the entire territory of Georgia with the exclusion of two regions: Abkhazia, and South Ossetia.

The SGH yields quarterly data on household expenditure, income and assets, basic employment characteristics, as well as housing conditions. Expenditure patterns are used as inputs for the construction of consumer price indices and information collected on income and expenditure is used as basis for poverty profiles. The survey has also been designed to provide data on income and total household expenditures for the purpose of national accounts.

Data is collected on all household members (except the labour force module which is only administered to members aged 15 or over). Respondents receive monetary incentives at the time of each of the quarterly visits. In 1998 they were equal to GEL3 (US\$1.50) per quarter per household.

Sample Design:

The sample used a two-stage stratified area sampling design. At the first stage, 282 census units (primary sampling units) were selected. At the second stage, individual households in the sample census units were selected. The aim was to obtain completed interviews for 2500 households. In order to compensate for non-response (expected at 25 percent), the effective sample size was 3,351 households per quarter. Responses were obtained for approximately 2300 to 2700 households per quarter (actual number of households and individuals are provided in table A2.1).

Stratification

Census units were stratified into 48 strata. Stratification was performed in order that estimates could be obtained at different levels: urban-rural, east-west Georgia, region and big Caucasus/Small Caucasus levels.

Sample selection

The 3,351 households were allocated among the strata using the 'square-root' allocation based on the 1989 population count (rather than proportional allocation). The resulting number of households for a given stratum determined the number of census units to be selected and the number of households per census unit. The census units within a stratum were selected with probability proportional to the number of households within the census unit and the selection of households was done using the principle of systematic selection.

Rotation scheme

The full sample within each stratum for each region is equally divided into 12 rotation groups. Each month, the households in one rotation group are dropped from the sample and replaced by another set of households. Households are contacted quarterly for a total of five contacts. They remain in the sample for 15 months. During that period they complete the initial interview, four weeklong diaries, and four quarterly interviews.

Weighting

The SGH uses population weights. The calculation of weights is done in 2 stages: The first stage weight is the sampling probability of the census unit. It is equal to the sampling interval multiplied by the required dwellings per census unit divided by the number of dwellings found in the sampling unit in 1989. The second stage weight is the actual number of addresses found in the census unit divided by the number of sampled addresses per census unit. The final weight is the product of the 1st and 2nd stage weights.

Questionnaires

The contents of the SGH resemble those of a Living Standards Measurement Survey (LSMS)¹¹⁵. The SGH gathers information on the following characteristics of households: composition of households and demographic characteristics of household members (e.g. age, sex, relationship to the head of household, marital status, educational attainment, nationality, etc.); living conditions (e.g. type of dwelling, ownership status, facilities, household possessions, etc); agricultural holdings and production (e.g. number and size of land plots, quantities of livestock, expenditures on inputs for farm or garden plot, harvest, etc.); income data (e.g. from employment, income in-kind, social benefits, money received from family members, etc.); and expenditure data (e.g. food expenditures, non-food expenditures, consumption of own production, changes in household

¹¹⁵ The LSMS are World Bank surveys established to explore ways of improving the quality and nature of household data collection by government statistical institutions in developing countries. One of the main objectives of these surveys is to assess household welfare.

assets and debts, etc.). In addition, the SGH also has a labour force module, which provides some limited information on labour force status of household members over 15 years of age (e.g. status of employment, type of enterprise, organisation, numbers of hours worked, reason for not working, etc.).

A2.1.2 The Labour Force Survey of Georgia (LFS) (1998, 1999).

This survey began in 1998. The questionnaire was co-designed by Georgian and ILO statisticians. Implementation was financed by UNDP. It was designed as a quarterly labour force survey to be attached to the SGH, since labour force information in the latter survey was considered insufficient. Its implementation was however only financed in 1998 and 1999. It has not been carried out since.

The LFS covers the entire territory of Georgia with the exclusion of Abkhazia and South Ossetia. The survey provides information on labour market status of all household members over 15 years of age.

Sample design:

The LFS was designed to be attached to the SGH. The two surveys are linked through a common household control card, containing demographic characteristics of household members. This facilitates the integration of survey operations as well as the linking of the two datasets. However, in order to obtain more reliable data at the regional level, the sample size for the LFS was increased. An additional 3,294 households per quarter were selected for the LFS. Thus, the total sample size for the LFS is 6,645 households per quarter, and each quarter, the sample of households for the SGH is a subset of the LFS sample. Seventy-five percent of the additional households are selected from urban primary sampling units and 25 percent from rural ones.

Rotation scheme

The rotation scheme for the LFS sample follows that of the SGH. Households are interviewed once a quarter, thus households in the SGH sample respond to two survey questionnaires, whereas households that are only in the LFS sample respond to only one questionnaire. Each household stays in the sample for four quarters.

Questionnaire

The survey was designed to gather information on the labour market status of individuals, their labour force experience, their occupation, the industrial activity and ownership of their place of work, nature of employment, hours worked (usual and actual), location and periodicity of work. It also covers the unemployed, their unemployment spell, their methods of finding a job, reasons for

quitting their job, reasons for not accepting an offered job, status of registration with the Employment Agency and whether they receive an unemployment benefit. The survey also provides information on secondary employment, including reasons for secondary job holding, status in employment, ownership and location of place of work, periodicity and hours worked. Finally the survey elicits some information on individuals seeking an extra job including reason for seeking an extra job and periodicity and type of work sought. The Labour Force Survey does not collect any information on wages or earnings. However, by merging the LFS with the SGH, this information can be obtained (only for the sample common to both surveys) from the income module of the SGH.

A2.1.3 Quality of the data

Overall, the quality of the data from both the SGH and the LFS is reasonably good, although there are some important issues to keep in mind. The biggest obstacle to its analysis is the lack of background documentation. Although a brief report prepared by Statistics Canada in 1996 outlines the sample design, no proper background documentation exists. This poses a serious problem for the analysis of the data particularly as some questions were added to the survey during implementation but were not reflected in the questionnaires (for example an additional question was added to the LFS in 1999 resulting in variables names being inconsistent between the two years). Thus, the data set does not necessarily correspond to the questionnaires. As a result, I had to travel to Tbilisi to work with the statisticians at the State Department for Statistics over several weeks to fully understand the data sets.

In general I found that the SGH data was not particularly clean and that there were a considerable number of outliers and missing observations. However, this did not pose a problem for my analysis as it was not the case for the variables of interest, namely the expenditure, labour force and human capital variables. Outliers existed for instance in information on the number of rooms in the house, and height and weight of individuals. Moreover, some of the questions (e.g. height and weight) were not systematically asked during interviews until 2000, so data for 1999 is unreliable. In general, I was told that there is no systematic control of the quality of data entry and that no edits are performed in a systematic way besides the manual edits and imputation for missing variables, which is performed by a team of economists who review the completed questionnaires. If, at the analysis stage, the data do not look coherent, *ad hoc* consistency checks are performed and selective edits and imputation are done.

I also felt that the data on incomes was not entirely reliable as there were a considerable number of missing observations and outliers. Data on wages was considered not to be reliable enough to examine the determinants of low-wages, however wage data from primary employment was

included in the analysis of the determinants of secondary job holding, but results were interpreted with caution. Data on the size of private transfers was also considered not to be reliable enough to examine the determinants of the scale of private transfers and receipt of private transfers was therefore constructed as a binary variable. Similarly, data on receipt of formal protection was also questionable as individuals, when asked about their benefits last month, may report their official benefit level, despite not having received a benefit for several months, or may report the full amount received, after being paid for several months at a time (see section A2.3.1 for more details on reliability of wage and benefit data in transition countries).

There could also be an issue of under-reporting as regards data on informal wage and self-employment, particularly in urban areas. It is conceivable that informal employees, working without a written agreement, and unregistered non-agricultural enterprises may be reluctant to report their activities, as they may not be certain as to the legality of their status. In contrast, unpaid family workers and individuals engaging in subsistence agriculture are unlikely to consider their activities as illegal and are more likely to report them. The low rates of informal employment, and indeed total employment, in urban areas may be a reflection of this fact. For similar reasons, it is likely that secondary employment is under reported, particularly in non-agricultural activities. Anecdotal evidence suggests that secondary employment in both agricultural and non-agricultural activities is quite common in Georgia, particularly for formal employees facing very low wages and wage arrears. However only 4% of the employed reported having secondary jobs and the vast majority of these were in agriculture. Finally, although the SGH and LFS are designed to be representative of the population at the regional and urban/rural level, no other sources of data exist to test to what extent they are representative in terms of various household or individual characteristics.

Merging and cleaning of data

In order to examine the relationship between household welfare and labour force status of the household head (chapter 6), I merged the LFS and SGH using household and individual identifiers.¹¹⁶ I therefore dropped half of the LFS sample and used only the sample based of the SGH, since it is common to both surveys. This did not pose a problem with regards to weights as the SGH sample is designed to be nationally representative. The only possible problem would have been in the reliability of data at the regional level, since the LFS sample was doubled, with respect to the SGH, precisely to get more representative data at the regional level. However this did not pose a problem as results for the multivariate analysis in chapter 5 were consistent with

¹¹⁶ The analysis for chapters 4 and 5 was based only on the LFS, except for the multivariate analysis on the determinants of informal employment, where the merged sample was used in order to control for the log of hourly earnings in the primary sector in the analysis of secondary job holding.

those of the descriptive analysis (based on the full LFS sample) and chapter 6 did not consider the regional dimension.

For the reasons mentioned above, both data sets required considerable cleaning. The cleaning involved amongst other things, the labelling of variables, zeros were changed to missing when it was clear that this should be the case (e.g. when 90% respondents had 0 for kitchen), some coding took place, when it was clear what codes should be (e.g. ¼ of products in the diary of expenses had no entry for unit of measurement (kg, g, L, units), I coded variables as appropriate. For instance, I coded expenditures on public transport as 'units', etc.). Outliers were kept, and the range was limited during the analysis (e.g. I limited age to 0-110 years, etc.). The data was reshaped, collapsed and merged in order to have single observations by household and quarter.

Table A2.1 Basic sample characteristics for SGH and LFS

	Survey of Georgian Households	Labour Force Survey
Sample		
sampling frame (households)	1240000	1240000
sample size (households per quarter)	3351	6645
	Number of Households	Number of Individuals
<i>Number of Responses (unweighted)</i>		
1st quarter 1998	2331	14303
2nd quarter 1998	2333	14322
3rd quarter 1998	2404	14165
4th quarter 1998	2563	14615
1st quarter 1999	2702	14952
2nd quarter 1999	2741	15310
3rd quarter 1999	2697	14856
4th quarter 1999	2690	14172

Source: Author's own analysis of SGH (1998, 1999), LFS (1998, 1999)

A2.2 Definition of variables used in the thesis

Age-group: a categorical variable is used for the descriptive analyses taking on the value of 1 if a respondent's age is 15-24, 2 if it is 25-49, 3 if it is 50-64, and 4 if it is 65+. For the regression analyses a set of dummy variables is used, taking on a value of 1 depending on the respondent's age in years: 15-25, 26-45, 46-55, 56+. The base category for regression analysis is 46-55.

Age of the household head: a continuous variable equal to the age of the household head.

Age squared of the household head: a continuous variable equal to the age of the household head squared, which gives greater weight to older ages.

Contributing family workers: ILO (1983) definition. All persons 'employed' without pay in an economic enterprise operated by a related person living in the same household. A dummy taking value of 1 if the respondent is a contributing family worker and 0 otherwise.

Disabled: a dummy variable taking on the value of 1 if an individual is disabled and 0 otherwise.

Do not receive formal social protection: a dummy variable taking value of 1 if a household does not receive formal social protection (see receive formal social protection) and 0 otherwise. This variable is also presented as a categorical variable taking values 1 to 4 depending on the status of the household head: 1 for a household that does not receive formal social protection, whose head is formally employed, 2. if the head is informally employed, 3 if the head is unemployed and 4 if the head is inactive.

Do not receive informal social protection: a dummy variable taking value of 1 if a household does not receive informal social protection (see receive informal social protection) and 0 otherwise. This variable is also presented as a categorical variable taking values 1 to 4 depending on the status of the household head: 1 for a household that does not receive informal social protection, whose head is formally employed, 2. if the head is informally employed, 3 if the head is unemployed and 4 if the head is inactive.

Economically active population: ILO (1983) definition. Comprises all persons who furnish the supply of labour for the production of goods and services. There are two measures of economically active population: the 'usually active population', measured in relation to a long reference period, such as a year; and the 'currently active population' (the labour force) measured in relation to a short reference period such as one week. We use economically active population to mean the 'currently active population' and use it interchangeably with 'labour force'. A dummy taking value of 1 if the respondent is economically active and 0 otherwise.

Education level of head of household: a set of dummy variables taking on the value of 1 depending on the level of educational attainment of the head of household: primary or less, incomplete secondary, general secondary, technical secondary, higher technical, higher general. The base category for regression models is primary or less.

Educational attainment level: a set of dummy variables taking on the value of 1 depending on the respondent's level of educational attainment: primary or less, incomplete secondary, general secondary, technical secondary, higher technical, higher general. The base category for regression models is higher general. This is also presented as a categorical variable taking values of 1 to 6, corresponding to the 6 different levels of educational attainment. Different levels of aggregation of these categories are used.

Employed: ILO (1983) definition. All persons aged 15 and over who during the reference week preceding the survey were either in paid-employment or self-employment, for at least one hour, or who were temporarily absent from their work but had a formal attachment to it. A dummy taking value of 1 if the respondent is employed and 0 otherwise.

Employers: ILO (1983) definition. All persons who are self-employed with employees. A dummy taking value of 1 if the respondent is an employer and 0 otherwise.

Employment rate: Eurostat (2000) definition. Total employed divided by the total population aged 15+.

Ethnic identity of the household head: a set of dummy variables taking on the value of 1 depending on the ethnic identity of the head of household: Georgian, Azeri, Abkhazian, Greek, Ossetian, Russian, Armenian, other. The base category for the regression analyses is Georgian.

Ethnic identity: a set of dummy variables taking on the value of 1 depending on the respondent's ethnic identity: Georgian, Azeri, Abkhazian, Greek, Ossetian, Russian, Armenian, other. The base category for the regression analyses is Georgian. This variable is also presented as a categorical variable taking values 1 to 8, corresponding to the 8 ethnic groups. Different levels of aggregation of these categories are used.

Female: a dummy variable taking the value of 1 if the respondent is female and 0 if male.

Formal employee: a dummy variable taking value of 1 if respondent is employed as (1) paid employee and (2) is not informally employed, and 0 otherwise.

Formal employment: a dummy variable taking the value if the respondent is (1) employed and (2) not informally employed, and 0 otherwise.

Formal farmer: a dummy variable taking value of 1 if a respondent is employed as (1) self-employed and (2) is not informally employed and (3) is employed in the agricultural sector. It takes on 0 otherwise.

Formal non-agricultural self-employed: a dummy variable taking value of 1 if respondent is employed as (1) self-employed and (2) is not informally employed and (3) is not employed in the agricultural sector. It takes on value of 0 otherwise.

Gender of the household head: a dummy variable taking value 1 if the head of household is a female and 0 otherwise.

Georgian: a dummy variable taking on the value of 1 if the respondent is of Georgian ethnic identity and 0 otherwise.

ILO informal sector employment: a dummy variable taking value 1 if a respondent has an ILO informal sector job and 0 otherwise. It refers to the ILO definition of informal sector employment, which includes only individuals employed in 'informal sector enterprises' (see below). See Appendix A5 for details of the ILO definition and our operationalisation.

Inactive: a dummy variable taking value of 1 if a respondent is (1) of working age- i.e. above 15 years and (2) not in the labour force, and 0 otherwise.

Informal employee: a dummy variable taking the value 1 if a respondent is a paid employee who is either (1) employed on the basis of an oral agreement, (2) employed casually, or (3) employed temporarily, and 0 otherwise (see chapter 3 for details of operationalisation of informal employment variables).

Informal employment: a dummy variable taking the value 1 if a respondent is either (1) informal self-employed, (2) contributing family worker, (3) informal employee, (4) other informal or (5) informal secondary jobholder, and 0 otherwise (see chapter 3 for details of operationalisation of informal employment variables).

Informal farmer: a dummy variable taking value 1 if a respondent is (1) informal self-employed and (2) employed in agriculture, and 0 otherwise.

Informal non-agricultural self-employed: a dummy variable taking the value 1 if a respondent is (1) informal self-employed and (2) employed outside the agricultural sector, and 0 otherwise.

Informal secondary jobholder: a dummy variable taking the value 1 if a respondent has a formal primary job and an informal secondary job as defined by the variable 'informal employment', and 0 otherwise (see chapter 3 for details of operationalisation of informal employment variables).

Informal sector enterprise: ILO definition based on the 'Resolution Concerning Statistics of Employment in the Informal Sector (1993b). They include enterprises owned and operated by own-account workers or employers whose business is: (1) located at home, outside home, in a street booth, on a construction site, in a market place, at a customer's home or in a non-fixed location; (2) in a factory, office, establishment, shop, workshop, etc. which is independent from the home and is not registered, or (3) on a plot of land either in an urban area or in a non-registered rural agricultural enterprise (see Appendix A5 for details of ILO informal sector definition and its operationalisation).

Informal self-employed: a dummy variable taking the value 1 if a respondent is an 'own-account worker' or 'employer' working in a household enterprise. It comprises: (1) own-account workers or employers whose business is located at home, outside home, in a street booth, on a construction site, in a market place, at a customer's home or in a non-fixed location (2) own-account workers

or employers whose business takes place in a factory, office, establishment, shop, workshop, etc. which is independent from the home and is not registered, and (3) own-account workers or employers working on their own or rented plot of land, in agriculture, either in an urban area or in a non-registered rural enterprise (see chapter 3 for details of operationalisation of informal employment variables).

Labour force participation rate: Eurostat (2000) definition. Total labour force divided by the total population aged 15+, or (Employed + (relaxed) Unemployed) / population aged 15+.

Labour force status of the household head: a set of dummy variables taking the value 1 depending on the labour force status of the head of household: formal employee, formal self-employed, formal farmer, informal employee, informal non-agricultural self-employed, informal farmer, contributing family worker, unemployed, inactive. The base category for the regression analyses is formal employee.

Labour force: ILO (1983) definition . Comprises the ‘currently active population’. The labour force is the sum of the Employed and (relaxed) Unemployed within the reference week. A dummy taking value of 1 if the respondent is in the labour force and 0 otherwise.

Log hourly wage primary job: continuous variable equal to the natural logarithm of the wage from primary employment for wage employees.

Non-agricultural employed: the sum of all employed that are working outside the agricultural sector.

Number of adults in the household: a continuous variable equal to the number of adults within the household.

Number of children aged 6 years or less: a continuous variable equal to the number of children aged 6 years or less within the household.

Number of household members employed by sector of economic activity: a continuous variable equal to the number of household members employed in each of the 17 sectors of economic activity (see sector of economic activity).

Number of household members formally employed: a continuous variable equal to the number of members within the household who are formally employed.

Number of household members informally employed: a continuous variable equal to the number of members within the household who are informally employed.

Number of household members unemployed: a continuous variable equal to the number of members within the household who are unemployed.

Number of other children: a continuous variable equal to the number of children aged over 6 years, and under 18 years within the household.

Other informal: a dummy variable taking the value 1 if a respondent is either (1) unidentified in employment status and works temporarily or casually OR in a typical informal enterprise OR (2) a co-operative member working temporarily or casually, and 0 otherwise (see chapter 3 for details of operationalisation of informal employment variables).

Own-account workers: ILO (1983) definition. All persons who are self-employed without employees. A dummy taking value of 1 if the respondent is an own-account worker and 0 otherwise.

Ownership type: a categorical variable taking on the value of 1 if employment takes place in a state or public enterprise or organisation, 2 if self-employment in agriculture without employees, 3 if other self-employment without employees, 4 if self-employment with employees, 5 if private sector wage employment, and 6 if cooperative and other private sector employment.

Paid-employees: ILO (1983) definition. All persons who within the reference week were 'employed' and performed at least 1 hour of work for wage or salary, in cash or in kind. A dummy taking value of 1 if the respondent is a wage employee and 0 otherwise.

Poor: a dummy variable taking on value of 1 if a respondent lives in a household whose consumption per equivalent adult falls below the poverty line and 0 otherwise. See section A2.3.1 on details of how we defined poverty.

Private: a dummy variable taking on the value of 1 if a respondent is employed in a private organisation and 0 otherwise.

Public: a dummy variable taking the value 1 if a respondent is employed in a state or public organisation and 0 otherwise.

Receive formal social protection: a dummy variable taking the value 1 if a household receives formal social protection and 0 otherwise. The variable takes the value 1 if a household received any of the following benefits: pensions for the elderly, pensions for the disabled, pensions for families without a breadwinner, student scholarships, allowance for temporary disablement, income from social insurance funds, allowance for childbirth, allowance for single parents, child allowance, unemployment benefits, pensions for war veterans, social aid for single pensioners and disabled persons. This variable is also presented as a categorical variable taking values 1 to 4 depending on the status of the household head: 1 for a household that receives formal social protection, whose head is formally employed, 2. if the head is informally employed, 3 if the head is unemployed and 4 if the head is inactive.

Receive informal social protection: a dummy variable taking the value 1 if a household receives informal social protection and 0 otherwise. The variable takes the value 1 if a household received any of the following: alimony, money received from non-family members from abroad, inheritance or other money received from relatives, money borrowed from a private source for household needs, and gifts (monetary) received from family members temporarily abroad. This variable is also presented as a categorical variable taking values 1 to 4 depending on the status of the household head: 1 for a household that receives informal social protection, whose head is formally employed, 2 if the head is informally employed, 3 if the head is unemployed and 4 if the head is inactive.

Region: a set of dummy variables taking on the value of 1 depending on the region of residence of the respondent: Tblisi, Kakheti, Shida Kartli, Kvemo Kartli, Samtskhe-Javakheti, Achara, Guria, Samegrelo and Imereti. The base category for the regression analyses is Kakheti.

Regional informal employment rate: a continuous variable taking on 9 different values equal to each of the rates of informal employment for Tblisi and the eight regions. Regional informal employment rates are equal to total informal employment in a given region divided by total employment in that region.

Regional unemployment rate: a continuous variable taking on 9 different values equal to each of the rates of unemployment for Tblisi and the eight regions. Regional unemployment rates are equal to total (relaxed) unemployed in a given region divided by total labour force in that region.

Rural: a dummy variable taking on the value of 1 if a respondent lives in a rural area and 0 otherwise.

Sector of economic activity: A set of dummy variables, taking on the value of 1 depending on the sector of economic activity according to the ILO 'International Standard Industrial Classification of All Economic Activity' (ISIC 3rd revision 1989): agriculture (A), fishing (B), mining and quarrying (C), manufacturing (D), electricity, gas and water supply (E), construction (F), wholesale and retail trade and repair of motor vehicles (G), hotels and restaurants (H), transport, storage and communications (I), financial intermediation (J), real estate, renting and business activities (K), public administration and defence (L), education (M), health and social work (N) other community, social and personal service activities (O) private households with employed persons (P) extra-territorial organisations and bodies (Q). Letters in brackets refer to classification in the ISIC (1989). The base category for the regressions is transport and communications (I). This variable is also presented as a categorical variable taking values 1-17, reflecting each of the above sectors of economic activity. Different levels of aggregation of these sectors are also used.

Self-employed: ILO (1983) definition. All persons who during the reference week were 'employed' and performed at least 1 hour of work for profit or family gain, in cash or in kind. It includes only market-production and certain types of non-market production such as the production of primary products for own consumption (it excludes the household sector). A dummy taking value of 1 if the respondent is self-employed and 0 otherwise.

Status in employment: a categorical variable taking value of 1 if individual is a paid employee, 2 if an individual is self-employed with employees, 3 if self-employed without employees, 4 if contributing family worker, 5 if cooperative member and 6 if other self-employed. Categories 2 to 6 are also aggregated under 'self-employed', such that status in employment is equal to 1 if paid employee and 2 if self-employed.

Type of inactivity: a set of dummy variables taking the value 1 depending on the type of inactivity of the respondent: student, pensioner, merit pensioner, disabled, caring for children, draftee.

Type of informal employment: a categorical variable taking the value 1 if a respondent is informal self-employed, 2 if contributing family worker, 3 if informal employee, 4 if other informal and 5 if informal secondary job holder (see chapter 3 for details of operationalisation of informal employment variables).

Type of unemployed: a set of dummy variables taking value 1 depending on the respondent's type of unemployment: searching for a job, discouraged, registered.

Underemployed: ILO (1983) definition. All persons aged 15 years and over who are (1) employed full-time and (2) working for a total (in primary and multiple jobs) of less than 41 hours per week OR (1) employed part-time and (2) doing so involuntarily (see appendix A4.1 for detail of definition). A dummy taking value of 1 if the respondent is underemployed and 0 otherwise.

Unemployed according to the 'relaxed criterion': ILO (1983) definition. All persons aged 15 years and over, who during the reference week were: (1) without work, (2) available for work within the next two weeks AND (3) had been seeking work for the preceding four weeks OR had not been searching for work during the previous four weeks because they had lost all hope of finding a job. A dummy taking value of 1 if the respondent is 'relaxed' unemployed and 0 otherwise.

Unemployed: ILO (1983) definition. All persons aged 15 years and over, who during the reference week were: (1) without work, (2) available for work within the next two weeks and (3) had been seeking work for the preceding four weeks. A dummy taking value of 1 if the respondent is unemployed and 0 otherwise.

Unemployment duration: a set of dummy variables taking value 1 depending on the respondent's duration of unemployment: 0-6 months, 6-12 months, 12 months +.

Unemployment rate: Eurostat (2000) definition. Total unemployed divided by total labour force. Unless otherwise specified, total unemployed refers to the 'relaxed' criterion.

Wage-employed private: a dummy variable taking value 1 if an employed person is (1) paid employed and (2) employed in a private organisation.

Wage-employed public: a dummy variable taking value 1 if an employed person is (1) paid employed and (2) employed in a public or state organisation.

Working-age population (workforce): The population aged 15 and over.

A2.3 Poverty measurement and analysis

This section outlines the methodology used in measuring poverty in chapter 6. First, it defines what is meant by poverty and well-being and discusses the choice of consumption as an indicator of well-being. Second, it details the procedure used for adjusting for differences in size and composition between households (choosing so-called 'economies of scale' and 'equivalence scales' indexes). Third, it explains the selection of the poverty lines used in this thesis. Finally, it performs a sensitivity analysis for the choice of economies of scale index (θ) to examine how sensitive the main results of this thesis are to the choice of θ .

A2.3.1 Defining Poverty and Well-Being

It is now generally accepted that the concept of well-being is a multi-dimensional one, which goes well beyond the material sphere and includes both physiological and sociological aspects. Thus, well-being is not simply associated with having sufficient income or consumption levels, but also with adequate health and nutrition, literacy, asset ownership, social relations, security, self-confidence and empowerment.

This multi-dimensional concept has been heavily influenced by Amartya Sen's capabilities approach. Sen's concept of 'functionings' relates to the things a person may value *doing* or *being*. 'Functionings' are features of a person's state of existence ranging from relatively elementary states (e.g. being adequately nourished) to complex personal states and activities (e.g. participation and appearing without shame). The concept of 'capability' relates to the ability of a person to achieve different combinations of functionings- the various combinations of valuable 'beings' and 'doings' that are within a person's reach, reflecting the opportunity or freedom to choose a life a person values. Sen argues that poverty may be best characterised in terms of the absence or 'deprivation' of certain basic 'capabilities' to 'do this' or to 'be that' (see Sen 1992; 1999). As argued in the UNDP's Human Development Report, which is based on Sen's capabilities approach, poverty is 'not merely in the impoverished state in which the person actually lives, but also in the lack of real opportunity - due to social constraints as well as personal circumstances- to lead valuable and valued lives' (UNDP 1997, p.16).¹¹⁷

Poverty can be defined as not having enough today of some dimension of well-being. It can be measured by comparing the individual's income, consumption, education or other attributes with

¹¹⁷ The UNDP's Human Development Reports are based on Sen's approach and characterise human development in terms of the expansion of valuable human capabilities. *The Human Development Index* captures the importance of three critical human capabilities – achieving knowledge, longevity and a decent standard of living. The *Gender-Related Development Index* captures gender-based inequalities in the achievement of these capabilities, while the *Human Poverty Index* captures deprivations (where 'living standard' is characterised in terms of access to safe water, health services and birth-weight) (see UNDP 1997).

some defined threshold below which they are considered to be poor in that attribute. Although the concern here is with poverty, it should be noted that poverty is just one of many tools one can use to analyse well-being; others include inequality, vulnerability and social exclusion.

Choosing a dimension and indicator of well-being

For the purpose of this thesis the analysis is limited to the material dimension of well-being and consumption is used as an indicator. The main interest here is in measuring the 'standard of living' and its relationship with labour market status, and a person's standard of living is usually taken to depend on individual consumption of privately supplied goods (for details see Ravallion 1992, p.6-7). It could be interesting to explore other, non-monetary, dimensions of well-being (such as education and health outcomes, asset ownership, empowerment), however such an analysis goes beyond the scope of this thesis but could provide an interesting topic for future research.¹¹⁸

To use Sen's (1984) terminology, this approach essentially takes a 'welfarist' perspective to the measurement of well-being in that it builds on welfare-economics, and more specifically on utility theory, and is based on the analysis of aggregate expenditure of all goods and services consumed.¹¹⁹ 'Non-welfarist' measures place a premium on people's preferences and can for instance be based on questions to households about their perceived situation, their judgement on minimum standards and their perception of needs and poverty rankings in the community.

Consumption is chosen over income as an indicator of material well-being. Most analysts agree that, provided the information on consumption obtained from a household survey is detailed enough, consumption will be a better indicator for poverty measurement than income.

First of all consumption is a better outcome indicator than income. Actual consumption better captures a person's well-being as defined as having enough to meet current basic needs, whereas income is only one of the elements which allow consumption of goods, others including access to goods, availability, etc. Consumption can therefore provide a better picture of actual standards of living than current income, especially when income fluctuates a lot (see Atkinson and Micklewright 1992b, p.184).

¹¹⁸ Falkingham (2000a, p.21-22) provides an interesting example of how one can analyse non-monetary dimensions of well-being in the CIS context. She provides an operational definition of Sen's concept of capability poverty to study child welfare in Central Asia.

¹¹⁹ 'Welfare economics' approaches to measuring well-being take the utility function as the starting point for the measurement of economic welfare, and are therefore based on the idea that consumption of goods and services raises welfare. Given a household utility function, household welfare levels can be compared using cost functions, which specify the amount of money required by a utility-maximizing household to obtain a given level of welfare. This allows

Second, consumption may be better measured than income. There are several reasons why consumption data in household surveys may often be more reliable than income data, particularly in poor agrarian economies such as Georgia. Deaton (1997) argues that in agrarian economies, incomes for rural households usually fluctuate during the year, in line with the harvest cycle, and that depending on when the survey is carried out, agricultural income may be over or underestimated as households may have difficulties in correctly recalling their income (also see Glewwe and Gaag 1988, p.6).

Moreover, in economies such as Georgia, where a significant proportion of the labour force is self-employed, and particularly in the informal sector, income flows may not only be erratic, but respondents may be unwilling to reveal income from informal activities as these are generally not registered. It may also be difficult for both farmers and micro-entrepreneurs to exclude inputs purchased for agricultural production from revenues. Another reason why consumption may be a more reliable indicator of welfare than income is that in developing and transition countries many households, both agricultural and non-agricultural, consume their own production or exchange it for some other goods. This can represent a large share of total consumption, which is not captured by data on incomes (see Glewwe and Gaag 1988, p.6,7).

A third issue, which is specific to the former socialist economies, is that of the de-monetization of the economies and resulting in-kind payments (see Falkingham 2000b, p.6). Since the collapse of the Soviet Union, chronic cash shortages have often led enterprises to settle transactions through barter. This has been the case both between enterprises but also between enterprises and their employees. Thus, wages, social benefits and pensions have been paid in-kind, in the produce of the enterprise. Workers then sell or barter the goods. In-kind payments reflect some sort of purchasing ability which is not captured by income data but which can impact on a household's standard of living. As it can be very difficult to value wages in-kind, consumption may be a better indicator of household welfare.

Finally, another related issue is that of the non-payment and arrears in the payment of wages and pensions, which is widespread in Georgia and in many other countries of the CIS. Falkingham (2000b, p.7) argues that this can result in the introduction of distortions into the measurement of household income as individuals may report their official wage, when asked about their salary in the last month (despite not being paid), or they may report the full amount received in the last

one to compare household's welfare by comparing aggregate consumption levels (for more details see Glewwe and Gaag 1988, p.3-5; Ravallion 1992, p.4-8).

month (after being paid for the past 6 months for instance). Once again, using consumption as a measure of household welfare by-passes these issues.

Constructing the Consumption aggregate

I use the consumption variable derived by the Georgian State Department of Statistics and the World Bank. To construct the consumption aggregate, the SDS uses data from two sources: (1) the daily diary of expenditures (shinda_03), which is filled out daily for 7 days once per quarter and (2) the quarterly questionnaire on employment, income and expenses (shinda_04) which uses a three-month recall period (respondents are asked for their expenditures last month, two months ago and three months ago, which are then averaged to get an estimate for one month during that quarter). The consumption aggregate is made up of two components: food and non-food consumption.

All food and beverage expenditures are taken from the daily diary of expenditures with the exception of “party food expenses” that are taken from the quarterly questionnaire. The food consumption aggregate is computed as the sum of food expenses in cash on every food item as well as estimated value for food-in-kind brought into the house. The estimate uses quarterly prices averaged at the regional level to assign value for (i) own food production (ii) food gifts and transfers in-kind and (iii) humanitarian food aid. All values are multiplied by 4.345 to get an amount for the whole month.

The non-food consumption aggregate includes only current non-food cash expenditures and does not include the consumption of non-food goods in kind. The following items are included: (1) tobacco (from daily diary); (2) clothing and shoes (from daily diary and quarterly questionnaire depending on the item); (3) household goods including furniture, most durables, tools, fabrics, major household maintenance, and other household goods are taken from the quarterly questionnaire, as are rent, water, electricity, gas, telephone and other communal expenses. Other household expenses such as fabrics, household maintenance products and some household supplies are taken from the daily diary; (4) medical services including visits to doctors, dentists, hospitals, and medicines are taken from the quarterly questionnaire while medical supplies are taken from the daily diary; (5) energy expenditures are taken from the quarterly questionnaire except liquid fuel, oil and diesel expenditures, which are taken from the daily diary; (6) transport including inter-city transport, taxi services, etc. and repair of private cars are taken from quarterly questionnaire while fuel, petrol and urban transport are taken from the daily diary; (7) education, entertainment and recreation taken mainly from the quarterly questionnaire with the exception of toys, films etc., newspapers and magazines, extra-curricular activities and school supplies that are taken from the daily diary; (8) other consumption expenses including legal services, weddings,

baptisms funerals and other expenses on ritual services are taken from the quarterly questionnaire while restaurant, personal care and other miscellaneous products are taken from the daily diary.

There are some limitations in the way in which the consumption variable has been aggregated. First, the aggregation of the consumption variable may overestimate consumption of own-production as market prices are used to impute the value of consumption of own-production rather than farm-gate prices, which are generally lower and more appropriate (see Deaton 1997). Moreover, regional/national prices are used instead of local (urban/rural). Second, some infrequent expenditures (e.g. clothing) are taken from the daily diary of expenditures, whereas the recall period may be more appropriate in the quarterly survey of expenditures.

Third, expenditures on funerals, marriages etc. are included, however, as argued by Deaton (1999, p.24), since only a fraction of households will make such expenses during the reference period, households that do undertake such expenditures will look relatively better off than they really are. Fourth, health expenditures are also included, however, expenditures on health are not a reflection of greater welfare, if anything they reflect quite the opposite (see Deaton and Zaidi 1999, p.24). Fifth, expenditure on household durables is included; however it is not the purchase of the durable, but its use that creates welfare. Moreover, it unrealistically excludes households that purchased durables immediately before or after the survey. Calculating a 'user cost' may be more appropriate (see Deaton and Zaidi 1999). Despite these limitations, I felt that the consumption aggregate was reliable enough and I decided to use it in order to allow for comparability with other SDS, World Bank and other studies of poverty and the labour market.

A2.3.2 Deriving equivalence scales and economies of scale indexes

Households of different size and composition have different needs and it is important to reflect these differences in needs in poverty measures. Adjustments can be made to reflect the age and gender of household members by using *equivalence scales*, as well as for household size by using *economies of scale indexes*¹²⁰.

The need to adjust for household size and composition arises from the fact that what we are ultimately interested in is individual welfare, but that consumption data is collected at the household level. Since we do not have individual level consumption data, the best we can do is to adjust total household expenditure by some measure of the number of people in the household.

¹²⁰ Note that it would also be desirable to adjust for intra-household inequalities, however measuring intra-household allocation and inequality is difficult when the analysis is confined to income and consumption. It can, however be captured through qualitative and participatory surveys as well as by analysing non-income measures of well-being, such as nutrition, education or health for which measures of individual well-being are possible.

Equivalence scales and economies of scale indexes are the deflators we use to convert household real expenditure into money metric utility measures of individual welfare (for a discussion on different approaches to setting equivalence scales see Ravallion 1992, p.17-25).

Using a per capita measure of consumption is the most common approach used. However, Deaton and Zaidi (1999, p.37) argue that using per capita measures does not take into account the fact that children consume less than adults and so ultimately it understates the welfare of individuals in households with large numbers of children. Also, per capita measures ignore any economies of scale in consumption within the households. Larger households may be able to purchase goods in bulk at cheaper rates. Also, some goods (such as with consumer durables for instance) have a 'public goods' aspect whereby consumption by one member does not reduce the amount available for consumption by another member. Thus, per capita measures understate the welfare of big households relative to small households.

In order to account for both differences in size and composition of households, one must calculate the number of adult equivalents within a household. The US National Research Council (1995) defines the number of adult equivalents by the following formula:

$$AE = (A + \alpha K)^\theta$$

Where AE= adult equivalent.

A= number of adults.

K= number of children.

α = parameter representing cost of a child relative to an adult ranging from 0 to 1 (equivalence scale).

θ =parameter representing the extent of economies of scale ranging from 0 to 1.

Thus when $\theta=1$ and $\alpha=1$, adult equivalent is equal to the household size, and deflating total expenditure by the number of adult equivalents is the same as deflating to a per capita basis.

There are no generally accepted methods for setting values for equivalence scales or economies of scale indexes. Dreze and Srinivasan (1997) have argued that economies of scale depend on the extent of public vs. private goods in a household. They show that in households with only adults, the elasticity of the cost of living with respect to household size is the share of private goods in total households' consumption. So if all goods are private then costs rise in proportion to the number of people in the households, if all goods are public, then costs are unaffected by the number of people in the household. Thus, in very poor countries where the share of household

budget devoted to food (a private good) is very high, there is very little scope for economies of scale, whereas in richer countries, where the share devoted to public goods such as housing, heating, etc. is higher, then economies of scale are larger. They also argue that while it may remain difficult to fully establish the extent of economies of scale in consumption, it seems far less realistic to assume zero economies of scale than to allow for some.

Engel's method defines the equilibrating compensation to be the level of income that sets food budget shares equal across households of various compositions. It is based on the idea that, as with any non-luxury good, the budget share devoted to food tends to decrease with total real consumption expenditure (see Ravallion 1992, p.21; Yemtsov 2001, p.55). Other approaches include relying on behavioural analysis, using direct questions to obtain subjective estimates and setting economies of scale in some reasonable but essentially arbitrary way. Deaton and Zaidi (1999, p.38) argue that the best of these approaches is probably the arbitrary approach. They suggest that θ should be set to 1 in the poorest countries where a large share of the household budget is devoted to food and around 0.75 for the richer economies where a larger share is devoted to housing, heating and other public goods (Deaton and Zaidi 1999, p.40). As concerns the cost of children and the setting of equivalence scales, most of the literature suggests that children are relatively more expensive in industrialised countries relative to poorer agricultural economies, and thus α should be set to 1 for countries such as the US or Western Europe and as low as 0.3 for the poorest economies.

For the purposes of this analysis I set $\alpha=1.0$ and $\theta=0.75$. I do not distinguish between adults and children in the equivalent measure. Accounting for different consumption needs of adults and children as well as of males and females does not make a difference in the results. As shown in Appendix A6.2, using the World Bank (WB) and Georgian State Department of Statistics (SDS) methodology, which accounts for differences in gender and age and makes stronger assumptions about the degree of economies of scale within the household, makes very little difference to the results (see section A2.3.4 for details of WB and SDS economies of scale and equivalence scale indexes). Moreover, although the value of θ is large relative to that adopted by the OECD (see Figini (1998)), it is not unreasonable given that utility prices and housing costs are subsidized in Georgia and therefore the share of public goods in household consumption is relatively small. Moreover, I find that the results are not very sensitive to the choice of θ and that considerable assumptions regarding the degree of economies of scale must be made before the poverty ranking of the labour market categories is affected, suggesting that setting θ equal to 0.75 is appropriate (see A2.3.4 for details). Finally, $\theta=0.75$ is consistent with the values estimated using Engel's method, which for Georgia yield $0.85 < \theta < 0.65$ (Yemtsov 1999).

A2.3.3 Defining a poverty line

Poverty lines, or the cut-off points separating the poor from the non-poor, can be set in two ways: either absolutely or relatively. Relative poverty lines are defined in relation to the overall distribution of income or consumption, whereas absolute poverty lines are based on some absolute standard, which for monetary measures, are usually based on the cost of basic food needs with a provision for non-food needs (for a detailed discussion of the merits and limitations of absolute vs. relative poverty lines see Ravallion 1992, p.25-33).¹²¹

There is considerable discussion in Georgia regarding the setting of a realistic poverty line. The official poverty line (used by the SDS) is based on a food-basket of 2,610 calories for a working adult and excludes access to health care and education. It uses CPI price data to cost the basket and is around 100 GEL (US\$50) per equivalent adult per month. The World Bank has recommended the use of a new poverty line (which it uses for its poverty assessments) that is based on the same caloric requirement but a different basket of goods. It argues that actual consumption patterns (observed through household survey data) should be used, rather than those established during Soviet times, and costs it using household survey prices. This amounts to decreasing the share of 'luxury goods' such as meat, in the basket, and increasing non-'luxury goods' such as bread. The World Bank recommended poverty line is about 55 GEL (US\$25) per month per equivalent adult. See Annex 1 of the World Bank Poverty Profile Update (2001) for a detailed discussion on the establishment of a realistic poverty line for Georgia.

Given the contentiousness of the issue of drawing an absolute poverty line, I chose to apply a relative poverty line based on two-thirds of median consumption per adult equivalent. As it happens, this is slightly lower than the World Bank absolute poverty line and equal to approximately GEL48 (US\$24) per equivalent adult per month in 1999. The choice of two-thirds of median consumption per equivalent adult is consistent with Bernabè, Krstic' and Reilley (2003), which examines poverty and informal labour markets in the CIS-7, and therefore allows for comparisons with other countries in the region.¹²² I also construct an 'extreme' poverty measure, which we set at half the median consumption level.

A2.3.4 Sensitivity Analysis for Choice of Economies of Scale Index (θ)

In this thesis I use an economies of scale index (θ) equal to 0.75 and we set the equivalence scale index (α) equal to 1 (see A2.3.2 for details). In contrast the World Bank (WB) and the Georgian

¹²¹ Alternative poverty lines include those based on subjective or self-reported measures of poverty (see Ravallion 1992, p.33-34). One can also combine absolute and relative poverty lines.

¹²² The 7 poorest countries of the CIS, namely Armenia, Azerbaijan, Georgia, the Kyrgyz Republic, Moldova, Tadjikistan and Uzbekistan.

State Department of Statistics (SDS) make stronger assumptions about both economies of scale and differences in intra-household needs between members of different age and/or gender groups (see Annex 1 Yemtsov 2001 for details). They make the following assumptions:

$\theta=0.54$ and

$\alpha =0.64$ for children aged <7years;

$\alpha=1$ for children aged 7-16 years;

$\alpha=1$ for male adults aged 16-60 years;

$\alpha=0.84$ for female adults aged 16-60 years;

$\alpha=0.88$ for male adults aged 60+, and;

$\alpha=0.76$ for female adults aged 60+.

In appendix A6.2 (tables A6.4 to A6.8) I show that despite these differences the regression results (OLS, Quantile and Probit) are consistent. The estimates for the main variables of interest, the labour force variables, are consistent in terms of significance, sign and magnitude.

However, the results relating to the number of adults and children in the household are not the same. I find that the number of children in the household is negatively correlated with consumption, whereas using the WB/SDS methodology finds that it is positively correlated with consumption.¹²³ Although this is not directly relevant to the objectives of this study, the sensitivity of results, concerning the relationship between household size and poverty, to choices of equivalence scales is an important one in the poverty measurement literature. I therefore wish to test to what extent poverty rates are sensitive to assumptions made about economies of scale and differences in intra-household needs.

Lanjouw, Milanovic and Paternostro (1998), Falkingham (1999a), Deaton (1999) and Yemtsov (1999) all find that using a per capita welfare indicator can lead to the conclusion that larger households are poorer whereas using a slightly lower value of theta (assuming some degree of economies of scale) can lead to the opposite conclusion. In the CIS/CEE region, the use of a per capita welfare indicator has had important implications. Considerable attention has been paid to the relative vulnerability of two household groups: old-age pensioner households and households with young children. Much of the empirical evidence suggests that households with young children have been the losers during transition whereas pensioner households have not fared so badly. The empirical evidence however is in sharp contrast to the anecdotal evidence that suggests

¹²³ This is a result of the fact that by assuming greater economies of scale (as per the WB/SDS methodology), one divides total household consumption by a smaller number of equivalent adults and therefore obtains a higher level of consumption per equivalent adult.

that pensions have declined rapidly in real terms and that in some countries payments of pensions have fallen far behind schedule.

Lanjouw, Milanovic and Paternostro (1998) suggest that the divergence between statistical evidence and the more popular intuitive judgements can be accounted for by details of poverty measurement. Notably the utilisation of a per capita measure of individual welfare is based on the assumption that there exist no economies of scale in household consumption and that there are no differences in needs arising from differences in family composition. They show that relaxing these assumptions affects the comparisons of poverty between large and small households and in turn affects the rankings of different household groups.

They argue that, given the inability to precisely observe the degree of economies of scale in consumption for a household, the question is then to determine how sensitive conclusions regarding the relative poverty of the elderly to that of the young are to the presence of economies of scale. If one has to make highly unrealistic allowances for economies of scale before there are any re-rankings between these two population sub-groups, then statistical results based on the per capita assumption can probably be accepted. If however, only mild deviations from the zero economies of scale assumption result in sharp re-rankings, then there is clearly reason for caution in interpreting results (Lanjouw, et al. 1998, p.6).

I follow the approach used by Lanjouw, Milanovic and Paternostro (1998) and Falkingham (2000b), to test the extent to which poverty rates for our labour market categories are sensitive to the assumptions made about economies of scale and differences in intra-household needs.¹²⁴ One minor limitation of this approach is that it does not distinguish between the effects of equivalence scales and those of economies of scale indexes. It assumes that both are captured by the value of θ .¹²⁵ Thus the equation for consumption per equivalent adult equation becomes:

$$CPA = \frac{E}{n^\theta}$$

Where CPA is consumption per equivalent adult, E is total household expenditure, n is the number of individuals in the household and θ is the elasticity of household needs with respect to household size.

¹²⁴ Other approaches exist (see for instance Deaton and Zaidi (1999)).

¹²⁵ Note that Deaton and Zaidi (1999), who do distinguish between the effect of α and θ find that the effect of θ is stronger than that of α . They show that children become relatively poorer if theta is decreased, holding alpha constant (more economies of scale assumed) than if alpha is decreased, holding theta constant (lower equivalence scale used).

Poverty is defined as belonging to the lowest quintile of the consumption distribution and I compute poverty rates by labour market status of the head of household using different values of theta from 0 to 1. Results are reported in table A2.2 below.

Table A2.2 Poverty rates by labour market categories for different values of theta

Head Employment Status	Theta (θ)											Population shares
	1	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0	
Average % poor	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Formal												
Employees	0.164	0.164	0.165	0.163	0.165	0.160	0.165	0.164	0.156	0.150	0.147	0.195
Self-employed	0.114	0.114	0.114	0.114	0.114	0.114	0.100	0.078	0.078	0.078	0.116	0.008
Farmers	0.121	0.115	0.106	0.099	0.101	0.101	0.100	0.094	0.089	0.098	0.098	0.146
Informal												
Employees	0.213	0.202	0.199	0.173	0.171	0.159	0.162	0.141	0.137	0.136	0.133	0.054
Self-employed	0.138	0.129	0.119	0.113	0.105	0.107	0.113	0.127	0.132	0.130	0.139	0.052
Farmers	0.148	0.140	0.134	0.127	0.116	0.110	0.095	0.091	0.094	0.098	0.116	0.045
Contributing family workers	0.090	0.085	0.080	0.078	0.073	0.083	0.081	0.092	0.091	0.089	0.090	0.094
Unemployed	0.326	0.324	0.317	0.315	0.314	0.316	0.293	0.296	0.270	0.275	0.270	0.065
Inactive	0.272	0.281	0.291	0.303	0.307	0.310	0.314	0.317	0.329	0.329	0.326	0.340

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Poverty line is set at bottom 20% of the consumption distribution.
- (b) Labour market status refers to the household head
- (c) Poverty rates refer to households
- (d) Unemployed refers to ILO relaxed criterion definition.

Table A2.2 shows that on the one hand, the lower the value of theta (the greater the assumption of economies of scale), the higher the poverty rates for households headed by inactive individuals. On the other hand, the lower the value of theta the lower the poverty rates for all other households, particularly those headed by formal and informal employees and farmers, as well as the unemployed. As suggested by Lanjouw et al. (1998), this could be explained by the fact that the inactive are largely pensioners who typically live in small households. This is confirmed by Table A2.3 below, which highlights that the inactive tend to live in households that are smaller than the national average, although the difference is not very significant. Whereas 22% of households headed by inactive individuals are one-member households, nationally only 16% of households are one-member households. We also note that households in Georgia are relatively small (the median is 3 household members), particularly if compared to Central Asian households.

Table A2.3 Distribution of Households by size

Household size	Cumulative percentage (%)	
	Inactive Head	All Households
1	22	16
2	41	34
3	56	50
4	70	72
5	82	85
6	91	94
7	97	98
8	98	99
9	99	99
10	99	100
11	100	100
12	100	100

Source: Author's own analysis of SGHH 1999.

I now examine to what extent the poverty ranking of households is affected by the choice of theta. Table A2.4 below ranks households by poverty incidence (1 highest poverty rate) for different values of theta. We see that re-ranking occurs around the 0.5/0.4 mark. This can explain the difference between the results based on my methodology and those of the WB/ SDS, since I use $\theta=0.75$ whereas the WB/SDS use $\theta=0.54$. We also note that considerable assumptions must be made about economies of scale before re-ranking occurs (i.e. between $\theta=1$ and $\theta=0.6$ there is very little re-ranking). This implies that the per capita assumption is actually a good one and confirms that $\theta=0.75$ is in fact appropriate.

Table A2.4 Poverty ranking by labour market categories for different values of theta

Head Employment Status	Theta											Population shares
	1	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0	
Formal												
Employees	4	4	4	4	4	3	3	3	3	3	3	2
Self-employed	8	8	7	6	6	5	6	9	8	9	6	9
Farmers	7	7	8	8	8	8	7	6	8	7	8	3
Informal												
Employees	3	3	3	3	3	4	4	4	4	4	5	6
Self-employed	6	6	6	7	7	7	5	5	5	5	4	5
Farmers	5	5	5	5	5	6	8	8	6	6	7	8
Contributing family workers	9	9	9	9	9	9	9	7	7	8	9	4
Unemployed	1	1	1	1	1	1	2	2	2	2	2	5
Inactive	2	2	2	2	2	2	1	1	1	1	1	1

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Poverty line is set at bottom 20% of the consumption distribution.
- (b) Labour market status refers to the household head
- (c) Poverty rates refer to households
- (d) Unemployed refers to ILO relaxed criterion definition.

Finally table A2.5 examines poverty rates by household size for different values of theta. We see that results are consistent with findings of Lanjouw et al. (1998). As greater assumptions about economies of scale are made, smaller households become relatively poorer while larger households become relatively less poor. The order begins to reverse with theta=0.6 and is definitely reversed by theta=0.4. As previously noted, this suggests that significant assumptions must be made about economies of scale to affect poverty rankings. However we note that the poverty ranking between one-member and two to three member households already reverses with theta=0.8. This suggests that there are considerable economies of scale in two to three member households compared to one-member households. As discussed above, this could explain our finding that lower values of theta are associated with higher poverty rates for inactive individuals, who are more likely to live in one-member households.

Table A2.5 Poverty rates by household size for different values of theta.

Household Size	Theta											Population Shares
	1	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0	
1	0.12	0.15	0.18	0.23	0.26	0.31	0.36	0.41	0.46	0.51	0.54	0.16
2 to 3	0.14	0.16	0.17	0.18	0.19	0.20	0.21	0.21	0.22	0.22	0.22	0.34
4 to 6	0.24	0.22	0.21	0.19	0.18	0.16	0.14	0.12	0.11	0.09	0.08	0.44
7 to 13	0.45	0.39	0.33	0.30	0.27	0.20	0.15	0.13	0.09	0.08	0.06	0.06
Average % of poor	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

(a) Poverty line is set at bottom 20% of the consumption distribution.

(b) Entries refer to the percentage of households of a given size that are below the poverty line.

Thus, we have seen that despite considerable differences in assumptions about economies of scale and equivalence scales, the relationship between labour market status of the household head and poverty remains the same. The results are therefore robust. Moreover, the sensitivity analysis has shown that considerable assumptions about economies of scale must be made before the poverty ranking between our different labour market categories is affected and this occurs around the 0.5 mark. This means that the use of theta equal to 0.75 is indeed appropriate. Finally it was found that in general, the greatest scope for economies of scale arises between one-member and two to three-member households, where an assumption of theta=0.8 already reverses the poverty ranking.

A2.4 Multivariate regression analysis techniques

Three multivariate regression techniques are used in this thesis: Ordinary Least Squares (OLS), Probit and Quantile Regression. Each of these is briefly described below, with a focus on interpretation of results.

Ordinary Least Squares

Ordinary Least Squares (OLS) regression aims to estimate the mean of the dependent variable, given the independent variables and to assess the conditional effect of a change in the value of a given independent variable on the dependent variable, while controlling for the effects of all other variables. The regression plane is defined as the plane where the sum of the squared deviations of the points from the plane is a minimum (see Lewis-Beck 1980).

OLS regression is used to examine the impact of labour force and human capital variables on the value of (log) consumption per equivalent adult, while controlling for a series of other household characteristics.

I specify the following OLS model for households $i=1, \dots, N$:

$$Y_i = \beta X_i + u_i$$

Where Y is the natural logarithm of consumption per equivalent adult and the vector X is the vector of explanatory variables, β is the parameter vector to be estimated and u is a random error term with $E(u)=0$ and $Var(u)=\sigma^2$.

We can interpret the regression coefficients, b_1, b_2, \dots, b_k , where k is the number of independent variables in our model, as the marginal impact on (log) y for every 1 unit increase in the value of x_1, x_2, \dots, x_k , for continuous variables. The coefficients for dummy variables, say b_1 , is interpreted as the relative impact on y of $x_1=1$ relative to x_{ref} (the omitted reference category) =1.

A measure of the goodness of fit of the model is provided by the Adjusted R^2 , which gives an indication of how much of the variance in the dependent variable can be explained by the variance in the independent variables in the model. It adjusts for the number of independent variables relative to the number of observations. Adjusted R^2 is defined as:

$$Adjusted R^2 = R^2 - \frac{(k)(1 - R^2)}{(n - k - 1)}$$

where k is the number of independent variables and n is the total number of observations. The Null Hypothesis (H_0) that in the population $\rho^2=0$ can then be tested. That is to say, what is the likelihood that one would observe the reported *Adjusted R²* in the sample, if the model explained none of the variation in Y in the population? An F -statistic is used on $(k-1)$ $(n-k)$ degrees of freedom, to test the joint hypothesis that all coefficients except the intercept are 0. If it is found that the probability is less than 10%, 5%, or 1%, H_0 can be rejected and one can say that the model is representative of the population and is statistically significant at the 1%, 5% or 10% level.

Similarly, the standard errors reported enable the testing of the null hypothesis (H_0) that in the population, each independent variable has no impact on Y , controlling for all other independent variables (e.g. $\beta_1=0$). A t-test to test H_0 can then be used. The Student's t-statistic is defined as:

$$t = \frac{b_1 - \beta_1}{S_{b_1}}$$

where b_1 is the estimated regression coefficient, β_1 is the population coefficient and S_{b_1} is the standard error of b_1 . A Student's t-distribution can then be used on $n-k$ degrees of freedom to obtain measures of the probability for H_0 . If it is found that the probability is less than 10%, 5%, or 1%, H_0 can be rejected and one can say that b_1 is significant at the 1%, 5% 10% level. These significance levels are reported directly in the tables.

Probit regression

I use probit regression when the dependent variable is dichotomous (usually coded 1 if the event takes place and 0 otherwise) and we are interested in the probability of the event taking place. A linear model is inappropriate in this case because the probability model is not linear in the independent variable (the probability is constrained between 0 and 1). The probability function must therefore be transformed. Several alternatives exist, and the two most commonly used are to transform the probability function into the functions for logistic or normal curves (logit and probit regression respectively) (Aldrich and Nelson 1984, p.31-35). These two curves are so similar that they yield essentially identical results. I chose probit analysis as I have found it to be the most commonly used technique when analysing the relationship between poverty and the labour market in the literature.

'Probit' stands for the abbreviation of 'probability unit' (Aldrich and Nelson 1984, p.37). The probit model is defined as:

$$\begin{aligned}P(Y_i=1|X_i) &= 1-P(Y_i=0) \\ &= 1- P(u=-X/\beta) \\ &= \Phi(X\beta)\end{aligned}$$

where $\Phi(\cdot)$ is the cumulative distribution function, Y is a dichotomous variable taking value 1 if the event takes place and 0 otherwise, X is the vector of explanatory variables, β is the parameter vector to be estimated, i is the unit of observation $i=1, \dots, N$, and u is a random error term with $E(u)=0$ and $Var(u)=\sigma^2$.

Probit parameters are estimated using a method called Maximum Likelihood Estimation (MLE), in contrast to OLS regression models, which are estimated by the Least Squares Estimation. MLE chooses estimates of the regression coefficients (b_1, \dots, b_k) that make the likelihood of observing this particular Y as large as possible. The conceptual difference between OLS and MLE estimation is that OLS is concerned with picking parameter estimates that yield the smallest sum of squared errors in the fit between the model and the data, while MLE is concerned with picking parameter estimates that imply the highest probability of having obtained the observed sample y (Aldrich and Nelson 1984, p.51).

The regression coefficients (b) are converted into marginal effects (using STATA's 'dprobit') for ease of interpretation. Thus, whereas probit reports the coefficients, dprobit reports the change in the probability of $y=1$ for an infinitesimal change in each independent, continuous variable and, the discrete change in the probability for dummy variables, while controlling for all other independent variables in the model (see STATA 1999, p.65).

As with OLS regression, the standard errors are used to calculate t-statistics and test $H_0: \beta=0$ and determine whether the coefficients are statistically significant at the 1%, 5% or 10% level (see OLS regression above).

The likelihood ratio (L^2) is used to test the goodness of fit of the model using a Chi2 distribution. However, unlike the *Adjusted R²*, it cannot provide any information on the percentage of variation in Y that is explained by the model. It allows the testing of the Null Hypothesis (H_0) that all coefficients in the population, with the exception of the intercept, are 0.

The likelihood ratio is defined as:

$$L^2 = -2 \text{Log} \left(\frac{L_0}{L_1} \right)$$

Where L_1 is the value of the likelihood function for the full model as fitted and L_0 is the maximum value of the likelihood function if all coefficients except the intercept are 0 (H_0) (Aldrich and Nelson 1984, p.55-56).

L^2 follows approximately a χ^2 distribution when the null hypothesis is true. The computed χ^2 value tests the hypothesis that all coefficients except the intercept are 0. The degrees of freedom for L^2 is $k-1$, where k is the number of independent variables in our model. We can then compare the computed statistic to a critical value ($\chi^2(k-1, \alpha)$ taken from the table of the chi-squared distribution with $k-1$ degrees of freedom and significance level α). If the probability is less than a 10%, then the Null Hypothesis can be rejected and it can be concluded that the model is significant.

Quantile regression

I use quantile regression in order to analyse the impact of the variables of interest (namely labour force and human capital variables) at different points of the (log) consumption distribution. Quantile regression models, introduced by Koeneker and Basset (1978) are similar to ordinary regression, but instead of minimising the sum of the squares of the residuals as in OLS, quantile regression models minimise the sum of the absolute residuals. Just as the aim of OLS regression is to estimate the mean of the dependent variable, the object of quantile regression is to estimate the θ th quantile of the dependent variable, conditional on the values of the independent variables (see STATA 1999, p.99-115).

The advantages of quantile regression include that, unlike the OLS procedure, it is less sensitive to outlier observations on the dependent variable and provides a more robust estimator in the case of deviation from normality. Furthermore, quantile regression models are also more efficient than the OLS estimators in the case of heteroschedasticity, when the error term is non-normal (see Buchinski 1998, p.89).

Quantile (including median, i.e. the 0.5 quantile) regression models are also known as least or minimum absolute value models. In these models, the θ th regression quantile, $0 < \theta < 1$, is defined as the solution to the minimization problem:

$$\min_{\beta_j} \{ \sum_j \theta |y_i - \beta_j x_{ij}| + \sum_j (1 - \theta) |y_i - \beta_j x_{ij}| \}$$

This set up as a linear programming problem and solved via linear programming techniques.

I estimate separate consumption functions, conditional on the values of the independent variables, at the 0.10, 0.25, 0.50, 0.75 and 0.90 quantiles for all households $i=1, \dots, N$:

$$\text{Ln } Y_i = X_i \beta_\theta + u_{\theta i}, \quad \text{Quant}_\theta(y_i | x_i) = x_i \beta_\theta$$

Where $\text{Ln } Y$ is the natural logarithm of the consumption per equivalent adult, $\text{Quant}_\theta(y_i | x_i)$ denotes the conditional quantile of y_i , conditional on the regressor vector X_i , B_θ is the vector of coefficients, and θ is θ th quantile. The error term, u_θ is left unspecified and the only assumption made is that u_θ satisfies the quantile restriction $\text{Quant}_\theta(u_\theta | x_i) = 0$.

The output of the above equation may be interpreted in exactly the same way as linear regression output, except that instead of the mean of the dependent variable, we predict the θ th quantile. The coefficients can be interpreted in much the same way as OLS regression: b_2 , for instance, gives the marginal change in the θ th conditional quantile of y due to a marginal change in x_2 .

I estimate the five regressions at the 0.10, 0.25, 0.50, 0.75 and 0.90 quantiles simultaneously using simultaneous quantile regression. Thus the following equations are solved simultaneously:

$$\begin{aligned} \text{Ln } Y_{0.90} &= a_{0.90} + b_{0.90}x_1 + b_{0.90}x_2 + \dots + b_{0.90}x_k \\ \text{Ln } Y_{0.75} &= a_{0.75} + b_{0.75}x_1 + b_{0.75}x_2 + \dots + b_{0.75}x_k \\ \text{Ln } Y_{0.50} &= a_{0.50} + b_{0.50}x_1 + b_{0.50}x_2 + \dots + b_{0.50}x_k \\ \text{Ln } Y_{0.25} &= a_{0.25} + b_{0.25}x_1 + b_{0.25}x_2 + \dots + b_{0.25}x_k \\ \text{Ln } Y_{0.10} &= a_{0.10} + b_{0.10}x_1 + b_{0.10}x_2 + \dots + b_{0.10}x_k \end{aligned}$$

In quantile regression, estimates of standard errors are obtained by using bootstrap resampling. The advantage of simultaneously solving the regressions rather than solving them individually is that STATA provides a bootstrapped estimate of the entire variance-covariance matrix of estimators, which enables the performance of hypotheses test to see whether the effects of certain variables are the same at different quantiles. To this end, we use a Wald test (i.e. a test based on the estimated variance-covariance matrix of estimators) to test the Null Hypothesis that the coefficients are jointly equal at the 25th and 75th percentiles (see STATA 1999, p.109-110).

The *Pseudo R*² reported by STATA is calculated as:

$$1 - \frac{\text{sum of weighted deviations about estimated quantile}}{\text{sum of weighted deviations about raw quantile}}$$

This is based on the likelihood for a double exponential distribution $e^{h_i|r_i|}$ (see STATA 1999, p.114).

Use of weights

All multivariate regression analysis in the thesis is carried out using unweighted data. This is because the weights used in the data sets are ‘population weights’ (i.e. of the ‘grossing-up’ type), which could result in an apparently high level of statistical significance for estimated coefficients, as a large n (sample size) would lead to small standard errors, confidence intervals and therefore an apparently higher significance level.

A2.5 Statistical Package

I have used STATA 6.0 and 7.0 for all the analysis. All data sets were provided to me in ACCESS and I transferred them into STATA 6.0 format using Stat Transfer.

APPENDIX 3:
ANNEXES RELATING TO CHAPTER 3

A3 Should the inactive and unemployed owning land be considered informally employed?

Bernabè, Krstić and Reilly considered that all individuals who are unemployed or inactive but live in households whose members engage in their own enterprise or own land, are informally employed. This was based on the approach of Yemtsov (2001), which assumes that such individuals are very likely to be ‘helping out’ on household farms or enterprises and are therefore more accurately classified as being actively employed.

This thesis argues that making this assumption is incorrect as respondents of the Labour Force Survey are asked whether they worked for at least one hour, including for free and on family farms or enterprises, within the last week. All individuals classified as unemployed or inactive have given a negative response to this question. Nevertheless, it is interesting to see how some of the results of the empirical analysis of this thesis would be affected if such an assumption were made. In particular, we are interested in the impact on the relationship between labour market status, poverty and the receipt of formal social protection.

Table 1 examines the share of individuals that receive formal social protection by labour market category. Results are presented for both scenarios. Column 1 corresponds to the analysis of this thesis, namely that unemployed and inactive who own land are considered to be unemployed and inactive respectively. Column 2 assigns the unemployed and inactive owning land to the informally employed category. We see that the share of household heads that receive formal social protection and work informally increases from 12.5% to 21.5%, whereas the share that receives formal social protection and is inactive decreases from approximately 20% to 11.5%. This can be explained by the fact that the majority of the ‘helpers on family farms or businesses’ are pensioners who own small plots of land and receive formal social protection in the form of pensions.

Table 2 examines the composition of the bottom and top consumption quintiles by labour market status of the household head and by whether or not the household receives formal social protection. We see that the reallocation of inactive and unemployed owning land to the informal employment category has a considerable impact, particularly when broken down by consumption quintiles. In our initial analysis we find that in the poorest consumption quintile, twice as many heads of households who received formal social protection were formally employed as were informally employed, thereby suggesting that those in formal employment may be more

successful at mobilising formal social protection. However, once we reassign the 'inactive and unemployed owning land or business' to the informally employed category, we find that exactly the contrary is true, suggesting that the informally employed would be more successful at mobilising formal social protection. At the same time, the share of households headed by the inactive that receiving formal social protection in the bottom quintile decreases from 40.2% to 19.2%, which would seem to suggest that formal social protection is not effectively targeting the inactive.

Thus, these tables highlight that to consider the inactive and unemployed that own land as informally employed, would result in making the informally employed appear to be greater recipients of formal social protection than they actually are, while households headed by the inactive would appear to receive a smaller share of social protection than they actually do.

Table A3.1 Formal Social Protection and Labour Market Categories, 1999

(% of household heads)

	Helpers on family farm or business= inactive/unemployed	Helpers on family farm or business= informal employment
Receive formal social protection	46.1	46.3
Formal employment	11.5	11.7
Informal employment	12.5	21.5
Unemployed	2.2	1.6
Inactive	19.9	11.5

Source: Author's own analysis of LFS and SGH, 1999

Table A3.2 Bottom and Top Consumption Quintiles by Formal Social Protection and Labour market Status of Household Head, 1999

(percent)

	Helpers on family farm or business = informal employment		Helpers on family farm or business = Inactive/unemployed	
	Bottom Quintile	Top Quintile	Bottom Quintile	Top Quintile
Total	100.0	100.0	100.0	100.0
Receive formal social protection	49.0	44.5	56.0	48.0
Formal employment	9.1	16.2	8.4	18.8
Informal employment	18.3	22.3	4.6	16.0
Unemployed	2.4	0.8	2.9	0.5
Inactive	19.2	5.2	40.2	12.8
Do not receive formal social protection	51.0	55.5	44.0	52.0
Formal employment	14.8	22.2	15.7	24.9
Informal employment	18.0	25.1	10.0	17.4
Unemployed	9.0	3.8	7.3	2.8
Inactive	9.2	4.5	10.9	6.9

Source: Author's own analysis of LFS and SGH, 1999

APPENDIX 4:
ANNEXES RELATING TO CHAPTER 4

A4.1 Defining underemployment

According to the 1966 International Conference of Labour Statisticians (ICLS) resolution, underemployment ‘exists when a person’s employment is inadequate, in relation to specified norms or alternative employment, account being taken of his occupational skill (training and working experience)’ (Husmanns, Mehran et al. 1990).

Two principal forms of underemployment are distinguished: visible underemployment, reflecting an insufficiency in the volume of employment; and invisible underemployment, characterised by low income, underutilisation of skill, low productivity and other factors. The 1982 ICLS resolution recognised, however, that ‘for operational reasons the statistical measurement of underemployment may be limited to visible underemployment’ (Husmanns, Mehran et al. 1990).

Underemployment has particular relevance in developing and transition countries, notably in connection with agriculture. It has been observed that in many developing countries measured unemployment is consistently low. This is explained by various reasons, one of which is that a limited number of workers are covered by unemployment insurance or other social benefits. Under such conditions, very few people can afford to be unemployed for any period of time. The bulk of the population must engage at all times in some economic activity, however little or inadequate that may be. Although at the same time they may be seeking other or additional work, they will not be considered as unemployed. In such circumstances, the employment situation cannot be fully described by unemployment data alone and should be supplemented with data on underemployment.

According to the international definition, ‘persons visibly underemployed comprise all persons in paid or self-employment, whether at work or not at work, involuntarily working less than the normal duration of work determined for the activity, who were seeking or available for additional work during the reference period’ (Husmanns, Mehran et al. 1990). This means that there are three criteria for identifying the visibly underemployed; (1) working less than normal duration; (2) doing so on an involuntary basis; and (3) seeking or being available for additional work during the reference period.

We wish to operationalise the above definition of visible underemployment for Georgia. As regards the first criterion, according to the resolution on statistics of hours of work adopted by the Tenth ICLS in 1962, normal hours of work for an activity should refer to the hours of work as

fixed by national legislation. For persons not covered by such legislation, normal duration of work should be determined on the basis of usual practices for the activity. The use of a uniform conventional norm should be regarded as a last resort, only to be applied in the case of activities for which there is neither legislation nor usual practices regarding hours of work (Husmanns, Mehran et al. 1990). The individual working hours should account for all activities that the person performed during the reference period, including any secondary activities. The Georgian Labour Code stipulates that the normal working period is fixed at 41 hours per week, 5 working days a week. Certain unhealthy or dangerous activities may have a working week of 36 hours.¹²⁶

The second criterion for identifying underemployment is the involuntary nature. Although we have no direct information as to whether those employed full-time are voluntarily working less than normal duration, we can exclude those who would typically be classified as voluntarily working less than normal hours. These include women with young children (under the age of 3), students and elderly workers (over the retirement age). We then assume that all others who are working less than normal hours do so involuntarily.

Finally, the third criterion 'seeking or being available for additional work' actually reinforces the involuntary nature of working short time. In fact, the two criteria can be considered as complementary or even somewhat overlapping (Husmanns, Mehran et al. 1990). Moreover, we argue that this criterion is not necessarily very relevant in transition countries where the lack of formal work opportunities mean that people may have lost hope of finding an other or an additional job. This concept is analogous to that of the 'discouraged unemployed', who are considered unemployed despite the fact that they have not actively been searching for work as they have lost hope of finding a job.

We therefore operationalise 'underemployment' as consisting of all working-age individuals who are (1) employed full-time and (2) working for a total (in primary and multiple jobs) of less than 41 hours per week. OR (1) employed part-time and (2) doing so involuntarily.

¹²⁶ Georgia still has the Soviet Labour Code. A new labour code is currently being drafted but has yet to be submitted to Parliament for discussion.

A4.2 Tables relating to chapter 4

Table A4.1 Determinants of Unemployment, controlling for the regional rate of unemployment, Probit results, 1999

Dependent variable: unemployed (dummy)	Urban	Rural
<i>Individual Characteristics</i>		
Female	-0.0207 (0.0091)**	-0.0047 (0.0026)*
Age 15-25	0.2471 (0.0226)***	0.077 (0.0119)***
Age 26-45	0.0537 (0.0121)***	0.0241 (0.0051)***
Age 46-55	<i>f</i>	<i>f</i>
Age 56+	-0.0523 (0.0135)***	-0.0259 (0.0041)***
Georgian	0.0145 (0.0125)	0.0132 (0.0035)***
<i>Education</i>		
Primary or Less	0.0019 (0.0386)	0.0043 (0.0095)
Incomplete Secondary	0.0346 (0.0282)	0.0134 (0.0071)*
General Secondary	0.0471 (0.0117)***	0.001 (0.0035)
Technical Secondary	0.0448 (0.0187)**	-0.0104 (0.0045)**
High Technical	0.0338 (0.0150)**	0.0137 (0.0055)**
High General	<i>f</i>	<i>f</i>
Regional Unemployment Rate (relaxed)	0.5768 (0.0490)***	0.4443 (0.0793)***
Observations	7990	12177
L.2.Chi2(K-1)	420.94(11)***	418.62(11)***

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Standard errors are in brackets.
- (b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- (c) The dependent variable for the probability model is whether an individual is unemployed.
- (d) Unemployed refers to ILO relaxed criterion definition.
- (e) The sample for the regression is all individuals in the labour force.
- (f) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discrete change from 0 to 1 for dummies.
- (g) The unit of observation is the individual.
- (h) *f* denotes variables omitted in the estimation (base categories).
- (i) L^2 Chi2 (K-1) refers to the likelihood ratio used to test the goodness of fit of the model and is compared to a Chi2 distribution on $k-1$ degrees of freedom, where k is the number of independent variables in our model (see appendix x).
- (j) Analysis carried out using unweighted data.
- (k) Definitions of all variables can be found in appendix A2.2.

Table A4.2 Determinants of Underemployment for urban wage employees, Probit results 1999.

Dependent variable: underemployed (dummy)	using 41hrs pw	using 35hrs pw
<i>Individual Characteristics</i>		
Female	0.1298 (0.0177)***	0.0768 (0.0157)***
Age 15-25	-0.0141 (0.0371)	0.0484 (0.0352)
Age 26-45	0.0018 (0.0203)	0.0278 (0.0178)
Age 46-55	<i>f</i>	<i>f</i>
Age 56+	0.0591 (0.0240)**	0.0598 (0.0226)***
Georgian	0.0179 (0.0247)	-0.0007 (0.0223)
<i>Education</i>		
Primary or Less	-0.1308 (0.0820)	-0.1873 (0.0380)***
Incomplete Secondary	0.0159 (0.0671)	0.0915 (0.0676)
General Secondary	-0.1154 (0.0218)***	-0.0326 (0.0186)*
Technical Secondary	-0.1056 (0.0306)***	-0.0064 (0.0255)
High Technical	-0.0807 (0.0249)***	-0.0222 (0.0206)
High General	<i>f</i>	<i>f</i>
<i>Sector of Economic Activity</i>		
Agriculture, Fishing (A, B)	-0.1646 (0.0503)***	-0.0286 (0.0442)
Manufacturing (D)	0.1179 (0.0331)***	0.1279 (0.0375)***
Electricity, Gas, Water Supply (E)	0.1167 (0.0484)**	-0.0115 (0.0515)
Construction (F)	0.1713 (0.0428)***	0.129 (0.0538)**
Wholesale and retail trade (G)	-0.0545 (0.0397)	-0.0192 (0.0356)
Hotels, restaurants (H)	0.047 (0.0665)	0.0743 (0.0684)
Transport, communication (I)	<i>f</i>	<i>f</i>
Financial intermediation, real estate (J, K)	0.1007 (0.0393)**	0.1345 (0.0453)***
Public Administration and defence (L)	0.011 (0.0361)	-0.0899 (0.0304)***
Education (M)	0.2967 (0.0285)***	0.4952 (0.0365)***
Health, social work (N)	0.1212	0.1146

	(0.0357)***	(0.0401)***
Other community and personal services (O)	0.2105	0.1096
	(0.0355)***	(0.0453)**
Private Households with employees (P)	0.2733	0.4912
	(0.0643)***	(0.0856)***
Other (C, Q)	0.1529	-0.192
	(0.0790)*	(0.0389)***
Region		
Tblisi	-0.1145	-0.186
	(0.0400)***	(0.0301)***
<i>Kakheti</i>	<i>f</i>	<i>f</i>
Shida Kartli	0.1881	0.0223
	(0.0412)***	(0.0405)
Kvemo Kartli	0.0985	-0.1364
	(0.0439)**	(0.0269)***
Samtskhe Javakheti	-0.1282	-0.1039
	(0.0565)**	(0.0370)***
Achara	-0.0327	-0.0586
	(0.0448)	(0.0331)*
Guria	-0.0785	-0.1305
	(0.0567)	(0.0315)***
Samegrelo	0.0415	-0.0742
	(0.0465)	(0.0332)**
Imereti	0.2389	0.1344
	(0.0371)***	(0.0435)***
Private	-0.0209	0.0605
	(0.0237)	(0.0218)***
Observations	4305	4305
L ² Chi2(K-1.)	763.92(32)***	995.55(32)***

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Standard errors are in brackets.
- (b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- (c) The dependent variable for the probability model is whether an individual is underemployed.
- (d) Underemployment is defined as all working-age individuals who are (1) employed full-time and (2) working for a total (in primary and multiple jobs) of less than 41 (or 35) hours per week. OR (1) employed part-time and (2) doing so involuntarily (see Annex X. for details).
- (e) The sample for the regression is the urban wage-employed.
- (f) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discrete change from 0 to 1 for dummies.
- (g) The unit of observation is the individual.
- (h) *f* denotes variables omitted in the estimation (base categories).
- (i) L² Chi2 (K-1) refers to the likelihood ratio used to test the goodness of fit of the model and is compared to a Chi2 distribution on *k*-1 degrees of freedom, where *k* is the number of independent variables in our model (see appendix x).
- (j) Letters in brackets refer to sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).
- (k) Category G also includes repair of motor vehicles. Category K also includes renting and business activities. Category C refers to mining and quarrying and category Q refers to extra territorial organisations and bodies.
- (l) Analysis carried out using unweighted data.
- (m) Definitions of all variables can be found in appendix A2.2.

A4.3 The system of social security in Georgia

The current social security system has three main components: the state social allowance, the unemployment benefit and the pay-as-you-go pension system.

The State Social Allowance was introduced in the beginning of 1998 to replace the family allowance. Whereas the family allowance had a wider coverage of vulnerable groups, the State Social Allowance only targets households comprised of non-working pensioners without a legal breadwinner. The allowance was fixed, by a Presidential decree of 10 February 2001, at GEL 22 (US\$11) for a one-member recipient household and GEL 35 (US\$12.50) for a household of two or more (TACIS 2000, p.37). Not only are these amounts only a fraction of the official minimum subsistence level, but also the allowance is paid sporadically and the system is suffering from enormous payment arrears (TACIS 1999a, p.71). As a consequence, many pensioners continue to work, so as to meet basic needs, however for some these benefits are the only source of livelihood.

In 1998, the government also introduced a fixed *Unemployment benefit*. As mentioned in the discussion on the Employment Fund, in order to be eligible, the unemployed must be registered with an Employment Fund office. Not only is the registration procedure complex and time consuming, but also eligibility is limited to those who are unemployed involuntarily, performing no work whatsoever and having participated in the unemployment insurance programme for some time or otherwise entering the labour market for the first time. As of September 1998, the unemployment benefit is only payable for the first six months, and is purely symbolic at GEL 14 (US\$7) for the first two months, GEL 12 (US\$6) for the next two months and GEL 11 (US\$5.50) for the last two months. Moreover, as with the Social State Allowance, as a result of the chronic under collection of payroll tax, the unemployment benefits are suffering from constant arrears in payments (TACIS 1999a, p.71). As a consequence, it is not surprising that very few people bother to register with Employment Fund offices at all.

Georgia has introduced a pay-as you-go *Pension System*¹²⁷. Pensions are fixed at GEL14 (US\$7) for the majority of pensioners, GEL18 (US\$9) for war veterans' widows and GEL 35-45 (US\$17.50-22.50) for war veterans and invalids. Despite the fact that the fixed-rate pension only represents 14.5% of the minimum subsistence level, GEL3 (US\$1.50) is deducted at the source to pay for utilities, bringing the current pensions down to 11% of the poverty line (TACIS 2001, p.42).

¹²⁷ In the pay-as-you-go pension system (common in western industrialised countries), the current employed pay for the current pensioners.

The pensions are financed through the United State Social Safety Fund (USSSF), which is financed by payroll tax, with budgetary transfers to compensate for under-funding. The payroll tax is 26% of gross wages for budgetary organisations, 27% of gross wages for other organisations (to be paid by the employer), and an additional 1% of gross wages paid by employees. In addition, in an attempt to increase tax collection, the Government has introduced a payroll tax for the self-employed but as of yet there are no incentives to pay and no clear mechanisms to collect it.

As a result of the severe fiscal crisis, brought on by both non-collection and non-compliance, the system suffers from substantial payment arrears. In 1998-999, pension arrears amounted to GEL 76 million (TACIS 1999a, p.72). In 1999-2000, more than two-thirds of pensioners suffered from arrears (TACIS 2001, p.42). Moreover, given the tight budgetary situation, the compensating budgetary transfers are hardly ever made. This places the Government in a difficult position. On the one hand it must expand payroll tax collection in order to finance social security, on the other, reducing the tax rate would serve as an incentive for those who are not paying to legalise their operations. The level of payroll tax is higher in Georgia than in most industrialised countries. The 'tax wedge', which measures the total cost to the employer of the net salary received by the employee, is 1.66 for a gross monthly salary of GEL200. This means that the payroll tax increases the cost of labour to the employer by 66% (Yemtsov 2001, p.16).

In addition to the high contribution rate and narrow contribution base, the replacement rate (the average pension as a percentage of the average wage) is only 20%. That is to say that the average pension is only 20% of the average employees monthly salary, which itself is only a fraction of the minimum subsistence level. Finally, institutional weakness and poor management have further crippled the system, resulting in insufficient collection of payroll tax, corruption, and a further aggravation of its financial difficulties.

The Government has taken steps to introduce a *multi-pillar pension system* consisting of three pillars: a universal state pension scheme, a mandatory private pension scheme and a voluntary private pension scheme. However it is unlikely that a significant portion of the population will be able to afford participation in the private schemes in the short or even medium term and it is therefore expected that the pay-as-you-go pillar will continue to be mandatory and significant for the majority of pensioners.

APPENDIX 5:
ANNEXES RELATING TO CHAPTER 5

A5. Informal employment and informal sector employment in Georgia by gender and quarter

The typology of informal employment used in this chapter consists of the following categories: (1) informal non-agricultural self-employed; (2) informal farmers; (3) contributing family workers; (4) informal employees, (5) informal secondary jobholders; (6) others informally employed.

Below we present frequencies and rates of informal employment by gender and quarter. We further break down our categories of informal employment to isolate 'informal sector employment' as defined by the ILO (1993b).

The ILO (1993b) defines the informal sector as consisting of a subset of household unincorporated enterprises.

'(1) The informal sector may be broadly characterised as consisting of units engaged in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned. These units typically operate at a low level of organisation, with little or no division between labour and capital as factors of production and on a small scale. Labour relations - where they exist - are based mostly on casual employment, kinship or personal and social relations rather than contractual arrangements with formal guarantees.

(2) Production units of the informal sector have the characteristic features of household enterprises. The fixed and other assets used do not belong to the production units as such but to their owners. The units as such cannot engage in transactions or enter into contracts with other units, nor incur liabilities, on their own behalf. The owners have to raise the necessary finance at their own risk and are personally liable, without limit, for any debts or obligations incurred in the production process. Expenditure for production is often indistinguishable from household expenditure. Similarly, capital goods such as buildings or vehicles may be used indistinguishably for business and household purposes.' (ILO 1993b, para.5)

Within the household sector, the informal sector comprises (i) 'informal own-account enterprises' and (ii) 'enterprises of informal employers'. (1) Informal own-account enterprises are household enterprises with the characteristics described above, that are owned and operated by own-account workers, either alone or in partnership with members of the same or other households, which may employ contributing family workers and employees on an occasional basis, but do not employ employees on a continuous basis. 'Enterprises of informal employers' are household enterprises with the characteristics described above, owned and operated by employers, either alone or in

partnership with members of the same or other households, which employ one or more employees on a continuous basis. (ILO 1993b, para 8,9).

We use location as a proxy for 'household enterprise'.¹²⁸ Therefore informal sector enterprises include enterprises owned and operated by own-account workers or employers whose business is: (1) located at home, outside home, in a street booth, on a construction site, in a market place, at a customer's home or in a non-fixed location; (2) in a factory, office, establishment, shop, workshop, etc. which is independent from the home and is not registered, or (3) on a plot of land either in an urban area or in a non-registered rural agricultural enterprise.¹²⁹

In order to isolate ILO informal sector employment from other informal employment, we break down our typology of informal employment into the following categories:

1. Own-account workers, producing for sale, barter, or for own consumption in informal sector enterprises.
2. Employers in informal sector enterprises.
3. Contributing family workers in informal sector enterprises.
4. Contributing family workers in non-informal sector enterprises.
5. Informal employees in informal sector enterprises.
6. Informal employees in non-informal sector enterprises.
7. Others employed in informal sector enterprises.
8. Others informally employed in non-informal sector enterprises (employed casually, temporarily or seasonally).
9. Informal members of producers' co-operatives.
10. Formal employees in informal sector enterprise.

¹²⁸ The ILO definition allows for the use of location as a proxy for household enterprises, when registration is irrelevant (as per ILO 1993b). In the Georgian Labour Force data, the question on registration is not particularly meaningful, as over 90% of own-account workers said they were 'registered'. However, qualitative research and anecdotal evidence suggest that this may refer to the payment of some kind of local licence fee (to obtain a permit to sell in a market for instance), or to the payment of bribes to local police, sanitary inspectors, tax inspectors, and local racketeers. However, in none of these cases does it refer to registration under national legislation as per ILO Ibid.. The ILO also suggests identifying informal (household) enterprises by the number of employees (less than 4 - which is generally the lowest number used in such cases). However, this is also inappropriate, as over 97% of own-account workers and employers work in enterprises with less than 4 people, and it could be argued that this would also include professionals (doctors, lawyers, accountants) etc. who could have relatively high incomes and 'intentionally conceal their activities to avoid the payment of taxes.

¹²⁹ The registration criterion is used for employers and own-account workers working in 'non-household' locations such as offices, factories, establishments, etc. (although they only represent 0.03% of total employment). Registration is also used to identify informal rural agricultural own-account workers and employers. This is because the data suggests that agricultural workers who say their enterprise is located 'at home' rather than 'on a plot of land' are less likely to be registered. This suggests that these could be smaller, subsistence 'garden plots'. *We also include own-account workers and employers engaging in urban agriculture* for similar reasons. Finally, note that we include production for own consumption, which is not included in the ILO definition.

In terms of our typology; (1) informal non-agricultural self-employed & informal farmers are equal to category 1 plus 2 (farmers are included in figures 'including agriculture'); (2) contributing family workers are equal to categories 3 plus 4; (3) informal employees are equal to categories 5 plus 6; (4) others informally employed are equal to the sum of categories 7 to 9; (5) informal secondary jobholders are included in each of the categories 1-9, depending on their status in the second job. Category 10; 'formal employees in informal sector enterprises' is included in the ILO informal sector employment definition, but not in our definition of informal employment.

Table A5.1 All employed (weighted frequencies)1999

TOTAL		Category of Informal Employment													
Quarter		Population aged 15+	Total Employed	Employed in IS	Total Informally employed	1.Own-account workers	2.Employers informal sector	3.Contributing family workers informal sector	4.Contributing family workers non-informal sector	5.Informal employees informal sector	6.Informal employees non-informal sector	7.Others informal sector	8.Others informally employed non-informal sector	9 Informal producers co-operatives	10.Formal employees informal sector
I	Female	1,632,536	830,520	160,991	457,707	58,685	1,981	55,591	289,234	22,581	22,933	5,881	298	523	16,722
	Male	1,385,553	881,695	235,163	402,595	122,371	10,883	19,845	161,281	45,854	35,395	5,949	593	424	33,208
	Unknown	27,396	13,135	2,757	5,716	725	156	443	2,959	1,433	0	0	0	0	217
	Total	3,045,485	1,725,351	398,911	866,017	181,781	13,020	75,879	453,474	69,869	58,327	11,830	891	946	50,147
II	Female	1,660,478	872,510	169,102	512,274	51,672	1,667	65,995	337,629	27,671	19,748	6,526	296	1,071	16,975
	Male	1,403,371	919,975	241,411	457,641	112,072	8,617	23,908	208,757	55,966	35,280	11,169	398	1,473	34,533
	Unknown	19,932	10,761	3,392	6,159	1,196	156	1,472	2,554	568	213	0	0	0	0
	Total	3,083,781	1,803,246	413,904	976,073	164,940	10,439	91,374	548,940	84,205	55,241	17,696	694	2,544	51,508
III	Female	1,678,489	875,717	178,568	501,818	60,764	2,426	64,832	319,102	30,321	19,473	4,589	209	102	16,283
	Male	1,402,572	908,035	254,834	429,467	117,609	9,085	30,170	178,409	50,991	34,687	6,342	872	1,303	44,315
	Unknown	14,841	8,385	2,836	5,585	1,369	0	311	2,581	913	168	242	0	0	0
	Total	3,095,902	1,792,136	436,238	936,870	179,742	11,511	95,313	500,092	82,225	54,328	11,173	1,080	1,405	60,598
IV	Female	1,615,255	783,476	151,525	429,647	51,979	1,154	50,690	272,500	24,990	19,167	7,668	590	909	15,130
	Male	1,338,729	814,081	237,138	393,189	102,892	11,647	21,894	157,904	55,396	32,317	9,787	389	962	37,653
	Unknown	23,732	12,015	3,350	7,013	1,474	0	820	3,900	475	344	0	0	0	581
	Total	2,977,716	1,609,572	392,014	829,849	156,345	12,801	73,404	434,304	80,861	51,828	17,455	979	1,871	53,364
Average 1999	Female	1,646,690	840,556	165,047	475,361	55,775	1,807	59,277	304,616	26,391	20,330	6,166	348	651	16,277
	Male	1,382,556	880,947	242,137	420,723	113,736	10,058	23,954	176,588	52,052	34,420	8,312	563	1,040	37,428
	Unknown	21,475	11,074	3,084	6,118	1,191	78	761	2,998	847	181	61	0	0	199
	Total	3,050,721	1,732,576	410,267	902,202	170,702	11,943	83,993	484,203	79,290	54,931	14,538	911	1,691	53,904

Table A5.2 All Employed (percentage of total employment) 1999

		TOTAL				Category of Informal Employment										
Quarter		Population aged 15+	Total Employed	Employed in IS	Total Informally employed	1.Own-account workers	2.Employers informal sector	3.Contributing family workers informal sector	4.Contributing family workers non-informal sector	5.Informal employees informal sector	6.Informal employees non-informal sector	7.Others informal sector	8.Others informally employed non-informal sector	9 Informal producers co-operatives	10.Formal employees informal sector	
I	Female	n/a	50.87%	19.38%	55.11%	7.07%	0.24%	6.69%	34.83%	2.72%	2.76%	0.71%	0.04%	0.06%	2.01%	
	Male	n/a	63.63%	26.67%	45.66%	13.88%	1.23%	2.25%	18.29%	5.20%	4.01%	0.67%	0.07%	0.05%	3.77%	
	Total	n/a	56.65%	23.12%	50.19%	10.54%	0.75%	4.40%	26.28%	4.05%	3.38%	0.69%	0.05%	0.05%	2.91%	
II	Female	n/a	52.55%	19.38%	58.71%	5.92%	0.19%	7.56%	38.70%	3.17%	2.26%	0.75%	0.03%	0.12%	1.95%	
	Male	n/a	65.55%	26.24%	49.74%	12.18%	0.94%	2.60%	22.69%	6.08%	3.83%	1.21%	0.04%	0.16%	3.75%	
	Total	n/a	58.48%	22.95%	54.13%	9.15%	0.58%	5.07%	30.44%	4.67%	3.06%	0.98%	0.04%	0.14%	2.86%	
III	Female	n/a	52.17%	20.39%	57.30%	6.94%	0.28%	7.40%	36.44%	3.46%	2.22%	0.52%	0.02%	0.01%	1.86%	
	Male	n/a	64.74%	28.06%	47.30%	12.95%	1.00%	3.32%	19.65%	5.62%	3.82%	0.70%	0.10%	0.14%	4.88%	
	Total	n/a	57.89%	24.34%	52.28%	10.03%	0.64%	5.32%	27.90%	4.59%	3.03%	0.62%	0.06%	0.08%	3.38%	
IV	Female	n/a	48.50%	19.34%	54.84%	6.63%	0.15%	6.47%	34.78%	3.19%	2.45%	0.98%	0.08%	0.12%	1.93%	
	Male	n/a	60.81%	29.13%	48.30%	12.64%	1.43%	2.69%	19.40%	6.80%	3.97%	1.20%	0.05%	0.12%	4.63%	
	Total	n/a	54.05%	24.36%	51.56%	9.71%	0.80%	4.56%	26.98%	5.02%	3.22%	1.08%	0.06%	0.12%	3.32%	
Average 1999	Female	n/a	51.05%	19.64%	56.55%	6.64%	0.21%	7.05%	36.24%	3.14%	2.42%	0.73%	0.04%	0.08%	1.94%	
	Male	n/a	63.72%	27.49%	47.76%	12.91%	1.14%	2.72%	20.05%	5.91%	3.91%	0.94%	0.06%	0.12%	4.25%	
	Total	n/a	56.79%	23.68%	52.07%	9.85%	0.69%	4.85%	27.95%	4.58%	3.17%	0.84%	0.05%	0.10%	3.11%	

Table A5.3 Non-agricultural employed (weighted frequencies)1999

Quarter		TOTAL				Category of Informal Employment									
		Population aged 15+	Total Employed	Employed in IS	Total Informally employed	1.Own-account workers	2.Employers informal sector	3.Contributing family workers informal sector	4.Contributing family workers non-informal sector	5.Informal employees informal sector	6.Informal employees non-informal sector	7.Others informal sector	8.Others informally employed non-informal sector	9 Informal producers co-operatives	10.Formal employees informal sector
I	Female	1,188,935	386,920	83,444	106,266	32,109	1,704	6,800	16,577	21,513	21,159	5,881	0	523	15,887
	Male	965,316	461,458	157,868	171,067	67,664	9,112	1,617	11,146	43,703	31,452	5,949	0	424	32,443
	Unknown	23,510	9,249	2,415	2,880	599	156	226	465	1,433	0	0	0	0	217
	Total	2,177,761	857,627	243,727	280,212	100,373	10,972	8,644	28,188	66,650	52,610	11,830	0	946	48,547
II	Female	1,174,834	386,866	91,891	119,961	37,980	1,428	10,435	25,160	20,547	17,286	6,526	142	457	15,896
	Male	930,511	447,115	158,667	174,030	65,581	8,461	1,750	14,806	44,073	28,542	10,119	398	299	32,240
	Unknown	13,466	4,295	1,309	1,522	867	156	287	0	0	213	0	0	0	0
	Total	2,118,810	838,276	251,867	295,513	104,428	10,045	12,472	39,966	64,620	46,041	16,645	540	756	48,136
III	Female	1,196,109	393,337	94,172	119,221	36,999	2,224	8,982	23,277	26,653	16,287	4,589	209	0	15,161
	Male	940,039	445,502	167,394	167,788	66,682	8,580	2,399	12,089	43,867	25,973	6,204	691	1,303	41,635
	Unknown	9,927	3,471	1,086	1,415	283	0	0	161	560	168	242	0	0	0
	Total	2,146,075	842,309	262,651	288,423	103,965	10,804	11,381	35,527	71,081	42,429	11,035	900	1,303	56,796
IV	Female	1,209,122	377,343	82,912	104,970	33,916	1,154	5,149	18,542	21,586	16,541	6,583	590	909	14,524
	Male	947,901	423,253	163,890	168,616	58,914	11,477	1,953	10,020	50,930	27,025	7,425	183	689	35,150
	Unknown	17,142	5,424	1,656	1,873	600	0	0	454	475	344	0	0	0	581
	Total	2,174,165	806,021	248,457	275,460	93,430	12,630	7,102	29,017	72,991	43,909	14,009	773	1,598	50,255
Average 1999	Female	1,192,250	386,116	88,105	112,604	35,251	1,627	7,842	20,889	22,575	17,818	5,895	235	472	15,367
	Male	945,942	444,332	161,955	170,375	64,711	9,407	1,930	12,015	45,643	28,248	7,424	318	679	35,367
	Unknown	16,011	5,610	1,616	1,923	587	78	128	270	617	181	61	0	0	199
	Total	2,154,203	836,058	251,676	284,902	100,549	11,113	9,900	33,174	68,835	46,247	13,380	553	1,151	50,933

Source: author's own analysis of Georgia Labour Force Survey, 1998, 1999

Table A5.4 Non-agricultural employed (percentage of total employment, 1999)

Quarter		TOTAL				Category of Informal Employment									
		Population aged 15+	Total Employed	Employed in IS	Total Informally employed	1.Own-account workers	2.Employers informal sector	3.Contributing family workers informal sector	4.Contributing family workers non-informal sector	5.Informal employees informal sector	6.Informal employees non-informal sector	7.Others informal sector	8.Others informally employed non-informal sector	9 Informal producers co-operatives	10.Formal employees informal sector
I	Female	n/a	32.54%	21.57%	27.46%	8.30%	0.44%	1.76%	4.28%	5.56%	5.47%	1.52%	0.00%	0.14%	4.11%
	Male	n/a	47.80%	34.21%	37.07%	14.66%	1.97%	0.35%	2.42%	9.47%	6.82%	1.29%	0.00%	0.09%	7.03%
	Total	n/a	39.38%	28.42%	32.67%	11.70%	1.28%	1.01%	3.29%	7.77%	6.13%	1.38%	0.00%	0.11%	5.66%
II	Female	n/a	32.93%	23.75%	31.01%	9.82%	0.37%	2.70%	6.50%	5.31%	4.47%	1.69%	0.04%	0.12%	4.11%
	Male	n/a	48.05%	35.49%	38.92%	14.67%	1.89%	0.39%	3.31%	9.86%	6.38%	2.26%	0.09%	0.07%	7.21%
	Total	n/a	39.56%	30.05%	35.25%	12.46%	1.20%	1.49%	4.77%	7.71%	5.49%	1.99%	0.06%	0.09%	5.74%
III	Female	n/a	32.88%	23.94%	30.31%	9.41%	0.57%	2.28%	5.92%	6.78%	4.14%	1.17%	0.05%	0.00%	3.85%
	Male	n/a	47.39%	37.57%	37.66%	14.97%	1.93%	0.54%	2.71%	9.85%	5.83%	1.39%	0.16%	0.29%	9.35%
	Total	n/a	39.25%	31.18%	34.24%	12.34%	1.28%	1.35%	4.22%	8.44%	5.04%	1.31%	0.11%	0.15%	6.74%
IV	Female	n/a	31.21%	21.97%	27.82%	8.99%	0.31%	1.36%	4.91%	5.72%	4.38%	1.74%	0.16%	0.24%	3.85%
	Male	n/a	44.65%	38.72%	39.84%	13.92%	2.71%	0.46%	2.37%	12.03%	6.38%	1.75%	0.04%	0.16%	8.30%
	Total	n/a	37.07%	30.83%	34.18%	11.59%	1.57%	0.88%	3.60%	9.06%	5.45%	1.74%	0.10%	0.20%	6.23%
Average 1999	Female	n/a	32.39%	22.82%	29.16%	9.13%	0.42%	2.03%	5.41%	5.85%	4.61%	1.53%	0.06%	0.12%	3.98%
	Male	n/a	46.97%	36.45%	38.34%	14.56%	2.12%	0.43%	2.70%	10.27%	6.36%	1.67%	0.07%	0.15%	7.96%
Average 1999	Total	n/a	38.81%	30.10%	34.08%	12.03%	1.33%	1.18%	3.97%	8.23%	5.53%	1.60%	0.07%	0.14%	6.09%

Source tables 1 to 8: author's own analysis of Georgia Labour Force Survey, 1998, 1999.

Notes :tables 1 to 8:

- 'Employed in IS' refers to the total number employed in the Informal Sector as defined by the ILO (1993b). It is the sum of categories 1,2,3,5,7,10.
- 'Total Informally Employed' refers to the total number of individuals employed informally, both inside and outside the informal sector. It is the sum of categories 1-9.
- The yearly figures correspond to quarterly averages.
- The figures include individuals with a primary or secondary job in each category.

Table A5.5 Informal sector and informal employment as share of total employment and total jobs

		% of total Employment	% of total Jobs
All Employed	In the IS	23.67%	23.28%
	Total Informal employment/jobs	52.17%	50.30%
Non-agricultural l employed	In the IS	30.10%	28.41%
	Total Informal employment/jobs	34.09%	32.44%

Source: author's own analysis of Georgia Labour Force Survey, 1999.

Notes:

- (a) Total informal employment: total number of *persons* with either an informal primary job or an informal secondary job.
- (b) Total informal jobs: total number of informal primary *jobs* plus total number of informal secondary jobs.

APPENDIX 6:
ANNEXES RELATING TO CHAPTER 6

Table A6.1 Average number of formal, informal, unemployed and inactive individuals per household by consumption quintile,

Georgia 1999 (percent)

	Consumption Quintiles				
	Poorest	2	3	4	5
Formal	0.6	0.8	0.8	0.9	0.9
Informal	0.6	0.9	0.9	0.9	0.9
Unemployed	0.3	0.3	0.2	0.1	0.8
Inactive	1.1	1.0	0.9	0.7	0.6

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) The entries refer to the proportions of labour market categories in the different quintiles of the consumption distribution.
- (b) The consumption measure is per capita adult equivalent household consumption ($\theta=0.75$).
- (c) The average consumption levels per adult equivalent in Georgian Lari for formal employment, informal employment, unemployment, and inactivity are 98, 90, 78 and 70 respectively.
- (d) Unemployed refers to ILO relaxed criterion definition.

Table A6.2 Average number of household members employed by sector and consumption quintile

Georgia 1999 (percent)

	Consumption Quintiles				
	Poorest	2	3	4	5
Agriculture, fishing (A, B)	0.57	0.93	0.98	1.13	1.1
Manufacturing (D)	0.11	0.10	0.11	0.10	0.10
Electricity, gas, water supply (E)	0.02	0.01	0.03	0.02	0.02
Construction (F)	0.02	0.03	0.03	0.01	0.02
Wholesale and retail trade (G)	0.14	0.18	0.14	0.14	0.10
Hotels, restaurants (H)	0.01	0.01	0.02	0.01	0.01
Transport, communication (I)	0.06	0.05	0.07	0.05	0.05
Financial intermediation, real estate, other business activities (J, K)	0.03	0.04	0.05	0.04	0.04
Public administration and defense (L)	0.08	0.07	0.08	0.07	0.10
Education (M)	0.09	0.11	0.10	0.13	0.11
Health, social work (N)	0.06	0.06	0.07	0.07	0.06
Other community and personal service activities (O)	0.02	0.04	0.04	0.04	0.02
Private households with employees (P)	0.01	0.00	0.00	0.00	0.00
Other (C, Q)	0.00	0.01	0.01	0.01	0.01

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) The entries refer to the proportions of labour market categories in the different quintiles of the consumption distribution.
- (b) The consumption measure is per capita adult equivalent household consumption ($\theta=0.75$).
- (c) The average consumption levels per adult equivalent in Georgian Lari for formal employment, informal employment, unemployment, and inactivity are 98, 90, 78 and 70 respectively.
- (d) Unemployed refers to ILO relaxed criterion definition.
- (e) Letters in brackets refer to sector of economic activity according to the International Standard Industrial Classification of all Economic Activities (ILO 1989).
- (f) Category G also includes repair of motor vehicles. Category K also includes renting and business activities. Category C refers to mining and quarrying and category Q refers to extra territorial organisations and bodies.

Table A.6.3 Determinants of poverty using number of informal, formal, unemployed and inactive individuals, probit results.

Dependent variable: poor (dummy)	Urban	Rural
<i>Demographic Characteristics</i>		
Region		
Tblisi	-0.0915 (0.0441)**	0 0
<i>Kakheti</i>	<i>f</i>	<i>f</i>
Shida Kartli	-0.0009 (0.0534)	-0.0856 (0.0216)***
Kvemo Kartli	-0.1622 (0.0428)***	-0.0929 (0.0253)***
Samtskhe Javakheti	0.2473 (0.0753)***	0.0283 (0.0326)
Achara	-0.2339 (0.0335)***	0.119 (0.0389)***
Guria	0.1814 (0.0730)**	-0.0637 (0.0256)**
Samegrelo	0.128 (0.0573)**	-0.0836 (0.0226)***
Imereti	0.2251 (0.0542)***	-0.029 (0.0261)
Gender of the Household Head (female=1)	0.0545 (0.0238)**	0.0416 (0.0196)**
Age of Household Head	0.004 (0.0045)	-0.0078 (0.0030)***
Age squared of Household Head	0 (0.0000)	0.0001 (0.0000)**
Ethnic Background of Household Head		
<i>Georgian</i>	<i>f</i>	<i>f</i>
Azeri	-0.2132 (0.0985)**	0.2522 (0.0697)***
Abkhazian	0.0307 (0.1501)	0.1091 (0.2529)
Greek	0.0125 (0.0850)	-0.1005 (0.0755)
Ossetian	0.0531 (0.0928)	0.0465 (0.0790)
Russian	0.1718 (0.0575)***	-0.0125 (0.0661)
Armenian	0.0412 (0.0409)	0.14 (0.0499)***
Other	0.1188 (0.0799)	-0.0696 (0.0718)
Number of adults	0.0233	0.0493

	(0.0189)	(0.0136)***
Number of children aged less than 6 years	0.0808	0.0512
	(0.0204)***	(0.0133)***
Number of other children	0.0395	0.04
	(0.0129)***	(0.0084)***
Education Level of Household Head		
<i>Primary or less</i>		
	<i>f</i>	<i>f</i>
Incomplete secondary	-0.0302	0.0367
	(0.0493)	(0.0276)
General secondary	-0.0333	-0.0005
	(0.0358)	(0.0233)
Technical secondary	-0.0154	-0.0085
	(0.0494)	(0.0387)
High technical	-0.0691	0.0069
	(0.0397)*	(0.0313)
High general	-0.1512	-0.0537
	(0.0350)***	(0.0271)**
Labour market Status		
Number of household members informally employed	-0.1135	-0.0709
	(0.0237)***	(0.0152)***
Number of household members formally employed	-0.0993	-0.0666
	(0.0228)***	(0.0184)***
Number of household members inactive	0.0047	-0.0133
	(0.0198)	(0.0154)
Number of household members unemployed	0.0329	-0.0142
	(0.0249)	(0.0272)
Observations	2367	2568
L² Chi2 (k-1.)	460.61(30)***	215.11(29)***

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Standard errors are in brackets.
- (b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- (c) The dependent variable for the probability model is whether a household's consumption per equivalent adult is below the relative poverty line.
- (d) The relative poverty line is set at 2/3 of median consumption per adult equivalent.
- (e) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discrete change from 0 to 1 for dummies.
- (f) The unit of observation is the household and gender, education, and ethnicity, refer to the head of household. Labour market status refers the number of household members in each labour market category.
- (g) *F* denotes variables omitted in the estimation (base categories).
- (h) Unemployed refers to ILO relaxed criterion definition.
- (i) L² Chi2 (K-1) refers to the likelihood ratio used to test the goodness of fit of the model and is compared to a Chi2 distribution on *k*-1 degrees of freedom, where *k* is the number of independent variables in our model (see appendix x).
- (j) Analysis carried out using unweighted data.
- (k) Definitions of all variables can be found in appendix A2.2.

Table A6.4 Labour market categories and poverty incidence using World Bank and SDS methodology (1999)

Employment Categories of the Household Head	Poverty, in % (WB poverty line)			Poverty, in % (SDS poverty line)		
	Head Count	Poverty Gap	Poverty Severity	Head Count	Poverty Gap	Poverty Severity
Total	14.7	4.9	2.6	41.8	15.4	8.0
Formal						
Employees	11.2	3.8	1.9	39.9	13.2	6.5
Self-employed	10.0	2.3	0.8	28.5	8.5	4.0
Farmers	6.9	2.8	2.0	26.0	8.6	4.5
Informal						
Employees	9.9	2.8	1.2	42.5	12.7	5.7
Self-employed	8.2	2.8	1.6	31.8	10.2	4.9
Farmers	8.2	4.3	3.3	26.1	9.5	5.7
Contributing family workers	4.9	1.0	0.5	22.7	6.6	2.7
Unemployed	20.6	6.7	3.6	57.8	21.7	11.3
Inactive	24.4	8.0	4.1	55.8	22.9	12.4

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- WB Poverty line is set at GEL 55 (US\$25) per equivalent adult per month.
- SDS Poverty line is set at GEL 100 (US\$55) per equivalent adult per month.
- Consumption per equivalent adult is calculated using WB/SDS methodology: $\theta=0.54$ and $\alpha=0.64$ for children aged <7 years; $\alpha=1$ for children aged 7-16 years; $\alpha=1$ for male adults aged 16-60 years; $\alpha=0.84$ for female adults aged 16-60 years; $\alpha=0.88$ for male adults aged 60+; and $\alpha=0.76$ for female adults aged 60+.
- Head Count is the share of household heads whose consumption falls below the poverty line.
- The poverty gap provides information on the distance from the poverty line. It captures the mean aggregate consumption shortfall relative to the poverty line across the poor population.
- Poverty Severity captures the inequality among the poor by effectively giving more weight to households that are further away from the poverty line.
- Unemployed refers to ILO relaxed criterion definition.

Table A6.5 Labour market categories and consumption using WB/SDS methodology, 1999 (percent)

Labour Market Status of the Household Head	Consumption Quintiles				
	Poorest	2	3	4	5
Total	100.0	100.0	100.0	100.0	100.0
Formal	23.9	31.2	35.5	40.1	44.3
Employees	15.8	20.2	20.1	20.1	21.6
Self-employed	0.4	0.6	0.4	1.1	1.4
Farmers	7.8	10.4	15.1	18.8	21.3
Informal	13.6	20.4	25.4	31.3	32.2
Employees	4.3	6.5	4.5	5.6	6.1
Self-employed	3.1	4.5	5.8	5.7	6.8
Farmers	2.3	3.3	4.8	7.8	4.5
Contributing family workers	3.9	6.2	10.2	12.2	14.7
Unemployed	9.7	8.4	6.1	4.1	4.0
Inactive	52.7	39.9	33.0	24.6	19.6

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- The entries refer to the proportions of these labour market categories in the different quintiles of the consumption distribution.
- The consumption measure is per capita adult equivalent household consumption calculated using WB/SDS methodology (see Notes to Table A.1.6 above).
- The average consumption levels per adult equivalent in Georgian Lari for formal employment, informal employment, unemployment, and inactivity are 98, 90, 78 and 70 respectively.
- Unemployed refers to ILO relaxed criterion definition.

Table A6.6 Determinants of Household Consumption, OLS and Simultaneous Quantile Regression
Results using WB/SDS Methodology (Urban)

Dependent variable: natural logarithm of consumption per adult equivalent	Mean (OLS)	Percentiles				
		10 th	25 th	50 th	75 th	90 th
Demographic Characteristics						
Region						
Tblisi	0.1596 (0.0575)***	0.1718 (0.1260)	0.0497 (0.0656)	0.0749 (0.0550)	0.242 (0.0766)***	0.3206 (0.0852)***
<i>Kakheti</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Shida Kartli	-0.0163 (0.0667)	-0.0369 (0.1462)	-0.1011 (0.0999)	-0.006 (0.0692)	0.0744 (0.0717)	0.0914 (0.1004)
Kvemo Kartli	0.2883 (0.0675)***	0.1791 (0.1497)	0.2024 (0.0893)**	0.272 (0.0594)***	0.4026 (0.0862)***	0.3777 (0.0946)***
Samtskhe Javakheti	-0.4304 (0.0863)***	-0.8114 (0.1895)***	-0.7012 (0.1065)***	-0.5623 (0.0959)***	-0.1136 (0.1002)	0.0541 (0.1072)
Achara	0.444 (0.0658)***	0.5377 (0.1368)***	0.3836 (0.0579)***	0.425 (0.0628)***	0.4479 (0.0666)***	0.4404 (0.0856)***
Guria	-0.2274 (0.0823)***	-0.2886 (0.1099)***	-0.3002 (0.1177)**	-0.21 (0.0613)***	-0.1647 (0.0814)**	-0.1936 (0.1123)*
Samegrelo	-0.1518 (0.0666)**	-0.1957 (0.1190)	-0.3342 (0.0799)***	-0.172 (0.0566)***	-0.0978 (0.0627)	0.0146 (0.1108)
Imereti	-0.2526 (0.0633)***	-0.3113 (0.1364)**	-0.2756 (0.0724)***	-0.2719 (0.0488)***	-0.1656 (0.0778)**	-0.1855 (0.1018)*
Gender of Household Head (female=1)	-0.0578 (0.0291)**	-0.037 (0.0587)	-0.03 (0.0461)	-0.0276 (0.0351)	-0.0374 (0.0378)	-0.1089 (0.0594)*
Age of Household Head	-0.0112 (0.0054)**	-0.0113 (0.0112)	-0.0074 (0.0049)	-0.0186 (0.0075)**	-0.0171 (0.0065)***	-0.0176 (0.0086)**
Age squared of Household Head	0 (0.0000)	0.0001 (0.0001)	0 (0.0000)	0.0001 (0.0001)*	0.0001 (0.0000)*	0.0001 (0.0001)
Ethnic Background of Household Head						
<i>Georgian</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Azeri	-0.0554 (0.1452)	0.2017 (0.1181)*	0.0243 (0.1160)	-0.1889 (0.0973)*	-0.2879 (0.2287)	-0.2212 (0.2595)
Abkhazian	0.0716 (0.1749)	0.1727 (0.2385)	-0.1021 (0.1742)	-0.2692 (0.3895)	0.4054 (0.5023)	0.3469 (0.4011)
Greek	-0.0662 (0.0932)	-0.046 (0.1545)	-0.0365 (0.0718)	-0.1592 (0.0454)***	-0.2032 (0.0999)**	-0.1693 (0.1215)
Ossetian	-0.1305 (0.1104)	0.0755 (0.2869)	-0.0352 (0.1073)	-0.0889 (0.0898)	-0.1635 (0.1311)	-0.232 (0.1709)
Russian	-0.2043 (0.0632)***	-0.2489 (0.0941)***	-0.2363 (0.1351)*	-0.2088 (0.0712)***	-0.2179 (0.0668)***	-0.142 (0.0902)
Armenian	-0.1183 (0.0491)**	-0.1281 (0.0773)*	-0.1933 (0.0801)**	-0.0624 (0.0732)	-0.1162 (0.0564)**	-0.1484 (0.0962)
Other	-0.0706 (0.0940)	-0.094 (0.1503)	-0.0753 (0.1256)	-0.0664 (0.1274)	-0.1082 (0.1438)	-0.0161 (0.1628)
Number of adults	0.0418 (0.0113)***	0.0584 (0.0173)***	0.0505 (0.0152)***	0.0445 (0.0171)***	0.0205 (0.0154)	-0.0159 (0.0180)
Number of children aged 6 years or	0.0757	0.1129	0.0641	0.0722	0.0942	0.064

less						
	(0.0251)***	(0.0333)***	(0.0321)**	(0.0296)**	(0.0367)**	(0.0379)*
Number of other children	0.0982	0.1218	0.1105	0.1045	0.076	0.0521
	(0.0151)***	(0.0317)***	(0.0152)***	(0.0127)***	(0.0157)***	(0.0238)**
Education Level of Household Head						
<i>Primary or less</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Incomplete secondary	0.0573	0.0212	0.1306	0.1195	0.1547	0.0505
	(0.0644)	(0.1748)	(0.0956)	(0.0657)*	(0.0767)**	(0.1067)
General secondary	0.1116	0.1771	0.1472	0.1307	0.0763	0.0839
	(0.0452)**	(0.0981)*	(0.0599)**	(0.0522)**	(0.0525)	(0.1026)
Technical secondary	0.0396	0.1857	0.1271	0.0546	-0.0129	-0.0679
	(0.0621)	(0.1119)*	(0.0680)*	(0.0550)	(0.0742)	(0.1271)
High technical	0.1496	0.2537	0.1976	0.1655	0.0754	0.0846
	(0.0532)***	(0.1371)*	(0.0642)***	(0.0586)***	(0.0739)	(0.1282)
High general	0.2667	0.3818	0.2991	0.2833	0.2027	0.1459
	(0.0477)***	(0.0925)***	(0.0545)***	(0.0519)***	(0.0523)***	(0.1095)
Labour market Status of Household Head						
<i>Formal employee</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Formal self-employed	0.176	0.296	0.2444	0.1235	0.162	0.107
	(0.0880)**	(0.1762)*	(0.0902)***	(0.0657)*	(0.0835)*	(0.1206)
Formal farmer	-0.1673	0.3859	0.1289	-0.213	-0.3544	-0.659
	(0.3023)	(0.2066)*	(0.0790)	(0.1108)*	(0.2035)*	(0.2532)***
Informal employee	-0.0942	-0.1	-0.0694	-0.1368	-0.1269	-0.1187
	(0.0448)**	(0.0543)*	(0.0617)	(0.0333)***	(0.0490)***	(0.0734)
Informal self-employed	0.1128	0.2599	0.1337	0.103	0.0427	0.0577
	(0.0463)**	(0.0478)***	(0.0496)***	(0.0427)**	(0.0445)	(0.0596)
Informal farmer	0.2845	0.3039	0.3508	0.2767	0.2385	0.1926
	(0.0511)***	(0.0766)***	(0.0774)***	(0.0362)***	(0.0543)***	(0.0789)**
Contributing family worker	0.0018	0.1876	-0.0151	-0.1038	-0.0244	-0.0166
	(0.0710)	(0.1041)*	(0.0529)	(0.0482)**	(0.0816)	(0.1156)
Unemployed	-0.1791	-0.1626	-0.2315	-0.2033	-0.1655	-0.1151
	(0.0383)***	(0.0594)***	(0.0459)***	(0.0480)***	(0.0725)**	(0.0775)
Inactive	-0.1391	-0.2466	-0.2055	-0.1544	-0.1166	-0.0815
	(0.0314)***	(0.0518)***	(0.0338)***	(0.0410)***	(0.0459)**	(0.0578)
Constant	4.7409	3.8354	4.3042	4.9418	5.2981	5.7337
	(0.1626)***	(0.3365)***	(0.1521)***	(0.2074)***	(0.1823)***	(0.2480)***
Observations	2357	2357	2357	2357	2357	2357
Adjusted-R2/Pseudo-R2	0.25***	0.2013	0.1782	0.1639	0.1353	0.1156
F ratio (<i>k</i> -1, <i>n</i> - <i>k</i>)	24.49 (34,2322)					

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

(a) Standard errors are in brackets.

(b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.

(c) The dependent variable is the natural log of consumption per adult equivalent.

- (d) Consumption per equivalent adult is calculated using WB/SDS methodology: $\theta=0.54$ and $\alpha=0.64$ for children aged <7years; $\alpha=1$ for children aged 7-16 years; $\alpha=1$ for male adults aged 16-60 years; $\alpha=0.84$ for female adults aged 16-60 years; $\alpha=0.88$ for male adults aged 60+; and $\alpha=0.76$ for female adults aged 60+.
- (e) Mean refers to the OLS regression.
- (f) The quantile regressions were performed at the 10th, 25th, 50th, 75th and 90th percentiles.
- (g) The unit of observation is the household and gender, education, ethnicity, and labour market status refer to the head of household.
- (h) *F* denotes variables omitted in the estimation (base categories).
- (i) Unemployed refers to ILO relaxed criterion definition.
- (j) *F* ratio (k-1, n-k) denotes the F-statistic with K-1, n-k degrees of freedom, where k is the number of independent variables in our model and n is the total number of observations. This statistic is used to test the Null Hypothesis (Ho): $\rho^2=0$ (see appendix A2.4 for details).
- (k) Analysis carried out using unweighted data.
- (l) Definitions of all variables can be found in appendix A2.2.

Table A6.7 Determinants of household consumption, OLS and simultaneous quantile regression results using WB/SDS methodology (rural)

Dependent variable: natural logarithm of consumption per adult equivalent	Mean (OLS)	Percentiles				
		10 th	25 th	50 th	75 th	90 th
<i>Demographic Characteristics</i>						
Region						
Tblisi	0 (0.0000)	0 (0.0000)	0 (0.0000)	0 (0.0000)	0 (0.0000)	0 (0.0000)
<i>Kakheti</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Shida Kartli	0.2476 (0.0456)***	0.1894 (0.0840)**	0.2353 (0.0694)***	0.2866 (0.0584)***	0.2888 (0.0371)***	0.2679 (0.0647)***
Kvemo Kartli	0.3258 (0.0549)***	0.2222 (0.0923)**	0.2588 (0.0730)***	0.2465 (0.0644)***	0.3349 (0.0615)***	0.4012 (0.0465)***
Samtskhe Javakheti	-0.1482 (0.0524)***	-0.5119 (0.2198)**	-0.1152 (0.0926)	0.0181 (0.0458)	0.153 (0.0598)**	0.1242 (0.0523)**
Achara	-0.1401 (0.0538)***	-0.5588 (0.1404)***	-0.1897 (0.1139)*	0.0069 (0.0542)	-0.0297 (0.0558)	0.1121 (0.0764)
Guria	0.1693 (0.0521)***	0.1586 (0.0697)**	0.1784 (0.0663)***	0.2214 (0.0623)***	0.1557 (0.0557)***	0.2278 (0.0548)***
Samegrelo	0.2566 (0.0479)***	0.2522 (0.0900)***	0.2989 (0.0758)***	0.3126 (0.0493)***	0.2186 (0.0416)***	0.1895 (0.0574)***
Imereti	0.0619 (0.0491)	0.0552 (0.0782)	0.1115 (0.0751)	0.1295 (0.0540)**	0.0534 (0.0399)	0.1118 (0.0667)*
Gender of Household Head (female=1)	-0.1364 (0.0304)***	-0.2048 (0.0478)***	-0.1756 (0.0366)***	-0.1153 (0.0231)***	-0.0888 (0.0290)***	-0.0453 (0.0416)
Age of Household Head	0.0197 (0.0054)***	0.0183 (0.0108)*	0.022 (0.0096)**	0.0187 (0.0058)***	0.0158 (0.0071)**	0.0028 (0.0105)
Age squared of Household Head	-0.0001 (0.0000)***	-0.0001 (0.0001)	-0.0001 (0.0001)*	-0.0001 (0.0000)**	-0.0001 (0.0001)	0 (0.0001)
Ethnic Background of Household Head						
<i>Georgian</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
	-0.4418 (0.0781)***	-0.6471 (0.2492)***	-0.4007 (0.1660)**	-0.2177 (0.1174)*	-0.2045 (0.1007)**	-0.2097 (0.1529)
Azeri	-0.2593 (0.3123)	0.2561 (0.1624)	-0.0619 (0.1907)	-0.3473 (0.1563)**	-0.5824 (0.2917)**	-0.3915 (0.2630)
Abkhazian	-0.3374	0.0332	-0.114	-0.2032	-0.4945	-0.3411

Greek	(0.1368)**	(0.6863)	(0.1414)	(0.1056)*	(0.1009)***	(0.2062)*
	-0.0127	-0.4169	-0.0226	0.0945	0.0283	-0.076
Ossetian	(0.1096)	(0.2872)	(0.2478)	(0.1118)	(0.0726)	(0.0867)
	0.171	0.432	0.229	0.248	0.3287	0.3188
Russian	(0.1044)	(0.2858)	(0.1409)	(0.1811)	(0.1403)**	(0.1444)**
	0.0053	0.2471	0.051	0.0044	-0.1118	-0.2225
Armenian	(0.0657)	(0.1033)**	(0.0933)	(0.0592)	(0.0660)*	(0.0810)***
	0.1467	0.5431	0.1778	0.0943	-0.0382	-0.1915
Other	(0.1683)	(0.1681)***	(0.2354)	(0.1492)	(0.1435)	(0.1765)
	0.0054	0.0437	0.0115	-0.0084	-0.0284	-0.0192
Number of adults	(0.0111)	(0.0194)**	(0.0154)	(0.0104)	(0.0152)*	(0.0138)
	0.0819	0.0448	0.0581	0.0747	0.0816	0.0879
Number of children aged 6 years or less	(0.0232)***	(0.0347)	(0.0371)	(0.0224)***	(0.0290)***	(0.0345)**
	0.0703	0.0964	0.0556	0.0498	0.0492	0.0369
Number of other children	(0.0138)***	(0.0267)***	(0.0179)***	(0.0129)***	(0.0178)***	(0.0151)**
Education Level of Household Head						
<i>Primary or less</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Incomplete secondary	-0.008	0.0353	-0.0196	0.0107	0.0131	0.0254
	(0.0423)	(0.0764)	(0.0751)	(0.0401)	(0.0560)	(0.0681)
General secondary	0.0297	0.0427	0.0473	0.0902	0.1015	0.0238
	(0.0378)	(0.0795)	(0.0631)	(0.0433)**	(0.0381)***	(0.0531)
Technical secondary	0.073	0.0184	0.1565	0.1558	0.0669	-0.0141
	(0.0642)	(0.1415)	(0.1234)	(0.0567)***	(0.0473)	(0.1027)
High technical	0.0681	0.0621	0.0955	0.0951	0.1279	0.133
	(0.0502)	(0.1157)	(0.0822)	(0.0478)**	(0.0495)***	(0.0684)*
High general	0.2106	0.2353	0.1904	0.2505	0.24	0.1567
	(0.0506)***	(0.1030)**	(0.0826)**	(0.0525)***	(0.0527)***	(0.0633)**
Labour market Status of Household Head						
<i>Formal employee</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Formal self-employed	0.1406	0.3076	0.1145	0.0743	0.0808	0.1909
	(0.1222)	(0.3707)	(0.1446)	(0.2204)	(0.1541)	(0.1655)
Formal farmer	0.0591	0.0944	0.033	0.016	-0.0307	-0.0036
	(0.0284)**	(0.0899)	(0.0472)	(0.0269)	(0.0317)	(0.0510)
Informal employee	0.0445	-0.126	-0.0293	0.0094	-0.0119	0.0655
	(0.0568)	(0.0975)	(0.0798)	(0.0552)	(0.0482)	(0.1044)
Informal self-employed	-0.0678	-0.1721	-0.1202	-0.1059	-0.0296	-0.0487
	(0.0657)	(0.1396)	(0.0897)	(0.0835)	(0.0636)	(0.0743)
Informal farmer	-0.0618	0.0074	0.0022	-0.0214	-0.1298	-0.2158
	(0.0499)	(0.1013)	(0.0660)	(0.0454)	(0.0512)**	(0.0572)***
Contributing family worker	0.1463	0.117	0.0993	0.0833	0.0879	0.0836
	(0.0364)***	(0.0475)**	(0.0445)**	(0.0421)**	(0.0428)**	(0.0525)
Unemployed	-0.2422	-0.3782	-0.3837	-0.1254	-0.2155	-0.2764
	(0.0749)***	(0.2233)*	(0.2037)*	(0.0995)	(0.0449)***	(0.0631)***
Inactive	-0.2387	-0.301	-0.2461	-0.2125	-0.1939	-0.1504
	(0.0348)***	(0.0498)***	(0.0731)***	(0.0408)***	(0.0361)***	(0.0426)***

Constant	3.9289 (0.1698)***	3.1436 (0.2852)***	3.5609 (0.2839)***	4.0062 (0.1868)***	4.5155 (0.2048)***	5.2442 (0.3079)***
Observations	2546	2546	2546	2546	2546	2546
Adjusted-R2/Pseudo-R2	0.13***	0.1302	0.0774	0.0688	0.0688	0.74
F ratio (k-1, n-k)	12.52(33, 2512)					

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- Standard errors are in brackets.
- *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- The dependent variable is the natural log of consumption per adult equivalent.
- Consumption per equivalent adult is calculated using WB/SDS methodology: $\theta=0.54$ and $\alpha=0.64$ for children aged <7 years; $\alpha=1$ for children aged 7-16 years; $\alpha=1$ for male adults aged 16-60 years; $\alpha=0.84$ for female adults aged 16-60 years; $\alpha=0.88$ for male adults aged 60+; and $\alpha=0.76$ for female adults aged 60+.
- Mean refers to the OLS regression.
- The quantile regressions were performed at the 10th, 25th, 50th, 75th and 90th percentiles.
- The unit of observation is the household and gender, education, ethnicity, and labour market status refer to the head of household.
- F denotes variables omitted in the estimation (base categories).
- Unemployed refers to ILO relaxed criterion definition.
- F ratio (k-1, n-k) denotes the F-statistic with K-1, n-k degrees of freedom, where k is the number of independent variables in our model and n is the total number of observations. This statistic is used to test the Null Hypothesis (Ho): $\rho^2=0$ (see appendix A2.4 for details).
- Analysis carried out using unweighted data.
- Definitions of all variables can be found in appendix A2.2.

Table A6.8 Determinants of household consumption, probit regression results using WB/SDS methodology, 1999

Dependent variable: poor (dummy)	WB poverty line		SDS poverty line	
	Urban	Rural	Urban	Rural
<i>Demographic Characteristics</i>				
Region				
Tblisi	-0.0404 (0.0327)		-0.1101 (0.0508)**	
Kakheti	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Shida Kartli	0.0171 (0.0428)	-0.0332 (0.0132)**	-0.0473 (0.0591)	-0.145 (0.0264)***
Kvemo Kartli	-0.0442 (0.0344)	-0.0583 (0.0123)***	-0.2235 (0.0543)***	-0.1617 (0.0303)***
Samtskhe Javakheti	0.2397 (0.0806)***	0.0569 (0.0270)**	0.1541 (0.0728)**	0.0393 (0.0393)
Achara	-0.1097 (0.0220)***	0.0848 (0.0306)***	-0.3604 (0.0435)***	0.0702 (0.0408)*
Guria	0.1719 (0.0727)**	-0.0406 (0.0138)***	0.1485 (0.0697)**	-0.0644 (0.0341)*
Samegrelo	0.0962 (0.0507)*	-0.0428 (0.0126)***	0.1056 (0.0581)*	-0.1569 (0.0270)***
Imereti	0.0982 (0.0480)**	-0.0199 (0.0157)	0.2016 (0.0518)***	-0.0426 (0.0335)
Gender of Household Head (female=1)	0.0057 (0.0170)	0.0322 (0.0134)**	0.0421 (0.0261)	0.0869 (0.0235)***

Age of Household Head	0.0069 (0.0032)**	-0.0006 (0.0024)	0.0102 (0.0050)**	-0.0113 (0.0038)***
Age squared of Household Head	0 (0.0000)	0 (0.0000)	-0.0001 (0.0000)	0.0001 (0.0000)**
Ethnic Background of Household Head				
<i>Georgian</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Azeri	0 (0.0000)	0.3008 (0.0826)***	0.0755 (0.1266)	0.2266 (0.0664)***
Abkhazian	0.0157 (0.1129)	0.0944 (0.2229)	0.0566 (0.1483)	0.1776 (0.2716)
Greek	-0.0719 (0.0440)	-0.0315 (0.0511)	0.0513 (0.0810)	-0.2001 (0.0744)***
Ossetian	0.1032 (0.0819)	0.0566 (0.0614)	0.0236 (0.0972)	-0.0352 (0.0803)
Russian	0.1443 (0.0506)***	0.0116 (0.0458)	0.1205 (0.0562)**	-0.0011 (0.0801)
Armenian	0.0724 (0.0340)**	-0.0016 (0.0251)	0.0928 (0.0422)**	-0.0944 (0.0422)**
Other	0.046 (0.0651)	-0.0288 (0.0376)	0.1204 (0.0783)	-0.1622 (0.0755)**
Number of adults	-0.0338 (0.0069)***	-0.0152 (0.0046)***	-0.0209 (0.0101)**	-0.003 (0.0082)
Number of children aged 6 years or less	-0.0419 (0.0174)**	-0.0077 (0.0096)	-0.0468 (0.0224)**	-0.0382 (0.0174)**
Number of other children	-0.0485 (0.0101)***	-0.017 (0.0059)***	-0.089 (0.0140)***	-0.0338 (0.0104)***
Education Level of Household Head				
<i>Primary or less</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Incomplete secondary	-0.0224 (0.0315)	0.018 (0.0188)	-0.0891 (0.0569)	-0.0106 (0.0307)
General secondary	-0.0361 (0.0240)	0.0085 (0.0152)	-0.0345 (0.0404)	-0.0333 (0.0274)
Technical secondary	-0.0229 (0.0324)	-0.0158 (0.0223)	-0.0095 (0.0563)	-0.0493 (0.0436)
High technical	-0.0375 (0.0260)	-0.0052 (0.0188)	-0.0381 (0.0477)	-0.0508 (0.0342)
High general	-0.1031 (0.0220)***	-0.0306 (0.0150)**	-0.1718 (0.0412)***	-0.13 (0.0299)***
Labour market Status of Household Head				
<i>Formal employee</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Formal self-employed	0.0442 (0.0671)	-0.0112 (0.0409)	-0.1014 (0.0832)	0.0401 (0.0930)
Formal farmer	0	-0.031 (0.0117)***	0.3223 (0.1815)*	-0.0522 (0.0213)**
Informal employee	-0.0272 (0.0266)	0.0043 (0.0224)	0.1575 (0.0376)***	-0.0091 (0.0411)

Informal self-employed	-0.081 (0.0215)***	0.0201 (0.0284)	-0.1006 (0.0417)**	0.0016 (0.0474)
Informal farmer	-0.1098 (0.0168)***	-0.0002 (0.0208)	-0.1748 (0.0428)***	-0.0279 (0.0369)
Contributing family worker	-0.0131 (0.0422)	-0.03 (0.0125)**	0.0684 (0.0635)	-0.0979 (0.0247)***
Unemployed	0.0732 (0.0276)***	0.1006 (0.0428)**	0.1526 (0.0326)***	0.0734 (0.0578)
Inactive	0.0821 (0.0197)***	0.0642 (0.0174)***	0.107 (0.0276)***	0.1099 (0.0272)***
Observations	2335	2546	2357	2546
L² Chi2 (k-1)	434.94 (32)***	202.18 (33)***	523.46 (34)	236.39 (33)

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Standard errors are in brackets.
(b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
(c) The dependent variable for the probability model is whether a household's consumption per equivalent adult is below the absolute poverty line.
(d) The World Bank poverty line is set at GEL55 (US\$25). The SDS poverty line is set at GEL100 (US\$50).
(e) Consumption per equivalent adult is calculated using WB/SDS methodology: $\theta=0.54$ and $\alpha=0.64$ for children aged <7 years; $\alpha=1$ for children aged 7-16 years; $\alpha=1$ for male adults aged 16-60 years; $\alpha=0.84$ for female adults aged 16-60 years; $\alpha=0.88$ for male adults aged 60+; and $\alpha=0.76$ for female adults aged 60+.
(f) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discrete change from 0 to 1 for dummies.
(g) The unit of observation is the household and gender, education, ethnicity, and labour market status refer to the head of household.
(h) *f* denotes variables omitted in the estimation (base categories).
(i) Unemployed refers to ILO relaxed criterion definition.
(j) L² Chi2 (K-1) refers to the likelihood ratio used to test the goodness of fit of the model and is compared to a Chi2 distribution on *k*-1 degrees of freedom, where *k* is the number of independent variables in our model (see appendix (x)).
(k) Analysis carried out using unweighted data.
(l) Definitions of all variables can be found in appendix A2.2.

Table A.6.9 Determinants of informal social protection (including in-kind transfers), probit regression results, 1999

Dependent variable: receive informal social protection (including in-kind transfers)	Urban	Rural
<i>Demographic Characteristics</i>		
Region		
Tblisi	-0.1467 (0.0498)***	
<i>Kakheti</i>	<i>f</i>	<i>f</i>
Shida Kartli	-0.1444 (0.0574)**	-0.337 (0.0326)***
Kvemo Kartli	-0.1117 (0.0591)*	-0.1557 (0.0464)***
Samtskhe Javakheti	0.153 (0.0686)**	-0.1316 (0.0440)***
Achara	-0.2102 (0.0555)***	-0.39 (0.0314)***

Guria	-0.0711 (0.0718)	-0.0307 (0.0458)
Samegrelo	-0.1527 (0.0573)***	-0.2831 (0.0362)***
Imereti	0.0284 (0.0547)	-0.2775 (0.0371)***
Gender of the Household Head (female=1)	0.0211 (0.0327)	0.0745 (0.0349)**
Age of Household Head	-0.0123 (0.0049)**	-0.0088 (0.0048)*
Age squared of Household Head	0.0001 (0.0000)**	0.0001 (0.0000)
Marital Status of Household Head		
Single	0.0213 (0.0477)	0.0101 (0.0573)
Divorced or Separated	0.0177 (0.0515)	-0.1055 (0.0684)
Widow(er)	0.0395 (0.0371)	-0.0209 (0.0370)
Ethnic Background of Household Head		
<i>Georgian</i>	<i>f</i>	<i>f</i>
Azeri	-0.0629 (0.1242)	-0.4864 (0.0280)***
Abkhazian	-0.0476 (0.1527)	
Greek	-0.2181 (0.0772)***	-0.3029 (0.0875)***
Ossetian	-0.0871 (0.0936)	0.2353 (0.0754)***
Russian	0.053 (0.0531)	0.2919 (0.0709)***
Armenian	-0.048 (0.0428)	-0.2346 (0.0489)***
Other	-0.1212 (0.0804)	0.0788 (0.1500)
Number of adults	-0.0291 (0.0099)***	-0.0396 (0.0099)***
Number of children aged less than 6 years	0.0273 (0.0217)	-0.0339 (0.0200)*
Number of other children	0.032 (0.0133)**	-0.013 (0.0121)
Household Consumption	0.0208 (0.0180)	-0.0044 (0.0174)
<i>Education Level of Household Head</i>		
<i>Primary or less</i>	<i>f</i>	<i>f</i>
Incomplete secondary	-0.0261 (0.0560)	-0.1312 (0.0363)***
General secondary	-0.1232 (0.0394)***	-0.1275 (0.0328)***

Technical secondary	-0.0989 (0.0544)*	-0.0618 (0.0554)
High technical	-0.0942 (0.0469)**	-0.0396 (0.0437)
High general	-0.1038 (0.0421)**	-0.0467 (0.0436)
Labour Force Status of Household Head		
<i>Formal employee</i>		
Formal self-employed	-0.0893 (0.0749)	0.0274 (0.1006)
Formal farmer	0.037 (0.2501)	0.1088 (0.0243)***
Informal employee	0.1712 (0.0337)***	0.1484 (0.0456)***
Informal self-employed	0.0391 (0.0389)	0.0076 (0.0569)
Informal farmer	-0.012 (0.0441)	-0.0832 (0.0426)*
Contributing family worker	0.0249 (0.0591)	-0.1158 (0.0306)***
Unemployed	0.1714 (0.0302)***	0.0977 (0.0615)
Inactive	0.1863 (0.0261)***	0.141 (0.0291)***
Observations	2357	2542
L² Chi2 (k-1)	222.08 (38)***	491.50 (36)***

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Standard errors are in brackets.
- (b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- (c) The dependent variable for the probability model is whether a household receives informal social protection, including in-kind transfers (gifts of food and non-food items). Informal social protection is: alimony, money received from non-family members from abroad, inheritance or other money received from relatives, money borrowed from a private source for household needs, and gifts (monetary) received from family members temporarily abroad.
- (d) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discrete change from 0 to 1 for dummies.
- (e) Household consumption is the log of consumption per equivalent adult.
- (f) The unit of observation is the household and gender, education, ethnicity, and labour force status refer to the head of household.
- (g) *F* denotes variables omitted in the estimation (base categories).
- (h) Unemployed refers to ILO relaxed criterion definition.
- (i) L² Chi2 (K-1) refers to the likelihood ratio used to test the goodness of fit of the model and is compared to a Chi2 distribution on *k*-1 degrees of freedom, where *k* is the number of independent variables in our model (see appendix x).
- (j) Analysis carried out using unweighted data.
- (k) Definitions of all variables can be found in appendix A2.2.

A6.1 Working Pensioners

As we have seen, a considerable share of individuals above retirement age is employed in Georgia. This is a consequence of the very low levels of pensions and the extensive arrears in their payment. Pensions are fixed at GEL14 (US\$7) with a GEL3 (US\$1.50) deduction at the source to pay for utilities, which amounts to only 11% of the poverty line (TACIS 2001, p.42). Moreover, as a result of the severe fiscal crisis, the system suffers from substantial payment arrears, and in 1999-2000, more than two-thirds of pensioners suffered from arrears (TACIS 2001, p.42).

As a result, we are not surprised to find that almost one half of all individuals above the retirement age are employed.¹³⁰ As table 14 demonstrates, 49% of pensioners work and 80% of those who work also receive a pension. As we have seen, the large majority of working pensioners are involved in small-plot farming. These results suggest that subsistence agriculture may be playing an important role in generating livelihoods in the absence of a functioning pension system.

Table A6.9.1 Share of pensioners that work and that receive a pension, 1999 (percent)

Employment Status of Pensioners	All	Receive Pension (% within groups)
Employed	49	80
Not employed	51	91
Total	100	

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

(a) Pensioner refers to individuals above retirement age (60 yrs. for females, 65 yrs. for males).

(b) Receive a pension refers to whether the household receives a pension.

We wish to examine in more detail the determinants of pensioner employment status. More specifically, we are interested in the impact of (a) receiving a pension and (b) household welfare, on the probability of a pensioner being employed. We use a probit model for the probability of a pensioner being employed. Technical details on probit analysis are presented in appendix 2.2.

We specify the following regression model:

$$E^*_i = \beta X_i + u_i$$

where E^* is the underlying continuous, unobserved, latent variable. X is a vector of individual characteristics, including gender, ethnic identity and region, as well as human capital

¹³⁰ Retirement age is 60yrs for females and 65 years for males.

characteristics, household characteristics (including household consumption per equivalent adult and whether the household received a pension in the last month).¹³¹ Consumption per equivalent adult is calculated by adjusting household consumption for economies of scale using $\theta=0.75$ (see section 1 and appendix A2.3 for details). A brief definition of the variables used can be found in appendix A2.2. β is the parameter vector to be estimated and the unit of analysis (i) is the individual. The unobservable error term u_i is defined as having $E(u)=0$ and $\text{Var}(u)=\sigma^2$

The observed variable is E_i . $E_i=1$ if a household is poor and $EY_i=0$ otherwise. E_i is related to E^*_i in the following way: if $E^*_i > 0$, we observe $E_i=1$ otherwise we observe $E_i=0$.

The probit model is therefore defined as:

$$\begin{aligned} \text{Prob}(E_i=1) &= \text{Prob}(\beta X_i + u_i > 0) \\ &= \text{Prob}(u_i > -\beta X_i) \\ &= 1 - \Phi(-\beta X_i / \sigma) \\ &= \Phi(\beta X_i / \sigma) \end{aligned}$$

Where $\Phi(\cdot)$ is the cumulative distribution function. For the purpose of this analysis we assume that u follows a normal distribution. The resulting coefficients have been converted to marginal effects for ease of interpretation and are reported in table 15.

First, we can see that, everything else being equal, the receipt of a pension is associated with a significant negative impact on the probability of a pensioner being employed. Indeed the probability that a pensioner will work decreases by 17% if the household receives a pension. This suggests that it is not just the low level of benefits that is pushing pensioners to work, but also that some individuals above retirement age are not receiving pensions at all and are therefore forced to work. Indeed 98% of individuals above retirement age who do not receive a pension work.

Second, we find a significant positive association between household welfare and the probability of a pensioner being employed. However, we must be very cautious when interpreting these results, as the direction of the causality is not necessarily clear (i.e. does the level of household welfare determine whether a pensioner is employed or does the fact that a pensioner is employed determine household welfare?). Our results show that the higher the level of consumption per equivalent adult, the higher the probability of pensioners being employed, although the magnitude

¹³¹ Information regarding the receipt of pensions is collected at the household level.

of the coefficient is very small. These results suggest that households with employed pensioners have a higher level of welfare, everything else being equal, than those with inactive pensioners.¹³²

Table 15 also reveals that female pensioners are significantly less likely to be employed, *ceteris paribus*, than male pensioners. Moreover, we see that location is also a very important factor in determining whether or not pensioners are employed. In particular we see that living in rural areas increase the probability of being employed by 36%. This result indicates that access to land is one of the main factors in determining whether or not pensioners are employed. We also see that living in certain depressed regions, everything else being equal, significantly increases the probability of being employed. Kvemo Kartli and Samtskhe Javakheti are two regions that are particularly associated with higher probability of pensioner employment. As we have seen in chapter 5, these two regions are also associated with high levels of poverty and informal employment. Finally, it is interesting to note that higher education is significantly associated with an increased probability of pensioners being employed. Table 15 shows that, relative to pensioners with higher education, all other pensioners (except those with technical secondary education) are significantly less likely to be employed.

In general these findings show that the inadequacy of the pension benefit system, both in terms of coverage and level of benefits, is pushing pensioners into employment to meet basic needs. Pensioners largely engage in agricultural activities, which appear to be a very important source of livelihoods and are associated with an increase in household welfare.

¹³² As previously discussed, this result could also be due to the fact that pensioners are largely employed in agriculture and that agricultural households tend to have higher levels of consumption per equivalent adult. However it is unclear to what extent these findings are determined by the methodology used to impute consumption of own production.

Table A6.9.2 Determinants of working pensioners, probit results, 1999.

Dependent variable: working pensioner (dummy)	
<i>Individual Characteristics</i>	
Female	-0.0833 (0.0144)***
Georgian	0.0043 (0.0204)
Region	
Tblisi	-0.1577 (0.0278)***
<i>Kakheti</i>	<i>f</i>
Shida Kartli	-0.1036 (0.0253)***
Kvemo Kartli	0.1331 (0.0271)***
Samtskhe Javakheti	0.1144 (0.0304)***
Achara	-0.0758 (0.0327)**
Guria	0.0474 (0.0294)
Samegrelo	-0.1266 (0.0261)***
Imereti	-0.0027 (0.0253)
Rural	0.3638 (0.0155)***
<i>Education</i>	
Primary or Less	-0.1281 (0.0230)***
Incomplete Secondary	-0.0717 (0.0235)***
General Secondary	-0.0624 (0.0206)***
Technical Secondary	0.0511 (0.0375)
High Technical	-0.0745 (0.0288)***
<i>High General</i>	<i>f</i>
<i>Household Characteristics</i>	
Household Received a Pension Last Month	-0.1735 (0.0179)***
Household Consumption	0.0021 (0.0001)***
Observations	6652
L.R.Chi2(d.f.)	1890.37(18)***

Source: Author's own analysis of LFS 1999 and SGHH 1999.

Notes:

- (a) Standard errors are in brackets.
- (b) *, ** and *** denote statistical significance at the 10%, 5% and 1% level using two-tailed tests.
- (c) The dependent variable for the probability model is whether an individual of pensionable age is employed. Pensionable age is 60 for females and 65 for males.
- (d) The coefficients refer to the marginal effects in percentages, computed at the average value of the variables for b
- (e) Household consumption is the log of consumption per equivalent adult.
- (f) Consumption per equivalent adult is calculated using $\theta=0.75$ and $\alpha=1$. See Chapter 6 section 1.3 for details.
- (g) The unit of observation is the individual. Consumption and receipt of pension refer to the household.
 - (h) f denotes variables omitted in the estimation (base categories).
- (i) Analysis carried out using unweighted data.
- (j) Definitions of all variables can be found in appendix A2.2.

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