

**LABOUR MARKET
PAPERS**

5

**Kyrgyzstan: Enterprise
restructuring and labour
shedding in a free-fall
economy, 1991-1994**

**James Windell
Richard Anker
Gyorgy Sziraczki**

Copyright © International Labour Organization 1995

Publications of the International Labour Office enjoy copyright under Protocol 2 of the Universal Copyright Convention. Nevertheless, short excerpts from them may be reproduced without authorization, on condition that the source is indicated. For rights of reproduction or translation, application should be made to the Publications Branch (Rights and Permissions), International Labour Office, CH-1211 Geneva 22, Switzerland. The International Labour Office welcomes such applications.

Libraries, institutions and other users registered in the United Kingdom with the Copyright Licensing Agency, 90 Tottenham Court Road, London W1P 9HE (Fax: +44 171 436 3986), in the United States with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923 (Fax: +1 508 750 4470), or in other countries with associated Reproduction Rights Organizations, may make photocopies in accordance with the licences issued to them for this purpose.

ISBN 92-2-109840-0

First published 1995

The designations employed in ILO publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the International Labour Office concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers.

The responsibility for opinions expressed in signed articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them.

Reference to names of firms and commercial products and processes does not imply their endorsement by the International Labour Office, and any failure to mention a particular firm, commercial product or process is not a sign of disapproval.

ILO publications can be obtained through major booksellers or ILO local offices in many countries, or direct from ILO Publications, International Labour Office, CH-1211 Geneva 22, Switzerland. A catalogue or list of new publications will be sent free of charge from the above address.

Foreword

In 1991, following the collapse of the Soviet Union, Kyrgyzstan embarked on what has proven to be a tumultuous process of economic, social and political adjustment. As with all of the former republics of the Soviet Union, few could envisage the dramatic implications of change. For Kyrgyzstan, this transition has been most difficult. Kyrgyzstan inherited a highly inefficient economy in terms of its use of labour, the poor quality of its infrastructure and the dependence on trade with the former Soviet Union. The collapse of these economic ties, combined with the steep drop in domestic demand, has resulted in enormous declines in output. By 1993, the free fall of the economy and the immense difficulties in developing a new basis for social and political organization reached crisis proportions. Large scale job losses and growing unemployment were becoming major political, economic and human problems.

In 1993, the United Nations Development Programme requested the International Labour Organization to study the changes occurring in Kyrgyzstan's industrial sector and in particular the impact of enterprise restructuring on employment. It was hoped that a thorough analysis of the dynamics of enterprise restructuring would help identify the types of labour market policies and programmes which should be implemented to promote economic growth and efficiency. This was important, since Kyrgyz policy-makers know that the large-scale labour shedding and the social havoc which are part of the transition to a market economy need to be accompanied by enterprise restructuring, labour reallocation and sustainable employment creation.

In order to help provide insights and answers to enterprise and employment restructuring in Kyrgyzstan, the ILO carried out a survey of manufacturing firms in the country in May-June 1994. The Kyrgyz Survey of Industrial Establishments (hereafter referred to as the KSIE) was jointly administered by the International Labour Organization, the Kyrgyz National Statistical Committee and the Kyrgyz Ministry of Labour and Social Protection. This paper is based on the results of this survey.

This enterprise survey in Kyrgyzstan builds on the experience ILO has gained on earlier enterprise surveys, such as in Hungary, Bulgaria, Russia, Malaysia, Mexico and the Philippines.

All three authors were in the Labour Market Policies Branch when the fieldwork and earlier drafts of this report were prepared. At present, all are still working in the ILO with Richard Anker in the Labour Market Policies Branch, György Sziraczki in the Labour Law and Labour Relations Branch and Jim Windell in the Regional Office for Europe.

Guy Standing
Labour Market Policies Branch
Employment Department
International Labour Office

Contents

Foreword

1. Introduction	1
2. The Data: Kyrgyzstan Survey of Industrial Enterprises (KSIE)	3
3. Enterprise Restructuring:	
Ownership, Management, Resources and Output	3
3.1 Distribution of Establishments and Employment by Size, Sector and Region at the Beginning of Reforms.....	3
3.2 Property Form Reform and Management Restructuring	6
3.3 Resource Allocation under Severe Constraints: the Changing Distribution of Inputs	9
3.4 Output Responses during Economic Decline	12
4. Employment Restructuring and Labour Shedding	17
4.1 Employment Changes 1991-94: Large-scale Down-sizing without Retrenchment.....	17
4.2 Labour Turnover and Recruitment	24
4.3 Policy Responses to Labour Surplus:	
Unpaid Leave, Reduced Work Schedule and Shift Work	25
4.4 Employment in "Social Asset" Facilities	29
5. Concluding Remarks	31
Appendix: Definition of Independent Variables for Regressions	33
Statistical Annex.....	35

1. Introduction¹

Kyrgyzstan is a small (4.4 million person), land-locked country in Central Asia. It is bordered on one side by the Himalayas and China and the other sides by three other land-locked former republics of the USSR (Kazakhstan, Uzbekistan and Tajikistan). Due to its location, it is far from major markets, and has relatively poor transportation links with the outside world. In addition, the collapse of traditional trading relationships has added to the difficult task faced by Kyrgyzstan and especially its manufacturing sector.

As with all former republics of the Soviet Union, the path to political and economic independence has been difficult for Kyrgyzstan. In some respects, transition was more rapid and radical than elsewhere in the region. Indeed, Kyrgyzstan has gained a reputation in the international community for adherence to political and economic reform, while maintaining a comparatively high degree of political freedom and implementing a range of structural adjustment programmes recommended by international donor agencies. On the other hand, transition from a peripheral region of the former USSR to an independent country pursuing market-oriented reforms has brought painful change to the population.

The wave of optimism following Kyrgyzstan's declaration of independence in 1991 has faded. Central planning had created an intricate web of production chains across the former republics,² and the collapse of the Soviet Union in 1991 began an accelerating process of disintegration of inter-republic trade. Gross Domestic Product fell by 25 percent in 1992 and a further 13 percent in 1993. Particularly hard hit was the industrial sector, which was highly dependent on inputs from its trading partners in other Republics who increasingly demanded hard currency payments for energy and production supplies.³ Export volumes fell dramatically — by 65 percent in 1992-93 according to some estimates — and the decline in the demand for goods left the manufacturing sector with high levels of unutilized capacity and a large proportion of the industrial workforce faced with redundancy. At the same time, Kyrgyzstan struggled with the shock of very high inflation as prices for the vast majority of goods rose to market levels. The cost of energy, for example, increased fifty fold in 1992 and by an additional seventeen fold from January through October 1993.⁴ Although the average wage rose by 262 percent in the first nine months of 1993, wage increases failed to keep pace with the rapid rise in consumer prices, estimated at 627 percent during the same time period.⁵

In May 1993 Kyrgyzstan introduced a national currency, the Som, becoming the first Central Asian republic in the former USSR to do so. Whatever the advantages gained in controlling monetary policy, this step created a wave of resentment among its neighbours; Uzbekistan, for example, temporarily halted commerce with Kyrgyzstan. In any case, this seriously complicated inter-republic trade as exchanges with those within the rouble zone

¹ We would like to thank Guy Standing for his comments and support and Esperanza Magpantay for statistical assistance. Any omissions or errors in this report, of course, are solely the responsibility of the authors, as is interpretation of the results.

² 98 percent of Kyrgyz exports were exchanged within the former Soviet Union in 1990. Foreign trade (excluding inter-republican trade) accounted for a mere 4 percent of GDP. Source: The Economist Intelligence Unit, Country Profile, 1993-94.

³ Industrial production reportedly fell by 34 percent in 1993. Source: Economist Intelligence Unit, Country Report, 1994.

⁴ World Bank, *Kyrgyz Economic Report*, May 1993.

⁵ Inflation for 1993 appears to have been in the region of 1300 percent, compared to 906 percent in 1992. The Economist Intelligence Unit, Country Report, 1994.

became more difficult. Inter-enterprise and banking arrears mounted as management coped the best they could with declining demand and an increasing inability to pay.

Like its regional neighbours, Kyrgyzstan's territorial borders are a legacy of the Soviet era. This has left Kyrgyzstan with deep ethnic and cultural divisions. In 1993, 52.5 percent of the country's population was composed of ethnic Kyrgyz, 21.5 percent of Russian-origin peoples and 12.9 percent of ethnic Uzbeks. Russians are concentrated in the more industrialized north (which includes the capital city Bishkek) and the Uzbek population is concentrated in the predominantly rural southern regions where Islamic traditions are stronger. The remaining groups include sizeable proportions of ethnic Germans, Ukrainians, Tartars, Tajiks, Uighurs, Kazaks and Koreans.

This ethnically diverse population has strained the fabric of the nation-state. In 1990, the country was rocked by social strife between Kyrgyz and Uzbeks in southern Kyrgyzstan. In the north, tension exists between the Russian and Kyrgyz populations. Combined with declining economic opportunities at home, this has resulted in considerable out-migration of Russians from Kyrgyzstan. Over 200,000 people emigrated from the country in 1992 and 1993, the majority of whom were ethnic Russians. The Russian community in Kyrgyzstan has played a leading role in society, with Russians holding key positions in economy, culture and politics. The emigration of Russians — often highly skilled and educated — represents a serious problem for the future development of Kyrgyzstan.

By the end of 1993, many had begun to wonder how Kyrgyzstan would cope with its problems. Official unemployment rates were low and but they were beginning to rise, and in any case they masked a very high degree of under-employment and a burgeoning population of discouraged job-seekers.⁶ Large segments of the population, including pensioners, students and single-parent families, were living under conditions of virtual impoverishment. By 1994 average pensions and the minimum wage covered less than one-third of the estimated minimum budget for food purchases.⁷

In this paper we analyse how industrial enterprises in Kyrgyzstan responded to the dramatic changes. We begin with a description of the Kyrgyzstan Survey of Industrial Enterprises (KSIE). The next major section, based on the survey results, highlights enterprise and employment structures in the Kyrgyz manufacturing sector at the beginning of the reforms, analyses changes in property form and managements appointments, and trends in the source of inputs and the level of outputs. This is followed by a detailed examination of employment change over the past few years, which covers topics such as enterprise downsizing and employment restructuring, labour turnover and recruitment and management responses to labour surplus. Finally, we conclude by examining the extent to which fundamental employment and enterprise restructuring can be said to have occurred, keeping in mind that effective restructuring must encompass a range of social, as well as economic, objectives.

⁶ Although the number of registered unemployed was below 1 percent of the labour force in 1993, recent estimates suggest a national unemployment rate of around 6.3 percent, a figure which excludes discouraged job-seekers and the underemployed. See: Sheila Marnie, "The Kyrgyz Labour Market in Autumn 1993", World Bank paper presented at the National Seminar on Poverty and Social Protection, Chalpon-Ata, September, 1994.

⁷ The incidence of poverty was recently measured in the Kyrgyz Multi-Purpose Poverty Survey (October-November 1993). One of the striking results of this survey was the high level of income inequality in Kyrgyzstan, with the bottom 50 percent of households receiving only 10 percent of total income while the top 0.5 percent received over one-quarter of all income. See: J. Falkingham and R. Ackland, "A profile of poverty in Kyrgyzstan", World Bank paper presented at the National Seminar on Poverty and Social Protection, Chalpon-Ata, September 1994.

2. The data: Kyrgyzstan Survey of Industrial Enterprises (KSIE)

The main data source for this paper is the Kyrgyzstan Survey of Industrial Enterprises (KSIE) which was conducted in May-June 1994. It covered larger manufacturing enterprises in the two principal industrial regions of the country: the Bishkek/Chu Valley region in northern Kyrgyzstan and the Osh/Jalal-Abad region of southern Kyrgyzstan. Almost all manufacturing enterprises in these regions with 40 or more workers and employees were included. The KSIE covered 171 enterprises in the Bishkek/Chu Valley region and 73 enterprises in the southern region including the city of Osh, the Osh Oblast and the city of Jalal-Abad.

It is important to point out that the KSIE does not cover all national employment. First, although the major centres of manufacturing activity are included, the KSIE for logistical reasons did not collect data nation-wide. Second, and more importantly, the manufacturing industry in Kyrgyzstan accounts for about one-fifth of national employment (18.2 percent in 1991); agriculture is the largest sector with 35.5 percent of employment. Thus, our conclusions about what is happening in Kyrgyzstan in terms of employment concern only industrial employment.

The KSIE consisted of two part questionnaires. A wide array of enterprise-level information was collected. The first questionnaire was left at the enterprise and was filled in based on enterprise records. Readers should note that enterprises in Kyrgyzstan keep detailed and reasonably accurate records. Basic quantitative information was collected on employment levels, the occupational and gender structure of employment, wages, and information on changes in the levels and sources of inputs and outputs. The second questionnaire involved a structured interview with plant managers who were asked a series of questions concerning employment practices and expectations for the future: in the level of employment and its structure, in training and in recruitment.

Given the rapid changes occurring in Kyrgyzstan, an effort was made to collect the most current information possible, while at the same time ensuring consistency of data across time. Thus, in the following analyses several different reference periods are used. The vast majority of data collected covers the period 1992-1993: from the end of December 1991 to the end of December 1993. December 1991 was chosen to represent the situation prior to major structural changes in industry and employment. As the launching of our fieldwork was late Spring 1994, we also collected some information — most notably on employment and capacity utilization — for the first quarter of 1994.

3. Enterprise restructuring: ownership, management, resources and output

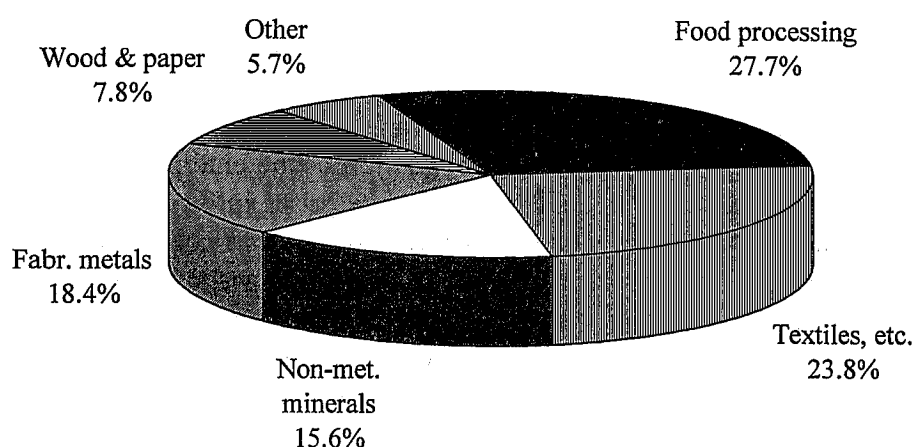
3.1 Distribution of Establishments and Employment by Size, Sector and Region at the Beginning of Reforms

In order to provide readers with a broad picture of what the Kyrgyz industrial sector looked like at the beginning of reforms, this section provides information on enterprise and employment structure by industrial sector, enterprise size and geographic region in 1991. Kyrgyz independence was gained only in July of that year, and the existing patterns of trade and commerce remained much as they were in times past. Our data from December 1991 therefore provides a fairly accurate glimpse of the industrial and size structure of employment in Kyrgyzstan at the end of the Soviet era.

The industrial distribution of establishments in the KSIE is presented in Figure 1.⁸ Food processing firms (including beverages and tobacco preparation) are the most numerous in the KSIE sample, representing close to one-third of all establishments (28.7 percent). Textile (including footwear and leather) comprise the next largest group in terms of the number of enterprises, accounting for approximately one-quarter of the firms surveyed, followed by fabricated metals and non-metallic minerals.

In terms of the geographical distribution of industries, food processing firms were concentrated in the Chu Valley and southern Kyrgyzstan (42.9 percent and 40.0 percent of food processing firms, respectively), while fabricated metals' firms tended to be concentrated in the capital city (53.3 percent of such firms). Textile manufacturing was less common in the Chu Valley (20.7 percent of firms).

Figure 1. Industrial Distribution of Establishments, December 1991

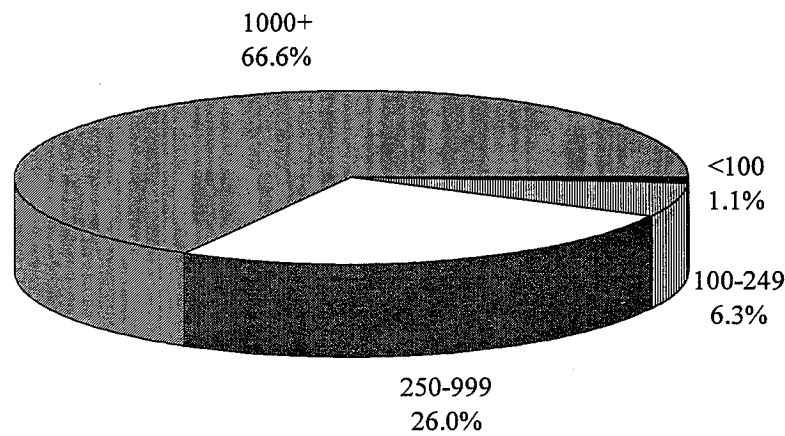


Source: KSIE, 1994.

The firms covered by the KSIE employed approximately 172,000 workers in December 1991. Over two-thirds of employment (66.6 percent) was concentrated in very large firms employing 1000 or more workers (Figure 2), a common feature of the industrial landscape throughout the former Soviet Union. Small firms with fewer than 100 workers accounted for a mere 1.1 percent of employment, those with between 100 and 250 workers for 6.3 percent and those with between 250 and 1000 workers for 26 percent of employment.

⁸ Although Kyrgyzstan does not yet use the International Standard for Industrial Classification (ISIC), we were able to translate the Kyrgyz industrial code for each firm to ISIC. In most cases, it was a relatively straightforward process. However, we were left with a few industrial groups with too few workers or enterprises: auto assembly, electronics, chemicals and basic metals. For this reason we include, auto assembly and electronics firms in our fabricated metals group, and basic metals and chemicals in our "other" industrial group which also comprises, for example, handicraft and musical instrument manufacturing.

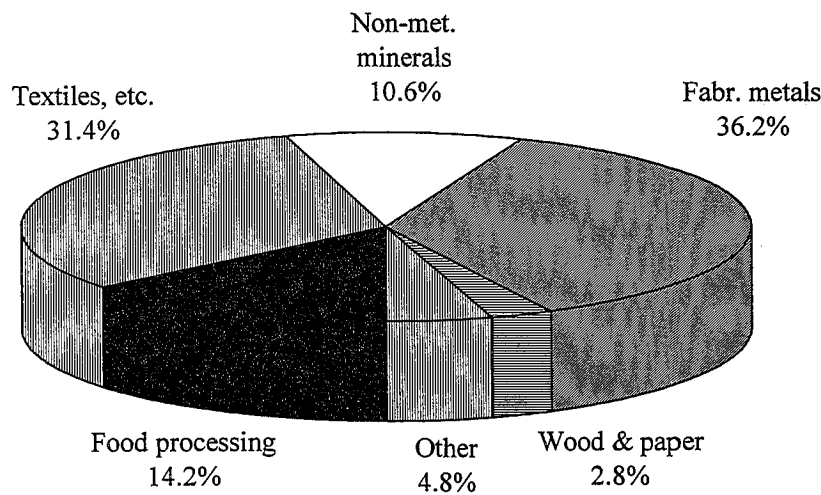
Figure 2. Employment Distribution, by Size of Establishment, December 1991



Source: KSIE, 1994.

In terms of the distribution of employment by industry (Figure 3), over two-thirds (67.6 percent) of those employed by firms in the KSIE worked in two industrial sectors: textiles and fabricated metals. Firms were generally largest in fabricated metals and textile manufacturing, with the mean employment size being 1386 and 932, respectively (Statistical Annex Table 1). Both sectors were heavily-oriented towards trade with the former Soviet Union.

Figure 3. Employment Distribution, by Industry, December 1991



Source: KSIE, 1994.

Reflecting the general regional distribution of industrial employment in Kyrgyzstan, almost three-fourths of those working in manufacturing were employed in northern Kyrgyzstan (46.7 percent in Bishkek and 26.1 percent in Chu Valley), while the southern part of the country (the Osh Oblast and the cities of Osh and Jalal-Abad), comprising approximately one-quarter (26.2 percent) of employment in December 1991.

This high degree of industrial specialization is a reflection of Kyrgyzstan's command economy heritage. Many large textile processing plants, for example, were located in Kyrgyzstan because of its proximity to major cotton sources in Uzbekistan. Similarly, certain heavy industries — such as defence plants — were widely dispersed throughout the integrated economy of the Soviet Union, often for national security reasons.⁹ Thus, the broad employment pattern of the manufacturing sector in December 1991 was typical of most centrally-planned economies. Large firms dominated and industrial activity was concentrated in a narrow range of activity highly dependent on traditional trading patterns within the former Soviet Union. In 1992 things began to change for Kyrgyzstan, and the period of wrenching adjustment started to take hold.

In the future, the economy's capacity for employment generation will rely on the extent to which new, small-scale firms flourish in a diversified range of activities. Active firm-creation and destruction is a sign of healthy economy, a necessary process as firms adapt to changing market conditions. A major challenge for industrial policy in Kyrgyzstan is to create an environment which promotes the formation of new enterprises, resulting in an adjustment in the country's industrial structure and reflecting its comparative advantages. Such adjustment will involve movement away from antiquated and specialized large-scale plants towards smaller enterprises able to adapt more dynamically to market signals.

3.2 Property Form Reform and Management Restructuring

One example of Kyrgyzstan's swift adoption of market-oriented reforms is its privatization programme. Within two years of the first law on privatization (December 1991), roughly one-third of all public property outside of agriculture had been privatized. Virtually all small-scale trade and service firms were privatized by January 1994 and ownership for over 142,000 apartments had passed to private hands.¹⁰

The government's privatization programme in industry is, however, probably best described as the commercialization, rather than privatization, of enterprises as it mainly involved the transfer of ownership rights from state to enterprise-based labour collectives under closed joint-stock arrangements. Very few shares have made their way to "private" hands.

By the beginning of 1994, 36.5 percent of all firms in the KSIE remained within the state sector (Figure 4). Almost half (49.6 percent) had become joint stock companies. The remaining 13.9 percent (34 firms) had some other property forms: cooperative (10), collective (7), private (6), joint venture (1), limited liability (5) and leaseholding (5). Hereafter we refer to these firms as a single group with "other non-state" property forms because meaningful comparisons of the individual forms are not possible given the small numbers involved.

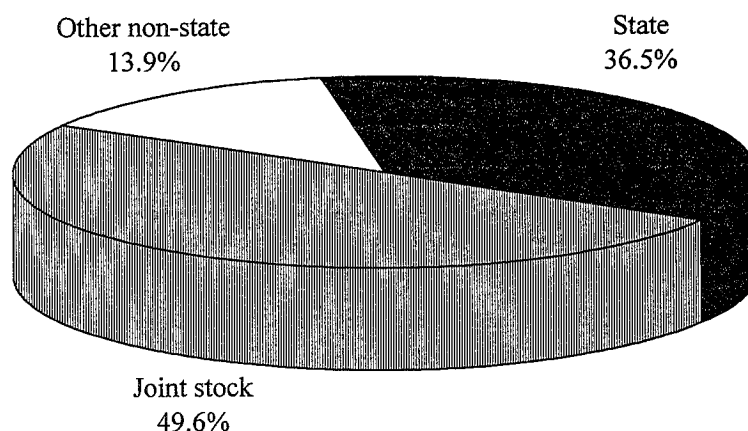
Privatization has proceeded much more quickly among textile and fabricated metals firms, with just over 60 percent being joint stock companies at the beginning of 1994 (Statistical Annex Table 2). Fully 70 percent of joint stock companies had acquired that form of ownership during 1993-94, with larger firms much more likely to be joint stock companies than small firms (Statistical Annex Table 3).¹¹

⁹ Several plants producing defence-related materials are included in the fabricated metals' sector.

¹⁰ A. Jusupbekov, K. Kuehnast, D. Prior and K. Rassmussen, "Kyrgyzstan in the Transition Period", in *Transition in Europe and Central Asia*, United Nations, 1994, (forthcoming).

¹¹ The tendency of larger firms to move first to joint-stock ownership is a typical pattern across the economies in transition. See, for example, G. Standing, G. Sziraczki & J. Windell, "The Bulgarian Labour Flexibility Survey: Introduction", ILO conference paper, May 1993.

Figure 4. Property Form Distribution of Establishments, March 1994



Source: KSIE, 1994.

A phenomenon related to changes in the form of property is whether the enterprise had detached a production, repair or service unit, with that unit forming a new independent firm.¹² Such activities can often lead to subcontracting arrangements, and we were curious whether there was any indication that firms, perhaps in an effort to cut costs and improve productivity, had shed such a unit.

Twenty-one firms, or 8.6 percent of the total, had detached a production, services or repair unit in the previous two-year period, with about half of those involved being firms with 250 or more workers, and half involving the detachment of a production unit. On average, approximately 7.0 percent of the firm's workforce had left with the detached unit, although the average workforce share detached was much larger in small firms (19.3 percent) than in the largest size category (3.3 percent). Small-scale firm development may well hold the key to the revival of Kyrgyz manufacturing, and the fact that even this small number of detachments occurred could be a positive sign.

Kyrgyzstan's privatization programme has been much criticized, particularly by the World Bank and International Monetary Fund, because of the lack of competitive share pricing and what was felt to be an excessive weight given to employee ownership.¹³ Apart from a required 25 percent holding by the state in most cases, a large proportion of ownership shares were distributed to factory managements and workers. This system, it was argued, created disincentives for managements to engage in effective restructuring of their enterprises as they would be blocked from making major changes (particularly those involving employment reductions) by their shareholders. By the time of the KSIE fieldwork, the vast majority of privatized enterprises had been privatized under this system, although by 1994 regulations applying to new privatization plans limited ownership by labour collectives to no more than 5 percent of total enterprise holdings.¹⁴

¹² Detachment may often form part of an enterprise's privatization plan. In one case, the local chocolate factory in Bishkek, with two separate production lines at either end of town, had split into two independent enterprises when moving to joint stock ownership. Without knowledge about the direct impact of this change, in general such detachments should contribute to restructuring by increasing competition and allowing management greater control over production and financial decisions.

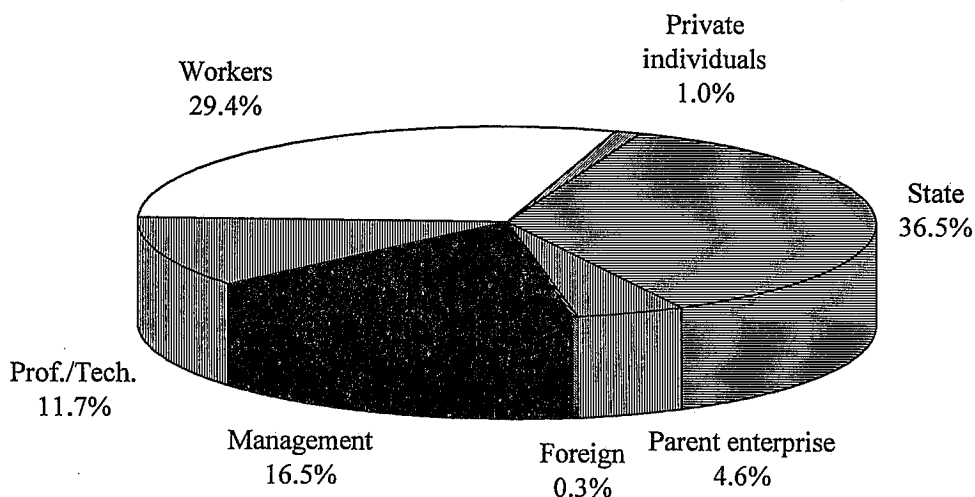
¹³ *Kyrgyz Economic Report*, World Bank, May 1993.

¹⁴ Future privatization of firms with 100 or more workers will involve competitive bidding by individual investors for up to 70 percent of equity, and through voucher auctions (open to individuals and investment funds) for up to 25 percent of equity.

Most joint stock companies (83.5 percent) in Spring 1994 had some form of worker/management participation in ownership of enterprise assets, compared to only 44.1 percent of those in the other non-state sector. In firms outside of the state sector having an ownership participation plan, enterprise managers, employees and workers on average held the largest share of enterprise holdings. Among joint stock companies, managers, professional and technical employees and workers held, on average, 57.6 percent of all ownership shares (Figure 5), with the remaining certificates held by the state (36.5 percent), the establishment's parent enterprise (4.6 percent) and foreign or other individuals outside of the establishment (1.3 percent) (Statistical Annex Table 4).

Especially intriguing is the strong relationship between employment size and the shareholding of management, particularly in the other non-state sector. Thus, in firms with fewer than 100 workers, management held a majority (52.2 percent) of ownership shares in the other non-state sector and almost a quarter of shares (24.5 percent) in joint stock companies. That management held significant controlling interests is potentially troublesome, because in any large-scale divestiture there is a danger that some individuals will profit more than others. First, given that enterprise assets were generally undervalued, it is an open question as to whether it is an equitable practice to transfer or allow enterprise managers to purchase essentially public assets at a very low price. Second, a manager might well take advantage of his or her position and "harvest" profitable elements of the enterprise (asset stripping), leaving behind less viable components for the remaining shareholders. On the other hand, many believe that the holding of significant financial interests by managements (and workers) can lead to greater efficiency.

Figure 5. Distribution of Ownership Shares in Joint Stock Companies, March 1994



Source: KSIE, 1994.

Kyrgyzstan's revised privatization plan should minimize the risks of some groups or individuals receiving gratuitous windfalls as the state now sells its remaining shares in competitive bidding on the open market.

It is no secret that many enterprise managers appointed during the Soviet era were selected on the basis of political considerations and operated under a range of external constraints in decision-making, making the efficient management of enterprise resources difficult even under the best of circumstances. Decisions concerning the nature and level of production, supply sources, hiring and employment plans were often imposed from above. A challenge for effective enterprise restructuring in Kyrgyzstan is to ensure that capable managers

are appointed who are knowledgeable about business practices and have sufficient independence.

One possible indicator as to whether the dependence of top managers or planners has been weakened would be the manner in which they were appointed. According to the KSIE data, 66.8 percent of managers in early 1994 were appointed by state or local authorities, 28.7 percent were selected by enterprise workers and 4.5 percent by an enterprise board, presumably a combination of enterprise managers, workers and local authorities. In the future, appointment of managers should be a responsibility devolved from government authority, avoiding possible political or informal influence in decisions about production, investment and employment.

In the KSIE we also asked when the senior manager was appointed, presuming that newly appointed managers would be better equipped to deal with the new business environment and somewhat more inclined to take risks — in production and employment decisions — than managers appointed earlier. About 36 percent of top managers had been appointed since 1991, with almost half (48.3 percent) of those in very large firms being appointed in 1992 or later. As will be demonstrated later in the paper when examining employment changes, firms in which the manager was relatively new to the job did cut employment to a greater degree than those appointed earlier (although this could be more the result of structural characteristics such as industrial activity than any presumed managerial independence in decision-making).

Thus, by the beginning of 1994, the manufacturing sector of Kyrgyzstan had undergone extensive change in the pattern of ownership and in the appointment of managements. Even so, additional changes in ownership are anticipated. Fully 62 percent of managers in state-owned firms planned to change the form of property in the near future, with those in the food sector being the most likely to be planning a change (75 percent of state-owned firms). The commercialization of enterprises is a positive step towards removing state intervention as a factor in firm-level decision-making. Despite the drawbacks of the privatization programme, industrial productivity and efficiency should improve as managers and workers become more aware of and responsible for the economic implications of decision-making. Having described the pattern of ownership forms and the appointment of managements, the following two sections analyse what, if any, influence these had on employment.

3.3 Resource Allocation under Severe Constraints: the Changing Distribution of Inputs

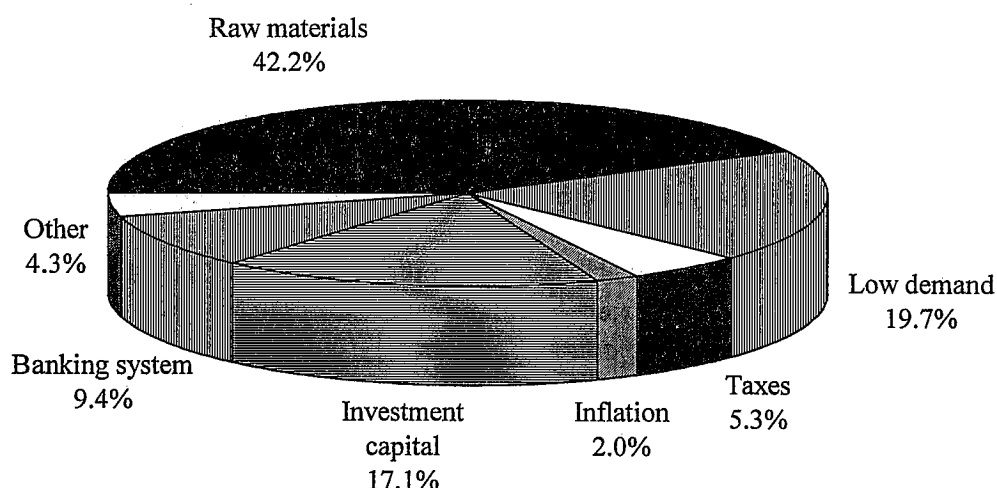
Given the catastrophic shocks endured by the Kyrgyz industrial sector during the early 1990s, it is important to investigate what impact these shocks had on the level and sources of inputs to the production process. For example, did the difficulties in buying goods from the successor states of the former Soviet Union result in managers turning to local suppliers as an alternative? Was there any movement towards obtaining inputs from the West, perhaps in exchange for finished goods? Was there any change in financial inputs to the enterprise which could help the firm effectively restructure?

Not surprisingly, when asked what their main business-environment problem was in 1993, over 40 percent of managers mentioned raw materials or other production inputs as the principal problem for the firm (Figure 6). Managers in wood and paper firms gave this response most frequently (63.2 percent), followed by those in food processing (57.1 percent) (Statistical Annex Table 5). In contrast, those in the non-metallic minerals sector (primarily construction material production) were more likely to mention low demand for their products as the main problem, presumably due to the drop in investment and construction orders during the sharp

economic downturn.¹⁵ Managers in small and large firms were equally likely to mention raw materials as the principal business-environment problem. It did, however, appear to be a greater problem in southern Kyrgyzstan with over half (57.6 percent) of managers giving this response.

Managements were confronted with a host of other difficulties too. The second most common response overall was the low demand for products (19.7 percent of firms), followed by the lack of investment capital (17.1 percent) and the banking system (9.4 percent). Managers in firms with over 1000 workers were much more likely to mention the banking system as the principal problem they faced (27.6 percent of firms). Although very few managers stated that taxes or inflation was the main problem of the enterprise (7.3 percent of firms), almost 20 percent of managers mentioned one of these as the second main problem facing the enterprise.

Figure 6. Main Business-environment Problems of Establishment, 1993



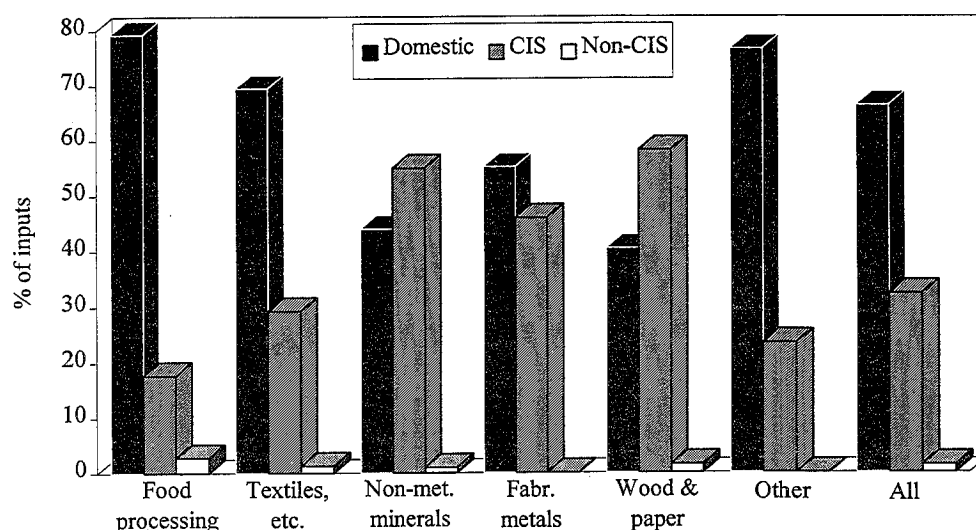
Source: KSIE, 1994.

Managers also gave, for both 1992 and 1993, the source of inputs, whether from the domestic market, other Commonwealth of Independent States (CIS) or other foreign sources. It is important to note that these data refer to the share of inputs and changes in that share, not by how much those inputs declined in face of the economic downturn, a point we return to later.

Roughly two-thirds (66.3 percent) of all production inputs in 1993 were obtained on the domestic market and almost one-third (32.3 percent) from a CIS-member state. Only 1.4 percent of inputs were obtained from outside the former Soviet Union. There was some variation among industrial groups (Figure 7 and Statistical Annex Table 6). The food processing and textile industries received most of their inputs from the domestic market (79.3 percent and 69.4 percent, respectively). Food processing had the largest share coming from a non-CIS country (2.8 percent). The fabricated metals sector relied the least on national sources (40.4 percent) with over half of the inputs in that sector coming from a former Soviet republic (58.1 percent) (Statistical Annex Table 6).

¹⁵ In 1993 only 4800 dwellings were constructed nation-wide compared to 7300 in 1992. Source: Economist Intelligence Unit, Country Report, 1994.

Figure 7. Source of Production Inputs, by Industry, 1993



Source: KSIE, 1994.

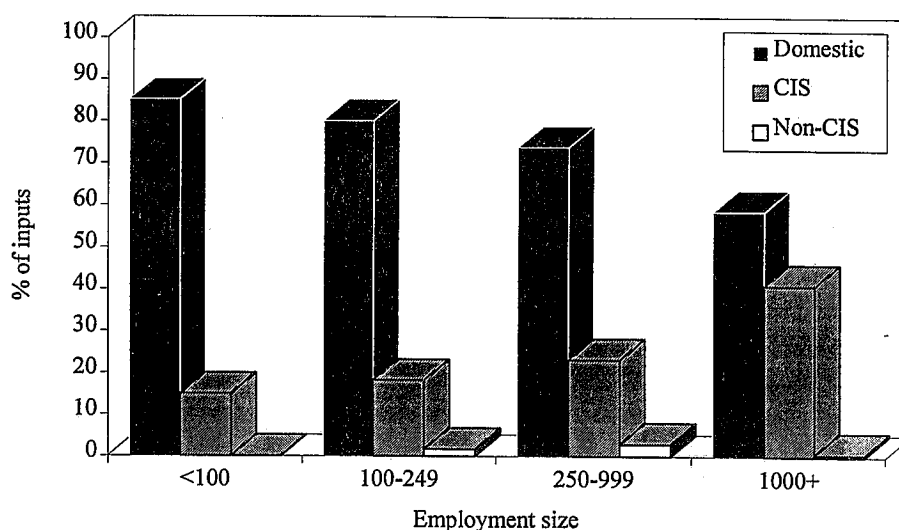
As expected, smaller firms were more oriented towards the domestic market, obtaining 85.1 percent of their production inputs within Kyrgyzstan (Figure 8 and Statistical Annex Table 7). Firms in southern Kyrgyzstan relied much more on domestic sources for their inputs (73.3 percent of inputs on average) than firms in the north (Statistical Annex Table 7).

Given the great difficulties in obtaining raw materials and other production inputs, we expected some change in the distribution of these sources during 1992-93 as management attempted to find suppliers who would accept barter swaps and other forms of payment for their goods. Indeed, although the change was not great, there is evidence that some small adjustments were made. Against the precipitous decline in production, there was a net average increase of 1.8 percent between 1992 and 1993 in the share of inputs obtained from domestic sources, an average increase of 0.6 percent from non-CIS sources and a decline of 2.4 percent in the share from former republics of the Soviet Union. These shifts were greater within some industrial, employment size and regional groups compared to others but overall the differences remained small (Statistical Annex Table 8 and 9). In short, there was very little movement towards acquiring inputs from outside of the former Soviet Union, an indication that Kyrgyz industry had not yet improved its trade links with the outside world.

Finally, what happened in the manufacturing sector in terms of financial inputs? Under central planning, enterprises operated under soft budget constraints so that loss-making firms functioned without threat of bankruptcy. Hardening of budget constraints through cutting subsidies and preferential loans has been a primary objective of governments in many transition economies. In Kyrgyzstan this process appears to have only begun. Thus, roughly one-third of all enterprises received some form of subsidy or loan in both 1992 and 1993;¹⁶ larger firms were more likely to have received financial assistance, and almost half of all firms in the fabricated metals' sector (42.2 percent).

¹⁶ Although there was no change in terms of the number of enterprises receiving a subsidy or loan, there does appear to have been a slight decline in the level of such funding. We are handicapped in this analysis by the fact that our data are in Som for 1993 and in Roubles for 1992. However, among those firms receiving some form of subsidy or loan, even with the sharp decline in production, the share of such financial inputs declined from 17.3 percent of the value of sales in 1992 to 13.1 percent in 1993, indicating a reduced level of government subsidies.

Figure 8. Source of Production Inputs, by Employment Size, 1993



Source: KSIE, 1994.

We also asked managers to give the share of all enterprise expenditures devoted to the social development fund, the production development fund, the wage fund as well as expenditures associated with fixed costs such as energy, taxes, rents and bank interest repayments. These funds are the basis on which enterprise accounts are calculated and distributed with non-money benefits drawn from the social fund, plant capital investments from the production fund, and wage payments from the wage fund. We will not dwell here on sectoral, size or regional characteristics of this distribution because the main story is that, between the end of 1992 and the end of 1993, the relative distribution of expenditures among these funds showed some change. On average, the share of expenditures devoted to the social fund dropped by 1.1 percent, that devoted to the production fund fell by 3.5 percent, the wage fund's share grew by 0.5 percent and that associated with fixed costs rose by 4.1 percent. Thus, management devoted fewer resources on a declining base to social and physical investment, while costs such as a energy and taxes consumed a larger proportion of production costs. The main message, however, appears to be that enterprises had not yet made major shifts in resources between wage, social and capital components.

3.4 Output Responses during Economic Decline

In this section, we examine the behaviour of enterprises from the output side. What has happened to the level of sales in industry and have there been any changes in the way goods are marketed? What has been the impact of economic decline on the use of productive capacity in industry? These indicators of firm performance confirm the grave economic situation confronting Kyrgyzstan during the period 1992-94.

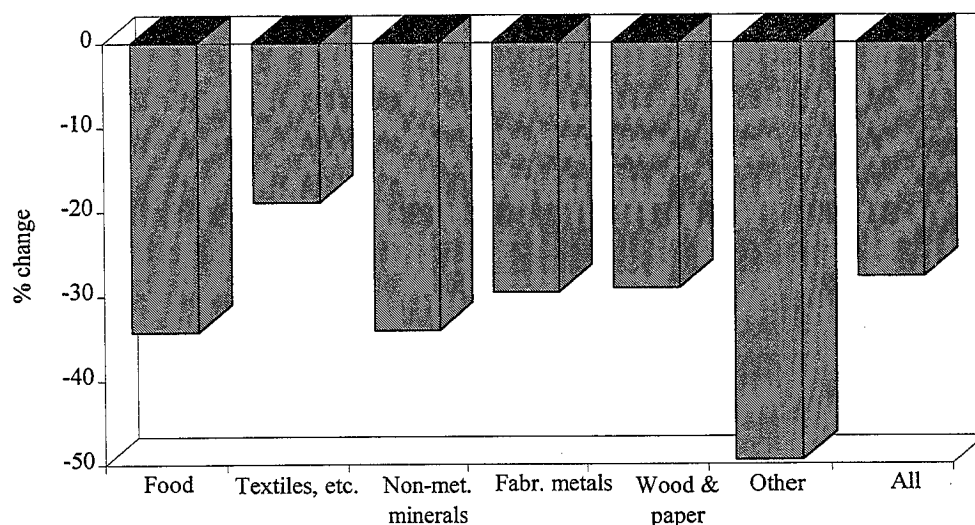
Managers were asked whether the level of sales adjusted for inflation had risen, fallen or remained basically unchanged during the previous two-year period. They were also asked to estimate by how much in percentage terms sales had changed. 80.7 percent of enterprises reported that the level of sales had declined, 13.5 percent that it had increased and 5.7 percent reported that sales had remained stable. The level of sales declined by 27.8 percent on average (Figure 9 and Statistical Annex Table 10).¹⁷ The textile industry, which had the greatest

¹⁷ Readers are cautioned that the percentage change in sales calculated is only a very rough estimate as these figures are derived from an on-the-spot interview with management.

volume of sales of any sector (35.0 percent of total sales in 1993), reported the smallest decline (-18.9 percent). Sales fell most in the food processing and non-metallic minerals' sectors (-34.3 percent and -34.1 percent respectively).

Sales fell by approximately one-quarter (25.1 percent) in firms with over 1000 workers (Figure 10 and Statistical Annex Table 11), and in only one such firm did sales increase. Although firms with fewer than 1000 workers were more likely to have increased sales, mid-sized firms with between 100 and 250 workers appeared most affected by declining economic conditions, with an average fall in sales of 38.3 percent. The value of sales increased in almost one in five firms (19.4 percent) with fewer than 100 workers. Regional differences were also marked: in the Osh Oblast and the city of Jalal-Abad, total sales fell by 17.7 percent compared to a decline of 23.0 percent in the Chu Valley region and 33.1 percent in the city of Bishkek. Furthermore, sales had increased in almost one-quarter (24.7 percent) of firms in southern Kyrgyzstan.

Figure 9. Sales Change, by Industry, 1993-94

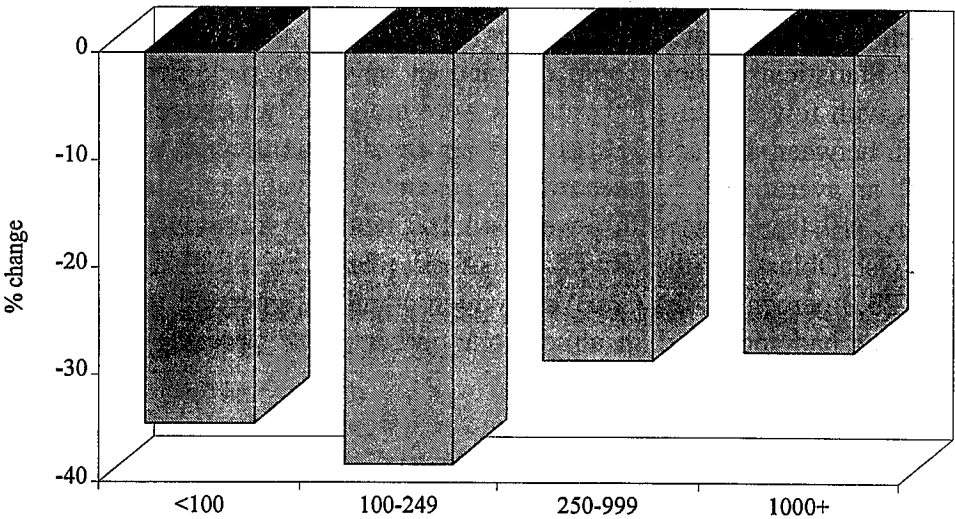


Source: KSIE, 1994.

In terms of the distribution of sales, Kyrgyz industry was heavily-oriented to the domestic market and the markets of the former Soviet republics. In 1993, just over half (54.9 percent) of manufacturing sales went to domestic customers, roughly a third (30.7 percent) was traded within the former Soviet republics, and only a small fraction (1.4 percent) was exported to other countries — a pattern which did not change significantly between 1991 and 1993. However, the difficulties of enterprises in finding buyers or suitable barter arrangements for their goods is evident in that 13.0 percent of industrial output in 1993 remained stocked and unsold in enterprises.

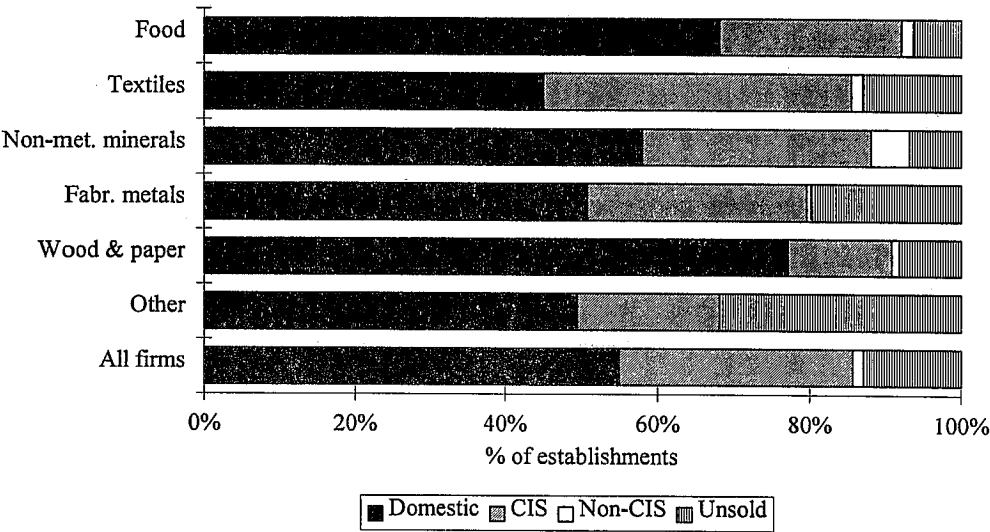
Thus, Kyrgyz industry has had to deal with both contraction in domestic demand and loss of its markets in the former Soviet republics, while it has been unsuccessful in shifting sales to new export markets.

Figure 10. Sales Change, between December 1991 and March 1994, by Employment Size



Source: KSIE, 1994.

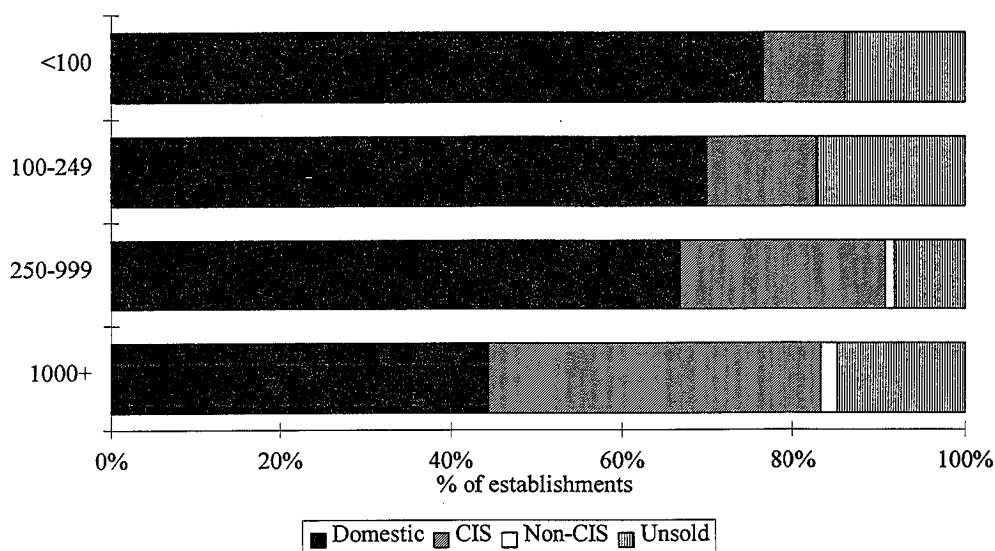
Figure 11. Percentage Distribution of Output, by Industry, December 1993



Source: KSIE, 1994.

The textile and fabricated metals sectors were the most "export-dependent" with 40.5 percent of output exchanged within the FSU in textiles, and 28.8 percent in fabricated metals (Figure 11 and Statistical Annex 12). Larger firms depended more on trade outside of Kyrgyzstan; 38.8 percent of the output in firms with more than 1000 workers was exchanged within the former Soviet Union compared to 9.4 percent in firms with fewer than 100 workers (Figure 12 and Statistical Annex Table 13). These data suggest that larger firms were particularly affected by weakening trade links, while smaller firms tended to suffer more from declining domestic demand.

Figure 12. Percentage Distribution of Outputs, by Employment Size, 1993



Source: KSIE, 1994.

In the KSIE we asked about bartering only on the output side, but such arrangements work both ways¹⁸. As Figure 13 shows, the percentage of output bartered in 1992 was 12.6 percent and by the first quarter of 1994 this had almost tripled to 33.9 percent. Large firms and those in southern Kyrgyzstan were much more likely to barter, exchanging more than 40 percent of their output in this fashion. There was relatively little difference across industries in 1994 (Statistical Annex Table 14).

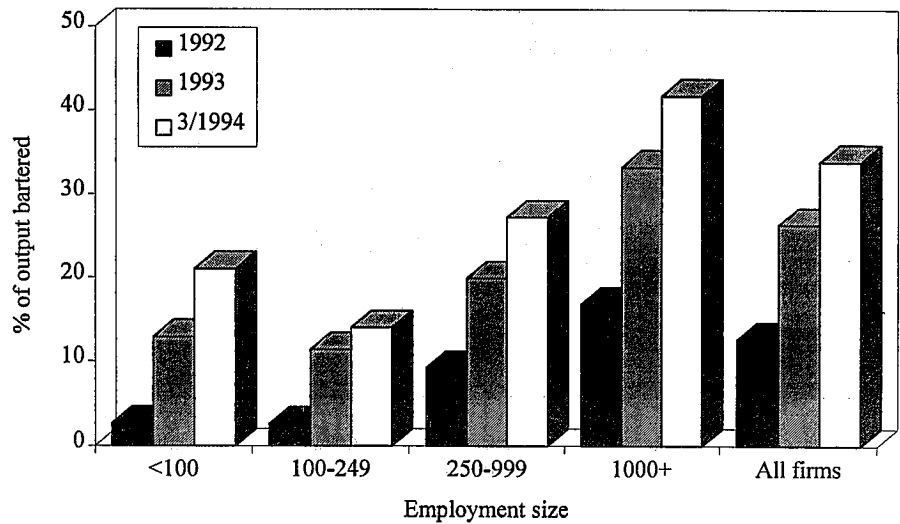
During the KSIE fieldwork we came across many instances where firms had changed their main product. Often, this was because of a disruption in supply links, since required inputs were no longer available. But there were also cases where management introduced a new product because they saw an opportunity to increase sales.¹⁹

Overall, 15.2 percent of firms had introduced a new main product, and 19.3 percent had stopped production of a main product in 1992-93. This suggests a reasonable level of product innovation, but it is difficult to assess to what extent these were truly innovations or merely reactions to input shortages, in essence "forced innovation". At least, the KSIE results imply that many managers were assessing demand and adapting internal processes to meet those demands, a positive sign even though the number of firms where this happened was small.

¹⁸ In one of the more memorable instances, a furniture manufacturer in Osh exchanged finished furniture for wood from Siberia and cotton from Uzbekistan, and the only cash generated by the firm was through small sales of furniture through a factory outlet. These sales allowed the firm to pay part of its wage bill (the rest being paid in furniture) and maintain employment. When asked about this seemingly untenable situation (at least from a long-term point of view), the manager was confident that the enterprise could continue functioning in this manner almost indefinitely because he had a willing workforce and strong trading relationships with his suppliers and buyers. To a greater or lesser extent, the vast majority of firms covered by the KSIE were confronted by similar dilemmas.

¹⁹ For example, in the furniture factory visited in Osh, the manager had shifted all women workers to the production of pillows, a new product for the firm, because demand for furniture had dropped significantly and there was a market for the pillows in the local bazaar.

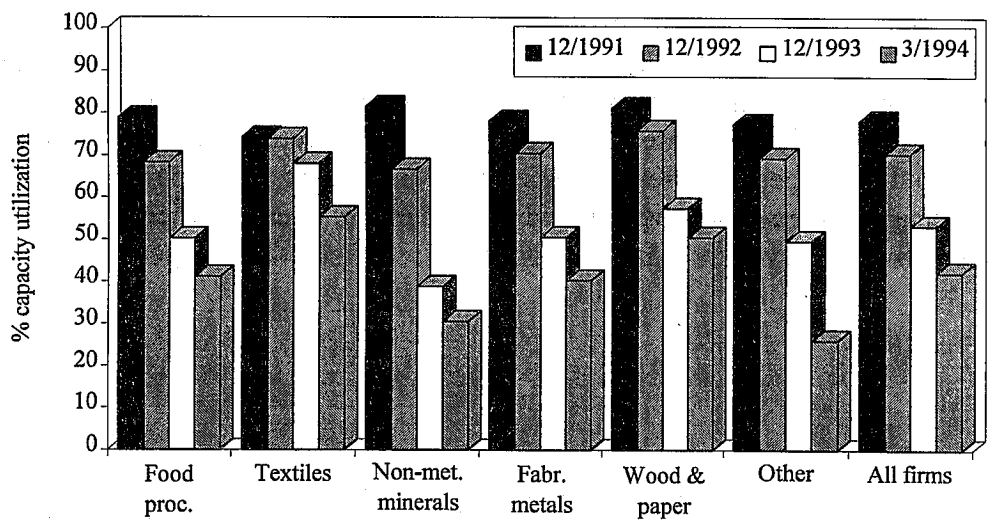
Figure 13. Percent of Output Bartered, 1992 to March 1994, by Employment Size



Source: KSIE, 1994.

Finally, managers were asked about the level of capacity utilization in December 1991, December 1992, December 1993 and March 1994. On average, from a high of 78.1 percent in December 1991, capacity utilization dropped to 70.4 percent at the end of 1992, to 53.2 percent by the end of 1993, and to a dismal 42.1 percent in March 1994 (Figure 14). Firms in the non-metallic minerals' sector were using, on average, only 30.5 percent of productive capacity. There was relatively little difference across size categories and regions (Statistical Annex Table 15).

Figure 14. Capacity Utilization, December 1991 to March 1994, by Industry



Source: KSIE, 1994.

4. Employment Restructuring and Labour Shedding

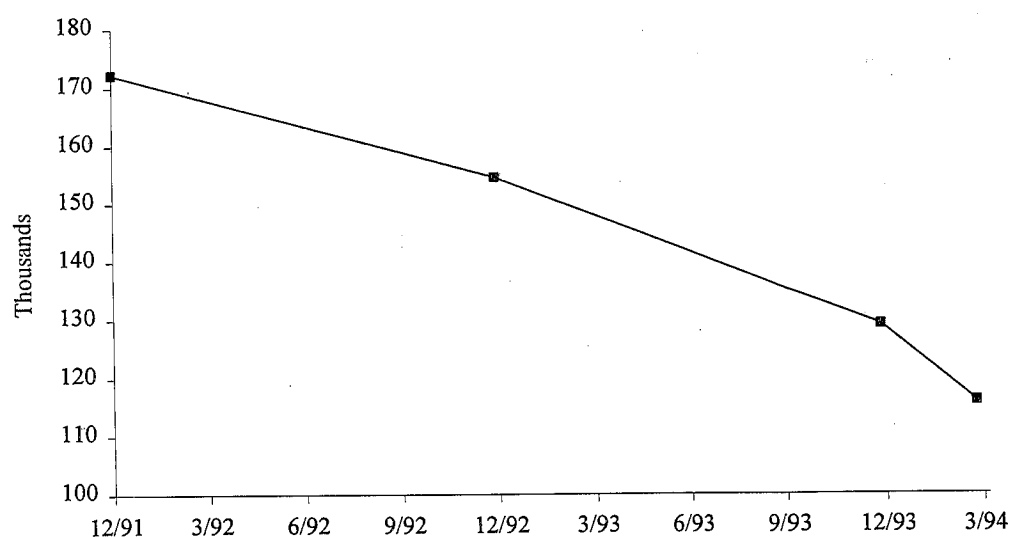
While conditions of labour shortage existed under the old system, the vast majority of enterprises were faced in 1992-94 with extremely high levels of labour surplus as demand for their goods fell precipitously. In this section, we investigate how management responded to conditions of labour surplus and, as we will see, a variety of management strategies emerged during the difficult period 1992-94, with severe implications for those in industrial employment. We also investigate the extent to which employment restructuring can be said to have occurred, a fundamental step in the regeneration of Kyrgyz manufacturing. Our principal objectives are to analyse (i) the dimensions and characteristics of the considerable "downsizing" of industrial employment and (ii) the extent to which this downsizing embodied positive elements of employment restructuring as opposed to a set of necessary short-term oriented coping mechanisms.²⁰

4.1 Employment Changes 1991-94: Large-scale Down-sizing without Retrenchment

Between December 1991 and March 1994, total employment fell by approximately one-third in the firms surveyed, from 172,234 workers and employees in December 1991 to 115,928 at the end of the first quarter 1994. The decline in employment has accelerated over time (Figure 15). Employment fell by 10.3 percent in 1992, by 16.5 percent in 1993 and by 10.2 percent (-40.9 percent on an annual basis) during the first quarter of 1994.

These enormous declines have resulted in a shift in the size distribution of establishments. As Table 1 illustrates, large firms (with 1000 or more workers) accounted for 18.7 percent of enterprises in the KSIE at the end of 1991 but only 10.2 percent by the end of March 1994. Conversely, small firms were 13.5 percent of all enterprises in December 1991, a share which grew to 26.6 percent by the first quarter of 1994.²¹

Figure 15. Change in Industrial Employment, December 1991 to March 1994



Source: KSIE, 1994.

²⁰ For a detailed review of the economic and employment issues confronting the Central Asian states, see P. Ronnas and O. Sjöberg (eds.) *Economic Transformation and Employment in Central Asia*, International Labour Office, Geneva, 1994.

²¹ In the following analysis of employment changes it is important to note that we have employment data for 244 firms in March 1994 but only 230 in December 1991. The 14 firms without employment information in December 1991 are likely to be detached units that formed new independent enterprises during 1992-93 (see Section 3.1).

Table 1. Distribution of Establishments, by Employment Size Category, in 1991 and 1994 (%)

Employment size	December 1991	March 1994
<100	13.5	26.6
100-249	29.1	31.6
250-999	38.7	31.6
1000+	18.7	10.2
Total	100.0	100.0

Source: KSIE, 1994.

The change in the size structure of employment is even more striking when each size category's share of employment is analysed. While over two-thirds of employment was concentrated in large firms in December 1991, by the end of March 1994 such firms accounted for just over one-half (51.5 percent) of employment (Table 2). Small and medium-small firms (those with less than 250 workers) increased their share of employment from 7.4 percent to 14.2 percent.

In terms of industrial sector, the fall in employment between December 1991 and early 1994 was greatest in the fabricated metals (-45.6 percent) and non-metallic minerals sectors (-34.8 percent), and lowest in food processing (-15.0), with firms in textiles and wood or paper products somewhat in-between in terms of overall employment change (Figure 16). Virtually all of this fall in employment has taken place through the downsizing of firms rather than by the elimination of firms.²² Thus, the mean employment size for all establishments fell from 706 to 475 workers between December 1991 and March 1994 (Statistical Annex Table 16).

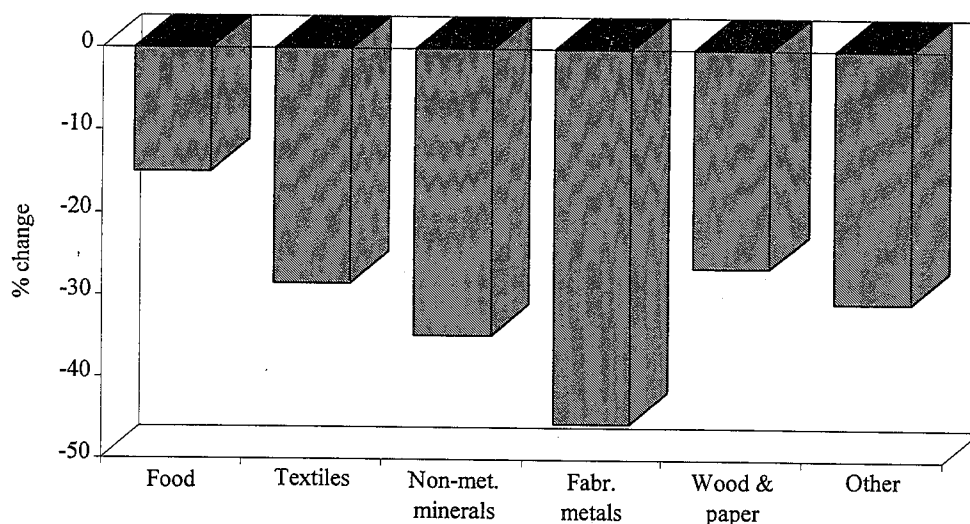
Table 2. Share of Employment, by Employment Size Category, in 1991 and 1994 (%)

Employment size	December 1991	March 1994
<100	1.1	3.4
100-249	6.3	10.8
250-999	26.0	34.3
1000+	66.6	51.5
Total	100.0	100.0

Source: KSIE, 1994.

²² Although the KSIE survey by its nature included only firms in existence in March 1994 (and so excluded firms which went out of business between December 1991 and March 1994), additional information available through the State Statistical Office indicates that very few (if any) manufacturing firms went out of business in this period. The lack of enterprise closures has occurred partly because of continuing state subsidies, partly because of the entrepreneurship of Kyrgyz managers who have introduced new products and/or made complex barter arrangements with other enterprises in order to stay in business, and partly because of the willingness of workers to accept reduced work schedules, extended periods of leaves and in-kind wage payments.

Figure 16. Percentage Change in Employment, between December 1991 and March 1994, by Industry



Source: KSIE, 1994.

In the fabricated metals sector, average employment dropped from 1,386 to 760, while in food processing it fell from an average size of 349 to 306 workers. Although employment had fallen on average by over one-third, employment rose during the period 1992-94 in 17.4 percent of establishments (40 firms), and in almost one-quarter of food processing firms (23.5 percent or 16 firms).²³

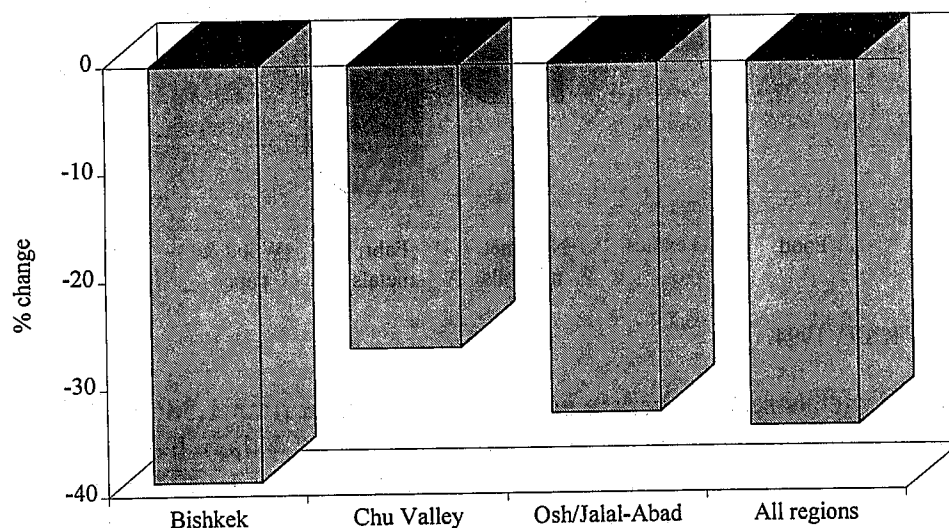
It is interesting to note that the employment changes occurring in manufacturing have resulted in a relative shift in the industrial distribution of employment (Statistical Annex Table 16). For example, the employment share of the fabricated metals sector declined by almost seven percentage points between December 1991 and March 1994, while the food sector's share rose by over four percent, an indication that some fundamental employment restructuring is occurring, perhaps reflecting to a greater degree the country's industrial comparative advantages. These results are consistent with those reported above for employment size since food enterprises are relatively small and fabricated metals' firms are relatively large.

In terms of regional differences, the decline in employment was greatest in the capital city, with employment in Bishkek dropping by 38.7 percent, and somewhat lower in Osh/Jalal-Abad and in the Chu Valley region, where employment fell by 32.5 percent and 26.3 percent, respectively (Figure 17). One must not, however, lose sight of the fact that all regions suffered greatly. The greater fall for Bishkek appears largely due to the industrial distribution of employment in Kyrgyzstan described earlier. For example, 53.3 percent of fabricated metals' firms were located in Bishkek, accounting for 73.4 percent of total employment in that sector at the end of 1991. The fact that this sector experienced the greatest declines in employment probably explains much of the regional differences mentioned above.

²³ These figures exclude the 14 firms not in existence as an independent production unit at the end of 1991.

Are the effects on employment change of employment size, industrial sector and region significant? And to what extent are they independent of each other? Also, how have other factors affected industrial employment? In particular, what were the impacts of the economic indicators described earlier such as rising barter arrangements, declining sales and changes in export-orientation?

Figure 17. Percentage Change in Employment, between December 1991 and March 1994, by Region



Source: KSIE, 1994.

And what about alternative forms of reducing labour surplus such as extended leave, reduced working hours and childcare leave? We expected such factors to be a major influence on employment change.

To investigate the influence of these and other factors on employment change, a series of ordinary least squares multiple regression models were estimated with the percentage employment change between December 1991 and March 1994 as the dependent variable. Definitions of the independent variables are provided in the Appendix. The results of these regression models are presented in Table 3. In column 2, we estimated what we call our standard model by specifying industry and employment size. In column 3, we estimated the effect on employment change of additional explanatory variables, while controlling for the variables in our standard model, with each independent variable specified individually. Those additional explanatory variables with significant coefficients in column 3 were included in a final OLS regression (column 4).

We expected that our control variables representing employment size and industry would be significant factors in explaining employment change.²⁴ However, none of the variables representing industrial sectors were statistically significant; this remained the case even when we omitted size category variables (unreported regression).

²⁴ Regional binary variables were tested and were not significant factors in explaining employment change. They are omitted in the following analysis.

At the same time, there was a strong, consistent and significant relationship between employment change and employment size; the larger the establishment the greater was the cut in employment. Unreported regressions (where the largest size category omitted rather than the smallest size category) suggest that what mattered in Kyrgyz industry in terms of employment change was being a smaller size enterprise; smaller firms increased employment or cut employment to a lesser degree than larger size firms.²⁵

In equation 3 and 4, we investigated the influence of various structural characteristics of employment. We hypothesized that firms with large shares of women, youth and older workers would have cut employment more than firms with lower shares of such workers. Since the employment situation of these groups has been adversely affected in many of the transition economies, our general expectation was that this would be the case in Kyrgyzstan. Contrary to expectations, none of these variables representing the employment share of vulnerable groups had a significant relationship to employment change.²⁶ However, the share of women on maternity leave in 1992 had a highly significant coefficient, indicating that firms cutting employment the most had higher shares of women on maternity leave — and this relationship was large in magnitude, with an approximately 0.8 percent fall in employment for each 1 percent higher percent women on maternity leave. This suggests that women may have been more inclined (or rather pushed) to take advantage of this enterprise benefit in firms where the threat to their jobs was greatest.²⁷

Other structural characteristics of employment investigated in equations 3 and 4 included (i) the percentage of the workforce in so-called unqualified positions (we expected that firms with high shares of unqualified workers would cut employment to a greater degree since such workers could more easily be replaced in the event of an economic upturn), (ii) the percent of the workforce employed in "social asset" facilities such as childcare centres and holiday resorts (we expected that employment would have dropped more in firms with large shares of such workers since their employment is not integral to the production process and they would thus be more susceptible to lay-off), and (iii) the share of total work weeks lost in 1993 due to the placing of workers on extended leave or reduced work schedules (hypothesizing that such firms were doing particularly poorly and would thus be more likely to have cut employment)²⁸. Interestingly, only the final explanatory variable (percent of workers on extended leave or reduced work schedules) was significant (at the 1 percent level). As this is negatively related to employment change, it implies that employment restructuring is incomplete in many enterprises.

We also investigated a range of firm-level economic indicators as to their influence on employment change. We expected, for example, that highly export-oriented firms and firms receiving large shares of their production inputs from the former Soviet Union would be more likely to have cut employment given the great trading difficulties mentioned by managers. We also expected that the percentage of the firm's output exchanged under barter arrangements would be negatively related to employment change, presuming that this indicated troubled

²⁵ 42.5 percent of all firms in which employment rose during 1991-94 had fewer than 100 workers in 1991. On average, employment in those firms rose by 4.7 percent, compared to a cut of 22 percent in the next size category, a cut of 29.2 percent in those firms with between 250 and 1000 workers, and a cut in employment of 37.7 percent in the largest size category.

²⁶ The employment shares of these groups in 1993 were also tested and were not significant.

²⁷ The share of women worker on maternity leave is extremely high in Kyrgyzstan (17.2 percent) and this share rose by 1.3 percent in 1993.

²⁸ It is important to note that the employment change variable is based on total employment which includes workers on extended leave or reduced work schedules.

trading relations and thus that such firms would have been more likely to cut employment. Finally, we hypothesized that the percentage change in sales (in real terms) would have a strong influence on employment, because managers would respond to declining sales by lowering the level of employment.

Table 3. Regression Results for Percentage Employment Change, between December 1991 and March 1994

Independent variable	Standard model	Standard model + one indiv. variable ^a	Full model ^b
Industry			
Textiles	-4.104		-7.491
Non-met. minerals	-7.090		-6.743
Fabr. metals	-12.575		-14.778
Wood & paper	-17.120		-22.842
Other	-2.761		-4.628
Employment size			
Size 100-249	-39.799 ***		-41.028 ***
Size 250-999	-47.809 ***		-47.625 ***
Size 1000+	-50.294 ***		-48.122 ***
Employment structure			
%FEMALE92		0.082	
%MATERN92		-0.885 ***	-0.740 ***
%PENSION92		-0.253	
%YOUTH92		0.003	
%UNQUAL92		0.293	
%FACEEMP92		-0.230	
%SURLAB92		-0.504 ***	-0.388 *
Inputs/Outputs			
%CHSALE		0.163 *	0.140
%EXPORT92		0.153	
%BARTER92		0.386 ***	0.300 **
%IMPORT92		0.090	
Other			
YRSOP		0.202	
AVEARN92		0.234	
SUBLN92		8.942	
CHPFORM		-1.216	
Constant	22.774		39.855
F =	6.046		6.048
R ² =	0.18		0.25
N =	230		226

Notes: *** denotes significance at the 1% level (two-tailed test),

** at the 5% level and

* at the 10% level

^a In each case only the one explanatory variable is specified in addition to the industry and size variables.

^b Specification includes industry and size variables plus those indicated as being significant in column 3.

Source: KSIE, 1994.

Surprisingly, neither the share of inputs received from within the former Soviet Union nor the share of output exchanged within the former Soviet Union were significantly related to employment change. Thus, it seems that "import- or export-dependent" firms fared as badly as those that relied to a greater degree on domestic sources.

However, the percentage of output bartered in 1992 was significantly and positively related to employment change, implying that firms that bartered large shares of their output were better able to maintain employment than firms with lower barter shares. It seems that firms which bartered less had greater difficulties in exchanging their goods and, thus, in maintaining employment.

The percentage change in the value of sales had a significant coefficient (at the 10 percent level) when tested individually with our control variables (column 3), but not when included in our final regression model (column 4). These results are very striking and surprising, since they indicate that firms have not responded strongly to declines in sales by reducing employment. One possible contributing explanation is that our information on sales changes may be somewhat inaccurate.²⁹

Finally, five additional explanatory variables were tested for their influence on employment change. We expected that older firms would have cut employment more than younger firms given that their plants were generally more antiquated and less able to adapt to changing economic conditions. We presumed that firms with higher average earnings would have cut employment more given the increasing inability of firms to meet their wage bills. If a firm was subsidized we hypothesized that it would be better able to maintain employment and, finally, we were curious if changes in property form had any influence as we expected that firms with better prospects (and therefore less employment reduction) would be more likely to change their form of property.³⁰ Results shown in table 3 indicate that none of these variables were significant factors in explaining employment change. These are intriguing results, especially as they imply that average labour costs are not a major factor at the present time affecting employment and that the existence of subsidies or loans is not retarding needed employment change.³¹

In summary, it appears that the principal factor influencing employment change in Kyrgyzstan has been the employment size of the establishment. The smaller the enterprise, the less likely the firm was to reduce employment, especially if the firm had less than 100 workers. That the extent to which the enterprise relied on barter had a positive and significant relationship to employment is an intriguing result, suggesting that the often complicated barter arrangements used to sell products enabled enterprises to retain workers to a greater degree as compared to those firms relying more on cash sales. We were also surprised that reliance on markets outside of Kyrgyzstan was not significantly related to employment change, seemingly indicating that reliance on the domestic market was not a refuge in a period of wrenching downward change. The gender, age and occupational structure variables as well as average earnings were not significantly related to employment change. This indicates that there has not

²⁹ The accuracy of these data could be adversely affected by the high percentage of goods exchanged under barter arrangement (26.3 percent in 1993). While presumably, the information on sales includes the value of bartered goods, it is possible that management underestimated this value, perhaps for tax reporting reasons. This explanation is consistent with the fact that sales declined less than employment during the period 1992-93, -27.8 percent compared to -34.3 percent.

³⁰ In a separate regression, the ownership shares of (i) managers and (ii) workers were tested as explanatory variables and were not significantly related to employment change, indicating that firms with extensive ownership control by workers or managers were not less likely to cut employment compared to commercialized firms where these groups held lower shares of ownership.

³¹ The insignificant result concerning whether the enterprise received a subsidy or loan remained even when its value was specified (unreported regression).

been any major change in employment structures as yet. Finally, the significant negative coefficients for the percent of women workers on maternity leave and for percent of work weeks lost to extended unpaid leave or reduced working time along with the surprisingly small coefficient for sales change imply that the large employment decrease already experienced by Kyrgyz industry still has a long way to go.

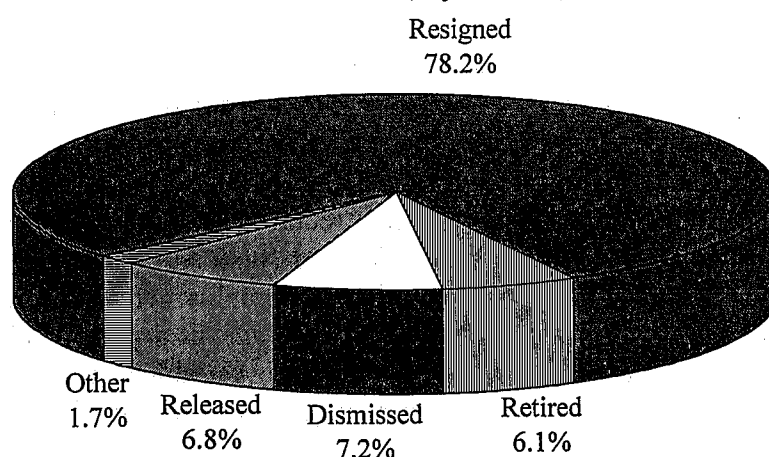
4.2 Labour Turnover and Recruitment

For both 1992 and 1993, managers were asked to indicate the method by which workers and employees left employment, whether through resignation, retirement, dismissal, retrenchment or other means. In this section, we examine the general pattern of reasons for employment departure, and in the following section we analyze other enterprise responses to labour surplus.

We suspected, in light of the initial management interviews at the outset of the KSIE, that retrenchment would form the bulk of all employment departures in manufacturing. The KSIE results, however, indicate that the vast majority of employment decline can be attributed to workers leaving employment voluntarily. Fully 78.2 percent of those who left employment in 1993 were said to have resigned voluntarily, 6.1 percent retired, 7.2 percent dismissed, 6.8 percent retrenched and 1.7 percent either drafted for the army or sent on a retraining course, placing them off the establishment's employment rolls (Figure 18)³².

There are numerous possible explanations for these results. Given the precarious situation of most industrial activity in Kyrgyzstan, and declining real wages and frequent work stoppages, we speculate that most workers "voted with their feet". That is, rather than waiting for dismissal or plant closure, workers sought employment opportunities elsewhere. Granted, such opportunities are limited in Kyrgyzstan, but the alternatives facing workers who remained in industrial employment were grim. Although eligible for unemployment compensation in case of retrenchment, such benefits are so low and last for such a short time that they provide little income security and few incentives for people to pursue a "wait and see" attitude.³³

Figure 18. Distribution of Leavers, by Reason, 1993



Source: KSIE, 1994.

³² There was only very little difference across industries, size categories and regions.

³³ For individuals having a work record equivalent to half of the length of service required for retirement eligibility, the unemployment benefit is 1.5 times the minimum wage for a 6-month period. All others are entitled to a six-month benefit equivalent to 110 percent of the minimum wage. The purchasing power of the minimum wage (58 Som per month in May 1994 or about US\$5) has been declining steadily so that by May 1994 it covered less than one-fifth of minimum subsistence requirements. See: J. Akeenyev, "The demographic situation and labour potential of the Kyrgyz Republic", ILO *Occasional Papers*, July 1994.

Indeed, in what are admittedly anecdotal cases, we were frequently told of friends or relatives who had quit their jobs to engage in small-scale trading at the bazaar or to ship goods to cities in Kazakhstan and Uzbekistan for sale there.

At the same time, considerable numbers of residents have left Kyrgyzstan for other republics of the former Soviet Union. While visiting Tokmak, the principal city of the Chu Valley region, we were told by most managers that emigration posed a serious problem for their enterprises. Many of the ethnic Russians and Germans leaving the country were skilled workers and managers were having great troubles in replacing them. In the city of Tokmak alone, total population had declined by 10 percent with most of that decline attributed to emigration.

In the KSIE, we asked managements whether they knew of workers who left the firm specifically to emigrate, and, if so, approximately what percentage of their workforce had left in 1993 for that reason. Over four out of five managers (82.8 percent) reported that they were aware of such cases in their enterprise, and for the Chu Valley region all but three managers knew of workers who had left the firm to emigrate. In the enterprises responding affirmatively to this question, the estimated share of the workforce leaving the firm in 1993 to emigrate was, on average, 8.3 percent. In the Chu Valley it was 11.3 percent compared to 6.9 percent and 6.2 percent in Bishkek and southern Kyrgyzstan, respectively. Thus, although it is difficult to provide an accurate assessment of the impact of emigration on industrial employment, surely a major share of those leaving voluntarily in 1993 left specifically for that reason.

In addition, 64.4 percent of respondents stated that skilled production workers were the occupational group most impacted by emigration. These results are particularly troublesome in that the loss of primarily highly-skilled workers represents a serious drain on the manufacturing sector's human resource base. The loss of such workers will require new efforts in training and retraining workers to fill these jobs.

Surprisingly, despite the enormous employment cuts, fully 60.2 percent of establishments recruited workers. The rate of recruitment in 1993 was approximately 8 percent, with larger firms and those in textiles manufacturing having a somewhat higher rate. Although on average the rate of recruitment appears not to have changed much between 1992 and 1993, firms in southern Kyrgyzstan appeared to do less recruiting, with the average rate falling from about 8 percent to 4 percent. Firms recruiting workers did have higher rates of voluntary labour turnover than those not recruiting, with the difference being statistically significant (standard t-test).³⁴

4.3 Policy Responses to Labour Surplus: Unpaid Leave, Reduced Work Schedule and Shift Work

In face of the tremendous employment declines described earlier, one might think that enterprises had sufficiently adjusted the size of their workforces to deal with falling demand. However, despite the dramatic decline in employment, managements were still confronted with conditions of high labour surplus and forced into a range of alternative actions to deal with the low demand for their goods. In this section, we review three of these alternative actions: (i) the practice of placing workers on extended leave (ii) reduced work schedule and (iii) reducing the number of weekly shifts — as a further indication of the extent of labour surplus in Kyrgyz industry.

³⁴ It is of interest to note that, of those firms reporting recruitment in 1993, on average only 7.6 percent of those recruited were hired with the assistance of employment service. In addition, when asked for the primary form of recruitment, only 13.1 percent of managers mentioned the employment service, with direct applications being by far the most common response (51.6 percent).

Placing workers on extended or administrative leave has been a common practice throughout the former Soviet Union during the transition process.³⁵ In Kyrgyzstan its use is pervasive. 68.9 percent of firms had placed workers on extended leave in 1993. On average, 39 percent of the firm's workforce was involved for approximately a two-month period. Widespread use of unpaid leaves may explain much of the voluntary labour turnover described in the preceding section. Rather than formally retrenching such workers, which requires severance pay and advance warning, managements may have resorted to extended leaves as an alternative to retrenchment. For workers in plants experiencing serious economic difficulty, such leave at least provide for continued access to a range of social benefits provided by enterprises, and time on leave counts towards social security length-of-service requirements. However, for many workers the likelihood of returning to productive, secure jobs may have seemed unlikely, and large numbers appear to have taken the cue from management to seek employment elsewhere.

There were marked differences among industrial, employment size and regional categories. Extended leaves appeared most common and for the longest period of time among non-metallic mineral firms.

Table 4. Use of Extended Leave and Estimated Reduction in Annual Full-time Work Weeks, by Industry, 1993

Industry	% of firms using extended leave	% of workforce on extended leave	Average length of leave (weeks)	% reduction in annual work weeks
Food processing	64.3	29.7	8.8	3.2
Textiles, etc.	62.1	53.8	7.4	4.7
Non-met. minerals	81.6	38.6	9.5	5.6
Fabr. metals	77.8	44.9	6.9	4.6
Wood & paper	57.9	18.2	5.7	2.5
Other	71.4	30.3	10.0	4.1
All	68.9	39.0	8.1	4.2

Note: On Tables 4, 5, 6 and 7 columns 3 and 4 refer only to those firms using leaves or reduced work schedules.

Source: KSIE, 1994.

Those in textiles, although among the least likely to use this form, on average placed over half of their workers on extended leave (Table 4). Although unpaid leave appeared on average shorter in very large firms, fully 93.1 percent of those with more than 1000 workers had used extended leaves in 1993 involving, on average, 45.4 percent of the workforce (Table 5).

³⁵ In a similar study conducted by the ILO in the Ukraine, 42.4 percent of the factories surveyed in 1994 had placed workers on administrative leave. See: Guy Standing, "Labour Market Dynamics in Ukrainian Industry in 1992-94", ILO-CEET, *Working Paper*, Budapest, 1994. Unpaid leave was also widely used in Kazakhstan. See: G. Sziraczki, "Emerging Labour Market Policy in Kazakhstan", *Labour Market Papers* No. 3, ILO, Geneva, 1995.

Table 5. Use of Extended Leave and Estimated Reduction in Annual Full-Time Work Weeks, by Employment Size and Region, 1993

	% of firms using extended leave	% of workforce on leave	Average length of leave (weeks)	% reduction in annual work weeks
Employment size				
<100	61.3	37.7	8.4	3.7
100-249	64.0	32.2	8.2	3.2
250-999	70.5	42.5	9.0	5.2
1000+	93.1	45.4	5.7	4.6
Region				
Bishkek	60.9	42.5	6.6	3.3
Chu Valley	75.9	38.6	7.7	4.3
Osh/Jalal-Abad	71.2	35.6	10.1	4.9

Source: KSIE, 1994.

Reducing the number of hours worked per week was a less common practice. Almost a quarter (23.4 percent) of the firms surveyed reduced weekly work hours in 1993. Generally, it seems that this was used as an alternative to extended leave, as only 21 percent of those reducing work hours also placed workers on extended leave. Work hour reductions were most common in the fabricated metals sector, where 37.8 percent of plants had implemented such a system (Table 6), and it was more common in larger firms (Table 7). In those firms reducing weekly hours, work schedules were reduced by 7.8 hours per week on average.

Another way in which enterprises may deal with conditions of labour surplus is by reducing the number of work shifts per week. Firms in the KSIE used this method extensively. 29.6 percent of firms reduced the number of work shifts between December 1992 and March 1994.

Table 6. Use of Reduced Work Schedules and Estimated Reduction in Annual Full-Time Work Weeks, by Industry, 1993

Industry	% of firms using extended leave	% of workforce involved	Average length (weeks)	Average reduction (hours/week)	% reduction in annual work weeks
Food processing	28.6	49.9	19.6	5.7	0.8
Textiles, etc.	17.2	70.0	17.5	6.2	0.6
Non-met. minerals	7.9	(63.3)	(25.6)	4.3	0.6
Fabr. metals	37.8	73.4	15.6	9.5	1.9
Wood & paper	15.8	(70.0)	(26.7)	6.0	0.8
Other	28.6	(80.0)	(22.5)	6.7	0.3
All	23.4	64.3	18.9	7.8	1.0

Note: In this and subsequent tables, figures in parentheses are based on fewer than 10 observations.
Source: KSIE, 1994.

Table 7: Use of Reduced Work Schedules and Estimated Reduction in Annual Full-time Work Weeks, by Employment Size and Region, 1993

Industry	% of firms with reduced schedules	% of workforce involved	Average length (weeks)	Average reduction (hours/week)	% reduction in annual work weeks
Employment size					
<100	12.9	71.9	19.9	7.9	0.7
100-249	18.7	58.2	12.5	7.1	0.8
250-999	34.6	69.4	22.7	8.1	2.1
1000+	27.6	50.4	16.6	8.0	0.9
Region					
Bishkek	21.7	73.4	20.6	8.1	1.2
Chu Valley	30.4	64.5	22.0	8.0	1.6
Osh/Jalal-Abad	17.8	50.1	10.7	7.7	0.3

Source: KSIE, 1994.

Those placing workers on extended leave in 1993 were more likely to have reduced the number of shifts (34.5 percent compared to 18.4 percent of firms not using extended leaves) and those reducing work schedules were also more likely to reduce the number of shifts (35.1 percent compared to 27.8 percent of those not reducing work schedules).

It is possible to estimate the percentage reduction in the total number of work weeks (full-time equivalent) in 1993 due to the placing of workers on administrative leave and reduced work schedules.³⁶ This provides us with an indication of one aspect of labour surplus — in the face of the ongoing employment cuts — in Kyrgyz industry (Table 8). Among all the firms in the KSIE, total labour inputs in 1993 had been reduced by 6.2 percent (5.2 percent through the placing of workers on extended leave and 1.0 percent through the use of reduced work schedules). Those in textile manufacturing and in the non-metallic minerals and fabricated metals sectors had the highest rates (6.8 percent and 8.4 percent). Medium-large firms (with 250-999 workers) had average rates of 7.4 percent.

Table 8. Estimated Labour Surplus Implied by Extended Leave and Reduced Work Schedules, by Industry, Employment Size and Region, 1993

Industry	% surplus
Food processing	4.0
Textiles, etc.	5.3
Non-met. minerals	6.2
Fabr. metals	6.5
Wood & paper	3.3
Other	4.4
All	5.3

Employment size	% surplus
<100	4.4
100-249	4.0
250-999	7.3
1000+	5.5

Region	% surplus
Bishkek	4.5
Chu Valley	5.9
Osh/Jalal-Abad	5.2

Source: KSIE, 1994.

³⁶ The simple assumption here is that these effects are additive.

Table 9. Reported Ability to Produce the Same Output with Fewer Workers, by Employment Size and Region, March 1994

	% responding "Yes"	% fewer workers
Employment size		
<100	17.7	19.0
100-249	36.0	20.8
250-999	30.8	22.6
1000+	31.0	21.5
Region		
Bishkek	21.7	22.8
Chu Valley	27.8	15.3
Osh/Jalal-Abad	39.7	24.0
All	29.1	26.1

Source: KSIE, 1994.

As shown in the earlier regression analysis, the degree to which firms placed workers on either extended leave or reduced work schedules was negatively associated with employment change, implying that firms using these forms had greater employment reductions. These results are consistent with the data presented earlier that the majority of employment change can be attributed to voluntary departures from employment. Thus, firms using extended leaves or reduced working schedules may have had higher reductions in employment partly because such practices encouraged "voluntary" departures.

In an additional effort to gauge the level of labour surplus among enterprises in Spring 1994, we asked managers whether they could produce the same level of output with fewer workers and, if so, by what percentage they could reduce their workforce to maintain current production levels. Roughly one-third (29.1 percent) said that they could maintain production and cut employment. On average, managers reported that they could reduce employment by 21.6 percent (Table 9 and Statistical Annex Table 17). At the same time, the estimated level of labour surplus, measured as the percent fewer workers managers felt they could do without while maintaining output was 8.2 percent, with some differences across industrial sector, size categories and regions (Table 10). These figures indicate that despite the dramatic declines in employment during 1992-94, Kyrgyz industry was operating in Spring 1994 with continued high levels of labour surplus.

4.4 Employment in "Social Asset" Facilities

Another characteristic of the industrial sector throughout the former Soviet Union was the high degree of enterprise-based systems of social support. Workers benefited from an array of social services connected to their employment, ranging from childcare facilities and schools to clinics and holiday facilities. Enterprises in Kyrgyzstan were already coming under increasing pressure to disinvest themselves of providing these assets during 1992-94, with, for example, many of their holiday facilities "temporarily" closed because of declining economic conditions. As economic transition continues, these pressures will intensify as firms look for ways of cost-cutting.

To help estimate the level of such benefits and whether there had been in change in their availability, we asked managers what type of facilities they offered in 1992 and 1993, and the number of workers employed in these facilities at both time periods.

Table 10. Estimated Labour Surplus Implied by Reported Ability to Produce Same Output with Fewer Workers, by Industry, Employment Size and Region, March 1994

Industry	% surplus	Employment size	% surplus
Food processing	4.1	<100	4.4
Textiles, etc.	7.3	100-249	6.7
Non-met. minerals	4.9	250-999	6.4
Fabr. metals	11.9	1000+	9.8
Wood & paper	6.6		
Other	14.5	Region	% surplus
All	8.2	Bishkek	7.7
		Chu Valley	4.3
		Osh/Jalal-Abad	13.1

Source: KSIE, 1994.

As Table 11 shows, worker transportation, housing, clinics, cafeterias and childcare facilities were commonly offered by establishments, with large firms offering a broad range of such benefits.

There was little difference between 1992 and 1993 in terms of whether or not a firm funded such a facility, but there was a marked decline in the number of workers employed in these facilities. Thus, facilities employment dropped by 12.6 percent, from 10,127 workers in 1992 to 8,841 in 1993. However, because of the greater declines in overall employment during this period, their share of total employment actually increased somewhat from 6.6 percent employment to 6.8 percent. We had expected that the declines in facilities employment would have been greater than the cuts made elsewhere, bringing about some internal adjustments in the distribution of employment. However, the evidence suggests that, for the most part, enterprises had not yet begun such internal restructuring.

A major policy objective for Kyrgyzstan is to enable enterprises to shed many of their social functions to improve productivity and competitiveness. However, a necessary step in this direction needs to be the transferring of social responsibilities to the state sector. Given the serious budget crisis facing the government, this seems difficult in the near future.

Table 11: "Social Asset" Facilities, by Employment Size, December 1993

Social asset facility	Employment size (% with facility)				
	<100	100-249	250-999	1000+	All
Childcare	6.5	9.3	37.2	75.9	25.4
School	—	—	1.3	13.8	2.0
Clinic	6.5	24.0	47.4	82.8	34.0
Cafeteria	12.9	22.7	44.9	65.5	32.4
Holiday resort	—	—	11.5	62.1	11.1
Housing	12.9	20.0	48.7	86.2	35.2
Worker transport	25.8	41.3	55.1	86.2	47.1
Farm plots	8.1	17.3	33.3	62.1	25.4
Employment in facilities (% total employment)	2.8	3.2	5.0	8.8	6.8

Source: KSIE, 1994.

5. Concluding Remarks

In a transition economy, one can identify three phases in the process of employment restructuring. In the first phase, high labour turnover permits employment cuts to be made through non-replacements. In the second phase, management resorts increasingly to prolonged periods of unpaid leave, reduced work schedules and other "holding" measures. The third phase, which usually accompanies massive restructuring, is characterized by plant closures and further high rates of retrenchment. By the Spring of 1994, Kyrgyz industry appears to have moved well into the second phase of employment restructuring. Considering the enormous employment cuts already made, the prospect of further declines seems necessary but disheartening.

In any rapidly changing situation, a survey such as the KSIE provides an historical perspective rather quickly. Since the KSIE was conducted in May-June 1994, conditions in the industrial sector have continued to worsen. Many enterprises are on the brink of closure, and the threat of social unrest is mounting. Although there has been considerable "downsizing" of establishments as indicated by data from the KSIE, there is little evidence of the more positive elements of employment restructuring such as small firm growth and a reorientation towards new export markets. Also, managers in the KSIE suggest that further employment cuts are inevitable.

One of the promising results of the KSIE is that small firms did comparatively well during this difficult period of transition. Since small start-up ventures in manufacturing are one important means of employment creation, the government must ensure an economic environment conducive to such ventures. Firms in the food sector also performed comparatively well, another area of employment creation that bodes well for Kyrgyzstan. Services, traditionally underdeveloped in all the transition economies, undoubtedly also will provide another major avenue for expansion of employment.

The shock of moving to a market-oriented society has brought great adversity to Kyrgyzstan but has also opened a path to a more productive utilization of its human, physical and natural resources. In this paper we have outlined the general characteristics and dimensions of employment change, and the immense impact on those working in the industrial sector.

Appendix: Definition of Independent Variables for Regressions

The definitions for all the independent variables used in the regression analysis are given below. Note that the omitted class for industry variables is food — which implies that the estimated coefficients represent differences from the food sector. Also note that the omitted size category is fewer than 100 workers, implying that the estimated coefficients for the employment size binaries represent differences from small firms.

TEXTILE, NONMET, FABMET,

WOOD, OTHER = a set of binaries (0 = No, 1 = Yes) for industrial sectors, in which the omitted category is food processing;

SIZE2, SIZE3, SIZE = a set of binaries for the employment size of the establishment in 1991 (0 = No, 1 = Yes) in which the omitted category was less than 100 workers;

%FEMALE92 = the percent of women in the establishment's workforce in December 1992;

%MATERN92 = the percent of women in the establishment on maternity leave in December 1992;

%PENSION92 = the percent of the establishment's workforce composed of pension-age workers in December 1992;

%YOUTH92 = the percent of the establishment's workforce aged 25 and under in December 1992;

%UNQUAL92 = the percent of the establishments workforce in unqualified job categories in December 1992;

%FACEMP92 = the percent of the establishment's workforce employed in "social asset" facilities in December 1992 (childcare, cafeteria, etc.);

%SURLAB93 = the percent of full-time work weeks lost in 1993 due to the placing of workers on extended leave or reduced work schedules;

%CHSALE = the percentage change in sales between 1992 and 1993 in real terms;

%EXPORT92 = the percentage of the establishment's output exchanged within the former Soviet Union in 1992;

%BARTER92 = the percentage of the establishment's output bartered in 1992;

%IMPORT92 = the percentage of the establishment's inputs obtained from the within the former Soviet Union in 1992;

YRSO = the number of years the firm had been in operation;

AVEARN92 = the average earnings in the establishment in December 1992;

SUBLN92 = a binary variable with 1 indicating that the firm received a subsidy or loan in 1992 and 0 indicating that it had not;

CHPFORM = a binary variable with 1 indicating that the establishment changed its form of property in 1992-94 and 0 that it had not.

Statistical Annex

Table 1. Percent Distribution of Establishments, by Employment Size and Industry, December 1991

Industry	Employment size category 1991				Mean employment size	% of total employment
	<100	100-249	250-999	1000+		
Food processing	17.6	33.8	44.1	4.4	349	14.2
Textiles, etc.	12.0	22.0	38.0	28.0	932	31.4
Non-met. minerals	8.1	29.7	54.1	8.1	479	10.6
Fabr. metals	9.3	14.0	30.2	46.5	1386	36.2
Wood & paper	27.8	44.4	22.2	5.6	258	2.8
Other	7.1	57.1	21.4	14.3	593	4.8
All	13.5	29.1	38.7	18.7	706	100.0

Source: KSIE, 1994.

Table 2. Percent Distribution of Establishments, by Property Form and Industry, March 1994

Industry	Property form		
	State	Joint stock	Other non-state
Food processing	45.7	41.4	12.9
Textiles, etc.	20.7	60.3	19.0
Non-met. minerals	34.2	47.4	18.4
Fabricated metals	28.9	62.2	8.9
Wood & paper	47.4	47.4	5.3
Other	71.4	14.3	14.3
All	36.5	49.6	13.9

Source: KSIE, 1994.

Table 3. Percent Distribution of Establishment, by Employment Size and Property Form, March 1994

Employment size	Property form		
	State	Joint stock	Other non-state
<100	38.7	30.6	30.6
100-249	36.0	49.3	14.7
250-999	35.9	59.0	5.1
1000+	34.5	65.5	—

Source: KSIE, 1994.

Table 4. Percent Distribution of Ownership Shares in Joint Stock Firms, by Employment Size, 1994

Ownership group	Percent distribution of shares by employment size				
	<100	100-249	250-999	1000+	All
Management	24.5	17.6	13.0	14.0	16.5
Prof./Tech.	11.8	13.2	8.5	14.5	11.7
Workers	30.5	29.7	30.2	25.8	29.4
State	24.1	37.3	41.4	36.2	36.5
Private individuals	0.0	0.1	1.4	2.5	1.0
Foreign	0.0	2.2	0.5	0.0	0.3
Parent enterprise	9.1	1.8	4.0	7.1	4.6
All shares	100.0	100.0	100.0	100.0	100.0

Source: KSIE, 1994.

Table 5. Main Business-environment Problem in 1993, by Industry (Percent of Establishments)

Industry	Main business-environment problem						
	Raw mat. and other inputs	Low demand	Taxes	Inflation	Investment capital	Banking system	Other
Food processing	57.1	12.9	1.4	1.4	20.0	5.7	1.4
Textiles, etc.	36.1	17.2	10.3	3.4	13.8	13.8	3.4
Non-met. minerals	26.3	31.6	—	—	18.4	15.8	7.9
Fabr. metals	31.1	22.2	4.4	2.2	20.0	11.1	8.9
Wood & paper	63.2	15.8	10.5	5.3	5.3	—	—
Other	42.9	21.4	14.3	21.4	21.4	—	—
All	42.2	19.7	5.3	2.0	17.1	9.4	4.3

Source: KSIE, 1994.

Table 6. Source of Production Inputs, 1993, by Industry (Percentage Share, Weighted by Total Sales 1993)

Industry	Source of inputs (% of total inputs)		
	Domestic	CIS	Non-CIS
Food processing	79.3	17.7	2.8
Textiles, etc.	69.4	29.2	1.3
Non-met. minerals	44.0	54.9	1.0
Fabr. metals	55.1	45.9	0.0
Wood & paper	40.4	58.1	1.5
Other	76.6	23.4	0.0
All	66.3	32.3	1.4

Source: KSIE, 1994.

Table 7. Source of Production Inputs, 1993, by Employment Size and Region (Percentage Share, Weighted by Total Sales 1993)

Industry	Source of inputs (% of total inputs)		
	Domestic	CIS	Non-CIS
Employment Size			
<100	85.1	14.9	0.0
100-249	80.1	18.2	1.7
250-999	73.9	23.1	2.9
1000+	58.6	40.9	0.5
Region			
Bishkek	66.2	32.9	0.9
Chu Valley	62.7	35.7	1.5
Osh/Jalal-Abad	73.3	24.0	2.6

Source: KSIE, 1994.

Table 8. Change in Percentage Share of Input Source, by Industry, 1992 to 1993 (Unweighted Change)

Industry	Change in % share of input source		
	Domestic	CIS	Non-CIS
Food processing	-1.0	-0.9	2.0
Textiles, etc.	2.8	-3.3	0.5
Non-met. minerals	4.7	-4.1	-0.6
Fabr. metals	-0.1	0.1	0.0
Wood & paper	0.9	-1.0	0.1
Other	12.5	-12.5	0.0
All	1.8	-2.4	0.6

Source: KSIE, 1994.

Table 9. Change in Percentage Share of Input Source, by Employment Size and Region, 1992 to 1993 (Unweighted Change)

Industry	Change in % share of input source		
	Domestic	CIS	Non-CIS
Employment size			
<100	4.4	-4.4	0.0
100-249	0.0	-0.3	0.3
250-999	1.3	-2.7	1.4
1000+	3.0	-3.2	0.2
Region			
Bishkek	4.2	-4.0	-0.2
Chu Valley	1.1	-1.7	0.6
Osh/Jalal-Abad	-0.1	-1.2	1.4

Source: KSIE, 1994.

Table 10. Value of Sales in March 1994, Compared to December 1991

Industry	Value of sales				
	Rose	Fell	No change	Total	% change*
Food	11.4	84.3	4.3	100.0	-34.3
Textiles, etc.	19.0	69.0	12.0	100.0	-18.9
Non-met. minerals	10.5	86.9	2.6	100.0	-34.1
Fabr. metals	8.9	88.9	2.2	100.0	-29.6
Wood & paper	21.1	73.6	5.3	100.0	-29.1
Other	14.3	78.6	7.1	100.0	-49.5
All	13.5	80.8	5.7	100.0	-27.8

* Estimate, figures weighted by value of sales 1993

Source: KSIE, 1994.

Table 11. Value of Sales in March 1994, Compared to December 1991, by Employment Size and Region (Percent Distribution of Establishments within Value of Sales Category and Percentage Change of Sales)

	Value of sales				
	Rose	Fell	No change	Total	% change
Employment size					
<100	19.4	74.2	6.4	100.0	-34.5
100-249	14.7	82.7	2.6	100.0	-38.3
250-999	11.5	82.1	6.4	100.0	-28.6
1000+	3.4	86.2	10.4	100.0	-27.8
Region					
Bishkek	7.6	88.0	4.3	100.0	-33.1
Chu Valley	10.1	84.8	5.1	100.0	-23.0
Osh/Jalal-Abad	24.7	67.1	8.2	100.0	-17.7

Source: KSIE, 1994.

Table 12. Percentage Distribution of Output, 1993, by Industry (Weighted)

Industry	Percentage distribution of output			
	Domestic	CIS	Non-CIS	Unsold
Food	68.1	24.0	1.6	6.3
Textiles	45.1	40.5	1.5	13.1
Non-met. minerals	58.0	30.1	5.1	6.9
Fabr. metals	50.7	28.8	0.6	19.8
Wood & paper	77.1	13.7	1.0	8.2
Other	49.4	18.6	0.0	31.9
All firms	55.0	30.7	1.4	13.0

Source: KSIE, 1994.

Table 13. Percentage Distribution of Output, 1993, by Employment Size and Region (Weighted)

	Percentage distribution of output			
	Domestic	CIS	Non-CIS	Unsold
Employment size				
<100	76.5	9.4	0.3	13.7
100-249	70.0	12.9	0.1	17.2
250-999	66.8	24.0	1.0	8.3
1000+	44.4	38.8	1.9	14.9
Region				
Bishkek	60.5	24.9	0.6	13.9
Chu Valley	58.6	34.5	3.6	13.3
Osh/Jalal-Abad	42.4	41.9	0.1	9.3

Source: KSIE, 1994.

Table 14. Percentage of Output Bartered, December 1992 to March 1994, by Industry and Region (Weighted by Value of Sales)

	Percentage of output bartered		
	1992	1993	1-3/1994
Industry			
Food	14.5	22.2	29.2
Textiles	15.7	29.2	37.6
Non-met. minerals	3.9	17.1	33.1
Fabr. metals	9.8	32.7	38.9
Wood & paper	19.0	28.2	37.1
Other	2.0	5.8	2.2
All firms	12.6	26.3	33.9
Region			
Bishkek	8.6	26.2	32.2
Chu Valley	16.8	24.6	32.0
Osh/Jalal-Abad	17.3	29.9	42.6

Source: KSIE, 1994.

Table 15. Level of Capacity Utilization, December 1991 to March 1994, by Employment Size and Region

	Capacity utilization (%)			
	12/1991	12/1992	12/1993	3/1994
Employment size				
<100	67.8	68.8	55.8	45.4
100-249	80.1	67.7	48.2	38.0
250-999	81.8	72.9	53.6	42.0
1000+	84.6	76.9	60.0	49.6
Region				
Bishkek	75.5	71.6	56.4	44.9
Chu Valley	83.7	70.9	50.8	38.4
Osh/Jalal-Abad	75.2	68.7	51.9	44.2

Source: KSIE, 1994.

Table 16. Percentage Change in Employment, from December 1991 to March 1994, by Industry

Industry	Percent employment change				Mean employ- ment size 12/1991	Mean employ- ment size 3/1994	% of +Total employ- ment 12/1991	% of +Total employ- ment 3/1994
	Fell 50+	Fell 25-49	Fell 1-24	Rose				
Food processing	11.8	26.5	38.2	23.5	349	306	14.2	18.5
Textiles, etc.	14.0	36.0	34.0	16.0	932	671	31.4	33.6
Non-met. minerals	27.0	37.8	18.9	16.2	479	315	10.6	10.3
Fabr. metals	32.6	51.2	9.3	7.0	1386	760	36.2	29.5
Wood & paper	16.7	44.4	16.7	22.2	258	190	2.8	3.1
Other	7.1	50.0	21.4	21.4	593	410	4.8	5.0
All	18.7	37.8	26.1	17.4	706	475	100.0	100.0

Source: KSIE, 1994.

Table 17. Reported Percent of Firms that Could Produce the Same Output with Fewer Workers, and Percent Fewer, by Industry, March 1994

Industry	% responding "Yes"	% fewer workers
Food	31.4	19.3
Textiles	19.0	23.5
Non-met. minerals	34.2	17.0
Fabr. metals	31.1	23.9
Wood & paper	26.3	11.8
Other	42.9	18.6
All firms	29.1	21.6

Source: KSIE, 1994.