

Rapid Labor Reallocation with a Stagnant Unemployment Pool

The Puzzle of the Labor Market in Lithuania

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Abstract

Lithuania is a transition economy undergoing rapid enterprise restructuring associated with substantial job turnover. At the same time, unemployment in Lithuania is high and of long duration. This presents a puzzle: high job turnover epitomizes labor market flexibility, while high unemployment indicates labor market rigidities. What are the reasons behind this paradox? Why do the unemployed not benefit from job opportunities created by high job turnover, which entails high rates of job creation and hiring?

To answer this question, Rutkowski looks at three perspectives on labor market flexibility:

- The macroeconomic perspective—A flexible labor market is one that facilitates full use and efficient allocation of labor resources.
- The worker perspective—A flexible labor market means ease in finding a job paying a wage adequate to the worker's effort and skills.
- The employer perspective—A flexible labor market does not unduly constrain the employer's ability to adjust employment and wages to changing market conditions.

Rutkowski looks at all three dimensions of labor market flexibility by analyzing job reallocation, worker transitions across labor force states, wage distribution, and regulatory constraints faced by employers. He focuses on the issue of job creation and job destruction, using micro level data on all registered firms. He finds that flexibility in one dimension can concur with rigidities in the other. Specifically, employers in Lithuania have a substantial degree of flexibility with employment adjustment coupled with limited flexibility to wage adjustment due to a high statutory minimum wage. The relatively rigid wage structure locks low productivity workers who are preponderant among the unemployed. The low-skilled long-term unemployed have become marginalized and unable to successfully compete for available jobs, while the high job turnover is accounted for largely by job-to-job transitions. As a result, a dynamic labor market coincides with a stagnant unemployment pool.

This paper—a product of the Human Development Sector Unit, Europe and Central Asia Region—is part of a larger effort in the region to examine labor market performance and its contribution to economic growth and poverty reduction. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jan Rutkowski, room H7-170, telephone 202-458-4569, fax 202-477-3387, email address jrutkowski@worldbank.org. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. January 2003. (82 pages)

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CONTENTS

Introduction	1
I. The Concept of Labor Market Flexibility	2
II. Macroeconomic Perspective: Restructuring with Underutilization of Labor Resources	5
Key Trends and Outcomes	5
Job Creation and Job Destruction	11
High Job Turnover	12
Persistence of High Job Reallocation	14
The Pattern of Job Turnover	15
The Role of Employer Characteristics	16
Firm size	16
Wage level	17
Industry	19
Market concentration	23
Region	25
Determinants of Job Creation	27
Job Turnover and Unemployment	39
III. Worker Perspective: Long Job Search Duration	41
Labor Flows	42
The Skills Gap	49
Job Security	52
Earnings Inequality	57
IV. Employer Perspective: Constraints to Employment and Wage Adjustments	62
Constraints To Employment Adjustment	63
Constraints To Wage Adjustment	65
Are the Constraints Binding?	66
Policy Recommendations	69
V. Summary and Conclusions	70
Main Issues	70
Macroeconomic Perspective	70
Worker Perspective	72
Employer Perspective	73
Policy Implications	74
References	76
Annex 1 Description of the Survey of Employment and Wages	78
Annex 2 Indicators of Employment Protection in Lithuania and Selected Transition Economies (as of 2001)	80

INTRODUCTION

The labor market in Lithuania is characterized, on the one hand, by high unemployment and high job flows, and by a high job creation rate, on the other. The former points out labor market rigidities, the latter indicates labor market dynamics. This paper looks at this puzzle with the objective of assessing the degree of labor market flexibility in Lithuania, given the advanced stage of economic transition (in the early 2000s).

The issue of labor market flexibility is particularly important for Lithuania since operating a currency board it cannot use monetary and exchange rate policy to accommodate external adverse shocks (such as the 1998 Russia crisis). Similarly, the imminent EU accession will constitute a shock to the economy, which will put a considerable strain on the labor market. This calls for substantial labor market flexibility to minimize the costs of adjustment. In this context, is the Lithuanian labor market flexible enough to facilitate economic restructuring associated with the EU accession and subsequent integration?

We find that there is a substantial degree of flexibility in terms of employment adjustment, but there is less flexibility in terms of wage adjustment. This implies a fast pace of enterprise restructuring, productivity gains and eventually economic growth. At the same time this implies that the growth in output does not translate in the growth of employment, and a large pool of low-productivity workers are locked out of employment due to wage rigidities.

The paper is organized as follows. Part I introduces the concept of labor market flexibility. Part II looks at labor market flexibility from a macro-economic perspective. Part III examines flexibility from the worker's point of view focusing on job security, earnings inequalities, and chances and costs of finding new employment. Part IV deals with institutional and regulatory constraints to employment and wage adjustment faced by the employer. Part V concludes.

I. THE CONCEPT OF LABOR MARKET FLEXIBILITY

In general, labor market flexibility means the ability of the labor market to adjust swiftly to changing economic conditions, in particular, the ability to absorb various external “shocks” hitting the economy. How can one gauge whether or not the labor market is flexible? There is no single criterion of labor market flexibility, as flexibility is a multi-dimensional phenomenon. One can distinguish there dimensions or perspectives on labor market flexibility: macroeconomic perspective, employers perspective and workers perspective. All three perspectives are inter-related and to some extent may overlap. For example, flexibility at the micro level—the level of an enterprise—translates into flexibility of an economy as a whole. Also, wage dispersion is another issue which is relevant for all three perspectives. Thus, one should bear in mind that this categorization is conventional, but at the same time each dimension can be characterized by some separate criteria.

From the **macroeconomic perspective** a flexible labor market gives rise to full utilization and efficient allocation of labor resources. This entails high labor force participation, low unemployment, and labor mobility resulting in an efficient structure (industrial, occupational, regional, etc.) of employment. The prerequisite of the latter is a process known as “creative destruction”, that is reallocation of jobs from the declining firms and industries to the expanding ones.

From the **worker perspective** a flexible labor market means an ease in finding a gainful employment. This entails availability of information on job opportunities, low mobility costs (including regional mobility and the acquisition of new skills necessary for occupational mobility), and a short duration of job search resulting in a satisfactory worker-job match. Although in a flexible labor market the probability of job loss is relatively high, the costs of joblessness are relatively low, as unemployment spells tend to be of short duration and there are high chances of finding a new job.

From the **employer perspective**, a flexible labor market does not unduly constrain the employer’s ability to adjust the size and the composition of their workforce as well as wages to changes in product demand.

Employers and workers would probably agree whether or not the labor market is flexible, but they could disagree on the assessment of labor market flexibility. While employers would probably unambiguously prefer more flexible labor markets, some workers—especially the insiders, i.e., those with secure jobs—may prefer higher degree of employment protection. However, those workers who are unemployed—the outsiders—could prefer to look for jobs in a dynamic labor market, where their chances of finding work are better, and unemployment spells are shorter.

From the view point of macroeconomic performance flexible labor markets tend deliver better outcomes. This point was forcefully made in the influential OECD Jobs Study (1994), and since then has been further supported by additional empirical evidence. For example, Boeri et al. (2000) found that countries with tight employment protection legislation tend to have lower employment rates. Garibaldi and Mauro (1999) provide evidence that flexible employment protection legislation is associated with high job creation. Di Tella and McCulloch (1998) show, based on the assessment of labor market flexibility by employers, that a more flexible labor market leads to lower unemployment rates and to a lower proportion of long-term unemployed in the unemployment pool. Moreover, rigid labor markets produce “jobless recoveries,” introduce unemployment persistence, and reduce the country’s vulnerability to external shocks. Recent work by Blanchard (2000) and Bertola et al. (2001) provides further theoretical and empirical support to the proposition that flexible labor market institutions reduce unemployment, particularly of long-term nature. This is thanks to greater wage flexibility and higher labor turnover associated with less regulated labor markets. Accordingly, it is real and relative wages, rather than employment, that bear the brunt of adjustment to adverse shocks. In addition, high labor turnover decreases the average time a worker spends in unemployment. Thus, flexible labor-market institutions positively influence the speed at which an economy can return to its equilibrium rate of unemployment following a negative shock. By contrast, it takes a regulated labor market much longer to get back to its equilibrium unemployment rate after a shock.

Measuring labor market flexibility is not easy for three reasons. First, there is no single indicator that would capture all dimensions of flexibility. As a result, different measures of flexibility usually produce different and sometimes inconsistent results,

which may create ambiguity and in some cases makes a definite assessment of labor market flexibility difficult. Second, existing partial indicators (such as various indices of the strictness of employment protection legislation) are imperfect proxies for the phenomena they intend to measure. This implies that the assessment of flexibility is of an approximate character and can be inaccurate. Third, quality of data used to construct an indicator can be poor. For example, job turnover can be deemed a good indicator of labor market dynamics, however available data sets tend to be flawed and not comparable across countries. This means that there is no reliable yardstick and the measures of flexibility are subject to a possibly wide margin of error.

With all these caveats in mind, this study relies on a series of widely used indicators of labor market flexibility relating to its various aspects. Specifically, in assessing the macroeconomic dimension of labor market flexibility we will utilize aggregate indicators of labor supply and job reallocation. From the workers' perspective we will examine labor market dynamics by analyzing labor flows and determining the risk of losing a job and chances to find a new one. In this part of the paper we will also address the issue of wage inequality. Finally, we will look at labor market flexibility from the employers' point of view by analyzing existing regulations governing employment and wage protection. However, we will use the results of earlier "macroeconomic" analysis to see if legal constraints on flexibility are actually binding. As already mentioned, all three perspectives are interrelated and to some extent overlap. Thus, in the concluding section we will try to give a summary assessment of labor market flexibility in Lithuania.

II. MACROECONOMIC PERSPECTIVE: RESTRUCTURING WITH UNDERUTILIZATION OF LABOR RESOURCES

This section presents the major labor market developments in Lithuania from the mid 1990s until present, and assess the labor market performance from a macroeconomic perspective. First, the evolution of main labor market variables (employment, wages and productivity) is described, and various measures of the utilization of labor resources are presented. Next, we turn to the analysis of job creation and job destruction, which is the focus of this section. By looking at job reallocation we aim at determining the degree of labor market flexibility and dynamics in Lithuania.

The findings suggest that the labor market in Lithuania tends to be slack, as witnessed by low utilization levels of labor resources, and that the economy has been undergoing far reaching restructuring associated with a high rate of job reallocation, which points to substantial labor market flexibility.

Key Trends and Outcomes

Labor market developments—the trends in employment and wages—are to a large extent influenced by the overall level of economic activity and the aggregate demand, as measured by GDP. This reflects the fact that labor demand is derived from product demand (i.e., is determined by consumers' demands for final goods and services).

Since 1996 the GDP growth in Lithuania has been positive, with the exception of 1999 when GDP fell in the wake of the Russian crisis. Overall, GDP is currently some 20 percent higher than in 1995. However, this positive output trend has not translated into employment growth, and employment is currently slightly (2 percent) below that reported in 1995 (Table 1). This phenomenon, called “jobless growth”, is not specific to Lithuania, instead is typical of most transition economies of Central and Eastern Europe (CEE). The *prima facie* reason for economic growth not coupled with employment growth is productivity improvements. Indeed, as Table 1 documents, growth in labor productivity (measured as GDP per worker) has been quite strong since 1996, averaging 3.6 percent per year. Thus, economic growth in Lithuania has been achieved through more efficient utilization of labor resources rather than through an increased use of labor

inputs. A deeper reason for the jobless growth in transition economies in general and in Lithuania in particular, is the process of overcoming the legacy of overmanning, inherited from the communist past. Many companies entered the transition with employment above that justified by production requirements. A growing exposure to domestic and international competition coupled the influx of new and more capital intensive technologies has led companies to rationalize employment and shed labor. This process has been spread over time. Although (as we will show later) the destruction of unproductive jobs has been coupled with the creation of new and more productive jobs, job losses have exceeded job gains, leading to a net fall in employment.

Table 1 Dynamics of GDP, Employment, Productivity and Wages, (1995=100)

	1996	1997	1998	1999	2000	Average annual rate of growth (1995-2000), %
GDP growth	105	112	118	113	118	3.3
Employment growth	101	102	101	100	96	-0.7
Productivity growth	104	111	117	113	122	4.1
Real wage growth	103	119	136	143	144	7.6

Note: Real wage growth is based on gross earnings.

Source: Statistics Lithuania, Bank staff calculations.

In the long-run, productivity improvements can be conducive to employment growth as *ceteris paribus* they imply a decrease in unit labor costs and thus an increase labor demand.¹ However, this potentially positive effect hinges on the development of wages. If wages grow faster than productivity, unit labor cost increases with detrimental effects on labor demand. That is what is happening in Lithuania. Since 1996 real wages have grown by 7.6 percent per year, outpacing labor productivity growth by a large margin. This implies an increase in labor costs and may have contributed to jobless growth. So far, the benefits of economic growth that has occurred since 1996 have materialized in the form of higher wages rather than higher employment.

¹ A relevant measure is so called total factor productivity (tfp), which reflects technological progress, however estimating tfp would go beyond the scope of this paper.

The lack of employment growth is only one sign of labor market problems in Lithuania and in fact, there are more severe ones. The labor market slack has been substantial and labor supply has declined. Specifically, the unemployment rate peaked at 17 percent, and after some temporary decline in 1997-1999 is on the rise again. A more general measure of labor market conditions, the ratio of employment to working age population (the employment rate), has deteriorated substantially (a 4 percentage points decline) over the period 1995-2000 (Table 2). The labor force participation rate has declined even more (by over 6 percentage points). In addition, unemployment tends to be of long duration as over 50 percent of the unemployed have been jobless for more than a year.

Table 2 Labor Force, 1995-2000

	1995	1996	1997	1998	1999	2000
	%					
Labor force participation rate	66.9	65.4	61.5	61.7	61.9	60.4
Employment rate	55.2	54.6	52.8	53.5	53.2	51.2
Unemployment rate	17.1	16.4	14.1	13.3	14.1	15.4
Share of long-term unemployed	..	..	..	55	38.7	52.3

Definitions: Labor force participation rate = labor force/population aged 14 or more ratio.

Employment rate = employment/population aged 14 or more ratio.

Unemployment rate = unemployment/labor force ratio.

Labor force = employment plus unemployment.

Source: *Labor force, employment and unemployment 1997-2000 (Labor force survey results)*, Statistics Lithuania, Vilnius 2001.

These negative trends over recent years have led to a significant underemployment of labor resources. The Lithuanian employment rate—a summary measure of the degree of utilization of labor resources—is much below the OECD average.² While only 57 percent of persons of working age are employed in Lithuania, the OECD average employment rate is 66 percent (Table 3). This means that about 9 percent of working-age persons in Lithuania who could have been employed are not, and are either unemployed or out of the labor force. This is a considerable social loss, which translates into lower than potential GDP.

² The employment rate is the ratio of employment to working age population, where in line with OECD practice, the working age is taken as 15 to 64.

Table 3 Unemployment, Labor Force Participation and Employment Rates by Age and Gender (%)

	All workers				Men			Women		
	15 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64
Lithuania (May 2001)										
Unemployment rate	17.2	32.7	15.7	12.3	36.0	17.5	16.1	27.6	13.8	7.7
Labor force participation rate	68.7	31.4	87.2	23.3	37.5	90.3	33.6	25.2	84.2	16.9
Employment rate	56.8	21.2	73.5	20.4	24.0	74.5	28.2	18.2	72.5	15.6
OECD (1999)										
Unemployment rate	6.4	11.8	5.4	5.2	11.7	4.9	5.6	11.9	6.1	4.6
Labor force participation rate	70.4	53.0	80.3	51.6	57.8	93.0	64.5	48.0	67.8	39.4
Employment rate	65.9	46.7	75.9	48.9	51.1	88.5	60.8	42.3	63.6	37.6

Source: Lithuania: Labor Force Survey, May 2001; Bank staff calculations.

OECD: Employment Outlook, 2000.

Apart from high overall unemployment, two factors contribute to the low employment rate in Lithuania. The first is low labor force participation among young workers (aged 15 to 24). The second factor is low labor force participation among older workers (aged 55 to 64). For example, the Lithuanian labor force participation rate for young workers is 21 percent against the 47 percent OECD average. Similarly, labor force participation rate for older workers is 20 percent against the 49 percent OECD average. In addition, for both those worker groups unemployment rates in Lithuania are much higher than in the OECD. In contrast, the employment rate for prime age workers is similar to the OECD average (74 percent against 76 percent). However, behind this similarity there are significant differences in employment by gender. In Lithuania the employment rate for prime-age men is significantly lower than the OECD average (75 percent against 89 percent), while the employment rate for women is substantially above the average (73 percent against 64 percent). The low employment rate for prime age men is the result of the high relative unemployment rate (17.5 percent), rather than low labor force participation rate.

The above data suggests that there is substantial room to increase labor supply in Lithuania. This includes higher labor force participation by young and older workers, whose productive potential is not fully utilized. It should be stressed, that the increase in labor supply does not entail an increase in unemployment (as the decrease in labor supply does not imply the decrease in unemployment). In general, employment growth is in line with the growth of the labor force, and thus the number of jobs is not fixed—contrary to the common “lump of labor” fallacy (Krueger and Pischke, 1997). More effective labor supply is one way to raise a country’s GDP. Admittedly however, labor supply is inversely related to the degree of slack in the labor market, and in particular to unemployment rate (through the so called “discouraged worker” effect).

Another aspect of overall labor market performance is regional variations in unemployment. High regional dispersion of unemployment rates points to a structural dimension of unemployment and to barriers to labor mobility. Apparently, these problems are not pronounced in Lithuania. There is noticeably little variation in unemployment rates across the ten major administrative regions (Table 4). The highest unemployment rate of 18.4 percent was observed in 2000 in the Siauliai region while the

lowest rates were observed in the Utena (13.6 percent) and Taurage (13.7) regions. By all standards the spread is very limited. There is probably more variation at lower territorial levels, but given the small size of the country it is questionable whether they form separate labor markets. In this context, improved labor mobility seems to be of limited importance as an equilibrating mechanism. While higher geographical labor mobility could be still desirable for better allocation of labor, it cannot be expected to significantly lower unemployment. In other words, even if labor mobility is low, it does not seem to be an important source of labor market rigidities in Lithuania.

Table 4 Unemployment Rate by Region, 2000

Region	Unemployment rate
	%
National average	15.4
Alytus	16.3
Kaunas	15.0
Klaipeda	14.4
Marijampole	15.5
Panavezys	14.6
Siauliai	18.4
Taurage	13.7
Telsiai	14.0
Utena	13.6
Vilnius	15.7

Source Labor force, employment and unemployment (survey data) 1997-2000, Statistics Lithuania, Vilnius 2001.

Overall, the central labor market problem in Lithuania is the low level of utilization of labor resources, which means that the output level is lower than potential. Unemployment is high and of long-duration, and labor force participation is low, especially among young and older workers. As a result, the overall employment rate is low by OECD standards. Despite economic growth which Lithuania has enjoyed since the mid 1990s, the labor market slack has not diminished. One possible reason is a strong increase in real wages, which has far outpaced productivity growth, thus leading to an increase in labor costs.

Job Creation and Job Destruction

The purpose analyzing the issue of job creation and job destruction is to determine how flexible is the labor market in Lithuania from the viewpoint of allocative efficiency. Allocative efficiency calls for reallocation of labor from less to more productive uses and thus entails labor turnover. Conversely, high job turnover—high rates of job creation and job destruction—implies two things. First, that hiring and firing costs do not prevent firms from restructuring, and thus that there is a necessary degree of labor market flexibility. Second, assuming that jobs that were destroyed were low productivity jobs and jobs that were created were higher productivity jobs, job turnover is associated with productivity gains and thus with higher efficiency. As such, job turnover is an indicator of labor market flexibility and restructuring. High job turnover indicates a dynamic labor market, while low job turnover points to potential rigidities and barriers to restructuring.

Our basic measure of labor market restructuring and flexibility will be what is called “excess job reallocation.” This measure shows the extent of job turnover beyond that necessary to accommodate net changes in employment. Technically, the rate of excess job reallocation is the difference between the job turnover rate (which is the sum of the job creation and the job destruction rates) and net employment growth.³ The rate of excess job reallocation shows the percentage of jobs that were reallocated from declining firms to expanding firms. For example, the excess job reallocation rate of 24 percent means that 12 percent ($24/2$) of jobs were reallocated from firms which reduced employment to firms which increased employment. It is worth noting that the excess job reallocation is determined by the lesser of job creation and job destruction rates.⁴

³ The primary concepts underlying the measurement of labor market flexibility are those of job creation and job destruction, while other measures are derived from them. Specific definitions are as follows. The *gross job creation* rate is measured as the sum of all employment gains in expanding firms in a given year, divided by total employment at the beginning of the year. The *gross job destruction* rate is defined as the sum of all employment losses in contracting firms in a given year divided by total employment. The sum of gross job creation and gross job destruction gives a measure of *gross job turnover (reallocation)*, and the difference yields the *net employment growth rate*. The *excess job reallocation* rate is defined as the job reallocation rate minus the absolute value of net employment growth.

⁴ Specifically, $EJR/2 = \min\{JC, JD\}$, where EJR is the excess job reallocation rate, JC is the job creation rate and JD is the job destruction rate.

High Job Turnover

How high is job turnover in Lithuania? To answer this question we will compare the rate of job turnover (reallocation) in Lithuania to those observed in some other transition economies and selected OECD countries (Table 5).⁵ It turns out that Lithuania has by far the highest rate of job turnover among both the transition economies and mature market economies. The average rate of job creation in Lithuania over the period 1996-2000 was 13 percent and the average rate of job destruction was 16.1 percent. This gives the rate of job turnover of 29 percent and the rate of excess job reallocation of 25 percent. Similarly high rate of job creation as in Lithuania was observed only in the US, and among the transition economies in Russia in the late 1990s. The rate of job creation in Lithuania was markedly higher than in Poland (by 3 percentage points) and considerably higher than in Slovakia (by 11 percentage points). However, the job destruction rate was also considerably higher in Lithuania than in other countries. For example, the job destruction rate was in Lithuania some 5 percentage points higher than in Poland, 6 percentage points higher than in the U.S., and as much as 9 percentage points higher than in Slovakia. Obviously, high job creation and job destruction means that job turnover in Lithuania was well above that observed in mature market economies and even that in fast restructuring transition economies. To illustrate, the excess job reallocation was in Lithuania by over 5 percentage points higher than in Poland by over 20 percentage points higher than in Slovakia.

⁵ International comparisons of job turnover are subject to a wide margin of error due to limited data comparability. In particular, data on firm entry and exit tends to be inaccurate and treatment of this data varies from country to country. However, as Table 5 documents, the differences between all considered measures of job turnover in Lithuania and other countries are so large that it is highly unlikely that they are spurious and due to statistical errors. Accordingly, the results of the comparison seem robust and not affected by measurement problems to the extent which could alter the conclusions.

**Table 5 Job Creation and Job Destruction: Lithuania Against Selected Countries
(as percentage of total employment)**

	Transition economies				OECD economies		
	Lithuania	Poland	Russia	Slovakia	France	Germany	United States
	1998-99	1998-99	1998-99	1997-98	1984-91	1983-90	1984-91
Job creation rate	13.6	9.7	12.2	2.0	12.7	9.0	13.0
Openings	3.8	4.4			6.1	2.5	8.4
Expansions	9.7	5.3			6.6	6.5	4.6
Job destruction rate	17.7	11.5	13.8	6.9	11.8	7.5	10.4
Closures	7.0	1.4			5.5	1.9	7.3
Contractions	10.7	10.1			6.3	5.6	3.1
Net employment change	-4.1	-1.8	-1.6	-4.9	0.9	1.5	2.6
Continuing establishments only	-0.9	-4.8			0.3	0.9	1.5
Job turnover rate	31.2	21.2	26.0	8.9	22.4	16.5	23.4
Continuing establishments only	20.4	15.4			12.9	12.1	7.7
Excess job reallocation rate	27.1	19.4	24.4	4.0	21.5	15.0	20.8
Continuing establishments only	19.4	10.5			12.6	11.2	6.2

Note: data for OECD countries are yearly averages, data for transition economies refer only to one year.

Sources: Lithuania: *Annual survey of wages and salaries (DA-03)*, various years, Bank staff calculations.

Poland: *World Bank (2001b)*

Russia: *Broadman and Recanatni (2001)*

Slovakia: *World Bank (2001c)*

OECD countries: *OECD (1996)*

All these clearly indicate that Lithuania has been undergoing a process of fast and very intensive enterprise restructuring, which is hardly paralleled by any transition or mature market economy. This process has been associated with a considerable job turnover, far exceeding that observed in most other countries. Each year there is a large number of new jobs being created, and simultaneously, an even larger number of old jobs is being destroyed. This implies a decline in the overall number of jobs, but also far-reaching reallocation of jobs from less to, presumably, more productive uses. This process of intensive and fast job reallocation indicates a dynamic labor market, with a

significant amount of flexibility, which is a prerequisite of successful restructuring. In other words, labor market in Lithuania seems flexible enough to enable what has been a dramatic reallocation of jobs and labor.

Persistence of High Job Reallocation

The process of intensive enterprise restructuring, as witnessed by high job turnover rates, has been under way uninterrupted since at least the mid 1990s (Table 6).⁶ There was some variation in job turnover rates over the period 1996-2000, however it was relatively small, and even when job turnover reached its lowest point, it was still high by international standards. When job turnover was at its peak (1996-1997), the excess job reallocation rate was 28 percent, while when job turnover reached its trough (1999-2000) the rate was still 21 percent, meaning that as much as over ten percent of all jobs were reallocated from shrinking firms to expanding firms. Despite some slow-down, intensive job reallocation continues in Lithuania.

Table 6 Job Creation and Job Destruction in Lithuania, 1996-2000

	1996-97	1997-98	1998-99	1999-2000
Job creation rate	14.0	14.0	13.6	10.5
Openings	5.2	4.0	3.8	3.6
Expansions	8.8	10.0	9.7	6.9
Job destruction rate	19.3	12.4	17.7	15.1
Closures	7.5	1.9	7.0	1.9
Contractions	11.9	10.5	10.7	13.2
Net employment change	-5.3	1.6	-4.1	-4.6
Continuing establishments only	-3.0	-0.4	-0.9	-6.3
Job turnover rate	33.4	26.3	31.2	25.6
Continuing establishments only	20.7	20.5	20.4	20.1
Excess job reallocation rate	28.1	24.7	27.1	21.0
Continuing establishments only	17.7	20.0	19.4	13.8

Source: Annual survey of wages and salaries, various years, Bank staff calculations.

⁶ There are no data on job turnover available for the period before the 1996.

The time variation of job destruction has been higher than that of job creation in Lithuania, which is a typical phenomenon observed also in developed market economies. For example, while the difference between the highest and the lowest job destruction rates was 7 percentage points during the period under question, the difference between the highest and the lowest job creation rates was less than 4 percentage points. Job destruction has been more sensitive to changes in economic conditions than is job creation. Accordingly, the time variation of job turnover in Lithuania has been largely accounted for by variation in job destruction.

The Pattern of Job Turnover

Let us now focus on the structure of job turnover. First, job destruction has tended to exceed job creation, which has led to a fall in employment.⁷ This implies that the extent of excess job reallocation in Lithuania has been limited by job destruction. The number of jobs reallocated was equal to the number of new jobs that were created.

Second, gross job creation has taken place mostly in existing firms. This is a typical pattern in several economies (in the U.S., instead, it is new entrants which tend to create most of new jobs. Still, new entrants played a significant part in job creation in Lithuania, too. For example, out of nearly 11 percent of new jobs that were created in 1999-2000, 7 percent were created owing to expansions of existing firms, and close to 4 percent were due to the entry of new businesses.

Third, job destruction occurs mainly in existing firms, while firm closures play a secondary, although non-eligible, role.⁸ For example, out of 15 percent of all jobs that were destroyed in 1999-2000, less than 2 percent were lost due to firm closures, and over 13 percent owing to reductions in employment by existing firms. It should be noted, however, that in the aftermath of the Russian crisis (1998-1999), firm closures accounted for a substantial part of job destruction. So, an increased proportion of jobs lost due to

⁷ The data on employment growth presented in Table 6 are not consistent with published data on employment in Lithuania. Specifically, data on job destruction and job creation imply larger than official loss in employment than. This can be due to the fact that data presented here do not cover all sectors of the economy (e.g., agriculture, public and social services).

⁸ Firm closures are usually substantially underrepresented in most surveys, however this does not seem to be the case in Lithuania, where the statistical agency takes effort to determine in each case whether a non-response is due to firm closure or to a refusal to respond.

firm closures seems to point to an external shock. Otherwise, adjustment consists of changes in the employment level.

The Role of Employer Characteristics

Job turnover tends to be higher in small private firms located in more dynamic industries and regions. In the proceeding part of this section we will document this assertion.

Firm size

Job turnover is substantially higher in small than in large firms. For illustration, in firms with up to 10 workers the job creation rate approaches 20 percent, the job destruction rate is almost 25 percent and close to 20 percent of jobs are reallocated from contracting to expanding firms (Table 7). In contrast, in the largest firms (with over 1,000 employees) the job creation rate is less than 1 percent, the job destruction rate is 10 percent and thus job turnover is much lower than in small firms.

Table 7 Job Turnover by Firm Size, 1999-2000

Firm size	Job creation rate	Job destruction rate	Job turnover rate	Net employment growth	Excess job reallocation rate
Micro	19.3	23.1	42.5	-3.8	38.7
Small	9.3	19.7	28.9	-10.4	18.6
Medium	5.3	16.0	21.3	-10.7	10.6
Large	7.1	9.6	16.7	-2.5	14.2
Extra large	0.7	9.9	10.6	-9.2	1.3

Note: Micro: 1-10 employees

Small: 11-50 employees

Medium: 51-250 employees

Large: 251-1,000 employees

Extra large: 1,001+ employees

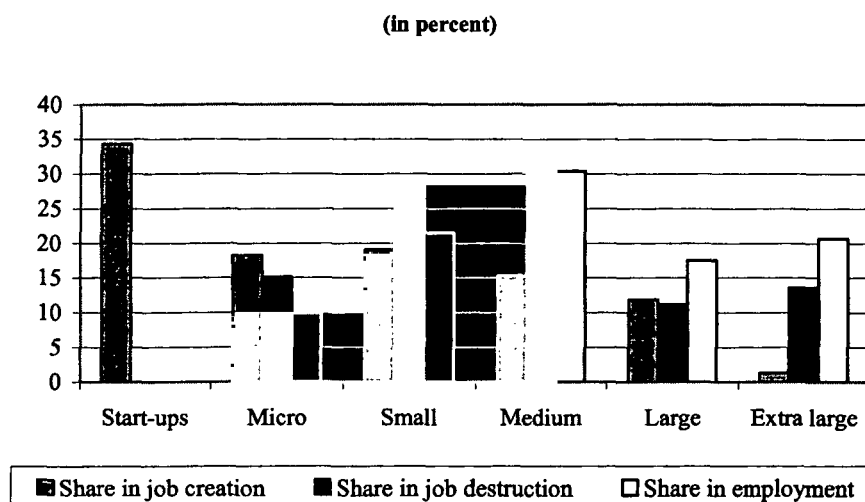
Classification is based on the employment level in the initial year.

Source: Annual survey of wages and salaries, 1999 and 2000, Bank staff calculations.

Are then small firms the engine of employment growth? The answer is qualified yes. It is business start-ups and small firms which jointly create a bulk of new jobs. By

itself, small firms lack the “critical mass” to create a very large number of jobs. First, the share of small firms in employment is limited. Second, the high job creation rate in small firms does not necessarily translate into large *absolute* numbers of newly created jobs. By definition, in small firms a relatively modest increase in employment in absolute terms means a substantial growth rate. Altogether, small firms (up to 50 employees) in Lithuania create almost 40 percent of all new jobs (Figure 1). This is a lot, but still this is a minority of new jobs. Only together with business start-ups (which as a rule are small) small firms create the bulk—over 70 percent—of new jobs. Thus, business start-ups play a critical part in job creation: by themselves, they create over one-third on new jobs.

Figure 1 Job Creation by Firm Size, 2001



The key part played in job creation by business start-ups and small firms has important policy implications. It points to the critical role of competitive product markets, lack of barriers to entry and favorable investment climate for employment growth.

Wage level

Labor demand is a function of wages. Given a production level, higher wages imply lower demand for labor. Lower labor demand, in turn, is likely to translate into lower rates of job creation and higher rates of job destruction. Do low-wage firms indeed create more and destroy less jobs than high wage firms? We provide a tentative answer

to this question by looking at the relationship between job flows and the wage level paid by firms.⁹

Indeed it seems that in Lithuanian lower wages are conducive to higher job creation, however they do not hamper job destruction. Still, the net employment growth is visibly higher in low-wage firms than in high wage firms (Table 8). Specifically, there is a marked inverse relationship between the wage level and job creation. The job creation rate in low-wage firms (bottom quartile) at 21 percent is over twice as high as in high-wage firms (top quartile), where it amounts to 8 percent. However, the job destruction rate tends to be also higher in low-wage than in high-wage firms. This implies that job turnover is particularly high in low-wage firms (39 percent) and relatively low in high-wage firms (19 percent), which is what one would have expected. Importantly, employment growth in low-wage firms is positive (1.7 percent per year), while it is negative in high-wage firms (-2.9 percent). This is supportive of the initial hypothesis that labor demand is inversely related to the wage level. It should be noted that the wage level is correlated with the firm's size, and thus the relationship between wages and job flows also reflects the earlier described relationship between job flows and firm size.

⁹ The answer is tentative as we do not control for the impact of other variables which affect both jobs flows and wages, such as productivity, human capital, or firm size.

Table 8 Job Turnover by Wage Quartile, 1999-2000

Wage quartile	Job creation rate	Job destruction rate	Job turnover rate	Net employment growth	Excess job reallocation rate
			%		
First	20.6	18.8	39.4	1.7	37.7
Second	15.6	17.9	33.5	-2.3	31.2
Third	10.9	16.0	26.9	-5.1	21.8
Fourth	8.1	10.9	19.0	-2.9	16.1

Note: Firms are ranked by the average wage level and then categorized into quartile groups.

Source Annual survey of wages and salaries, 1999 and 2000, Bank staff calculations.

In sum, low-wage firms are characterized by high job creation, employment growth and substantial job turnover. In contrast, high-wage firms create relatively few jobs, tend to reduce employment, but are characterized by relatively low job turnover.

Industry

This section identifies industries which are expanding and declining as well as those which undergo the most intensive restructuring. A look at correlations between the components of job turnover will help identify patterns of industrial restructuring. Finally, it will be determined if job reallocation and thus restructuring takes place mainly between industries or within industries.

Where are jobs being created? Table 9, Panel A presents top 10 industries with the highest rates of job creation. As expected, the highest job creation rates are in the service and trade sectors, which were relatively underdeveloped in Lithuania. Financial intermediation stands out as the biggest job creator, followed by trade and so called “other business activities”, which include legal services, accounting, business counseling, marketing, personnel recruitment, etc. These are all activities which form a foundation of a developing market economy. However, high job creation is not limited to the service and trade sectors, but it also occurs in the manufacturing industry, such as in manufacturing of wood products and furniture, and manufacturing of plastic products.

The top 10 industries in job destruction include construction, insurance and real estate (somewhat surprisingly), manufacturing of mineral products, and hotels and restaurants (Table 9, Panel B). It is clear that in some sectors high job destruction coexists with high job creation. Such high job turnover, restructuring sectors include manufacturing of wood products, wholesale and retail trade, recreations, hotels and restaurants, as well as car sales and repair (Table 9, Panel C).

In conclusion, the fastest expanding sectors, in which job creation is much faster than job destruction, include financial intermediation and other business activities, wholesale trade, as well as some manufacturing activities: manufacturing of RTV and communication equipment, furniture and wood products, and apparel (Table 9, Panel D). Among the most important declining industries, which destroy large amount of jobs (both in absolute terms and relative to their employment) are construction, real estate and manufacturing of mineral products.

Table 9 Job Turnover by Industry, 1999-2000

A. Top 10 industries with highest rates of job creation

Industry	Job creation rate	Share in employment
	%	
Financial intermediation	60.7	1.1
Wholesale trade	22.5	6.3
Other business activities	19.9	2.7
Wood	18.5	2.6
Recreation & culture	14.6	0.9
Hotels & restaurants	14.5	2.3
Car sale & repair	14.4	2.9
Furniture	14.3	1.9
Retail trade	13.9	9.0
Rubber & plastic	13.9	0.9

B. Top 10 industries with highest rates of job destruction

Industry	Job destruction rate	Share in employment
	%	
Construction	19.9	12.0
Insurance & pensions	18.2	0.6
Mineral products	17.8	1.9
Real estate	17.5	2.4
Hotels & restaurants	17.5	2.3
Car sale & repair	16.9	2.9
Wood	16.0	2.6
Leather	15.8	0.5
Retail trade	15.5	9.0
Recreation & culture	15.0	0.9

C. Top 10 industries with highest excess job reallocation

Industry	Excess job reallocation	Share in employment
	%	
Wood	32.0	2.6
Wholesale trade	29.4	6.3
Recreation & culture	29.3	0.9
Hotels & restaurants	29.0	2.3
Car sale & repair	28.8	2.9
Retail trade	27.7	9.0
Rubber & plastic	27.7	0.9
Insurance & pensions	25.1	0.6
Metal products	23.5	1.3
Travel	22.9	1.9

D. Top 10 industries with highest employment growth

Industry	Net employment growth	Share in employment
	%	
Financial intermed.	55.5	1.1
Oth. business activities	9.8	2.7
Wholesale trade	7.8	6.3
RTV & communic.	5.2	1.3
Furniture	3.6	1.9
Apparel	2.7	5.0
Wood	2.5	2.6
Petroleum products	-0.1	0.6
Recreation & culture	-0.4	0.9
Rubber & plastic	-0.5	0.9

Note: The ranking is based on industries whose share in total employment is at least 0.5 percent. This means that 18 industries with smallest employment are excluded.

Source: Annual survey of wages and salaries, 1999 and 2000, Bank staff calculations.

What is the impact of job flows and restructuring on employment growth in the industrial sector? This is an empirical question because as we have just seen, high job destruction does not necessarily imply a fall in employment, as high job creation does not necessarily imply employment growth. It is the joint impact of job creation and job destruction that determines changes in industry employment. It turns out that in Lithuania employment growth within the industrial sector is strongly positively correlated with job creation ($r=0.90$) but weakly negatively with job destruction ($r=-0.47$). The latter means that there are industries where employment grows despite high job destruction. At the same time there is a relatively weak (but *positive*) correlation between employment growth and the excess job reallocation rate ($r=0.36$). This is a counterintuitive finding which means that industry restructuring tends to be *conducive* (not detrimental, as usually assumed) to employment growth.

These findings have two important policy implications. First, employment policies should focus on creating favorable conditions for job creation rather than on preventing job destruction and protecting unviable jobs. Second, contrary to common perception, enterprise restructuring often results in employment gains, not losses, and thus should be encouraged rather than hampered. In other words, enterprise restructuring and associated job destruction are not detrimental to employment as long as business environment is conducive to job creation. It is high job creation, not low job destruction, that is key to employment growth.

Does job reallocation in Lithuania take place mainly between or within industries? This is an important issue, which defines the nature of industrial restructuring. The dominance of the *between* component of job turnover would point to reallocation of labor resources from declining industries to growing ones, while the dominance of the *within* component would indicate that resources are reallocated from contracting toward expanding firms within an industry.

One could have expected that the transition from a centrally planned economy to a market economy (as is taking place in Lithuania) will be largely associated with reallocation of resources across industries in order to compensate the inherited misallocation problem. It turns out that at the more advanced stage of the transition this

is not the case. Although inter-industry employment shifts still play an important part in Lithuania, they are dominated by much larger intra-industry shifts. Using the standard decomposition of the excess job reallocation index (Davis and Haltiwanger, 1990), one finds that *between* industry job shifts account for 18 percent of the excess job reallocation index and *within* industry shifts account for the remaining 82 percent. Hence, the dominant form of restructuring in Lithuania consists of *intra*-industry reallocation of jobs. This pattern of industrial restructuring observed in Lithuania (i.e., the dominance of within industry job shifts) does not differ from that of other advanced transition economies, such as Poland or Slovakia, nor from that prevailing in mature market economies. As in other market economies, restructuring in Lithuania takes place mainly at the industry level, and consists of reallocation of jobs from less to more efficient firms within the same industry.

Market concentration

Earlier in this section the importance of competitive product markets for job creation was emphasized. First, discussed above, a large number of new jobs is created by new entrants. Second, according to standard economic theory, monopolized markets are characterized by lower employment than competitive markets. Here we will try to determine if there is an observable link between the degree of market concentration (inverse of competition) and job flows in Lithuania.

The results must be interpreted with great caution, as the measure used (which is based on the shares in industry employment by domestic firms) is an imperfect proxy for the degree of product market competition. First and most importantly, it does not take into account competition coming from foreign firms. Second, it is assumed that a firm's share in employment corresponds to its share in sales.

With these caveat in mind, there is an U-shaped relationship between market (employment) concentration and job creation. The job creation rate is highest (over 11 percent) in industries in which market concentration is low, and in industries in which market concentration is high, being markedly lower (6 percent) in industries in which market concentration is moderate (Table 2.10). The high job creation rate in industries in which market concentration is high is surprising, since as one can recall, job creation

strongly depends on entry of new firms, while high degree of concentration implies that new entry is limited. This means that in Lithuania job creation must be high in *existing* firms, which enjoy a significant degree of market power.¹⁰

Table 10 Job Turnover and Concentration of Employment within Industry, 1990-2000

Concentration	Job creation rate	Job destruction rate	Job turnover rate	Net employment growth	Excess job reallocation rate
				%	
Low	11.3	16.4	27.7	-5.0	22.7
Moderate	5.9	12.8	18.7	-6.9	11.8
High	11.8	8.4	20.2	3.4	16.8

Note: The degree of concentration is measured by Herfindhal-Hirschman Index (HHI) and is categorized as follows:

Low = HHI is less than 1,000 points

Moderate = HHI between 1,000 and 1,800 points

High = HHI in excess of 1,800 points

Source. *Annual survey of wages and salaries, 1999 and 2000, Bank staff calculations.*

The pattern of job destruction is different: the rate of job destruction monotonically decreases with market concentration. It is lowest (8 percent) in industries where market concentration is high, it is significantly higher (13 percent) in industries in which market concentration is moderate and is by far the highest (16 percent) in industries in which market concentration is low.

Consequently, job turnover is the highest in industries in which market concentration is low and thus competition is high, which is what one would have expected. Less intuitive is the finding that job turnover is the lowest in industries characterized by moderate degree of market concentration. Also the observed pattern of employment growth depending on the degree of competition seems surprising. Employment grows the fastest in industries in which market concentration is high and falls most rapidly in industries in which market concentration is moderate.

¹⁰ This is broadly consistent with findings of Carlin et al (2001), as the present study finds that "some market power but not too much" has positive effects on sales and productivity growth and other indicators of firms performance. In their paper "some market power but not too much" occurs when firms are facing one to three competitors, which by our measure would most probably translate into high degree of market concentration.

To conclude, it seems that either high competition or market power is conducive for job creation, while in industries where firms have only moderate market power the employment performance is the worst. The policy implications of these findings are twofold. First, policies aimed at fostering product market competition are compatible with the objective of job creation and lead to more dynamic labor markets. Second, good employment performance of firms with market power barely means that protecting firms from competitive pressure can stimulate employment. The critical question is if this situation is sustainable once these firms will become exposed to more competition. It seems rather unlikely that firms, which have been sheltered from competition, will be able to become competitive and at the same time preserve employment. Thus, protecting firms from competition in order to preserve jobs does not seem a viable policy option.

Region

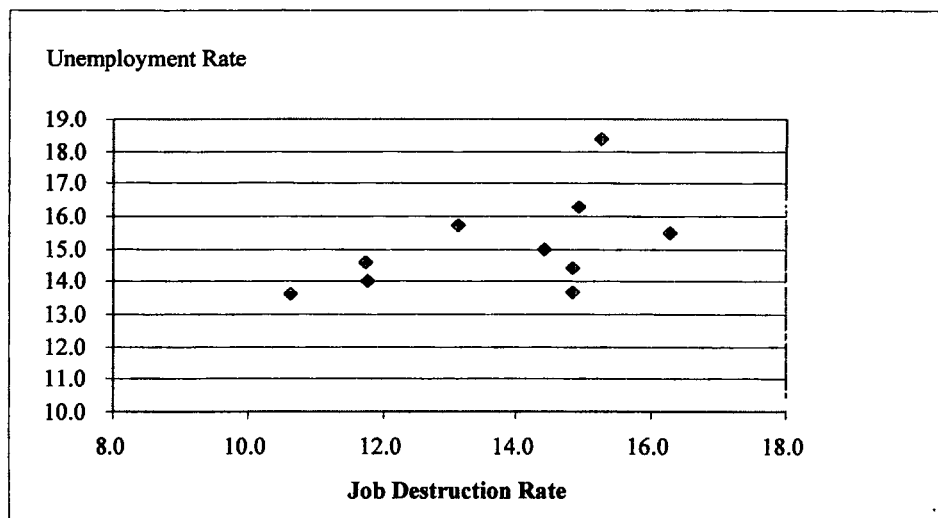
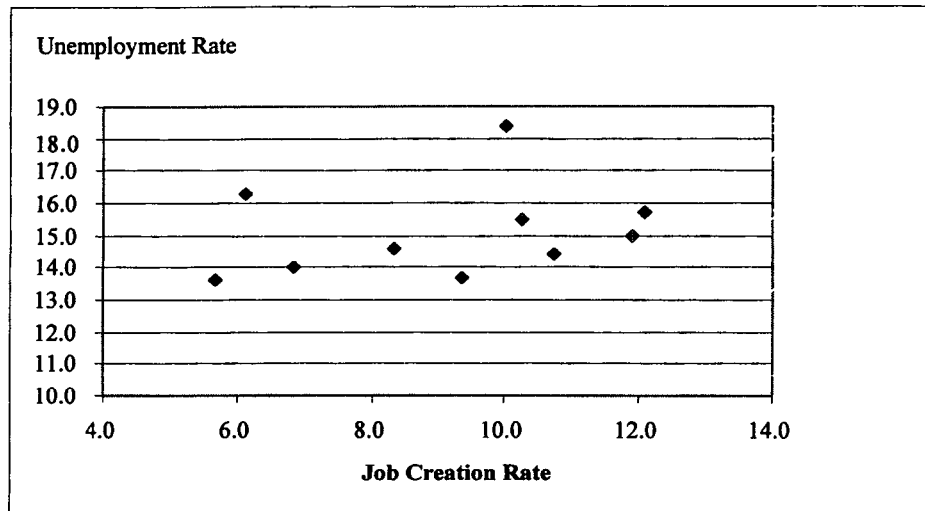
This section focuses on regional variation in job flows, with the following two objectives. First, it attempts to identify dynamic, high turnover regions, as well as stagnant, low turnover regions. Second, it aims at determining the relative importance of within and between region job flows. The latter issue is relevant for determining the extent of regional restructuring and the extent to which regions in Lithuania form separate labor markets.

Lithuania's regions differ with regard to job creation, but hardly differ with regard to job destruction. The most successful regions create twice as many jobs (relative to their employment) as least successful one. Specifically, the job creation rate ranges from about 6 percent in the Utena and Alytus regions, to 12 percent in the Vilnius (capital) and Kaunas regions. However, as Figure 2 (Panel A) shows, the overall regional variation in job creation is rather modest. Even lesser is the regional variation of the job destruction rate, which ranges from less than 11 percent in the Utena region, to over 16 percent in the Marijampole region. Leaving these extreme cases aside, in all remaining regions the job destruction rate varies around 14 percent (Figure 2, Panel B).

Given that in all Lithuania regions employment has contracted, differences in excess job reallocation reflect differences in job creation. The regions that have restructured the most are those in which the job creation rate has been the highest. Thus,

labor markets are most vibrant in the Vilnius and Kaunas regions, and are stagnant in the Utena and Alytus regions (Figure 2, Panel C).

Figure 2 Job Creation & Job Destruction by Region



Interestingly, there is no visible relationship between regional unemployment rates and either the job creation rates or job destruction rates. The unemployment rate is similar in regions with higher job creation as in regions with lower job creation. Similarly, regional unemployment rates do not vary with job destruction rates. A *prima facie* reason behind this is that there is very little regional variation in unemployment rates in Lithuania. However, why regional unemployment rates do not respond to job creation and job destruction remains an open question. One possible explanation is that many workers move directly from old jobs to new jobs, without entering unemployment, while hiring from the ranks of the unemployed is limited.

Are jobs reallocated mainly between or within regions? Given that employment has fallen in all regions in Lithuania, there has been virtually no scope for reallocation of jobs from declining to expanding regions. Accordingly, *en masse* job reallocation has happened *within* regions. This is of course a statistical simplification, however it highlights the point that due to an across the board employment decline, there has been little regional employment restructuring in Lithuania.

Determinants of Job Creation

In the previous section we looked at job turnover and its components. In this section we will look at factors that cause firms to change employment level, in particular to create new jobs. We aim to explain firm employment growth using various firm characteristics, such as ownership structure, access to foreign markets, access to credit, investment behavior and technology. To do so, we first examine bivariate associations between various firm characteristics and employment dynamics. Next, we carry out multivariate regression analysis to identify independent impact of selected variables.

Table 11 presents relationships between selected firm characteristics and two measures of job creation: the absolute and the relative change in employment. The first measure shows the average number of jobs created by a given category of firms. The second measure relates this number to the initial average employment in this category of firms.

We examine three groups of factors related to job creation. The first group consists of factors that may be associated with job creation but by itself do not influence it. An example is firm size. Small firm size does not by and of itself cause employment growth, but we found a pattern that small firms tend to create on average more jobs than large firms.

The second group consists of factors, which influence job creation, but at the same time are themselves influenced by changes in employment. Examples include profitability, productivity or labor cost, which are likely to have an impact on employment, but simultaneously they vary with changes in employment. There is “reverse causality” and such factors are called endogenous.

The third group comprises of true determinants of job creation, that is factors that influence employment but are independent of it. Examples include access to credit, FDI or export orientation. Firms, which have access to credit, to foreign capital or to foreign markets, may find it easier to expand and thus increase employment. These factors are referred to as exogenous.

As Table 11 documents, small firms tend to create jobs while large firms destroy them. Micro firms, which are preponderant in Lithuania, created on average 1.6 jobs per firm, that is increased their employment by as much as one-third during 1999-2000. In contrast, large firms on average closed over 30 jobs per firm, thus reducing employment by close to 9 percent. This pattern points to the restructuring process going on in larger firms, which need to shed labor in order to reduce cost and stay competitive. At the same time, this finding points to the critical role played by business climate for job creation, as it is small firms which suffer the most from unfavorable business environment.

Table 11 Changes in Employment by Firm Category, 1999-2000

Firm characteristics (1999)	Number of firms ^{a)}	Average employment (1999)	Average change in employment (persons)	Employment growth rate (%)
All firms	12963		-1.4	-3.6
<i>Size (employment)</i>				
Micro (1-10)	6902	4.8	1.6	32.6
Small (11-50)	4223	22.9	0.5	2.2
Medium (51-100)	929	70.6	-3.6	-5.1
Large (101+)	909	355.5	-31.2	-8.8
<i>Foreign ownership</i>				
None a)	11693	35.5	-1.1	-3.1
Minority	453	96.5	-8.0	-8.3
Majority	793	75.9	-2.8	-3.6
<i>Export orientation</i>				
Exporting firms	1273	165.3.0	-4.6	-2.8
Non-exporting firms	880	30.8	0.4	1.2
No data	10810	30.9	-1.4	-4.5
<i>Access to credit</i>				
Yes	2125	113.7	-9.5	-8.4
No	10838	25.6	0.1	0.5
<i>Fixed capital formation (investment)</i>				
Negative or zero	5260	38.9	-4.1	-10.5
10	1116	108.3	-6.1	-5.7
25	932	79.1	-3.8	-4.8
50	816	48.7	1.4	2.9
More than 50%	1851	31.7	1.4	4.4
No data	2988	7.1	3.1	44.4
<i>Capital intensity</i>				
Very low (1st quintile)	2527	16.0	0.8	4.9
Low (2nd quintile)	2526	25.0	-0.3	-1.4
Medium (3rd quintile)	2526	39.3	-1.6	-4.1
High (4th quintile)	2526	47.1	-2.3	-4.9
Very high (5th quintile)	2526	77.3	-4.3	-5.6

Firm characteristics (1999)	Number of firms ^{a)}	Average employment (1999)	Average change in employment (persons)	Employment growth rate (%)
<i>Productivity</i>				
Very low (1st quintile)	2593	31.0	-1.1	-3.5
Low (2nd quintile)	2593	45.2	-2.6	-5.9
Medium (3rd quintile)	2592	45.0	-1.8	-4.0
High (4th quintile)	2593	47.0	-2.5	-5.3
Very high (5th quintile)	2592	32.1	0.8	2.5
<i>Unit labor costs</i>				
Very low (1st quintile)	2591	24.6	0.9	3.6
Low (2nd quintile)	2591	38.3	-1.4	-3.5
Medium (3rd quintile)	2591	52.0	-2.7	-5.2
High (4th quintile)	2591	55.2	-3.5	-6.4
Very high (5th quintile)	2590	29.9	-0.5	-1.8
<i>Profitability (%)</i>				
Negative or zero	5836	40.1	-3.4	-8.5
10	4882	43.1	-0.5	-1.1
25	1594	35.0	2.3	6.5
More than 25%	651	29.1	-0.1	-0.4

a) Active in both 1999 and 2000.

Definitions of variables: Access to credit = liabilities to credit institutions.

Fixed capital formation = % increase in the value of fixed tangible assets over one year.

Capital intensity (capital-to-labor ratio) = value of fixed tangible assets over employment.

Productivity = sales over employment.

Unit labor costs = wages and social security contributions over sales.

Profitability = operating profit over sales

Note: the "no data" category is shown only if includes a large number of firms.

Source. Survey of enterprises main financial indicators (F 01) for 1999 and 2000, Lithuanian Department of Statistics; Bank staff calculations.

Foreign direct investment has no clear direct impact on job creation. If anything, the impact is negative, as firms with foreign capital tend to cut on average more jobs than domestic firms. However, firms with a majority foreign stake perform markedly better than firms with the minority stake. The former reduced employment by less than 4 percent while the latter by over 8 percent. Still, why is FDI associated with employment decline instead of employment growth? The likely reason is that firms with foreign capital are engaged in intensive restructuring to improve their competitiveness.

This does not imply that FDI contributes to job destruction. In the absence of FDI the long-term employment record of the firms might have been still worse. Furthermore, FDI is likely to have a substantial positive *indirect* impact on employment through access to foreign markets (e.g., distribution networks) and investment in fixed capital. Attracting FDI still seems the best strategy to increase long-term employment.

Exporting firms reduced employment while non-exporting firms slightly increased it. This may appear surprising, as export means access to a bigger market and thus helps to overcome the often-quoted domestic demand “constraint” (see: Doing business in Lithuania). Probably the same argument applies here as in the case of FDI. Exporting firms, which tend to be large, are shedding labor in order to lower their cost and increase productivity and thus stay competitive. Lack of restructuring would likely undermine their viability in the long run with even larger employment losses.

Access to credit is often a prerequisite to firms’ growth and thus one would have expected that firms, which took credit, grew faster than those, which did not. The reality in Lithuania has proved just the opposite. Firms—predominantly large ones—which borrowed capital contracted at a fast rate (over 8 percent), while firms which did not rely on credit at least maintained their employment level. There are two possible reasons for this. One is the already familiar restructuring argument: that credit goes to overall efficient but restructuring firms. The second possibility is “soft” lending, i.e., credit being allocated to large, inefficient but well-connected firms. To the extent that the former is the case, bank lending supports enterprise restructuring, to the extent that the latter is the case, it inhibits it. Soft lending implies inefficient allocation of resources, and in particular by limiting the amount of credit available to well performing but small firms may be a major constraint to growth (World Bank 2001c). Additional research, going beyond the scope of this report, is necessary to determine which effect has been predominant in Lithuania.

Large scale investment brings about employment growth, however small scale investment tends to be coupled with employment reduction. Firms, which increased their fixed capital by more than 25 percent, experienced employment gains, however limited in magnitude—less than two persons. Firms which carried out modest investment (less than

25 percent) experienced employment losses, which in contrast were quite substantial. For example, the investment rate up to 10 percent was associated with an average employment reduction by 6 persons, or almost 6 percent of initial firm employment. It is important to note that the investment rate is inversely related to firm size: smaller firms tend to invest more relative to their initial capital than larger firms (disinvesting firms are an exception to this pattern).

To interpret this findings one should bear in mind that whether or not investment brings about an employment increase depends on its nature. First, investment can entail mainly a switch toward a more capital-intensive technology with a relatively small increase in output. In such a case capital is substituted for labor with a resulting fall in employment. Second, investment can entail both an increase in the capital-to-labor ratio, and an increase in output large enough to bring about an increase in employment. In the second case, capital and labor are gross complements (despite being substitutes in production) because of the scale effect (i.e., the increase in output engendered by investment) dominates the substitution effect (i.e., the fall in employment due to an increased use of capital). It seems that in Lithuania small-scale investment is associated predominantly with the substitution effect and thus gives rise to a reduction in employment. In contrast, large scale investment leads to a scale effect which dominates the substitution effect and thus gives rise to an increase in employment. These findings obviously do not imply that small-scale investment is bad for employment. The relevant point of reference is what would have happened to employment in the absence of investment. Productivity and competitiveness would suffer resulting in long-run employment losses.

Capital-intensive firms tend to shed labor faster than labor-intensive firms. Capital intensity is, however, closely related to firm size: in small firms the capital-to-labor ratio is relatively low while in large firms it is relatively high. For example, firms with low ratio of capital-to-labor (bottom quintile) employed on average 16 persons in 1999 and increased their employment by almost 5 percent over one year. In contrast, firms with high capital to labor ratio (top quintile) employed on average 77 persons, and decreased their employment by close to 6 percent. Apparently, large capital-intensive

firms are less dynamic than small labor-intensive firms but the exact reasons for this needs to be further investigated.

High labor productivity is good for job creation although the relationship is not straightforward. The job creation record of firms with the highest labor productivity (top quintile) is markedly better than that of firms with the lowest productivity (bottom quintile). Interestingly, firms in the both extreme groups are comparable in size (they tend to be small), so this factor does not distort the comparison. Highly productive firms increased their employment by 2.5 percent in 2000, while low productivity firms decreased their employment by 3.6 percent. Firms in the middle of the productivity distribution (which tend to be larger than both the most and the least productive firms) had the worst employment record, however, reducing employment by 4 to 6 percent. One possible reason is that it is the moderately productive firms, which are under the biggest competitive pressure to improve productivity and thus shed labor. For obvious reasons highly productive firms have less reasons to restructure, while the least productive firms can be those whose function in the protected and not exposed to competition segment of the market. This is an issue that needs further examination.

Low unit labor costs reflect high labor productivity. Not surprisingly then, the relationship between labor costs and job creation is an mirror image of that between job creation and productivity. Firms with low labor cost (bottom quintile) have by far the best job creation record. They created on average almost one job per firm, increasing their employment by 3.6 percent. Firms with higher labor costs tend to eliminate rather than create jobs, although the relationship is not monotonic: firms with the highest labor costs perform somewhat better in terms of employment than firms in the middle of the distribution. Again, this likely reflects the fact that firms with high unit labor cost operate in the segment of the economy that is protected from intense competition.

Profitable firms have a better job creation record than unprofitable ones. Loss-making firms decreased their employment by over 8 percent, laying of on average 3.4 persons per firm. In a way this is a welcome development, indicating that poorly performing firms engage in restructuring to improve their performance. Firms operating with a narrow profit margin (less than 10 percent) also tend to restructure, although on a

much smaller scale: they reduced their employment by about 1 percent, on average less than one person per firm. The main creators of jobs are firms, which generate solid profits (11 to 25 percent profit rate). On average they generated over 2 jobs per firm, and increased their employment by 6.5 percent. Quite surprisingly, however, the most profitable firms (with the profit rate above 25 percent) if anything, slightly decrease their employment. One possible reason is that their high profitability has been achieved through substantial productivity gains, which (given the output level), were likely to result in employment reductions.

The shortcoming of the above analysis is that some variables are correlated with others and thus their relation with the dependent variable also reflects the impact of these other variables. A regression analysis was applied to circumvent this shortcoming and to determine the independent effect of various factors affecting job creation. To reduce the endogeneity problem, the endogenous variables were lagged by one year.

The main results from the regression analysis are as follows (Table 12).

Table 12 Regressions of Employment on Selected Firm Characteristics

Explanatory variables	Regression models			
	(1)	(2)	(3)	(4)
empl99	0.9022*** 97.63	0.8946*** 90.63	0.8895*** 90.12	0.8939*** 83.62
foreign	0.0007* 1.7	0.0007 1.54	0.0003 0.58	0.0003 0.54
export	0.0011*** 3.53	0.0009** 2.32	0.0008** 2.23	0.0010*** 2.51
credit	0.0399 1.51	0.0423 1.58	0.0149 0.55	0.0166 0.57
capform	0.0233*** 3.62	0.0230*** 3.55	0.0220*** 3.42	0.0193*** 2.62
ktol			0.0319*** 3.05	0.0320*** 2.86
lwage				0.0874*** 3.62
productiv			0.0357** 2.18	
profitab				0.0095 0.82
industry	no	yes	yes	yes
constant	0.3215	0.2780	-0.3689	-0.7550
No. of obs.	885	885	885	650
Adj. R ²	0.939	0.941	0.942	0.947

Dependent variable: log of average employment in 2000

Definitions of explanatory variables: empl99 = log of average employment in 1999

foreign = share of foreign ownership, %

export = share of exports in total sales, %

credit = 1 if a firm has a debt towards financial institutions, 0 otherwise

capform = log of increase in fixed tangible assets over a year, %

ktol = log of capital-to-labor ratio

lwage = log of average wage

productiv = log productivity (sales per employee).

profitab = log of the ratio of operating profit to sales

industry = 2-digit NACE classification

All explanatory variables refer to 1999

Absolute values of the t-statistics are in italics

*** - significant at the 1 percent level, ** - significant at the 5 percent level, * - significant at the 10 percent level (for two-sided t test).

Firm size has a significant independent impact on firm growth prospects: employment in small firms grows faster than in large firms. As result, initial differences in firm size after one year are reduced by about 10 percentage points. For example, imagine two firms, one employing 25 workers and the other 50 workers. Assume that the larger firm increases employment by 2 percent over one year. Then our model implies that the smaller firm will increase employment by 7.4 percent. Both firms will converge in size, although very gradually: in absolute terms the size differential will be reduced by only one person. So, the magnitude of the net impact of firm size on its employment growth should not be overemphasized.

Foreign direct investment hardly influences firm employment, at least directly. All else held constant, an increase in the share of foreign capital does not have any significant effect—either positive or negative—on the firm's employment growth.

Exporting firms tend to create more jobs and thus employ more workers than similar non-exporting firms, however the differential is small. Other things being equal, a 10 percent higher export share on average results in only about 1 percent higher employment (after one year, assuming the same initial employment level). This result is in contrast to the negative one obtained earlier using descriptive statistics. According to the regression analysis, the net impact of export on employment growth is positive and thereby consistent with economic theory.

Ceteris paribus, firms, which have access to credit, do not generate more jobs than firm, which do not. Although the effect is positive, it is not statistically significant. Thus, as indicated earlier, credit does not seem to go to firms with a growth potential and thus does not help to generate employment.¹¹

¹¹ According to a survey of SMEs, small firms report the shortage of working capital as being one of the main problems for their development, and claim that external financing is difficult to obtain. Thus, poor access to credit by small firms is likely to limit their job creation potential.

Investment in fixed capital leads to faster employment growth. All else being equal, a 10 percent higher investment in fixed capital engenders additional employment increase of around 0.2 percent, which is statistically highly significant. Thus, contrary to some fears, investment has a pro-employment impact.

By the same vein, an increase in capital intensity is beneficial for employment. Controlling for the impact of other variables, a 10 percent increase in the capital-to-labor ratio contributes around 0.4 of a percentage point to the firm's rate of annual employment growth. Again, in this case the regression analysis indicates a positive net impact, in contrast to a negative gross impact suggested by the descriptive analysis.

Productivity differentials between firms translate into differences in employment growth. Higher productivity firms tend to grow faster. A ten percent higher productivity implies some 0.4 percentage point faster annual employment growth. This contradicts the popular view that productivity improvements imply employment losses. To the contrary, productivity gains are beneficial for job creation.

Other variables held constant, higher wages contribute to job creation. This may seem surprising at first, as it is natural to assume that higher wages imply lower demand. However, given that we control for profitability, the result means that higher wages may be associated with faster employment growth provided that profits are unaffected. In other words, if higher wages are associated with higher productivity, offsetting the negative impact of higher wages on unit labor cost, then they do not hurt job creation. This is consistent with the efficiency wages theory (which asserts that higher wages can spur productivity improvements) and with our earlier finding that more productive firms grow faster.

Profitability, contrary to common perception, does not contribute to faster job creation. Its net impact on employment is negligible and statistically insignificant.

The results of the regression analysis in a few cases differ radically from those obtained earlier and based on descriptive statistics. Specifically, regression analysis points to a positive independent employment impact of exports and capital intensity, contrary to the descriptive results. Also, the regression analysis indicates that

productivity has a positive effect on employment, while according to the descriptive results the effect was non-linear. Thus, also in this case the regression analysis sends a stronger and more positive message than the simple descriptive analysis. Obviously, the results of the regression analysis are more informative and are more likely to reveal causal relationships as they provide a net rather than gross effect of a variable.

Let us briefly summarize the main findings:

- All else being equal, small firms have a bigger employment creation potential than larger firms;
- The share of foreign capital has no visible direct impact on firm employment performance;
- Export orientation has a significant positive impact on firm employment growth, although the magnitude of the effect tends to be small. One possible reason for the small magnitude of the effect is that there are two opposite forces at work. Once is access to foreign markets with positive effect on employment. The other is a greater focus on productivity with a negative short-term effect on employment;
- Access to credit is not associated with better employment performance. This may suggest that credit does not go to expanding firms (which tend to be small), but instead is directed to stagnant or contracting firms (which tend to be large). To the extent this is the case, inefficient allocation of financial resources limits the job creation potential of SMEs;
- Investment brings about employment growth: capital and labor turn out to be gross complements in Lithuania, despite being substitutes in production. Other things being equal, more capital intensive firms have a better job creation record than less capital intensive firms; and
- Labor productivity contributes to employment growth in Lithuania, invalidating fears that productivity improvements imply job cuts.

Job Turnover and Unemployment

What is the link between job turnover and unemployment? Can high unemployment in Lithuania be attributed to intensive enterprise restructuring and associated high rate of job reallocation? Theoretical analysis shows that there is an equilibrium relation between the job reallocations rate, the rate of unemployment and the mean duration of unemployment, however the relation depends also on other factors (Garibaldi et al., 1996). In general, accelerated job reallocation can increase unemployment, especially if there is inertia to labor mobility, but at the same time it is likely to result in shorter unemployment spells. These relationships are supported by empirical evidence. In OECD countries low job reallocation is associated with more long-term unemployment (Garibaldi et al., 1996). Recent study for Poland showed that an accelerated pace of job reallocation, which occurred in the late 1990s, was accompanied by a marked increase in unemployment (World Bank, 2001).

High unemployment in Lithuania can thus be attributed to, at least partly, the persistently high rate of job reallocation, which is coupled with limitations on mobility from old jobs to new jobs. However, the high rate of job turnover in Lithuania coexists with long average duration of unemployment, which is not consistent with theoretical predictions. In theory, high job turnover should improve the chances of the unemployed to find a new job, but in fact it does not.

It is relatively easy to explain why high job reallocation in Lithuania is associated with high unemployment. There are two possible reasons. First, in the short-run high job reallocation can contribute to unemployment owing to productivity gains. Second, given heterogeneity of jobs and workers, high job reallocation may contribute to frictional and structural unemployment.

Productivity improvements. Job reallocation brings about productivity gains because supposedly it entails the destruction of low-productivity jobs and the creation of high-productivity jobs. Higher productivity means that the same output can be produced with fewer workers. The negative effect of productivity increase on unemployment is of a short-term character, since in the longer term the increase in productivity results in lower unit labor cost and leads to new investments which bring about new jobs and thus

mitigate unemployment.¹² Another way of looking at the link between productivity and unemployment is to note that there is no secular trend of the increase in unemployment, which would have existed if rising productivity were causing joblessness.

Frictional and structural unemployment. Job reallocation means that the displaced workers need to search for new jobs, which takes time and requires acquiring information on new job opportunities. Moreover, jobs that have been destroyed usually differ in salient characteristics (e.g., skills required to perform them, or location) from those, which have been created. Workers need to acquire new skills or/and move to different locations to find new jobs. Given that workers are not perfectly mobile, structural (skill and spatial) mismatches arise. That is, job reallocation gives rise to the mismatch between the skills demanded and supplied in a given area, or causes an imbalance between the supplies of and demands for workers across areas. Frictional and structural unemployment are thus an unavoidable consequence of restructuring and associated reallocation of labor (Lilien, 1982, Abraham and Katz, 1986).¹³

It is more difficult to explain the coexistence of high job turnover and long-term unemployment in Lithuania. One possible hypothesis is that the long average duration of unemployment is due to the particular *structure* of job turnover in Lithuania, i.e., the fact that job destruction has been higher than job creation. In other words, high job turnover in Lithuania has taken place in the context of the overall fall in the number of available jobs and associated employment decline. In addition (and not independently) the diminishing job availability has been likely to lead to the disenfranchisement of many long-term unemployed, whose employability has dramatically diminished due to the erosion of their skills and morale. Accordingly, the long-term unemployed in Lithuania are hardly able to benefit from high job turnover. Finally, it is also possible that there are wage rigidities, which negatively affect job-finding probabilities among certain groups of workers, which is an issue that will be explored later.

¹² This is under the assumption that productivity gains are not fully consumed in the form of higher wages but instead improve the rate of return on investments.

¹³ It should be noted that in a frictionless world the increase in job destruction—if matched by a proportionate increase in job creation—would not lead to the increase in unemployment. It is commonly assumed that the hiring function $H=f(V, U)$ is linearly homogenous in the number of vacancies, V , and unemployment, U , and this assumption is not refuted by the evidence (Layard et al., 1991). This means that if, say, the numbers of unemployed and vacancies double, then the number of hires will double too, leaving the unemployment rate unchanged.

To sum up, the high job reallocation rate prevailing in Lithuania has likely contributed to high unemployment in two ways. First, high job reallocation has most probably created skill and regional mismatches which have given rise to structural unemployment. Second, high job reallocation has likely brought about productivity improvements, which in the short-run might have resulted in some net job losses and associated increase in unemployment. However, high job turnover has taken place in the context of high job destruction, which has exceeded job creation, and thus the fall in the overall employment level. The diminished job availability has contributed to the build up of long-term unemployment. As long-term unemployment is often associated with the loss of skills, many of the long-term unemployed have become marginalized and probably are not able to benefit from the relatively high hiring rate.

What are the policy implications of the above results? First, to the extent unemployment in Lithuania results from productivity improvements, this should not be of policy concern, as in the longer-run higher productivity is going to be beneficial for employment (given that the wage growth will not outpace that of productivity).

Second, to the extent that unemployment is structural, policy measures to reduce skill and regional mismatches can produce beneficial effects. Such measures include training and retraining, as well as improving the housing market or promoting commuting through lowering transportation costs (which includes better transport infrastructure, e.g., roads).

Third, long-term unemployment can be partially tackled by carefully targeting active labor market interventions (such as training) at persons who are at high risk of long-term unemployment.¹⁴

III. WORKER PERSPECTIVE: LONG JOB SEARCH DURATION

From the worker's perspective a labor market is efficient if it is easy to find a job paying a decent wage. This involves high probability of avoiding unemployment, short duration of job search, and wages that adequately reflect productivity differentials and

¹⁴ This usually involves changes in the incentive structure faced by public employment services so that they use *profiling* instead of *creaming* (i.e., focusing on those unemployed who are easiest to place to jobs).

human capital heterogeneity. The Lithuanian labor market does not fully meet these conditions. The risk of losing a job is relatively high, however the chances of finding a new one are rather low. Unemployment spells thus tend to be of long duration. Poorly educated, low-skilled and inexperienced workers find it particularly difficult to find employment. One possible reason is compression of wages at the lower end of the distribution, which is likely to inhibit employment chances of less productive workers.

Labor Flows

The risk of losing a job and the chance to find a new one are best depicted by the so called transition matrixes, which show estimated probabilities that workers move across different labor force states, such as employment and unemployment. Large labor flows between employment and unemployment indicate a dynamic labor market, where there is a lot of both firing and hiring. Many workers lose their jobs but they find it relatively easy to find a new one, thus their unemployment spells tend to be short. In contrast, limited labor flows point to a stagnant market, where few workers lose their jobs but those who become unemployed have little chances to find work. Unemployment is a stagnant pool, workers tend to stay jobless for a long time, with their chances to find a job gradually declining, often up to the point they become detached from the labor market and become virtually unemployable.

We will focus on the analysis of yearly labor flows (transitions) as this allows us to do some international comparison. However, it should be noted, that yearly transition data can be inaccurate due to the problem of “round-tripping”, that is uncaptured movements between different labor force states that take place within one year. Thus, yearly transition data underestimate the true labor flows by disregarding the labor movements that took place during the year.

Lithuanian workers face a high risk of losing a job. As much as 5.7 percent of workers who were employed in May 2000 were unemployed one year later (Table 13, Panel A). This is a high job separation rate by standards of both transition and OECD economies (Boeri 1998). For example, the job separation rate in Poland in the mid to late 1990s varied between 2.2 and 3.4 percent (Bell 2001), that is roughly half the magnitude observed in Lithuania. Similarly, in Slovakia—another high unemployment country—

the job separation rate was 2.3 percent in 1999 (World Bank 2001c), that is considerably lower than in Lithuania. It seems that only in Russia, and—to a smaller extent—Bulgaria the inflows from employment into unemployment were of similarly large magnitude as in Lithuania (5.6 percent in Russia 1995/96 and 4.3 percent in Bulgaria in 1996/96).¹⁵

Table 13 Transition Probabilities Across Labor Force States

Panel A

May, 2000	May, 2001			
	Employed		Unemployed	Out of the labor force
	Same job	New job		
Employed	82.1	5.6	5.7	6.6
Unemployed	x	24.0	60.4	15.6
Out of the labor force	x	5.2	4.8	89.9

Panel B

November, 2000	May, 2001			
	Employed		Unemployed	Out of the labor force
	Same job	New job		
Employed	89.4	3.7	3.2	3.7
Unemployed	x	30.2	57.5	12.3
Out of the labor force	x	3.5	3.0	93.5

Source: Lithuanian Labor Force Survey, Bank staff calculations.

Expectedly, most of the jobs are terminated by employers, so job separations are largely involuntary. Lay-offs are the main reason for unemployment among previously employed worker (46 percent), followed by terminations of temporary jobs (22 percent). Still, voluntary quits account for a sizeable proportion—almost one-third—of unemployment among the previously employed (Table 14). This indicates, that a relatively large group of workers accepts temporary spells of unemployment as a means of changing—presumably improving—their labor market status.

¹⁵ Data for Russia are reported in Bell (2001), data for Bulgaria taken from World Bank (2001a).

Table 14 Mobility Across Labor Force States: Lithuania against Selected Countries

Country	Period	Shorrock's index (* 100)
Bulgaria	1995-96	36.7
Lithuania	2000-01	31.0
Poland	1997-98	31.3
Russia	1995-96	38.5
Slovakia	1999Q1-Q4	17.6
USA	1992-93	61.6

Note: the Shorrock's index is defined as $S=(n-\text{tr}(P))/(n-1)$ and is proportional to the fraction of persons who changed their status within a given period.

where: n denotes the number of states and $\text{tr}(P)$ is the trace of the transition matrix P .

S takes the value of 0 when nobody changed their status, and the value of $n/n-1$ when everybody changed their status,

Sources: Bulgaria: Garibaldi et al. (2001)

Lithuania. Labor Force Survey, May 2000 and May 2001

Poland: Bell (2001); Russia: Bell (2001); Slovakia. World Bank (2001c)

USA: Boeri (1998), Bank staff calculations

The unemployment problem in Lithuania is magnified by large numbers of new entrants to the labor market. The yearly transition rate from inactivity into unemployment accounts for 4.8 percent, and is substantially higher than in other transition economies. For example, in Poland this rate was 2.2 percent in 1997/78 (Bell 2001), about half that observed in Lithuania.

A vast majority (86 percent) of the unemployed in Lithuania has previous labor market experience. This proportion is quite typical of transition economies and indicates that the labor market is in the state of flux, that people lose jobs mainly because of enterprise restructuring. It is interesting to contrast this with situation prevailing in some transition economies with the most rigid labor markets. For example in Macedonia, which as other former Yugoslav republics inherited an extremely high level of employment protection, the proportion is reversed: a majority of the unemployed are new entrants (mostly school leavers) whom low labor turnover prevents from finding a job. The above figure suggests that (despite high youth unemployment, which is a common phenomenon) barriers to entry are not a dominant labor market problem in Lithuania. It is largely enterprise restructuring and associated lay-offs which contribute to unemployment.

How difficult is it for the unemployed in Lithuania to find a new job? The picture is not too optimistic. Only a minority—one-fourth—of the unemployed find a job within a year. This is worse than in Poland or Bulgaria (where around one-third of the unemployed find a job within a year), or in Russia (near 40 percent), but better than in Slovakia, where the yearly job accession rate is less than 20 percent. These data should be viewed against the benchmark of the high turnover labor market in the US, where the majority (almost two-thirds) of the unemployed find a job within a year (Boeri 1998).

Surprisingly, the examination of half-yearly transitions from unemployment to jobs gives a more positive picture. It turns out that the half-yearly job accession rate—at 30 percent—is in Lithuania higher than the yearly rate (Table 13, Panel B). Thus, the chances to find a job within six months are not that bad. However, it is likely that these new jobs are not long lasting but rather temporary, precarious jobs leading to a next spell of unemployment.¹⁶

All in all, labor flows are quite limited in Lithuania. The percentage of workers who change their labor force status tends to be somewhat lower than in other transition economies, which in general are characterized by the stagnant unemployment pool (Table 15). This implies that from the worker perspective, the labor market is not dynamic.

¹⁶ Another factors which may account for this apparent paradox are seasonal effects (November is a lower employment season than May) and sample bias (i.e., one of the two samples is not representative).

Table 15 The Unemployed by Employment History and Reasons for Unemployment, 2001

Reasons for unemployment	Unemployed
	%
All unemployed	100.0
New entrants	14.1
Job losers	85.9
All job losers	100.0
Lay off	45.7
Termination of temporary job	22.4
Voluntary quits and other reasons	31.9

Source: Labor Force Survey, May 2001, Bank staff calculations.

Finding new employment is a lengthy process. On average, it takes over three years of job search before a new job is found.¹⁷ This means that unemployment in Lithuania is of a long-term nature, and it is thus very costly for both the affected individuals and the society as a whole. International experience shows that long-term unemployment often leads to disenfranchisement and social exclusion, as chances to find a job decrease with unemployment duration. This so called “duration dependence” results from the erosion of skills and motivation on the part of the long-term unemployed as well as from the employers’ reluctance to hire workers who were jobless for a long time, whom they consider as less productive.

Some worker groups are more successful than others in finding new employment. Two groups stand out in this respect. These are young workers and workers with university education, (Table 16). Both these groups on average find work much faster than their older and less educated counterparts. For example, it takes younger workers (aged 15-24) half the time needed to find a job by older workers (aged 55-64). Similarly, university educated workers need about half the time necessary to find a job by workers with less than upper secondary education. Put differently, 50 percent of younger workers and university educated workers find a new job within less than 18 months, while other

¹⁷ The average estimated duration of an *uncompleted* unemployment spell is 21.1 months. In a steady state, the average duration of a *completed* unemployment spell is twice as long as that of an uncompleted spell.

groups need well over 2 years to achieve the same outcome (50 percent success rate). Unfortunately, these relatively successful worker groups are a minority. For a majority of the jobless chances of finding a job quickly are very slim. This is yet more evidence of a stagnant unemployment pool.

Table 16 Duration of Uncompleted Unemployment Spells (2001)

A. Distribution of Unemployment by Duration

	Share in unemployment
	%
Less than 1 month	10.1
1-6 months	25.4
7-12 months	16.0
13-24 months	16.3
25 months or more	32.3

B. Average Duration

	Mean duration	Median duration
	<i>months</i>	
All unemployed	21.1	12
<i>Gender</i>		
Men	22.5	14
Women	19.1	12
<i>Age</i>		
15-24	14.0	9
25-54	22.3	14
55-64	26.2	23
<i>Education</i>		
University	14.6	8
College	20.7	12
Upper secondary	20.1	12
Lower secondary	25.3	14
Primary	25.3	19

Source: Lithuanian Labor Force Survey, May 2001, Bank staff calculations.

Do the unemployed become discouraged by the futility of their job search effort? The “discouraged worker” effect is considerable, although not larger than in other countries. Around 16 percent of the unemployed in Lithuania become inactive within one year, that is they ceased their job search (or become unavailable for work). This is less than in Bulgaria (28 percent), similar as in Poland, but much more than in Slovakia (less than 5 percent).

Another measure of the discouraged worker effect is the proportion of persons who are categorized as economically inactive, but in fact would like to work and are available for work; the reason they are not looking for work that they think that no jobs are available. This proportion, at 2 to 4.5 percent, is non negligible in Lithuania.¹⁸ If the discouraged workers were counted as unemployed, rather than out of the labor force, then the number of unemployed in Lithuania would be higher by some 10 to 20 percent. These figures are complementary to the unemployment rate measure of the labor market slack and illustrate perceived difficulties in finding a job.

The unemployed have to compete for jobs with new entrants to the labor market (e.g., school leavers) and also with those who already have jobs but may be perceived by employers as better matches for existing vacancies. It turns out that indeed such competition takes place in Lithuania, and that in many cases the unemployed loose the game, i.e., are at disadvantage when competing with workers without unemployment history. First, job-to-job transitions are quite significant in Lithuania; 5.6 percent of workers change a job within a year. This is somewhat more than, for example, in Poland where the job-to-job transitions account for between 4 and 5 percent of employment (Bell 2001). Second, flows from inactivity to jobs are relatively large in Lithuania, again larger than in Poland (5.2 percent against 4.3 percent, respectively).

As a result, the unemployed are a minority among the new hires (Table 17). The bulk of the vacancies is taken by persons who changed jobs (46 percent) and new entrants (8 percent). Only the remaining 46 percent of vacancies goes to the unemployed. This

¹⁸ The figures differ depending on the adopted definition of the discouraged worker. According to a broad definition, the discouraged worker is not looking for a job but would like to work and is available for work. According to a narrow definition, the discouraged worker explicitly gives the lack of available jobs as an reason for not looking for a job (in addition, as in the previous definition, they would like to work and are available for work).

partly explains relatively low probability of escaping unemployment. It also points to a possible problem of the skill gap or skill mismatch on the part of the unemployed. Some of them may have troubles finding a job because their skills fall short of those required by employers.

Table 17 New Hires by Previous Labor Market Status, 2001

Labor force status one year earlier	%
Employed	45.9
Unemployed	45.7
Out of the labor force	8.4
Sample size	136.0

New hires: persons who hold their present job for 12 months or less.

Source: *Lithuanian Labor Force Survey, May 2001, Bank staff calculations*

The Skills Gap

Indeed, the skills gap on the part of the unemployed seems to partly account for the limited transitions from unemployment into jobs. On average, the unemployed, and especially the long-term unemployed, have lower educational attainment and lower skills than the employed (Table 18). In other words, there is an “excess supply” of poorly educated persons among the unemployed in the sense that, all else being equal, there is not enough low skilled jobs to eliminate unemployment.¹⁹ Consequently, unemployment is disproportionately concentrated among workers with low educational attainment and poor skills. For example, the unemployment rate among workers with less than upper secondary education is around 25 percent compared with 6 percent among workers with university education. Similarly, the unemployment rate among workers in elementary occupations (i.e., the low skilled) is over 20 percent, compared with 4 percent among

¹⁹ A critical variable that here is assumed to be constant is the structure of wages. A flexible wage structure, entailing the fall in relative wages of low skilled workers, would help to absorb unemployment among poorly educated workers. However, social norms embedded inter alia in the minimum wage, prevent wages from adjusting to supply and demand conditions.

professionals or 8 percent among technicians. Low or inadequate skills are thus an important factor behind high unemployment in Lithuania.²⁰

Table 18 Unemployment by Educational Attainment and Occupation, 2000

	Unemployment rate	Share in unemployment	Share in employment
Total	15.4	100.0	100.0
<i>Education</i>			
University	5.9	7.2	20.9
College	13.6	21.7	25.0
Upper secondary general	17.3	23.1	20.0
Upper secondary vocational	18.6	22.2	17.7
Lower secondary general	26.2	14.9	7.6
Lower secondary vocational	24.0	8.7	5.0
Primary or less	9.3	2.1	3.8
<i>Occupation</i>			
Managers	8.2	4.0	8.2
Professionals	3.6	3.0	14.3
Technicians	8.4	3.9	7.7
Office clerks	16.2	5.1	4.8
Service and sales workers	15.2	12.3	12.5
Agricultural workers	2.0	1.8	16.1
Craft workers	17.9	19.9	16.6
Machine operators and assemblers	20.2	13.3	9.5
Elementary occupations	21.8	15.7	10.2
Armed forces	4.2	0.0	0.2
Unknown	x	6.2	0.0
Not previously employed	x	14.9	x

Source: Labor force, employment and unemployment (survey data), 1997-2000, Statistics Lithuania, Vilnius 2001; Bank staff calculations.

In order to assess the magnitude of the skills gap, let's carry out the following thought experiment. Imagine that the number of available jobs grows to the point where there is enough jobs for all the unemployed. Assume that jobs for each education

²⁰ In principle, a flexible wage structure would make it possible to absorb the excess supply of low productivity worker. We examine wage flexibility and institutional constraints thereto in the proceeding sections.

level grow at the same rate, thus maintaining the existing structure of employment by education.²¹ Assume also that skill mismatch occurs only between educational levels. i.e., there are no skill mismatches within educational levels.²² Under such best-case scenario, where the number of vacancies equals the number of job seekers, about 22 percent of all unemployed will not find a job because of skill gap, that is, because their skills fall short of employers requirements.²³ Expectedly, the extent of the skill gap is more pronounced among the long-term unemployed than among the short-term unemployed, although the difference is relatively small, smaller than in other countries. Given the current rate of unemployment of about 17 percent, the estimated skill gap implies some 4 percent unemployment rate caused by skill gap. This is a lower bound estimate due to optimistic assumptions underlying the calculations. In reality, the problem of skill gap is likely to be even more pronounced.

The problem of the skill gap—the inadequacy between skills demanded by employers and those possessed by the unemployed—seems to be more pronounced in Lithuania than in some other transition economies of Central Europe. For example, in both Bulgaria and Poland the skill gap is smaller, accounting for about 17 and 14 percent of unemployment, respectively.²⁴ Thus, the inadequate skill level of the unemployed, especially of the long-term unemployed, are likely to be a key factor behind relatively limited outflows from unemployment to work in Lithuania. Poor skills prevent a substantial fraction of the unemployed to effectively compete for jobs, and can lead to their marginalization on the labor market.

The apparent importance of the skill mismatch problem in Lithuania has two policy implications. First, it indicates the need for greater wage flexibility, especially at the lower end of the wage distribution, in order to encourage the creation of low skilled jobs and improve the employment prospects of poorly educated unemployed. Second,

²¹ This is an optimistic scenario, since in reality due to the skill biased technological change high skilled jobs grow at a faster pace than low skilled jobs.

²² This is again an optimistic assumption as after all skill mismatches do exist within educational groups.

²³ The formula to calculate the skill gap is: $sg = \sum_{i=1}^L (u_i - e_i)$ for $u_i > e_i$, where u_i and e_i are percentage shares of the i -th educational level in unemployment and employment, respectively, and L is the number of educational levels.

²⁴ See Rutkowski (1998) and Rutkowski (1999) for the estimates of the skill gap for Poland and Bulgaria, respectively.

and more fundamentally, it points to the role of the educational and training systems in curbing the problem of low, narrow and inadequate skills.

Job Security

What kind of jobs can Lithuanian workers bargain for? Are the jobs mainly stable and well paying or largely precarious and low-paid? One popular indicator of job stability—and thus labor market dynamics—is job tenure (OECD 1997). If workers tend to hold jobs for a long time this implies that the jobs are secure and labor turnover is limited. However, this usually comes at the cost of less hiring, which means less chances to find work for those who are jobless. In contrast, short average job tenure points to a flexible labor market, where jobs are less secure but at the same time there is more hiring and therefore it is easier to find a new job. Accordingly, a dynamic labor market is characterized by relatively short average employer tenure and a high proportion of short—tenure workers (new hires). Conversely, long average tenure and low proportion of short-term workers indicate labor market stagnation.

One would have expected that economic transition almost by definition is associated with widespread movements of labor across firms and industries, and thus with an increased job instability and thereby average employer tenure is shorter than in mature market economies. However, given that transition is also associated with widespread shedding of labor and depressed labor demand, the proportion of short-tenure workers—new hires—may be lower than in the dynamic market economies. Does the Lithuanian labor market conform to this pattern?

The data seem to confirm the priors. On average, workers in Lithuania have shorter job tenure than their counterparts in mature market economies (Table 19). The median job tenure in Lithuania is 5 years, which is considerably less than almost 11 years in Germany or 7.7 years in France. It is also less than the median job tenure in Poland, (6.2 years), which is a relatively dynamic transition economy. On the other hand, in mature market economies with flexible labor markets average job tenure is similar or even shorter than in Lithuania. For example, in the US—where the labor market is least regulated among the OCED countries—the median job tenure is 4.2 years, that is almost by one year shorter than in Lithuania. Also in Spain, which has aimed at making its labor

market more flexible by encouraging the use of fixed-term contracts, the median job tenure (although not the mean) is shorter than in Lithuania.²⁵

Table 19 Distribution of Employment ^{a)} by Job Tenure: Lithuania against Selected Countries

	Under 1 year	1 and under 2 years	2 and under 5 years	5 and under 10 years	10 and under 20 years	20 years or over	Average tenure (years)	Median tenure (years)
Lithuania (2001)	15.4	8.9	21.6	25.4	16.8	11.9	8.3	5.0
<i>Sector</i>								
Private sector	22.2	11.6	25.3	21.9	11.0	8.0	6.1	3.2
Public sector	6.1	5.3	16.6	30.1	24.8	17.1	10.7	8.0
<i>Firm size</i>								
-10	30.3	12.3	27.3	17.5	8.2	4.4	4.6	3.0
11 - 19	20.2	12.3	25.3	25.6	11.4	5.3	5.5	4.0
20 - 49	12.9	9.0	24.6	27.3	14.9	11.3	8.0	5.0
50+	9.9	7.1	17.6	27.5	21.9	16.1	9.8	7.0
Czech R.	19.2	36.6		12.0	14.8	17.4	9.0	2.0
Denmark	25.1	11.4	16.2	18.2	17.7	11.4	7.9	4.4
France	15.0	8.0	17.7	17.4	23.3	18.7	10.7	7.7
Germany	16.1	9.4	22.0	17.2	18.4	17.0	9.7	10.7
Poland (1999)	14.5	11.7	19.0	17.7	20.3	16.7	9.6	6.2
Spain	35.5	4.9	11.1	14.4	17.7	16.5	8.9	4.6
United Kingdom	19.6	10.7	19.5	23.5	17.3	9.4	7.8	5.0
United States	26.0	8.5	20.0	19.8	16.8	9.0	7.4	4.2

a) Wage and salary workers

Note. data refer to 1995, unless stated otherwise.

Source: Lithuania - LFS May 2001, Bank staff calculations

Poland - LFS February 1999, Bank staff calculations

OECD countries - OECD Employment Outlook 1997

As expected, Lithuania fares worse on another measure of labor market dynamics, which is the percentage of workers in new jobs. There are less new hires in Lithuania than in most of the OECD countries. For example, 15 percent the proportion of new hires in Lithuania some 20 points lower than in Spain and 10 points lower than in Denmark.

²⁵ High mean and low median tenure in Spain reflect the dual character of its labor market: a flexible segment consisting of workers on fixed-term contracts and thereby short employer tenure, and a rigid segment, consisting of workers with permanent contracts and thus long employer tenure.

(Table 17). Compared with transition economies, Lithuania has relatively less new hires than the Czech Republic but somewhat more than Poland.

What all these figures tell us about the labor market in Lithuania? Consistent with earlier findings, they point to “one-way” labor market dynamics. There is substantial “transition dynamics”, which has manifested itself in a substantial number of job separations, and has shortened employer tenure of a large number of workers.. However, there is still little “development dynamics” which would manifest itself in intense hiring and job creation. Lithuanian workers have lost job security, but have not yet gained the hope for finding a new job.

The overall picture presented above conceals significant variation in job stability across firms and sectors. There are distinct differences in the distribution of job tenure between the public and the private sector as well as depending on the firm size (Table 17). Not surprisingly, jobs in the public sector are much more stable than in the private sector. A mirror image of this is a much greater dynamics in the private sector. A median worker in the private sector has tenure of 3.2 years, while his public sector counterpart’s tenure is 8 years. At the same time, 22 percent of workers in the private sector work for less than year, compared with only 6 percent in the public sector.

Expectedly, small firms offer less secure jobs than large firms. The smaller the firm, the shorter job tenure and the higher the proportion of new hires. To illustrate, median tenure in firms employing up to 10 workers is 3 years and the proportion of workers with less than one year tenure is 30 percent. In comparison, in firms employing 50 or more workers median job tenure is 7 years—more than twice as long as in small firms—and the proportion of new hires is 10 percent, that is one-third of that in small firms. Thus, the worker looking for a job has the biggest chance to find it in a small firm, however his/her chances to keep it for a longer period will be limited.

Employer tenure data prove that small private firms constitute the most flexible and dynamic segment of the labor market, despite facing the same regulatory environment as larger or public firms. One likely reason that large, state owned firms are characterized by less labor turnover is that they are strongholds of trade unions, which are

in position to enforce existing regulations and turn them to the advantage of their members.

What is the size of the flexible segment of the Lithuanian labor market? If one assumes that “flexible firms” are those employing up to 50 workers, then about one-half of the Lithuanian labor market is flexible, while in the other half of the market regulations appear more binding and thus restricting labor turnover. The flexible segment seems to be somewhat smaller than in Poland, where small firms account for 65 percent of total employment. A caveat is in place here, however, that one cannot draw far reaching conclusions based on just one indicator of the extent of flexibility. Firm level flexibility is affected by a number of factors, not just by firm size. But if indeed the size of the flexible segment is relatively small in Lithuania, then labor market deregulation can be a way of enhancing labor market flexibility and job creation, although admittedly at the cost of less job stability.

Another component of the flexible segment of the labor market are so called “flexible jobs”. These include fixed-term and temporary jobs, part-time jobs, and self-employment. They have recently received much attention, since they have accounted for a large part of employment growth that has occurred in the EU. How does the Lithuanian labor market score in this respect? The data indicate that flexible forms of employment are very limited in Lithuania. Fixed term and temporary contracts are not popular and account for only 6.5 percent of all employment contracts. Similarly, part-time jobs are held by less than 9 percent of workers, and thus are relatively rare. Finally, self-employment is not a common form of employment, either. Only one in ten Lithuanian workers chooses self-employment as a way of earning a living, which is less than in most transition economies of Central Europe, and also less than in some EU countries, such as Spain or the U.K (Table 20). Accordingly, the vast majority of jobs are traditional permanent, full-time and dependent jobs. If anything, flexibility is achieved through employment adjustment (firing and hiring), rather than by using flexible forms of employment. Relatively few workers are ready to give up traditional regular employment and take up the risk of becoming self-employed entrepreneurs.

Table 20 Non-Agricultural Self-employment: Lithuania against Selected Countries

	Self-employment
	% of total employment
Lithuania (2001)	10.5
Czech R.	13.2
Denmark	6.9
France	8.2
Germany	9.4
Hungary	13.1
Netherlands	9.7
Poland	12.0
Spain	17.6
United Kingdom	11.4
United States	7.0

Note: Data refer to 1998 unless stated otherwise

Source: Lithuania: LFS May 2001, Bank staff calculations.

Poland: LFS February 1999, Bank staff calculations

OECD: OECD Employment Outlook 2000

The limited incidence of flexible forms of employment reflects the existing regulatory restrictions on the use of fixed-term contracts, possibly unfavorable treatment of part-time employment with respect to the entitlement to various work-related benefits, and probably the lack of tradition and incentives to use flexible contracts. The low share of self-employment is somewhat surprising given the innovative system of so called “patents”, i.e., licenses (permits) to carry out short-term economic activity. These “patents”, which are relatively cheap and easy to obtain, are intended to formalize activities usually carried out in the informal sector (small trade, some services, etc.). One would have expected that this system will result in an increased scope of self-employment, which apparently is not the case (although one does not know the counterfactual).

The presented data show that there is still room in Lithuania to increase employment through a more widespread utilization of flexible employment contracts and self-employment options. In this context, the recent plans to restrict the use of fixed-term contracts by limiting the number of permissible renewals to one seem counterproductive.

While the idea behind these plans—to increase job security and protect workers from possible abuse of FTCs by employers—is understandable, its implementation is likely to be achieved at the cost of limiting hiring and employment growth. There is a trade-off here, but given high unemployment in Lithuania, the priority should be given to fostering hiring. At the same time, extra care should be taken not to create a dual labor market: a highly protected segment, consisting of workers with secure jobs, who practically cannot be dismissed, and an unprotected segment consisting of workers having precarious, temporary jobs. Such dualism is in general bad for labor market and macroeconomic performance and can be avoided by deregulating and improving flexibility of the labor market at large.

Earnings Inequality

Labor market liberalization and institutional changes associated with the economic transition have brought about a marked increase in earnings inequality. As a result, jobs differ substantially in terms of the pay they offer. In particular, low and high paying jobs have emerged, while the number of middle paying jobs, which were prevalent under central planning, has shrunk dramatically. This trend of increasing earnings inequality has been characteristic of virtually all transition economies, although the countries vary significantly as to the attained level of inequality (Rutkowski, 2001). How large are earnings inequalities in Lithuania? What is the risk of low-pay and what are the chances of high earnings? This section will attempt to answer these questions. The answers are important not only from the point of view of workers' well-being, but also from the point of view of overall labor market flexibility. Flexible labor market are characterized by higher earnings dispersion, which arguably is conducive for job creation and higher employment (OECD 1994, Bertola et al., 2001). Thus, a higher proportion of low-paid jobs may imply a greater absolute number of jobs, especially low-skilled jobs.

Earnings inequality in Lithuania is rather low in comparison with other transition economies of Central and Eastern Europe and modest by the EU standards. Table 21 shows some commonly used indicators of inequality for Lithuania. The Gini coefficient—a summary measure of inequality ranging from 0 (no inequality) to 100 (extreme inequality)—amounts to 27.3 in Lithuania, which indicates modest earnings

dispersion.²⁶ A more intuitive measure of inequality is the decile ratio, which can be thought of as the ratio of high wages (upper decile) to low wages (bottom decile). This ratio is 2.8, which again indicates a modest level of inequality.

Table 21 Summary of Earnings Distribution, 2001

	Mean	Bottom decile	Median	Top decile	P10	P90	Decile ratio	Gini coeff. (*100)	Low- pay	High-pay
	Litas						%			
All workers	639	357	600	1004	59.5	167.3	2.8	27.3	22.5	17.2
<i>Sector</i>										
Public sector	734	367	640	1100	57.3	171.9	3.0	26.6	16.4	21.5
Private sector	646	350	520	1,000	67.3	192.3	2.9	27.4	27.1	14.0
<i>Firm size</i>										
-10	647	346	500	1,000	69.2	200.0	2.9	..	34.8	12.5
11-19	625	357	500	1,000	71.4	200.0	2.8	..	26.6	13.6
20-49	635	358	560	1,000	63.9	178.6	2.8	..	23.9	12.2
50+	719	365	600	1,100	60.8	183.3	3.0	..	17.6	20.6

Note: P10 denotes the earnings of the bottom decile relative to the median, expressed as a percentage. The incidence of low (high) pay = low(high) paid workers as a percentage of all full-time wage and salary workers.

Source. Labor Force Survey, May 2001, Bank staff calculations

Another dimension of wage inequality is the “distance” between the low paid worker (at the bottom decile) and the median worker, as well as a distance between the median worker and the high paid worker (at the upper decile). In line with earlier results, these distances are not very high by standards of transition economies. The bottom decile worker earns about 60 percent of the median wage (P10 ratio), which means that his/her relative earnings position is relatively good. On the other hand, the top decile worker earns 67 percent more than the median worker (P90 ratio), implying somewhat limited premium for high skills (productivity). In most transition economies the relative earnings

²⁶ This figure, calculated using the household based LFS data is significantly lower than the Gini coefficient calculated using results of an employer based survey of wages and reported in Rutkowski (2001). This is quite common, however renders assessing the “true” degree of inequality, and in particular international comparisons, difficult. We have more confidence in the value reported here than in that reported earlier in Rutkowski (2001) since the latter was calculated using aggregate data, with a high proportion of workers concentrated in the bottom wage bracket (which is likely to lead to the overestimation of the degree of inequality). On the other hand, the figure reported here is probably somewhat biased downward due to bunching of reported wages around some particular values (multiplies of 100), which is typical of household based surveys of wages.

position of low paid workers is worse than in Lithuania, while the relative position of highly paid workers is better. This is of course tantamount to saying that earnings dispersion in Lithuania is relatively limited.

Is the limited earnings dispersion in Lithuania a good news or bad news for workers? As already mentioned, the answer is ambiguous. It is good news to the extent higher income inequality reduces worker welfare. On the other hand, it is bad news to the extent it entails lower returns to high skills and, even more importantly, to the extent it translates in more harmful inequality, namely that in access to jobs. The latter effect may occur if relative wages do not adjust sufficiently to changes in demand for and supply of different categories of workers (e.g., low skilled workers vs. highly skilled workers) and thus price some workers out of the labor market. In other words, insufficient wage dispersion may entail the reduction in the number of low skilled jobs and thus contribute to unemployment.

Does the degree of wage flexibility—approximated by wage dispersion—vary by firm type? For example do small private firms have a more dispersed wage structure than large state owned firms? Rather surprisingly, there does not seem to be much difference in wage setting practices between small and large, private and public firms. Across all types of firms the bottom decile wage varies between 350 and 370 Litas and the top decile wage varies around 1,000 Litas. The lack of visible differences in wage dispersion across sectors distinguishes Lithuania from other transition economies, where as a rule wage variation in the private sector is considerably higher than in the public sector (Rutkowski, 2001). One possible reason, relating to the bottom tail of the wage distribution, is the minimum wage—which has more “bite” in Lithuania than in most other transition economies—that effectively prevents firms from adjusting wages downwards, and produces an uniform wage floor. It is more difficult to find a plausible explanation for the compression at the top tail of the wage distribution. More research is needed, taking into account differences in human capital and other factors influencing wages across firm types.

Another facet of labor market flexibility and associated wage inequality is the proportion of low-paying and high-paying jobs. The more flexible the labor market, the

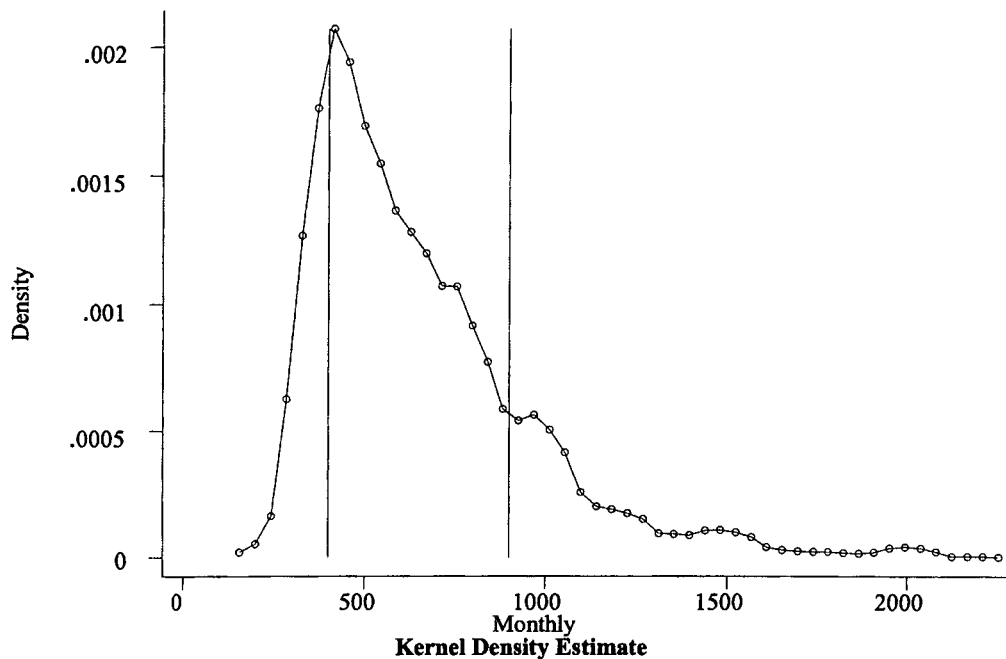
higher the inequality and the higher the incidence of low—and high-pay. It is the low-paying jobs that are the focus of social policy. On the one hand, low-paid workers are preponderant among the working poor. On the other hand, for many low-productivity workers getting a job, even a low-paid job, is the only way to escape poverty. This is yet another reflection of ambiguity associated with earnings inequality that we have encountered earlier.

Quite surprisingly, the incidence of low-pay is relatively high in Lithuania, especially given its modest level of wage inequality. This reflects the fact that the earnings distribution in Lithuania is strongly positively skewed, i.e., has a short but “heavy” lower tail. As shown in Figure 2.3, the proportion of low paid jobs is high (this proportion is depicted as the area under the curve left to the first vertical line), however these jobs are not very much different (in money terms) from middle paying jobs (depicted as the area under the curve between the two vertical lines).

Specifically, defining low pay in a common way as earnings less than two-thirds of the median, we find that 23 percent of workers in Lithuania are in low-paid employment. This proportion is high by OECD standards, (although not by transition economies standards) and is higher than in countries with a comparable level of inequality. For comparison, the incidence of low-pay in the Czech Republic (a low inequality country) is around 16 percent, in Poland (moderate inequality country) is 18 - 19 percent, and in Latvia (relatively high inequality country) is over 26 percent. In most of the EU countries the incidence of low pay does not exceed 15 percent.

The bottom line is that there is a lot of low-paid jobs in Lithuania, but in relative terms they are only moderately, not extremely, low-paid. The implication of this is that wage flexibility is probably sufficient to provide jobs for less skilled workers skills, but it may be insufficient to provide jobs for workers with no or little skills, which are disproportionately represented among the unemployed.

Figure 3 Earnings Distribution, 2001



Source: Labor Force Survey, May 2001, Bank staff calculations.

Which firms provide low-paying jobs and which provide well-paying jobs? Not surprisingly, in the private sector low-paying jobs are more prevalent than in the public sector (27 percent and 16 percent, respectively). Contrary to common perception, however, well-paying jobs are concentrated in the public sector, rather than in the private sector (22 percent and 14 percent, respectively). This is not untypical for transition economies, what is striking is that the incidence of well-paying jobs in the private sector is in Lithuania so much lower than in the public sector. A couple of factors can account for this situation. First, the public sector may be located in more skill-intensive industries (such as education and health care) and thus have higher proportion of highly skilled labor. Second, there may be some rents in the public sector, which are appropriated by workers and which lead to wages higher than the equilibrium level. Determining which factor is at work requires further investigation, which goes beyond the scope of this paper. The upshot is, that the private sector in Lithuania provides a large number of low-paying jobs while offering relatively few opportunities for high pay, which can be

interpreted as that's sector immaturity. Probably, as the sector matures, it will increasingly occupy the top-jobs niche.

Expectedly, small firms are the main source of low-paying jobs, while larger firms are the main source of well paying jobs (Table 21). In small firms (with less than 50 workers) from one-fourth to one-third of all jobs are low-paid (the smaller the firm, the larger the proportion). In larger firms, the fraction of low-paid jobs—less than one-fifth—is much smaller, although still sizeable. Conversely, few jobs (12-14 percent) pay well in small firms, while in larger firms one-fifth of all jobs is relatively well paid. In line with these data, the average wage in small firms is lower than in larger firms, although this simple comparison disregards inter-firm differences in human capital.

To summarize, wage flexibility seems to be limited in Lithuania, particularly at the lower end of the wage distribution, which is probably accounted for by the relatively high minimum wage. Although low paid jobs are numerous, the wage differential between a low paid job and the median job is rather modest. This suggests, that the supply of jobs for workers with lowest skills and productivity may be unduly limited. Small private firms provide the bulk of low-paid jobs, and pay on average lower wages than larger and state owned firms. This reinforces the view that they constitute the most flexible but also the least protected segment of the labor market. The segment is large, serving mainly workers in the bottom tail of the skill distribution. Firms in this segment offer mainly low productivity, low paid, precarious or casual jobs. These jobs may not be valued highly from the worker welfare perspective, but often they are the only chance for the unemployed to find work.

IV. EMPLOYER PERSPECTIVE: CONSTRAINTS TO EMPLOYMENT AND WAGE ADJUSTMENTS

This section looks at constraints faced by employers in adjusting employment and wages to the changing demand conditions. Constraints to employment adjustment come primarily from the employment protection legislation (the labor code), which imposes some firing and hiring costs. Constraints to wage adjustment come mainly from the existence of the statutory minimum wage. We briefly describe existing legal framework for employment and wage protection and compare it with that existing in selected other

transition economies. We also try to assess to what extent the regulations are binding, and recommend some measures to improve labor market flexibility. Our analysis indicates that regulatory barriers to labor market flexibility are modest in Lithuania, broadly in line with those in other transition economies characterized by relatively flexible labor markets. However, relatively high minimum wage is likely to constrain necessary wage adjustments. Both these facts—relatively low firing costs and high minimum wage—are consistent with high rates of job turnover and a modest degree of wage dispersion documented earlier. Although labor market rigidities are not overwhelming in Lithuania, in some dimension labor market flexibility can be improved—we address some of the issues in the concluding part of this section.

Constraints To Employment Adjustment

In theory, dismissals are easy in Lithuania. In practice they may turn out rather difficult and costly. The Law on Employment Contract (which is a part of the Labor Code) lists a number of valid reasons for dismissal, which include business needs (e.g., changes in organization of production) and poor-performance on the part of a worker. However, employers tend to complain that in practice dismissals are difficult since the burden of proof that a dismissal was justified is on the employer. Workers (especially those laid off for disciplinary reasons) often resort to court appeal, claiming unfair dismissal, and courts tend to exhibit a pro-labor bias and as a rule order job reinstatement and payment of compensation amounting to forgone earnings (up to 12 months salary). To the extent this indeed is the case, there is a risk involved in firing a worker, and monetary costs of dismissal—if found invalid—can turn out to be substantial. This can effectively prevent some employers from firing redundant workers. It seems, however, that the dismissal costs result mainly from the judicial interpretation of the law in favor of workers, rather than from the law itself.

The law offers a way to reduce the risk associated with dismissals, but this comes at relatively high price. There is a provision whereby an unconditional dismissal is feasible (i.e., the employer is not required to prove a valid reason) provided that the employer pays a statutory compensation. The amount of the compensation is proportional to job tenure and ranges from 4 months to 12 months salary.

In the case of normal dismissals, the employer has to give an advanced notice two months prior to termination of employment and offer severance pay, which is related to job tenure and ranges from 1 month to 3 months salary.²⁷ These costs are the same for both individual and collective dismissals.²⁸ However, in the case of collective dismissal local authorities can suspend the dismissal for up to 6 weeks, which can lead to additional costs. All in all, these dismissal costs are within the range characteristic of other transition and OECD economies, although the advanced notice in Lithuania is rather long for workers with short job tenure—2 months compared with 2 weeks in Poland (Annex 2).

Fixed-term contracts are a second-best way of lowering employment adjustment costs in countries where the termination of indefinite duration employment contracts is difficult and costly. However, in many countries there are regulatory restrictions on the use of fixed-term contracts in order to prevent their abuse by employers and provide greater job stability to workers. Such restrictions exist also in Lithuania and consist of both a limit on the maximum cumulated duration of successive contracts (5 years), *and* the number of successive renewals (two).²⁹ These restrictions seem excessive. Given that employers facing fluctuations in demand prefer short-term (one-year, say) contracts, the effective total duration of fixed-term contracts is likely to be limited in most cases to two years. As a rule, countries use *either* a limit on the total duration, *or* a limit on the number of renewals (Annex 2).

An alternative to employment adjustment is working time adjustment. In Lithuania employers have an option to redistribute working hours within a period of one quarter and to use overtime, which implies some degree of working time flexibility. However this degree is limited and can be enhanced. First, the period within which employers are allowed to redistribute working hours is relatively short. The longer the period during which employers can reschedule working hours the larger the room to adjust working time to seasonal fluctuations in demand. The world trend is toward

²⁷ Some worker groups, such as workers with children, workers with disabilities and workers near retirement, are entitled for 4 months advanced notice of dismissal.

²⁸ In many countries collective dismissals are associated with higher costs than individual dismissals. For example, in Poland severance pay is mandatory only in the case of a collective dismissal.

²⁹ It is planned that in the revised version of the labor code the renewals of fixed term contract will be prohibited.

annualization of working hours, i.e., calculating the weekly working time on a yearly basis (Ozaki, 1999).

Second, the use of overtime is restricted by a relatively strict yearly limit of 120 hours, and by a high mandatory overtime premium (50 percent of base salary). The limit on the use of overtime is in Lithuania much stricter than in most other countries. For example, in Estonia and Hungary it is 200 hours. As regards mandatory overtime premia, they are high in most transition economies of Central and Eastern Europe, and Lithuania is not an exception. It should be borne in mind however that in many OECD countries overtime premium is only 25 percent, thus is half as high as in Lithuania. Moreover, in many countries efforts have been made to minimize the cost of overtime work. An increasingly widespread measure is to grant compensatory rest time instead of extra overtime payments (Ozaki, 1999).

Constraints To Wage Adjustment

Constraints to wage adjustment come from the existence of the statutory minimum wage, as well as from other so called wage floors, such as unemployment benefit, which provide a floor for the wage distribution. Here we focus on the role played by the minimum wage. Since the mid 1990s the minimum wage in Lithuania has been relatively high (Table 22). Currently it accounts for about 40 percent of the average (mean) wage. This is high by standards of most transition economies of CEE, where the minimum wage tends to account for around 30-35 percent of the average wage, but for example in Estonia the minimum wage accounts for less than 30 percent of the average wage (IMF, 2001).

Table 22 Evolution of the Minimum Wage, 1994-2000

Minimum wage as % of	1994	1995	1996	1997	1998	1999	2000
Gross average wage	15.5	26.1	35.7	45.8	41.4	40.0	39.5
Median wage		..	..	..	..	50.1	..
Bottom decile		..	..	..	..	97.1	..

Source. Earnings indices 1991-2000, Statistics Lithuania, Vilnius 2001. Earnings distribution in October 1999, Statistics Lithuania, Vilnius 2000.

Although the “bite” of the minimum wage is commonly measured by the ratio of the minimum wage to the mean wage, this can be misleading, especially when wage distribution is unequal and widening. The problem with using the average (mean) wage is that it is not representative of market wages of “typical” and all the more of low-skilled workers. The average wage is to a large extent influenced by earnings at the top of the distribution, and owing to the asymmetric nature of earnings distribution, a vast majority of workers earn less than the minimum wage. Therefore a more accurate measure of the bite of the minimum wage is the ratio of the minimum wage to the *median* wage, or to the bottom decile. On these measures the bite of the minimum wage in Lithuania proves substantial. The minimum wage accounts for 50 percent of the median wage and is close to the bottom decile. The latter fact indicates that there is a relatively large number of workers working at or even below the minimum wage.³⁰

High minimum wage prevailing in Lithuania in recent years might have had a negative employment impact. This is because a minimum wage that is high relative to productivity inhibits the creation and encourages the destruction of low-productivity jobs. The gain is faster restructuring and higher average productivity, however it comes at the high social costs of higher unemployment, as low-skilled workers are priced out of the market. Put differently, high minimum wage leads to employment rather than wage adjustment, which carries both benefits and costs (Boeri and Terrell, 2001).

Are the Constraints Binding?

Regulatory constraints restrict employers’ choices to the extent they are strict and enforced. For example, the minimum wage set a very low level relative to the average wage would have no impact on the employers decisions regarding employment. Nor would have a high minimum wage if enforcement was lax, i.e., there was no penalty for violating the law. We use a simple “test” to determine if regulatory constraints to labor market flexibility are binding in Lithuania. Namely, we look at labor market outcomes which are indicative of flexibility, such as job creation, job destruction, wage distribution,

³⁰ Relatively high incidence of minimum or sub-minimum wage employment in Lithuania can be in part accounted for by underreporting of wages by employers in order to lower the burden of taxation and social security contributions.

etc. To some extent we have already done this earlier, so here we mainly summarize the findings.

Employment protection legislation and associated dismissal costs do not seem to significantly restrict employers' ability to adjust the size and composition of their workforce to the changing product market conditions. High job turnover and in particular the high job destruction rate which persist in Lithuania attest that firing is not prohibitively costly or difficult.

Firing seems to be easier in small firms and more difficult in large firms. One factor behind this is likely to be trade union presence in large, especially privatized firms. Evidence from other transition economies suggests that it is usually the interaction of labor market regulations, union power and ownership structure which results in labor market rigidities. Given regulatory framework, what makes a difference is union presence and power. That is, lay-offs tend to be difficult in firms with strong unions and easier in firms without or with weak unions. In other words, trade unions play a key role in effectively enforcing labor market regulations. Based on casual evidence it seems that Lithuania conforms with this pattern: employment protection regulations are mainly enforced in large, unionized firms, while in small private, non-unionized firms enforcement is weaker. This increases labor market flexibility, but in some cases may come at the price of violation of basic worker rights and standards. This is not only a theoretical possibility, but reality in many small firms. According to anecdotal evidence, in many small firms basic standards of occupational health and safety are often not observed. There is a trade-off here, and not always the optimal balance is struck. In some firms there is too little worker protection while in others there is too much protection and too little flexibility. Relaxing some of the regulatory restrictions while improving enforcement would probably improve the social outcome.

The minimum wage is likely to be a binding constraint to wage adjustment, although in some segments of the economy enforcement seems lax. The major piece of indirect evidence on the detrimental effects of the high minimum wage in Lithuania is high unemployment concentrated among less productive workers: the youth and the low-skilled. Consistent with this is wage distribution that is compressed at the lower end.

There is a visible spike at the minimum wage, suggesting that it truncates the wage distribution. The bite of the minimum wage is particularly pronounced in industries employing large numbers of low skilled workers, such as agriculture, hotels and restaurants, and trade. In these industries the incidence of minimum and sub-minimum wage employment ranges from 20 to 30 percent. However, these figures also indicate that some workers are paid less than the minimum wage.

Indeed, the average wage in the lowest wage bracket is significantly less than the minimum wage, implying that enforcement is weak.³¹ To the extent employers are able to circumvent the minimum wage regulation, it obviously does not harm employment. However (similarly as in the case of the employment protection regulations) it would be preferable to adopt a lower minimum wage with stricter enforcement, rather than the other way round.

While probably limiting employment chances of less-skilled workers, the high minimum wage in Lithuania has likely contributed to the fast pace of enterprise restructuring and productivity improvements. By restricting adjustment of wages to the fall in the demand for low-skilled labor, the high minimum wage in Lithuania forced employers to close low-productivity jobs implying a rise in the average productivity level. The high rate of job reallocation provides support to this view. If this argument is correct, then the high minimum wage would explain the apparent paradox that high job turnover coexists in Lithuania with a stagnant unemployment pool. Job turnover is high, because employers have to close low-productivity jobs and replace them with higher productivity jobs. The unemployment pool is stagnant since low-productivity workers due to the high minimum wage are locked out of employment (Boeri and Terrell, 2001).

To conclude, Lithuania has a modestly restrictive employment protection regulations but a relatively high minimum wage. However, the effects of legal norms seem to be unevenly distributed across different segments of the economy. There is a flexible segment, consisting of small private non-unionized firms, where enforcement of regulations is weak and thus they hardly constrain employers ability to adjust

³¹ According to the employer based survey, the average wage in the lowest wage bracket in 1999 was 330 Lits while the minimum wage was 430 Litas. Although the former figure is biased downwards due to the inclusion of part-time workers, still the discrepancy is substantial.

employment and wages. At the same time, there is a less flexible segment, consisting of large public or privatized firms with strong unions, where actual firing and hiring costs are higher, and thus the adjustment capacity is lower. And on top of this there is a substantial informal sector where employers by definition face virtually no regulatory constraints and flexibility is unfettered.³²

All in all, employers in Lithuania face few effective constraints to employment adjustment, although it involves some procedural and monetary costs. However, they face a constraint to wage adjustment resulting from a relatively high minimum wage, despite the fact that enforcement is not very strict. As a consequence, job turnover is high but so is unemployment, concentrated among those with low-skills and little labor market experience.

Policy Recommendations

Although the labor market in Lithuania is relatively flexible, there is a number of measures that if undertaken would improve labor market performance. These include:

- Lowering dismissal costs by making advance notice of dismissal related to job tenure and shortening it for workers with short tenure;
- Liberalizing the use of fixed-term contracts by removing a limit on the number of successive renewals while keeping the existing limit on total duration;
- Adopting the practice of annualization of working hours, i.e., calculating the weekly working time on a yearly basis;
- Lowering the cost of overtime work by allowing social partners to negotiate the number of hours as well as the amount and forms of compensation (monetary vs. time off), while setting the ceiling on the total number of hours (at least 200 hours) and the minimum overtime premium at 25 percent of the base salary;
- Gradually lowering the minimum wage as proportion of the average wage (e.g., by suspending the cost of living adjustment) to about one-third of the

³² According to data compiled by SODRA (Social Security Institution), the share of informal sector in employment is from 8 to 13 percent (depending on the definition adopted).

average wage, and in the future pegging the minimum wage to movements in the median rather than mean wage; and

- Alternatively, differentiating the minimum wage by instituting a youth sub-minimum, accounting for 80 percent, say, of the regular minimum wage.

More generally, labor market performance could be improved by letting social partners “negotiate flexibility”, which would be consistent with a world-wide trend (Ozaki, 1999). This would imply deregulating labor relations and devolving the responsibility for determining them to social partners themselves, while the state would be responsible for setting and enforcing only basic norms and standards. In other words, the state should reduce the scope of its regulatory activity in the area of labor relations, and at the same should improve its capacity to enforce basic worker rights and standards.

V. SUMMARY AND CONCLUSIONS

Overall, the labor market in Lithuania is relatively flexible. There are few effective constraints to employment adjustment, as witnessed by high rates of job creation and job destruction. However, the scope for wage adjustment is limited due to the relatively high statutory minimum wage, which might have led to elimination of low-productivity jobs. As a result, there has been far reaching reallocation of labor associated with substantial productivity improvements and thus relatively high economic growth. At the same time, labor resources have been underutilized, which manifests itself in the relatively low labor force participation rate and high unemployment, concentrated among low-productivity workers. In short, the structure of the labor market in Lithuania favors productivity and wage growth over employment growth. Labor market institutions in Lithuania do not seem to inhibit economic growth, however they produce “jobless” growth and persistent unemployment.

Main Issues

Macroeconomic Perspective

The Lithuanian labor market is conducive to efficient allocation of resources and productivity growth, but not contributing to full utilization of labor resources and

employment growth. Specifically, the following trends and patterns prevailing since mid 1990s stand out:

- Economic growth has been achieved due to productivity growth with declining employment and rising unemployment;
- The growth of productivity has translated into an even faster growth of wages, leading to the increase in unit labor cost with a potentially negative impact on labor demand;
- Employment-to-population ratio has been low, largely due to high unemployment and low labor force participation of younger and older workers;
- Despite the substantial labor market slack job turnover has been considerable. A large number of new jobs has been created coupled with a large scale destruction of old jobs. There has been a dramatic reallocation of jobs away from low-productivity uses towards high-productivity uses, indicating far reaching enterprise restructuring;
- New jobs have been largely created by small and medium sized firms as well as by business start-ups. At the same time, SMEs have destroyed a large number of jobs and consequently employment at SMEs—as in larger firms—has not increased;
- Export orientation, capital investment, and productivity improvements are key determinants of job creation by firms;
- At level of an industry, high job destruction does not necessarily imply a net fall in employment. In fact, employment growth at the industry level is negatively (although weakly) correlated with the rate of job destruction, nor enterprise restructuring is tantamount to job losses. After all, employment growth is (weakly) positively correlated with the rate of job reallocation. Thus restructuring tends to be associated with employment growth, not fall. This is in contrast with popular view according to which restructuring is equivalent to downsizing;

- Job reallocation takes place largely within an industry, while reallocation across industries is limited. Similarly, job reallocation takes place within, rather than between, regions; and
- The fast pace of job reallocation occurring in Lithuania has contributed to unemployment by bringing about skill and spatial mismatches, and by giving rise to productivity gains, which in the short-run might have led to employment losses.

Worker Perspective

Workers in Lithuania face job insecurity and difficulties in finding new employment. Especially less skilled workers are at a high risk of unemployment, which often is of a long-term nature. Low chances of escaping unemployment are associated with the skills gap but also with the wage rigidity at the bottom of the distribution. Low skilled workers seem to be locked out of employment by the relatively high minimum wage. Overall, from the worker perspective the labor market is stagnant in Lithuania, and employment prospects are bleak.

The following stylized facts illustrate major issues:

- The high job destruction rate is associated with a short average job tenure and high inflows into unemployment. The laid off workers are the single largest group among the unemployed, however those who quitted their jobs voluntarily are a sizeable minority;
- Although the rate of job creation rate is high, it has a limited impact on unemployment. This is because employers tend to hire from the ranks of already employed (job-to-job transitions) and new labor market entrants. The unemployed account for less than one-half of all hires;
- Accordingly, the exit rate from unemployment is low and unemployment is a rising pool. On average, the duration of unemployment spells is very long which leads to a high share of long-term unemployment. The overall mobility across labor force states is low;
- The unemployed, and especially the long-term unemployed, tend to have lower educational attainment and lower skills than the employed. There is a skills gap

and mismatch, which cannot be eliminated solely thanks to an increase in the overall number of jobs;

- Small firms hire the most workers (relative to their employment) and thus offer the best chances to find a new job for an unemployed person. At the same time however the average job tenure at small firms is short and job security is low;
- The use of flexible forms of employment is limited. Self-employment, temporary employment or part-time employment are relatively rare. At the same time, informal sector employment is sizeable; and
- Earnings dispersion is modest. In particular, wages tend to be compressed at the bottom end of the distribution. The incidence of low-pay is high, however the differential between “low wages” and the median wage is modest.

Employer Perspective

The labor market in Lithuania is over regulated, however actual constraints to the adjustment of the size and the composition of the workforce are modest, in line with those prevailing in OECD countries. There are some procedural and monetary costs of firing, but they do not prevent employers from closing unproductive jobs and laying-off redundant workers.

Wage flexibility is limited by a relatively high minimum wage, which is likely to prevent employers from creating low-productivity jobs. Although the minimum wage regulation seems to be circumvented in some segments of the economy (largely in small firms), it nonetheless is binding in other segments (mainly in larger firms), with a likely negative impact on employment of low-productivity workers. More generally, employers in Lithuania face relatively stringent employment protection regulations combined with relatively lax enforcement (or no enforcement in the informal sector), which is an undesirable mix.

Among issues that should be addressed by labor market reforms aiming at improving labor market flexibility are the following:

- Excessive dismissal costs for some categories of workers (e.g., workers with short job tenure);
- Excessive restrictions on the use of fixed-term contracts;
- Excessive restrictions on the use of overtime; and
- Relatively high statutory minimum wage.

Policy Implications

The list of issues presented above indicates that the functioning of the labor market in Lithuania can be improved and also points to some policy recommendations. The key ones include:

- Improving business environment, especially for SMEs. Small firms are particularly vulnerable to bureaucratic harassment and taxation (in the broadest meaning of the word). At the same time, SMEs play a critical part in both job creation and job destruction. Improving business environment thus carries the potential to foster job creation and inhibit job destruction with resulting growth in employment;
- Lowering barriers to entry. Business start-ups account for a large fraction of all newly created jobs. Accordingly, fostering entry of new firms is likely to result in faster job creation;
- Fostering the creation of new jobs (by improving investment climate) rather than preventing the destruction of unviable, low-productivity jobs. Analysis indicates that job destruction and restructuring are conducive, not detrimental, to employment growth. Accordingly, attempts to forestall restructuring in order to protect jobs are in the longer-run counter-productive;
- Improving access to credit by small firms with growth potential, and tightening banking practices to prevent the absorption of credit by unviable firms;
- Improving the skills of poorly educated workers as a means of addressing the crucial problem of the skills gap. This can be achieved by improving access to and better quality of primary and secondary education, including vocational

education. Emphasis should be placed on making workers with lower educational attainment trainable and employable, rather than on mechanically increasing the number of workers with higher education;

- Enhancing wage flexibility in order to accommodate the excess supply of low skilled workers. This can be achieved either by reducing the minimum wage as a percentage of the average wage, or by differentiating the minimum wage, e.g., by introducing the youth sub-minimum;
- Promoting flexible forms of employment, including fixed-term contracts, in order stimulate labor supply (e.g., part-time work by women) and labor demand; and
- Most generally and importantly, reversing the implicit rule “strict regulations with lax enforcement” by deregulating labor relations and devolving the responsibility to shape them to social partners, and simultaneously by improving enforcement of key labor rights and standards.

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Annex 1

Description of the Survey of Employment and Wages

The Lithuanian Department of Statistics carries out an annual survey of employment and wages (known as DA-03). This survey was a primary source for the analysis of job creation and job destruction. The main characteristics of the survey are as follows.

Firm Coverage

The survey is a census of all registered enterprises in the non-financial sector (regardless of size, firm ownership, etc.). However, excluded are individual natural person firms, agricultural firms, financial enterprises, and budgetary units (schools, hospitals, etc.).³³

Definitions

Employment = average employment (over a year), including full-time and part-time workers.

Wages = annual gross wage bill (including social security contributions).

Non-Response and Missing Values

If a firm does not respond to the survey but is active (according to the Business Register), then data is imputed based on administrative records. The Statistical Department makes substantial effort to determine if the non-response is due to the lack of activity, or due to unwillingness to respond. The lack of activity is coded as zero (or a missing value), whereas in the case of a genuine non-response an estimate is substituted for actual data. This allows one to identify business start-ups and closures.

Business start ups are defined as follows:

$$E(t) = 0 \text{ and } E(t+1) > 0.$$

Business closures are defined as :

$$E(t) > 0 \text{ and } E(t+1) = 0$$

where $E(t)$ stands for employment at time t .

Data Cleaning

In a few cases matched employment records showed implausibly large increases or decreases in firm employment over a year. Such large employment changes are likely to reflect either mergers, or splits, or can be spurious, i.e., reflect errors in data entry. Given that such outliers have a large weight and bias the data on job creation and destruction, they were removed from the data set. An observation was treated as an outlier if the employment change was large in both absolute and relative terms. A large absolute change was defined as that exceeding two standard deviations (the distribution of

³³ Strictly speaking, data for the so called budgetary units are provided at the county level, but not at the individual unit level. The county level data were not used in the analysis of job turnover.

employment changes is approximately normal). A large relative change was defined as either 50 percent fall in employment or 600 percent increase in employment.

Annex 2
Indicators of Employment Protection in Lithuania and Selected Transition Economies (as of 2001)

	Lithuania	Estonia	Hungary	Poland
A. Individual dismissal				
Conditions for fair dismissal	Business needs, non-performance, inadequate skills, disciplinary reasons, or compensation form 6 month salary (tenure<1years) to 36 months salary (tenure>20 years)	Non-performance or business needs	Non-performance or business needs	Lack of competence, redundancy of the job
Advanced notice	Unrelated to tenure	Related to tenure	Related to tenure	Related to tenure
Minimum	2 months	2 months	30 days	2 weeks
Maximum	4 months (workers with children, workers 5 years before retirement, disabled, etc.)	4 months (if tenure more than 10 years)	90 days	3 months
Severance pay	Related to employer tenure	Related to employer tenure		
Minimum	1 month salary	2 months	1 month (tenure <5 years)	None, but 1 month in case of termination due to disability or retirement
Maximum	3 months salary	4 months salary 12 months for civil servants	6 months (tenure>25 years)	

	Lithuania	Estonia	Hungary	Poland
Monetary compensation in case of unfair dismissal	Forgone earnings up to 12 months salary	Up to 6 months wages	Severance pay is doubled and extended to those below 3 years of tenure	Forgone earnings up to two months plus compensation up to 3 months salary
B. Collective dismissals				
Minimum number of workers constituting collective dismissal	10 workers within 30 days	Not regulated legislatively	10 workers	10% of workers in firms employing less than 1,000 workers within 30 days
Obligatory notification, consultations, or approval	information sent to local government and local labor office	Notification of workers' representatives	Consultations with trade unions or works councils; notification of local employment office.	Consultations with trade unions, notification of local labor office
Delay to start of notice and additional notice period	Notification of local labor office 3 months prior to planned dismissal	Not regulated legislatively	30 days 90 days if 25% of workforce or 50+ employees are involved	45 days (elaborate)
Type of negotiations required (number of workers, selection criteria, redeployment, retraining, outplacement, severance pay, etc.)	Attempt of redeployment is a precondition for dismissal	Not regulated legislatively	Consultations on planned reductions and ways to mitigate its effects	Agreement on the number of workers to be dismissed and selection criteria. If agreement cannot be reached, the ultimate decision is with management..
Severance pay	No special provisions for collective dismissals	No special regulations	No special regulations for collective dismissals	Related to total length of service
Minimum				1 month (less than 10 years)
Maximum				3 month (more than 20 years)

Fixed term contracts				
Limitations on use	Only in the case of work that is temporary in nature	Objective reason (list of 6 permissible reasons)	No restrictions expect for public service (objective reason only)	No restrictions
Maximum number of successive contracts	2 (plan is to decrease to 1)	No limit specified	No limit specified	2
Maximum cumulated duration of successive contracts	5 years	5 years	5 years	No limit specified

Overtime				
Limitations on use (other than protection of women, minors, etc.)	Special business needs; worker's consent required			Special business needs
Yearly limit (hours)	120	200	200; up to 300 if agreed in collective bargaining	150
Overtime premium	at least 50% of base salary	at least 50% of base salary	50% of base salary	50% of base salary for two first hours; 100% for ensuing hours
Redistribution of working hours	Possible within 4 months period	By agreement of parties	Possible within one year	Not provided for
Collective bargaining				
Dominant bargaining levels	Firm	National (mostly bargaining over minimum wage)	Firm	Firm
Mandatory extensions of industry level agreements to non-participating firms	No	No	No	No
Statutory minimum wage	Yes	Yes	Yes	Yes
Determined by	Government; proposal submitted by tripartite council	Government; proposal submitted by tripartite council	Government through negotiations with trade unions	Government, based on proposal submitted by tripartite council.
Regular periodical adjustment for changes in costs of living	Periodical adjustments	Negotiated	Regular yearly adjustment	Yes
Percentage of the average wage	Around 40	Around 30	Around 30% until 2001 40% since January 2001	around 40

Source: OECD Employment Outlook 1999, National legislation and regulations

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