Competitive Pressure and its Social Consequences in EU Member States and in Associated Countries

(COMPPRESS, HPSE-CT-2002-00149)

Workpackage 5

Integrated framework to analyse the impact of competitive pressure and enlargement on the interaction between corporate sector, labour market and households

Deliverable 25

Links between firms, individuals and institutions related to competitive pressure and integrated analytical framework to explore these links and interactions

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1. Introduction

Competitive pressure has many facets that have been addressed in different parts of the COMPPRESS project by applying different methodology and using empirical evidence of different nature. Competitive pressure manifests itself in a wide-range of economic and societal phenomena and is an agent of structural and societal change. It is also a key notion in economic policy as the understanding of the nature of competitive pressure and its impact on firms' behaviour and performance is a key factor behind piles of legislation and regulatory norms. Research within the COMPPRESS project corroborates the complex nature of competitive pressure and the important role it plays in modern societies. The project results also underscore complex links that exist between competition-related business interactions, the ensuing repercussions for the participants in the labour market and the more general ramifications for household and the society as a whole, as reflected in societal values.

Workpackage 5 seeks to identify the key mutual links between the main components of the project, looking at interdependencies and interactions between corporate sector, labour market, households and institutions within an integrated analytical framework. The first step in this exercise is to identify the main links and interdependencies between competitive pressure and social values, as revealed in the interactions between firms, individuals and institutions, in accordance with the outcomes of workpackages 1-4. In addition we seek to analyse and assess the nature of these interrelations and the direction of causal links, which is essential for the formulation of policy conclusions and recommendations.

Due to the multidisciplinary nature of the research undertaken within the four workpackages, the integrated analytical framework is also of an interdisciplinary nature and has some inherent eclectic features. Nevertheless, applying this integrative multidisciplinary approach helps to highlight and outline the core aspects of what could be called "a joint descriptive model of competitive pressure and social values" which integrates the links and interactions between corporate sector, labour market, households and institutions in a consistent framework. Such a model – when properly elaborated - could be used as a tool to test the multifaceted combined outcome of different exogenous interventions, including policy actions, as it combines interdependencies and interactions.

Understandably, this research effort is only a first step in this direction. Building a comprehensive functioning integrated model is a colossal task that goes well beyond the

research goals set within the COMPPRESS project. Nevertheless, the multidisciplinary effort to outline the features of this model is an important practical step, which has generated qualitatively new type of knowledge regarding the role of competitive pressure in modern society.

2. Competitive pressure and the interactions between firms, individuals and institutions: a brief review of related recent literature

The economic literature – both theoretical and empirical – on the interactions between firms, individuals and institutions is not very abundant. In fact, it is difficult to find a theoretical treatise covering this theme in a comprehensive and consistent manner. Most of the related literature is largely empirical, drawing on various partial theoretical models. Nevertheless, the policy component features prominently in most of these studies.[1]

A recent OECD study (Gjersem, 2004) is centered on the available evidence on linkages between product market competition and economic growth, and the various policies that may have affected them. The paper argues and provides evidence that competition matters for both growth and welfare as it raises "…the pressure on businesses to allocate and utilize their resources in the best way, while tending to improve the functioning of labor markets. It also pushes enterprises to improve processes and to innovate." To this effect, the study analyses the effect of various policies, including both macro and micro-economic policies and institutional change. *Inter alia*, the paper reviews the institutional set-up of policy making (both EU-wide and national institutions) and highlights the approaches to increase competitive pressures for specific industries (such as network industries). It also quotes Nagarajan (1999) who found that the potential welfare gains for the EU from a "comprehensive trade round comprising market access and trade facilitation" may improve welfare by 1½ per cent. The study discusses reforms of competition legislation (antitrust, merger reviews, state aid and law enforcement) and finds them rather important. A special attention is then paid to European Union-wide liberalisation efforts and restructuring of network activities (gas, electricity, telecommunication, etc.). Despite the ongoing economic integration, in many product markets the "relevant market" is still the national one and this affects the structure of markets and competition. The paper argues that "the gains from

[1] Note that the present brief literature review covers mostly recent works not covered in previous deliverables submitted under workpackages 1-4.

removing trade protection, even unilaterally, are sizeable". It is noted that limits on "parallel imports" can lower domestic competition in branded goods.

A common starting point of related empirical analysis is the theoretical premise that growth may be stimulated by enhancing product market competition and these gains are composed of one-off efficiency improvements and continual gains in productivity. Dynamic gains are linked to innovation activity and diffusion of innovations. Evidence of interactions between the rigorousness of anti-competitive product market regulations and R&D intensity in the business sector, non-tariff trade barriers and R&D, product market regulation and the size of the technology gap are quoted. As for measuring competition, price dispersion and mark-ups are considered. Regulation is generally considered important, and some studies (e.g. Nicoletti el al., 2001) showed that changes in productivity as a result of a change in product market regulation (e.g. entry liberalisation) can be rather sizeable. The model-based analysis has suggested that even a small reform in product or labour markets would substantially affect economic performance in the Euro Area.

A number of studies look at the effect of trade openness and the external trade regime and find these as key variables of industry concentration and competitive pressure. Veugelers et al. (2001) find that productivity growth is lower in industries where concentration and price dispersion are higher. Bernard and Jensen (2004) show that exporting plants have substantially higher productivity levels, and within a given industry, exporters are the ones that grow faster than non-exporters. Reallocation of resources is thus related to foreign presence as exporters draw resources away from non-exporters. For the US, Conway (2006) disentangles three different effects of an increased import competition on plant-level behaviour: drop in domestic sales, improvement of the average plant efficiency and a rise in the market exit rate. A detailed plant-level dataset of the US Census of Manufacturers and the Annual Survey of Manufacturers (1983-2000) is used to analyse these effects. One of the conclusions is that the massive reduction in employment and output in the US textile industry was a result of a mix of reduced employment in the face of rising competitive pressure and a related rise in the market exit rate well over the entry rate. Exogenous technology improvement was underway but mattered much less.

The relationship between openness, reforms and firm reaction may be different for less developed economies. Calderon-Madrid and Voicu (2004) analyse the relationship between import competition and productivity of domestic firms in a situation when trade liberalisation comes together with a major trade agreement with other countries (NAFTA).

The paper uses plant-level panel data to analyse the performance of Mexican manufacturing firms between 1993-2000. Two channels are analysed through which tariff reduction may possibly lead to performance improvements: 1) better access to a larger menu of imported inputs and 2) stronger import competition on domestic markets. Plant performance is assumed to be related to access to technology (expenditures in R&D and technology transfer and "the relative importance of alternative sources of technological transfers"). Firm performance is measured by TFP and job turnover. Using the Levinsohn and Petrin (2000) estimation of TFP, authors construct a productivity index (similarly to Pavcnik, 2002) that measures the distance from average industry practice in a base year for each plant. It is found that most of the productivity improvements at the industry level come from a resource reallocation to more productive firms. In addition firms with higher share of imported (high quality) goods tend to have higher TFP growth. Job turnover at firm level is found to be influenced by the integration of markets and import competition.

Muendler (2004) studies the linkage between trade liberalisation and firm level productivity using Brazilian experience of liberalisation and its reversal. Firm-level TFP is estimated by different methodologies including an extension of the Olley and Pakes (1996) procedure. The Brazilian example of the early nineties serves as an example for both the policy reversal and the size of reforms. In 1991-1993, the government cut inward trade barriers to less than a quarter of their initial levels. The author distinguishes three channels of trade-induced productivity change: 1) foreign import competition in product markets; 2) easier access to foreign equipment and intermediates and 3) competition in the product market. He finds that trade liberalisation does induce competitive pressure. Controlling for the endogeneity of foreign market penetration and tariffs, even a small alteration of tariff would induce serious efficiency gains for surviving firms. Product market competition was found to be a crucial factor once liberalisation takes effect, rising the probability of exit.

Another approach is to analyse the effect of trade reforms on workers (e.g. in terms of inequality) rather than on firms. Attanasio et al. (2003) studies the effects of tariff cuts in Colombia through the 1980s and the 1990s on the distribution of wages. Three main channels were identified through which the wage distribution was affected: 1) increasing returns to college education; 2) changes in industry wages that hurt sectors with initially lower wages and a higher fraction of unskilled workers and 3) shifts of the labour force towards the informal sector that typically pays lower wages and offers no benefits. The results suggest that trade policy played a role in each of the above cases but the overall effect of trade

reforms on the wage distribution may have been rather moderate. The increase in the skill premium was primarily driven by skill-biased technological change partially induced by tariff cuts and increased foreign competition. What trade reform did was exposing domestic firms to both. It is found that wage premia fell a great deal in industries having gone through major tariff reductions.

Several related studies focus on economies in transition. Orazem and Vodopivec (2003) use a data set on all manufacturing firms in Slovenia over the period 1994-2001 to look at how firm efficiency changes in response to changing competitive pressures. They estimate TFP by a translog function and the Solow residual is decomposed into various factors. Unlike the situation in other transition economies, these authors do not identify an effect of the change in firm ownership on firm efficiency in Slovenia. At the same time they find that the most significant effect on TFP growth can be attributed to factors such as the extent of foreign competition, foreign ownership, private ownership, and the market share of new entrants as well as the exit rate. Competitive pressure played an important role in sorting out efficient firms: competition by new entrants, foreign firms as well as importers (international trade) all contributed to industry level TFP gains. The authors argue that the remaining TFP growth was related to the firm fixed-effect that could partly also be attributed to market competition.

Competition-related reforms and their effect on the labour market are addressed in Bhattacharya et al (2004) who estimate the impact of import competition on labour productivity growth in Australian manufacturing using a panel data analysis for nearly three decades. It is argued that foreign competition has a dual effect: on the one hand it can both stimulate the productivity of domestic firms as well as eliminate inefficient producers; on the other hand, a threat of foreign entry and competition may hinder fixed investment thus reducing productivity gains. Bhattacharya et al (2004) also find that labour productivity is increasing over time in both import share and industry concentration. The results imply that when either import share or concentration is low, the trend in labour productivity over the sample period is close to zero or even negative. Higher concentration is associated with a higher positive trend in labour productivity, and the positive trend is magnified further when import share is high. Higher import share seems to have delivered greater gains in labour productivity through time for sectors that are really concentrated. It is argued that both the trade reform and micro-economic reforms (e.g. adoption of new information and technologies, labour reforms) were the main source of the recent productivity gains.

Murrell (2003) analyses the impact of institutions built in the course of economic and political transition in former socialist countries. The paper looks at how the reactions of firms to the new institutions established during the nineties only to find that firm adjustment is slower than institutional construction. Importantly, it is found that income gains may well be behind institutional development, in the case when companies are slow to react and institutional transformation is rapid.

Belke, Göcke and Hebler (2005) look at the effect of an adoption of the EU acquis communautaire on future labour market performance in the Central and Eastern European Countries (CEECs). For this purpose, they analyse and estimate the impact of institutional uncertainty on job creation and job destruction in these countries. They conclude that the effects due to structural change in the CEECs' labour markets are reinforced by reducing the accompanying institutional uncertainty. The paper also attempts to quantify the trade-off between lower institutional uncertainty and higher employment costs.

Mortensten and Pissarides (2001) explore the effects of taxes and subsidies on job creation, job destruction, employment and wages in a theoretical model. Their analytical results show that wage and employment subsidies tend to increase employment, especially of low skill workers, and also increase wages. A job creation or hiring subsidy reduces unemployment duration but increases incidence with an ambiguous effect on overall employment. In a special case, active labour market policies such employment subsidies and hiring subsidies may offsets the related labour market distortions. The costs of these and other policies can be financed by a non-distortionary consumption tax.

3. Interdependencies and interactions between corporate sector, labour market, households and institutions: a synthesis of COMPRRESS outcomes

3.1 General issues and empirical framework

Different Transition Paths

Our empirical results provide strong evidence that the interactions between corporate sector, labour market, households and institutions as well as the related enterprise behaviour and performance change with the stages of economic transformation. In this regard it is

important to point out that the CEECs that are in the focus of this research effort followed very different paths and strategies during their transition from plan to market.

Prior to 1990, while Slovenia and Hungary economies have already been exposed to market conditions, Bulgaria and particularly Romania had highly centralised economies. By 1990, however, all Eastern European countries were already in a decline. After 1990, all economies in transition experienced at least two years of continuous GDP decline. Nonetheless, the economies with longer exposure to market conditions recovered sooner than the centralised ones. The Slovenian economy did pick up after only two years of negative growth rates and Hungary, since 1993, has posted positive economic growth. By contrast, Bulgaria and Romania faced subsequent drop of the real GDP during 1996-1997, and 1997-1999, respectively. Recovery started only in 1998 in Bulgaria and in 2000 in Romania.

Bulgaria initially tried to minimise the social costs of adjustment by postponing harsh measures in the hope that problems were transitory. In 1996-1997, the deepening macroeconomic imbalances escalated into a severe financial crisis combining a crash in public finances, run on the banks and a collapse of the currency, all of which gave rise to a hyperinflationary hike in early 1997. However, since 1997 the situation has changed radically: the course of economic and political reforms has been firmly set and the policy orientation towards a pluralistic democracy and market economy has gained support among a wide majority of the society. In terms of economic policy, the emphasis was placed on fast macroeconomic stabilisation (based on a currency board arrangement) and acceleration of structural reforms. There was a remarkable turnaround in economic performance: inflation rapidly fell to low single digits, public finances were brought under firm control and the economy grew steadily at a relatively high pace which allowed for the recovery of real incomes and private consumption. Microeconomic liberalisation and privatisation followed macro stabilisation. Foreign direct investment gradually picked up after the turn of the millennia. Notably, the opening of accession negotiations with the EU was an important cornerstone of the post-1997 reforms.

Hungary started with very fast microeconomic restructuring: prices and trade were practically fully liberalised at an early phase, followed by a more gradual liberalisation of the capital markets. Laws on auditing standards and bankruptcies effectively cut off a substantial part of corporate deadweight by 1992, when the banking sector was consolidated. Commercialisation progressed rapidly, and Hungary chose early case-by-case privatisation, facilitating massive FDI inflow. Economic recovery accelerated soon after the 1995

macroeconomic stabilisation. Hungary created a stable corporate environment, which was favourable export-led growth, and which led to large-scale restructuring of the economy by 2000. The substantial slow-down of export demand in 2001-2 coincided with a significant loosening of the fiscal policy, and with some populist measures, like doubling the minimum wage in two steps. These two important shocks together decelerated structural adjustment.

Romania experimented with several alternative solutions. It frequently attempted to avoid tough decisions. The government repeatedly tried to address some pressing issues without fully implementing consistent reform packages. This led to frequent policy changes, and the lack of clear transition strategy delayed intensive restructuring. Corporate environment remained unstable until recently, which made firms cautious in adjusting to the new, still uncertain market environment. Similarly to the case of Bulgaria, the situation changed radically with the opening of accession negotiations with the EU. In recent years there has been a remarkable turnaround in economic performance and institutional reforms. As part of these reforms, enterprise restructuring was also given a solid boost.

Slovenia was a country that followed a gradualist reform course and managed to go through the transition process with least turmoil. In particular, it prevented the rapid inflow of foreign capital (including FDI) into the country in an attempt to protect domestic producers. Moreover, the country adhered to capital controls for quite some time after the start of economic transformation. On the other hand, it has to be stressed that this specific policy course was underpinned by favourable starting conditions, including relatively high level of economic development, absence of major macroeconomic imbalances, close historic links with major European markets and partners and good level of human capital development. With the process of accession to the EU, these market restrictions were gradually lifted in order to comply with the *acquis communautaire* and this process of market liberalisation was also engineered without major turbulence.

After 1990, Bulgaria, Hungary and Romania faced population decline. Between 1989 and 2003 the Bulgarian population lost more than 1.14 million persons, Hungary about 447 thousand, and Romania lost about 1.34 million persons. By contrast, the Slovenian population remained rather constant. The main cause of population decline was the dramatic decrease of fertility, but also the migration from Romania and Bulgaria. The population structure by age has also considerably changed. The proportion in total population of the working-age category has slightly increased and the proportion of children has continuously decreased, whereas the share of elderly has grown. Consequently, while the youth dependency ratio

diminished, the 'grey dependency' increased considerable. The ageing process was in 2003 most accentuated in Bulgaria, medium in Slovenia and Hungary, and relatively reduced in Romania.

The enterprise datasets

The empirical analysis of the interactions between corporate sector, labour market, households and institutions within the COMPPRESS project was undertaken on the basis of comprehensive enterprise datasets for four new EU members and acceding countries: Bulgaria, Hungary, Romania and Slovenia.

A brief description of the datasets follows.

Bulgaria

The empirical analysis of the Bulgarian corporate sector has been based on a comprehensive enterprise data base that has been compiled at the Centre for Economic and Strategic Research for more than 10 years. It consists of annual balance sheet data for individual enterprises and covers all Bulgarian enterprises that report to the National Statistical Institute in accordance with the "double entry" accounting method. The time period covered is from 1994/95 to 2002.

The main components of the individual enterprise records are the annual "Balance sheet" and "Income statement" of the enterprise. In addition to that the individual enterprise records contain some supplementary documents with additional annual data. The most important of these are: Income and expenditure (contains a more detailed breakdown of individual income and expenditure items); Fixed assets (describe changes in the course of the year); Receivables and payables (a more detailed breakdown); Cash flow (describes all incoming and outgoing payments in the course of the year); Personnel (by categories) and labour costs (a more detailed breakdown); Investment expenditures; Taxes paid (a more detailed breakdown, including tax arrears); Export earnings (by major currencies).

While consisting of un-identified entities (in accordance with the Law on Statistics) the enterprise data set contains identifiers that allow categorising the firms by different parameters such as:

- ownership. In the tables in the Annex four major ownership categories are identified: SOEs, firms privatized to domestic investors, other domestically owned private firms and firms with foreign participation.

- sector/branch of economic activity (at different level of aggregation). For the purposes of this study we have used mostly the NACE classification (from NACE 1-digit to NACE 3-digit levels).

- location, etc.

The full data set is an unbalanced panel as different number of enterprises have reported in different years. The actual number of enterprises increases from some 20000 in 1995 to more than 80000 in 2002. Some parts of the empirical analysis were performed on the subset of Bulgarian manufacturing firms. The total number of manufacturing firms in the dataset ranges from some 4,000 in 1994 to more than 12,000 in 2002.

Hungary

The Hungarian corporate dataset covers mostly large corporate entities and this prevents the computation of some of the indices directly from firm-level data. Due to this, some of the indices are computed from reported sectoral aggregates, based on all incorporated firms which, in turn, limits to some extent the coverage of the measurement effort. The dataset is thus based on balance sheet information for Hungarian manufacturing firms supplemented with sectoral data. The actual enterprise dataset consists of the profit and loss statements and balance sheets of a sample of firms for the same period. The total number of firms ranges from around 3,000 in 1994 to more than 5,000 in 2003. Compared to Bulgaria, the Hungarian dataset only covers part of the manufacturing sector. The sample includes at least 15%, and usually more than 20%, of all manufacturing firms in every year. However, with respect to sales volume the sample accounts for least 70% of all manufacturing sales in Hungary in every year. Another difference is that the Hungarian dataset covers only firms employing at least 10 people. Thus, the sample selection in Hungary is biased towards the large firms.

The most important tendency which can be observed from the Hungarian indices is the gradual privatisation of state-owned enterprises, very frequently to foreign owners. Even though the number of firms increased more or less steadily in almost all sectors, sectoral concentration, measured by the Hirschman-Herfindahl index of output, or by the share of the largest firms in output or exports, did not substantially diminish in most sectors.

Import penetration increased substantially in several sectors; however, that may also be related to the increasing market share of multinationals: they may import large amount of components for their assembly lines. That will not increase competitive pressure, as that basically represents within firm allocation of resources.

Romania

The empirical analysis of the Romanian corporate sector has been based – similarly to the Bulgarian case - on a comprehensive enterprise data base that has been compiled at the Romanian Centre for Economic Modelling (RCEM) during 1998-2002. It consists of annual balance sheet data for individual enterprises and covers more than 14,000 enterprises that report to the National Institute for Statistics in accordance with the "double entry" accounting method. Unfortunately, the data for 2002 lack the assets form among the indicators, thus not allowing for the computation of any production function in that year.

Like in the case of Hungary, the enterprise dataset is complemented with reported sectoral aggregates, for those categories where data was not available in the company data set. The actual sample of companies covers approximately 80% of the total turnover in the corporate sector; the same coverage ratio is representative for the manufacturing sector (76% without considering 4 sectors with high intrinsic concentration). The data are not equally representative on sections, subsections and divisions. However, for most sectors, available data cover between 75% and 99% of the sectoral turnover. In only one case, the coverage is below 60%. The lowest coverage rates are in services sectors, therefore the dataset is perfectly suitable for an analysis of the Romanian manufacturing sector.

Slovenia

The Slovenian estimations are based on the comprehensive firm-level dataset on trade and capital flows for 1994-2002 compiled by the Bank of Slovenia. It is focused on the manufacturing sector where it covers the overwhelming part of the country's corporate sector (apart from small firms with less than 10 employees). Thus the data used in the empirical analysis are collected from balance sheets and income statements for the Slovenian manufacturing firms. The number of firms in the datasets ranges from some 1000 in 1994 to around 1400 in 2002. These firms have been selected out of total 6,400 manufacturing firms according to following criteria:

– firms with more than 10 employees and more than €1 million of net sales

– in some cases the analysis was based on a balanced panel for the period 1994-2002, thus limiting the number of firms to around 1000.

In addition, a selection was applied in order to preserve the adequate quality of the data and consistency of results.

Household budget surveys

Similarly, the interactions between the corporate sector, labour market and households in the four countries have been analysed on the basis of comprehensive household budget survey compiled by the national statistical offices.

3.2 The interactions of firms, markets and institutions under competitive pressure

Competitive pressure affects firms' behaviour and performance through a variety of channels, in the first place through the actions undertaken by other firms attempting to lure the same limited bunch of customers in the same market. Notably, competitive pressure in product markets arises not only from firms operating in the domestic market (both domestically and foreign owned) but also from imports. Hence, another factor that affects the level of competition on the product markets is the degree of openness of the economy in terms of the freedom of access by foreign firms to sell their products domestically. Actions by other firms provoke counteractions or other responses by incumbent firms that seek to preserve or increase their market share.

The efficient operation of the market mechanisms also affects the degree of competition on the product markets. For example, the existence of various market imperfections (such as information asymmetry, state intervention on the market or administrative controls over the operation of the market) may also affect the level of effective competitive pressure. Notably market imperfections are endemic in immature market economies.

The intensity of competitive pressure faced by the firms operating in a given market is the complex outcome of the interactions of numerous agents. While it arises from the direct interaction of firms with their competitors in the marketplace, these interactions also reflect the indirect effect of the actions of other stakeholders such as government bodies entrusted with the implementation of public policy (in particular, the institutions with delegated authority to implement competition policy), creditors and other financial institutions, suppliers and customers, organized labour unions, business associations, etc. In the broader sense (North, 1990) institutions are the norms and rules, including the incentive systems that govern and structure the interactions of economic agents. In particular, competition policy is

one of the areas where public intervention can and does directly affect firms' behaviour causing it to change compared to a situation of the absence of such regulation. Competition policy also represents one of the realms in which a European-wide approach has attained the highest degree of application. We have also addressed some competition-related interactions between firms and institutions and their effect on enterprise behaviour and performance.

The COMPPRESS project employs different quantitative indicators to measure the level and intensity of competitive pressure in the manufacturing sectors of the Central and Eastern European economies. In particular we use various indicators to evaluate market structure (such as market concentration and size distribution, import penetration, exposure to foreign markets, etc.) as well as other measures of competitive pressure. Being methodologically consistent across countries they also allow direct cross-country comparisons of this aspect of corporate performance in these countries.

We illustrate in a comparative perspective the evolution of market structure in the four economies with two indicators of competitive pressure: market concentration as measured by the Hirschman-Herfindahl index and import penetration (Figures 3.2.1 and 3.2.2)

These results – as well as other similar results of the project – highlight some specific features of market structure and competitive pressure in the corporate sectors of the four acceding countries. One important general finding about the evolution of the corporate sectors in the four countries is the high levels of market concentration of their corporate sectors. The causes for this, however, may differ from country to country: while in Bulgaria and Romania, this high level of concentration is mostly a legacy of the past (when industries were dominated by industrial giants specialised in East European markets), in Hungary it also reflects the entry into the local markets of some large multinationals which managed to seize considerable market shares. Notably, the high level of concentration has been preserved despite the ongoing entry into the markets of large numbers of de novo firms. This can be traced clearly in the case of Bulgaria where the enterprise data set is most comprehensive in terms of the coverage of small de novo firms (in the rest of the countries the available data sets do not have the same level of completeness).

Figure 3.2.1 The evolution of competitive pressure in new EU members and accession countries: market concentration as measured by the Herfindahl index

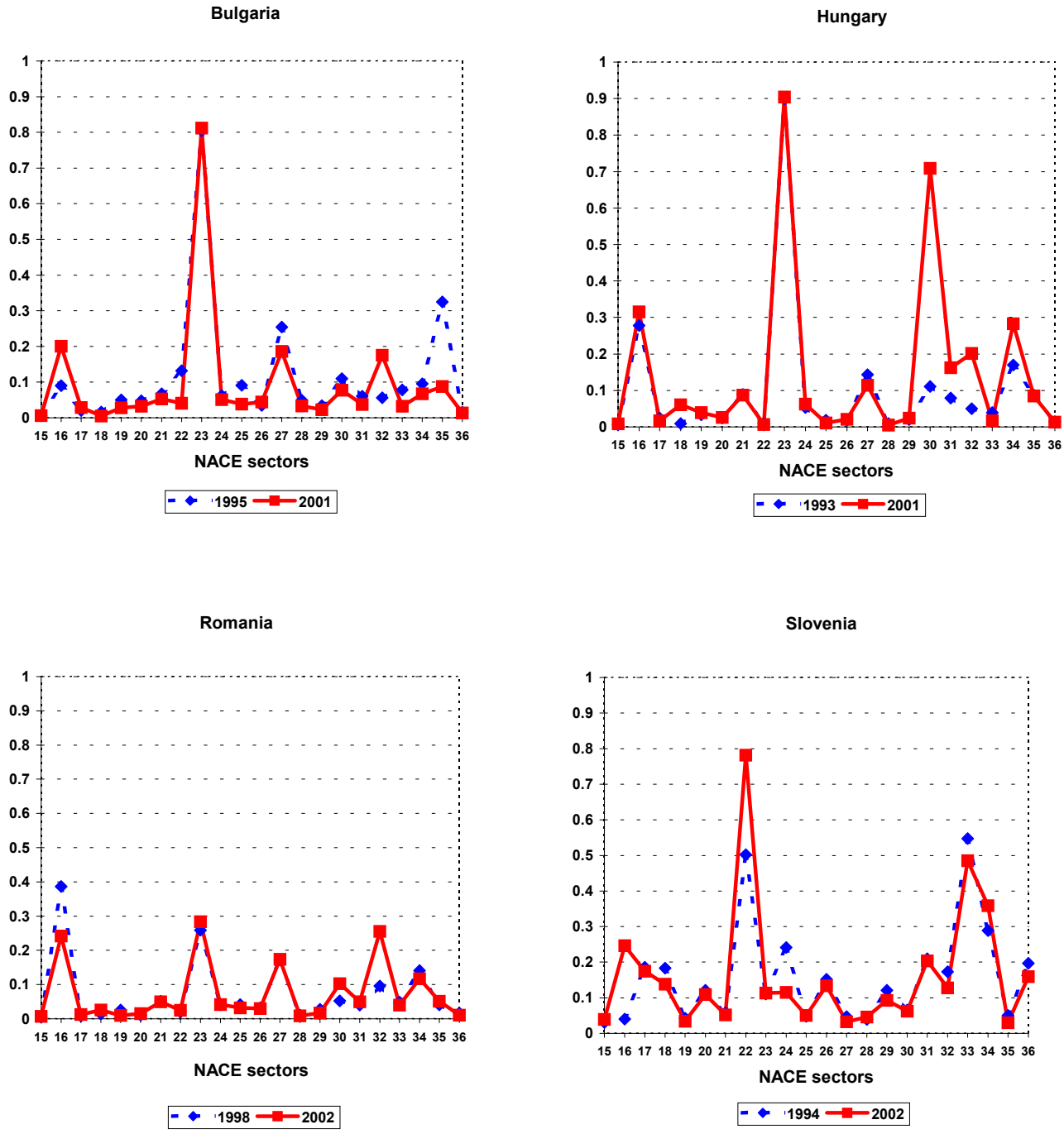
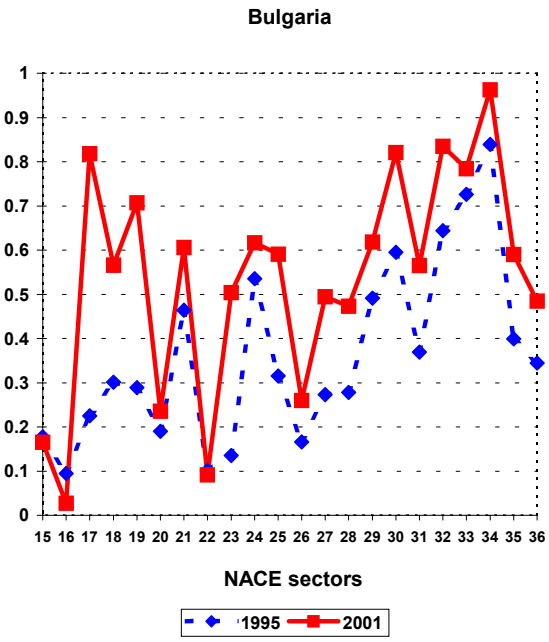
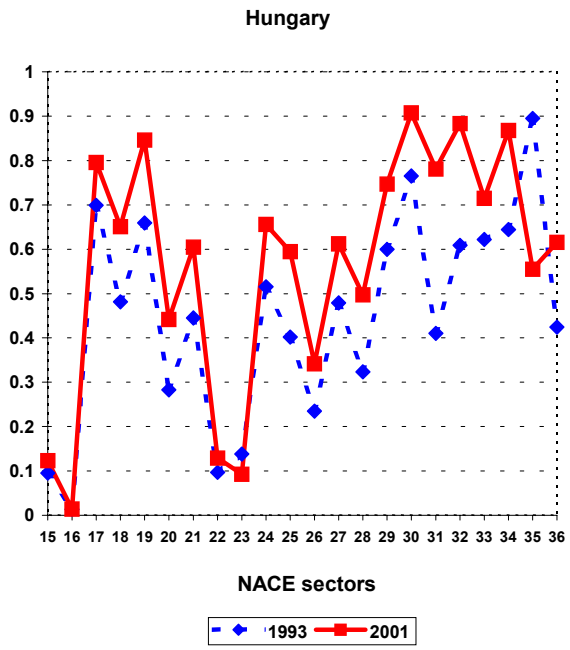
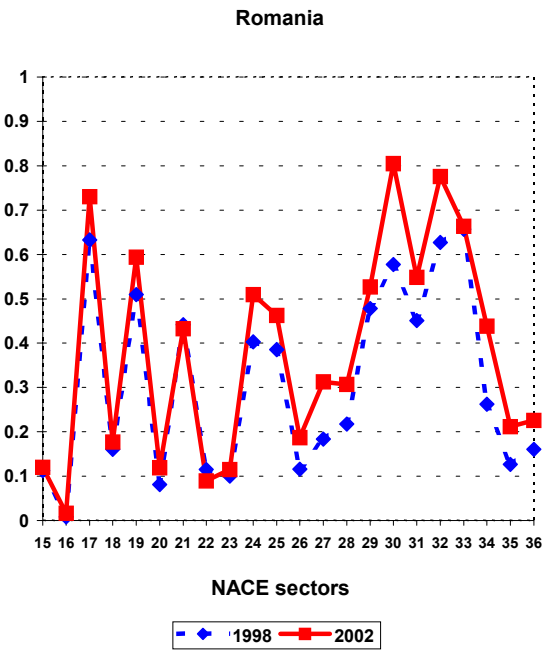
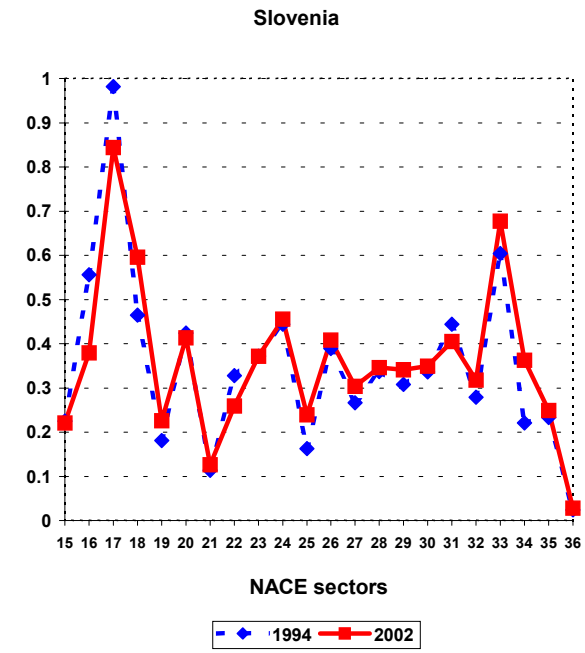


Figure 3.2.2 The evolution of competitive pressure in new EU members and accession countries: index of import penetration









The entry to the local markets of foreign capital and firms (most pronounced in Hungary, but recently accelerating in the other countries as well) has had important implications for competitive pressure in the corporate markets. Notably, this direction of the impact has been ambiguous: in the cases when FDI firms have been able to seize considerable share of local markets (often facilitated by various incentives offered by national policies), they have in fact sought to establish strong market positions, even monopolistic ones (Hungary is probably the most conspicuous example). As a result they have often driven local firms out of their traditional markets; while in most cases this was likely related to efficiency superiority, the strengthening of the market positions of FDI firms can be at least partly attributed to unfair incentives granted by domestic policy (in disfavour of local firms). In these circumstances the impact of FDI firms on market competition may be dubious, and in fact negative. In other countries (e.g. Bulgaria), the inflow of FDI has been scattered in numerous small investments and did not lead to the establishment of new, foreign monopolies. In this case, FDI firms have likely contributed to the increase of market competition in local markets. Openness to trade also plays an increasingly important role in shaping the competitive environment of their corporate sectors, both in terms of import penetration and in terms of exposure to foreign markets. The quantitative measures indicate that these economies have already been exposed to strong competitive pressure coming from trade. In fact, during the past more than a decade of economic transformation, there has been a continuous adjustment by their corporate sector to the competitive pressure stemming from trade.

Competitive pressure and market structure affect firms' behaviour and performance in various ways and induce different responses and adjustment processes. In turn, the firms' adjustment in response to competitive pressure can take various forms and can affect different facets of firm performance, such as the production technology (including the efficiency of factor utilization), the firm's capital structure, the demand for different production factors, the firm's pricing behaviour, etc. In this paper we focus on two types of adjustment: changes in productive efficiency and changes in pricing behaviour, which are among the most important features of the firms' response to changing competitive pressure. Within the COMPPRESS project we analyse several aspects of firms' adjustment in response to competitive pressure.

The effect of competitive pressure on firms' productive efficiency was analysed in the context of an augmented production function (or production frontier). Under the assumption

of exogenous factors that affect productive efficiency the augmented production function takes the form:

(1) $q_j = f\,[A(\boldsymbol{Z}_j), \boldsymbol{X}_j, \boldsymbol{\beta}]\ exp\ (\varepsilon_j)$,

where q_j is output of firm j, $f(.)$ is a suitable functional form, $\boldsymbol{X}_j$ is a vector of firm j's inputs, A is the total factor productivity index, $\boldsymbol{Z}_j$ is a vector of factors that are assumed to determine or affect firm level efficiency, $\boldsymbol{\beta}$ is a vector of parameters to be estimated and ε_j is a normal random term with zero mean. The vector of augmenting variable $\boldsymbol{Z}_j$ comprises various indicators of competitive pressure as those discussed above.

As an illustration of some of the empirical results obtained using this methodology, we show in Table 3.2.1 a summary of some of the estimation results for such an augmented production function for three CEECs.

Furthermore, we analyse the joint interactions of firms, markets and institutions in a cross-country perspective. The approach is based on a similar but modified methodology, using a two-tier approach:

1) As a first step, we use firm level data for different countries to derive secondary, meso-level indicators, in which we seek to eliminate the effect of firm-specific, time-varying factors that are not directly related to institutional interactions and change.

2) As a second step, we use these meso-level indicators to analyse the effect of institutional interactions and change on their formation and dynamics, in conjunction with other relevant factors.

Similarly to the approach above, the estimable equation is augmented with relevant indicators of competitive pressure as well as with relevant indicators of institutional change.

We illustrate this approach with the results for a pooled two-tier estimation of the effects of competitive pressure and institutional interaction and changes on firms' productive efficiency in Bulgaria, Hungary and Romania (Table 3.2.2).

Table 3.2.1 The effect of competitive pressure on productive efficiency: estimation results (signs of coefficients and statistical significance)

NACE	Import penetration			Market concentration			Foreign control			Export share			Market share		
	BG	HU	SI	BG	HU	SI	BG	HU	SI	BG	HU	SI	BG	HU	SI
15	- ***	+ *	+ **	- ***	-	+	+ *	+ ***	+ ***	+ *	+	-	+ ***	+ ***	+ ***
16							-			+			+ ***		
17	- **	+ *	- *	-	+ **	-	+	+ ***	+ **	+ *	+	- ***	+ ***	+ ***	+ ***
18	- *	+	-	-	- ***	+	+	+ ***	+	+ ***	+ ***	-	+ ***	+ ***	+ ***
19	+	+ ***	-	+	+	-	+	+ ***	+ **	-	+ ***	-	+ ***	+ ***	+
20	+	+ ***	+ ***	+	+	- ***	-	-	- **	+ *	+ ***	+ **	+ ***	+ ***	+ ***
21	-	- **	+	+	- **	+	-	+ ***	+ ***	+ ***	- **	- ***	+ ***	+ ***	+ ***
22	+ ***	-	-	+ *	+ ***	+	+	+ ***	+ **	+ *	+ *	- ***	+ ***	+ ***	+ ***
23				-						+ **			+ *		
24	- ***	+ *	+	-	+	+	+ *	+ ***	+ ***	+ **	+	-	+ ***	+ **	+ ***
25	-	+ ***	+ *	* *	-	+	+ *	+ ***	+ *	+	-	-	+ ***	+ ***	+ ***
26	-	+ ***	+ **	+	- ***	+	+	+ ***	+ ***	-	- **	+	+ ***	+ **	+ ***
27	+ **	+ ***	-	-	+	-	- *	+ ***	+	-	+	+ ***	+ ***	+ ***	+ ***
28	+	- **	+	+ **	- *	- **	+ ***	+ ***	+ ***	+ *	+ ***	- *	+ ***	+ ***	+ ***
29	- ***	- ***	-	- **	- ***	-	+ ***	+ ***	+ ***	+ ***	+ ***	+ *	+ ***	+ ***	+ ***
30	-	+ *	+	+	+	+	+	+	-	-	+	+ **	+ **	+ ***	+ ***
31	- ***	+	+	-	-	-	+ ***	+ ***	+ ***	+	- *		+ ***	+ ***	+ ***
32	-	-	+	+ *	+ *	+	+	+ ***	+ *	+	- ***	+	+ ***	+ **	+ ***
33	+ *	- ***	-	+	+	-	+ ***	+ ***	-	+	-	-	+ ***	+	+ ***
34	-	- **	+ *	+ ***	- **	- **	-	+ ***	+ ***	+	-	- ***	+ ***	+ ***	+ **
35	- *	- **	+ ***	+	+	-	+ **	-	-	+ ***	+	+	+	+ **	
36	-	+	-	+ ***	-	- ***	+	+ ***	+	+ ***	+ ***	-	+ ***	+ ***	+ ***

Notes: BG – Bulgaria; HU – Hungary; SI – Slovenia. The symbols *, ** and *** refer to significance levels of 10%, 5% and 1%, respectively.

Table 3.2.2 Estimation results (OLS) for the equation of the technical efficiency level, pooled data for Bulgaria, Hungary and Romania

Variable		
Period	1995-2002	1995-2002
No. observations	273	273
Constant	0.753 ***	0.737 ***
	(8.46)	(7.63)
Import penetration ratio	-0.115 ***	-0.110 ***
	(-5.46)	(-4.97)
Hirschman-Herfindhal index by NACE 2-digit sectors	0.142 ***	
	(2.50)	
Share of three largest firms by		0.049
NACE 2-digit sectors		(1.24)
EBRD index of "progress in transition"	0.064 **	0.065 **
	(2.00)	(1.94)
Country dummy Bulgaria	-0.120 ***	-0.098 ***
	(-10.8)	(-5.77)
Country dummy Hungary	-0.115 ***	-0.147 ***
	(-5.35)	(-4.28)
R^2	0.339	0.294
Root MSE	0.082	0.083

Notes:
(i) The time period for Romania is 1998-2001.
(ii) The symbols *, ** and *** refer to significance levels of 10%, 5% and 1%, respectively.

These results – as well as other related results obtained in the project – highlight some important specificities of the ongoing restructuring of the corporate sectors in the emerging market economies of Central and Eastern Europe. In particular, while these empirical results do confirm that competitive pressure affects the firms' adjustment process, the actual adjustment is not always in line with theoretical priors. This may be the result of both the existing market imperfections mentioned above but also may be related to the dramatic overall structural changes that are still underway in these economies. One specific feature that emerges from the empirical findings is that the actual enterprise responses to competitive pressure may differ in the stages of economic transformation in these countries. For all these reasons the in-depth empirical analysis based on micro data is a unique source of information about the specificities of the actual adjustment process.

According to the empirical results, the most powerful competitive pressures, that have triggered the most discernible and strong responses by firms in Central and Eastern Europe, are those generated by foreign firms on the local markets. This occurs both through the emergence of foreign-dominated manufacturing firms that operate in the domestic manufacturing sectors, and through the competition effects induced through trade liberalisation, resulting in increasing import penetration of the domestic markets. As to the actual direction of these effects, the results are equivocal, suggesting the incidence of both positive and negative spillovers of foreign induced competitive pressure. On the one hand, there is strong evidence, suggesting that in some cases this type of competitive pressure is associated with active restructuring of the domestic firms that face it, leading to higher productive efficiency and welfare enhancing changes in pricing policies. On the other hand, there is also statistically significant evidence of the opposite outcomes: for example, in some cases higher (probably excessive) levels of import competition tend to be associated with declining efficiency of the domestic firms subject to this type of pressure; in other cases foreign controlled firms tend to exploit local market imperfections and to collect larger monopolistic rents than domestic firms.

The empirical results provide systematic evidence of the recurrence of one specific, and somewhat counterintuitive, feature of enterprise performance in the CEECs. This is the empirical finding that market power per se (in terms of individual market share) does not seem to be associated with the emergence of monopolistic deadweight such as excessive overpricing or efficiency losses. Rather, at this stage of economic transformation, Central and Eastern European firms tend to employ their market power to grow aggressively and to gain

even larger market shares. On the other hand, we find relatively strong evidence that the sheer number of competitors in the segments of the product markets of these countries tends to have a healthy effect on enterprise performance, inducing efficiency gains and reducing price markups.

Importantly, the empirical results provide evidence which is generally supportive of the conjecture that progress in institutional reforms is positively associated with productive efficiency. Moreover, institutional reforms act in conjunction with competitive pressure, reinforcing its positive effect on firms' productive efficiency.

The empirical results for these CEECs suggest that enterprise behaviour and performance changes with the stages of economic transformation. There are notable differences in the nature of enterprise responses in countries that were less advanced in market reforms (at least in the period that we analyse, 1995-2001) such as Romania and Bulgaria, compared to the more advanced Hungary and Slovenia. Advance in market reforms tends to strengthen the positive spillover effects associated with growing competitive pressure and to reduce the initial gaps. Often, the competitive behaviour of the Romanian manufacturing firms shows higher similitude with the behaviour of Hungarian companies than with the one characterising Bulgarian firms.

3.3 Competitive pressure and the interactions between firms and workers

Labour market adjustment was part of the overall transition process: its speed and depth very much reflected the particular characteristics of the structural adjustment in the economy and society. This adjustment to the emerging market conditions led to large changes in employment and wage structure. Obviously, magnitudes and the time path of these developments varied substantially from country to country, depending on the particular characteristics of the transition process.

Within COMPPRESS, we analysed labour market developments in three CEECs: Bulgaria, Hungary and Romania. The time frame of the empirical analysis was 1995-2001 for Bulgaria, 1992-2002 for Hungary, and 1999-2002 for Romania. The empirical analysis is based on company level data for all three economies. We analyse corporate labour market behaviour using dynamic labour demand and dynamic wage models. Job-flow figures characterise some important features of these economies. We used the same models and methods for all three countries, facilitating a meaningful comparison.

However, there is one important constraint of our analysis: as it is based on corporate balance sheet information, where we only have the total employment and wage bill, we had to assume that labour was homogeneous. But it is very important to bear in mind the heterogeneity of labour, when interpreting these results, thus the comparative analysis is supplemented by more detailed information on Hungary, where we have data on the composition of labour at the firm from a matched employee-employer sample (these results are based on Kőrösi, 2005).

Labour demand and wage setting

We used a standard dynamic labour demand model, where output and labour cost are the main explanatory variables. We also used a standard dynamic model for corporate wage setting, which included rent-sharing, wage curve, and size effects. However, both models were augmented by variables characterising competitive pressure and describing competitive environment of the firm: we used import penetration, various measures of market concentration, market share of the firm, regional unemployment rate, and the ownership structure of the firm. We assumed that corporate behaviour might be heterogeneous: sectors using different technologies may vary in structural coefficients. We also assumed that behaviour may change over time: we tested for structural breaks both over time and over sectors, and the coefficient vectors indeed were significantly different. The possible endogeneity of the explanatory variables was treated by using GMM for estimation.

The first very important result was that the shifters used for describing the competitive environment, the firm or sector specific competitive pressure almost always proved to be insignificant. That does not mean that competitive pressure did not matter, but as we used dynamic models, previous adjustment to competitive pressure is already incorporated into the lagged dependent variable. Competitive pressure variables become very significant in a static model, but the static model is a clearly misspecified one. The adjustment process is a very important ingredient of the corporate behaviour in a transition economy. The omission of the dynamic adjustment severely hampers the empirical model.

While variations in competitive pressure clearly influenced corporate labour market behaviour, they almost exclusively were macroeconomic effects. Firm specific variation in competitive pressure seems to be negligible compared to the macro shocks these economies had to absorb.

Changes in the overall competitive environment of the economy directly influenced the behaviour of the firm, driving the temporal and country-wide differences of the parameters.

The two main variables proved to be significant in most cases in the labour demand model: output and labour cost; all other factors proved to be irrelevant in most cases. Dynamics was important, and there are characteristic differences in the speed of adjustment over the three economies. Labour adjustment was very fast in Hungary: labour demand model always collapsed to an equation assuming imminent adjustment. The situation in Bulgaria and Romania seems to be closer to an error correction specification around a steady state, except, that the long run seems to be very unstable in all three countries. It indicates that no stable equilibrium labour market behaviour emerged in any of the three economies, as yet. Adjustment was slower in Romania than in Bulgaria.

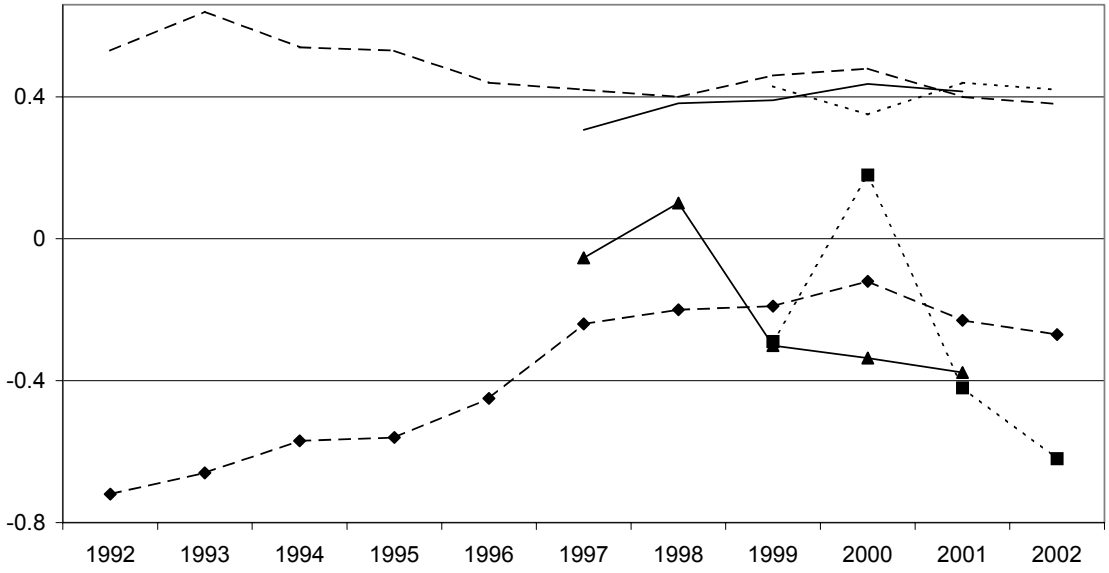
Figure 3.3.1 summarizes the time path of the estimated output and wage elasticities of the labour demand model for the entire sample and for manufacturing. There were significant differences in the parameters over the sectors, but the main tendencies are similar to those visible in these samples.

Output elasticities are very stable over time and countries; manufacturing sectors tend to have higher output elasticity than other sectors, which indicates that increasing output in manufacturing generates slightly more jobs than a similar growth in other sectors, *ceteris paribus*, but that is partly offset by the usually relatively larger sensitivity to the cost of labour in manufacturing.

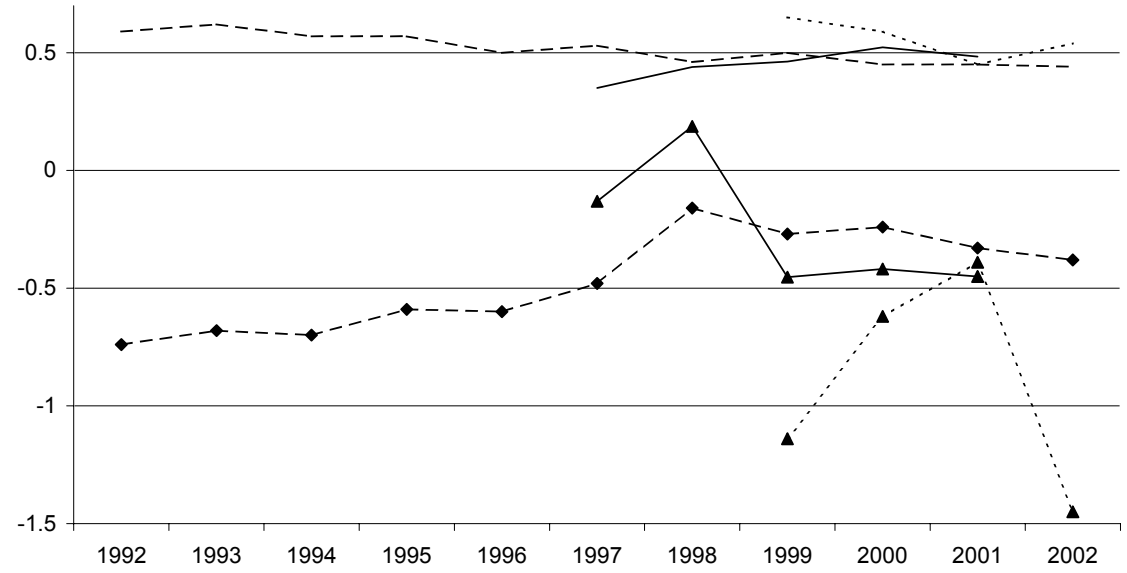
Wage elasticities, on the other hand, show characteristic behavioural differences, which seem to reflect variations in the overall competitive pressure. Structural breaks are mostly the consequence of changes in the sensitivity of corporate labour demand to wages. When the macro environment is unstable, wage elasticities are larger in absolute terms. The picture also reflects important differences over the three countries.

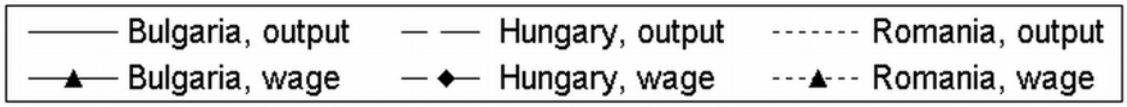
Figure 3.3.1 Short-run output and wage elasticities of labour demand

All firms



Manufacturing





Initially, labour demand was very sensitive to the cost of labour in Hungary, reflecting the precarious position of most enterprises. However, as restructuring progressed, and the macro environment was stabilised, successful firms started to grow rapidly. These firms reacted immediately to any shocks, adjusting their behaviour imminently, as they had to be ready to absorb very large shocks. However, they could reap the fruits of the successful transition: a very fast growing demand offset the consequences of strong competition, so their labour cost sensitivity substantially declined. Wage elasticity was insignificant in several manufacturing sectors in the high growth years of 1997-1999. However, as export demand substantially cooled with the turn of the millennium, and economic policy turned more interventionist, increasing instability in the corporate environment, wage elasticities moved away from zero, reflecting an increasing sensitivity to the cost of labour. Still, Hungarian wage elasticities did not exceed the values typical to developed market economies. The slow-down of the demand, the end of the fast expansion just made corporate behaviour more standard: these coefficients are in line with the ones describing corporate labour demand in well functioning market economies, but adjustment was much faster in Hungary.

The wage elasticity was insignificant in Bulgaria right after the recovery form the hyperinflation in 1997-1998. However, as the economy started to operate normally, and economic policy created a relatively stable environment to the firms, a relatively stable behavioural pattern emerged. However, Bulgarian firms still operated under strong pressure, which was reflected in a relatively high sensitivity to the cost of labour.

Wage elasticities fluctuate strongly in Romania. These big changes reflect the uncertain reaction to the instability of the corporate environment. The labour demand sometimes is extremely sensitive to the cost of labour, especially in some manufacturing sectors, which clearly reflect strong pressure on the firms. Firms are unwilling to quickly adjust their labour demand; even though demand grew in the period, they seem to be hesitant about the long-run viability of the expansion, thus they react nervously to wage shocks.

There was only one factor, which always proved to be an important variable in the corporate wage model: productivity. Regional unemployment was significant under some circumstances, indicating some wage-curve effect, but that was unstable, and contributed much less to the explanation of wage dynamics. Unemployment was a very important factor of Hungarian wage setting in the first few years of the Hungarian sample, however, it lost relevance later. As we use a dynamic model, regional wage differences only influenced wage setting when the regional distribution changed. Regional differences in unemployment rates

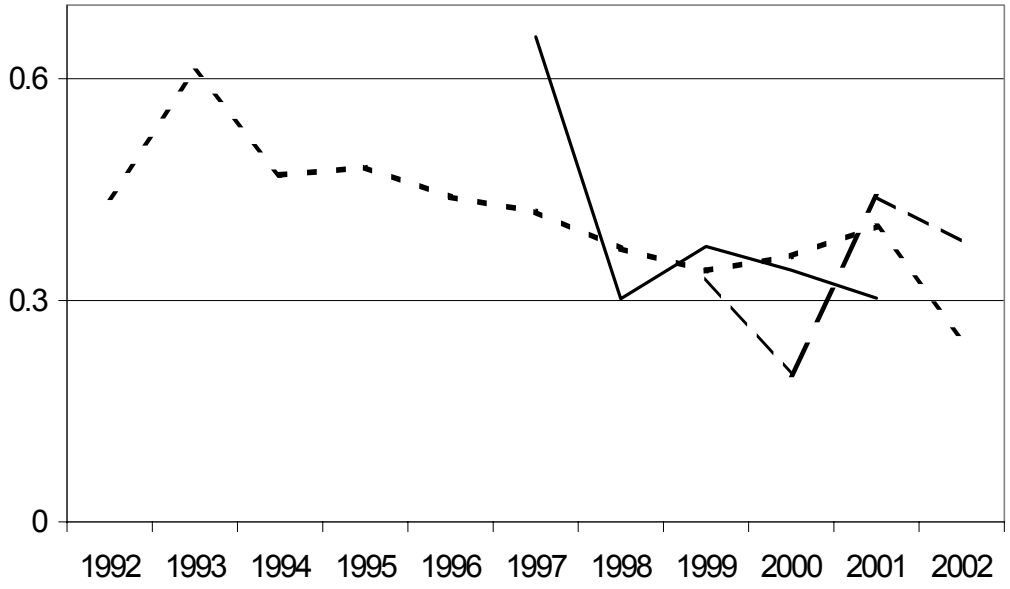
were large in all three countries, and their distribution was rather stable after the initial years of transition. Unemployment rates changed over the sample, but the most regional unemployment figures moved parallel; thus the intensity of the pressure on the local labour market changed little over time.

Figure 3.3.2 shows the productivity elasticity of wage setting in the three economies. It indicates very strong rent sharing, the elasticity is larger than the values typical for developed market economies (0.2 or less). This intensive rent sharing is all the most interesting, as the traditional explanation for that is that monopsonic trade unions force firms to share the rent of productivity improvements with their employees. Rent sharing in Bulgaria was extremely intensive after stabilisation. That may clearly reflect very special conditions after the financial crisis. However, rent sharing was intensive afterwards, too. The intensity of rent sharing gradually declined in Hungary, but it still was unusually high. However, trade unions were rather weak in Bulgaria and Hungary during this period. Romania, having the largest, and probably most influential trade unions among the three countries did not experience more intensive rent sharing than the other two; for most sectors Romania seemed to have the least intensive rent sharing, although its coefficient fluctuated substantially in many sectors.

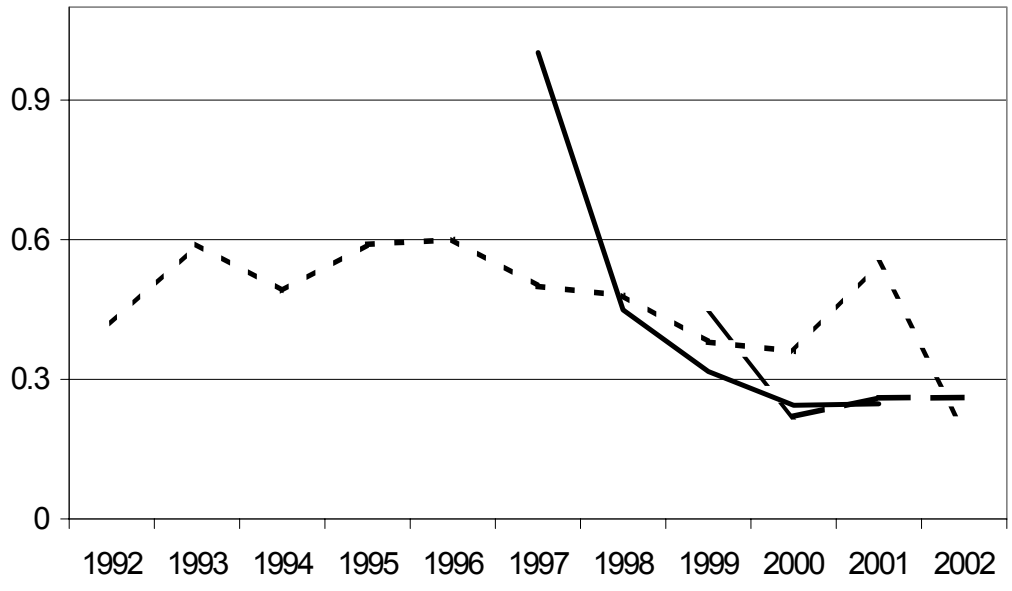
It is interesting to note that rent-sharing was extensively studied for Poland, where several studies repeatedly analysed wage setting with similar models for different periods (see, among others, Grosfeld and Nivet, 1999; Christev and Fitzroy, 2002; and Bishop and Mickiewicz, 2003). They all found evidence of rent sharing; initially it was only restricted to expanding firms, and its intensity substantially varied over time.

Figure 3.3.2 Short-run productivity elasticity of wage determination

All firms



Manufacturing



_____ Bulgaria - - - - - - - - Hungary __ __ __ __ Romania

Job flows

Job flow analysis gives a very convenient description of the structural adjustment of a labour market. In the initial phase of transition the CEECs were characterised by very intensive job destruction, usually accompanied by very little job creation, thus, employment contracted rapidly. That was also a characteristic feature of Bulgarian and Romanian transition: both countries had very little job creation in the initial period of transition.

Figures 3.3.3 – 3.3.6 summarise job-flows for several interesting segments of the three economies. As we only have a sample of firms, and firm entry/exit is arbitrary for at least two countries, we based our job-flow analysis on continuing firms only. These narrow job-flow figures are significantly underestimate the intensity of job-flows, as a significant part of job creation and destruction is due to firm creation and destruction. It may also give lower overall net job creation, as this period was characterised by intensive creation of small private enterprises in all three CEECs. Still, some tendencies are clearly visible from these narrow job-flow figures.

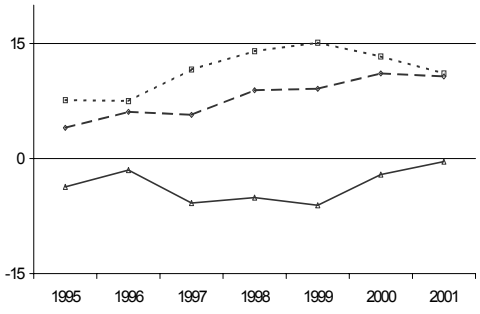
Our sample period for Bulgaria and Romania starts well after the initial transformational shock, so it is no surprise that job destruction is less intensive than in the early transition period. Job creation was also more intensive than the roughly 1% found in the initial transition period.

However, job flows are very unevenly distributed over the different group of firms, and there are substantial differences among the countries.

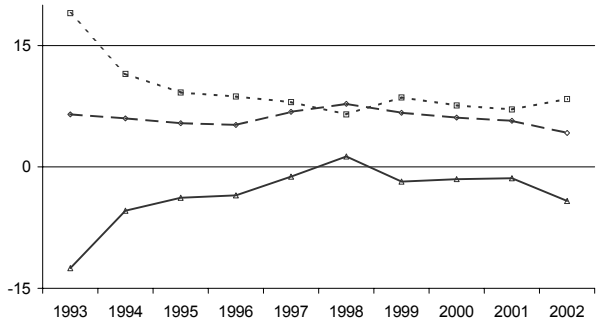
Bulgaria experienced gradually increasing job creation accompanying intensive job destruction. Job creation was especially intensive in labour intensive sectors: trade, light industries, and some service sectors; these were the sectors characterised by net job creation by the end of our sample; capital intensive sectors, like engineering, still continued to shed labour intensively.

Figure 3.3.3 Gross job creation, destruction, and net job creation/destruction

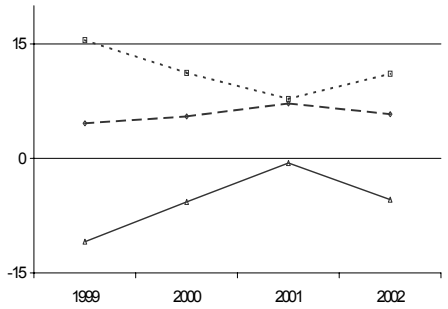
All firms



Bulgaria

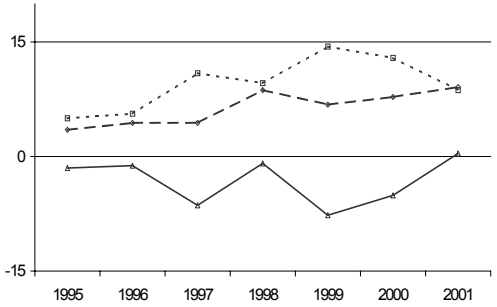


Hungary

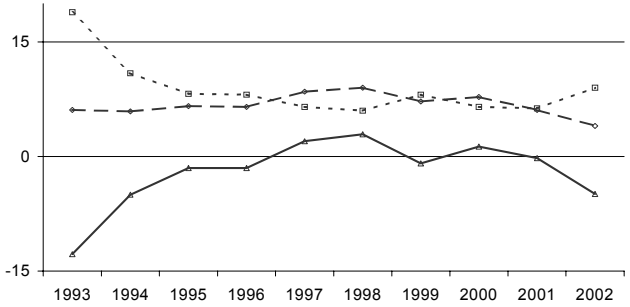


Romania

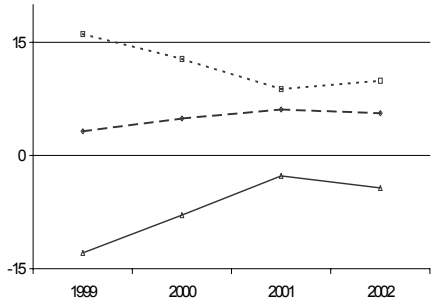
Manufacturing



Bulgaria



Hungary



Romania

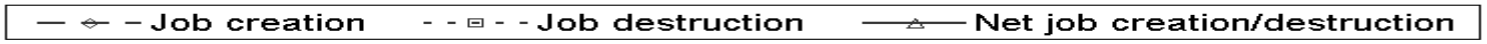
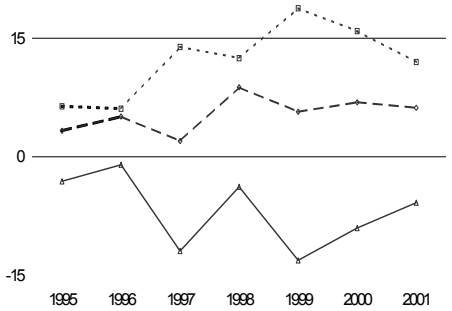
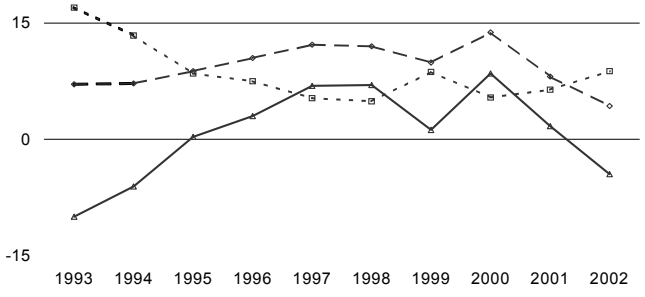


Figure 3.3.4 Gross job creation, destruction, and net job creation/destruction

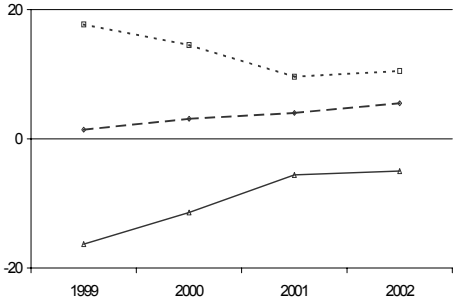
Engineering



Bulgaria

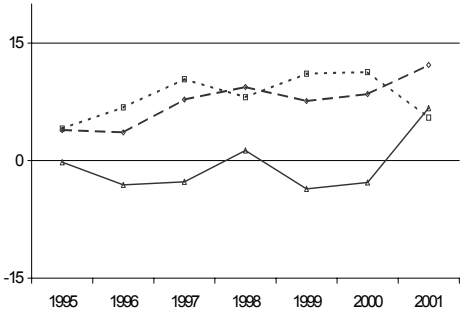


Hungary

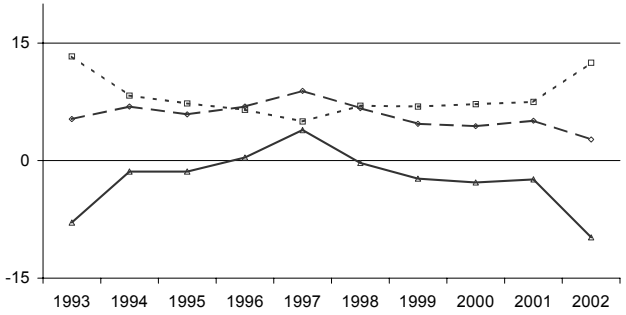


Romania

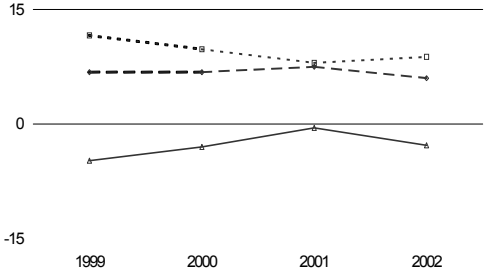
Textile, clothing and footwear



Bulgaria



Hungary



Romania

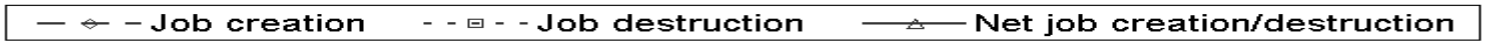
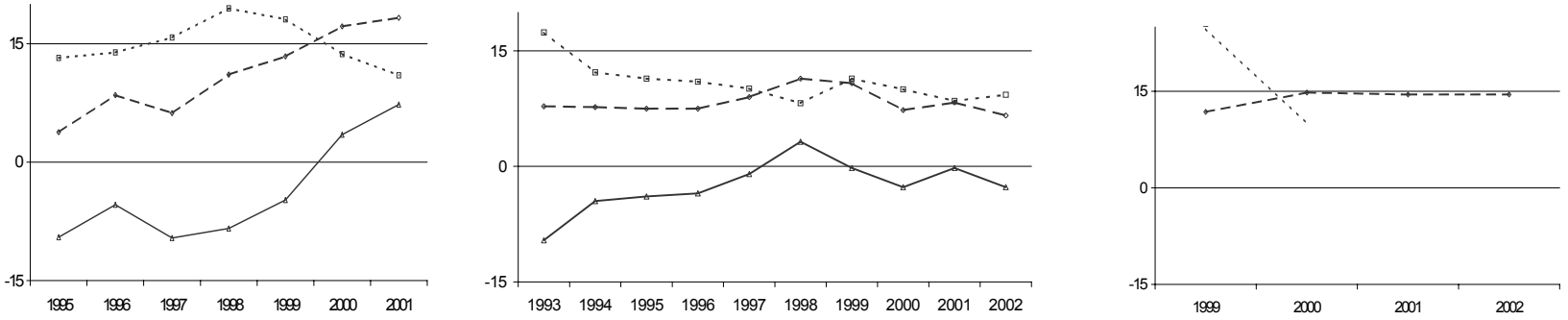


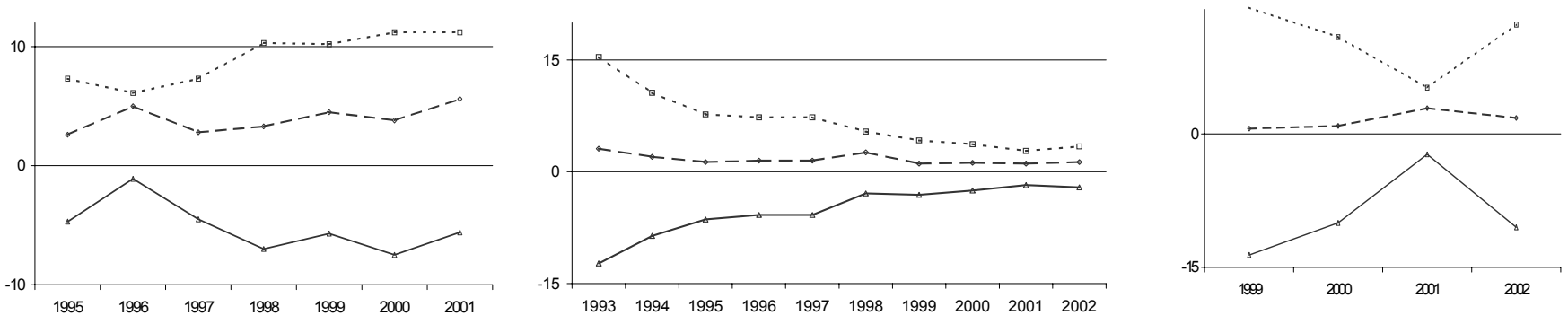
Figure 3.3.5 Gross job creation, destruction, and net job creation/destruction

Trade



Bulgaria Hungary Romania

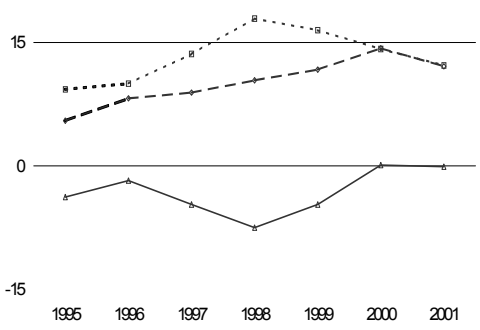
State owned firms



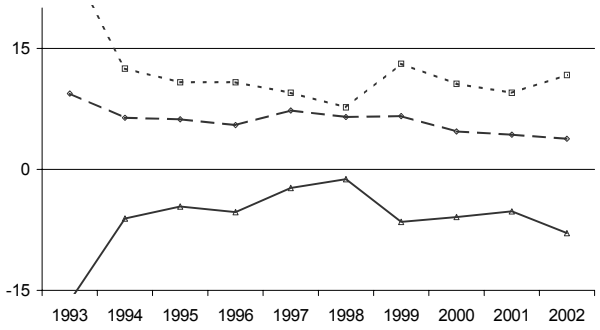
Bulgaria Hungary Romania

Figure 3.3.6 Gross job creation, destruction, and net job creation/destruction

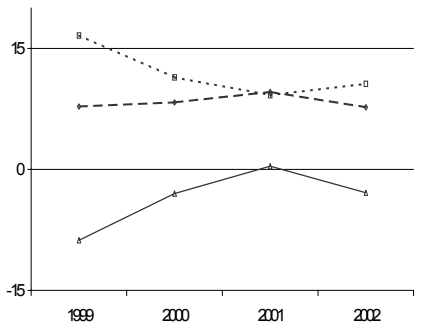
(Domestic) private firms



Bulgaria

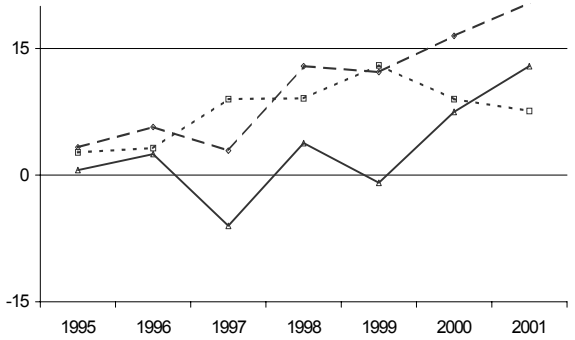


Hungary

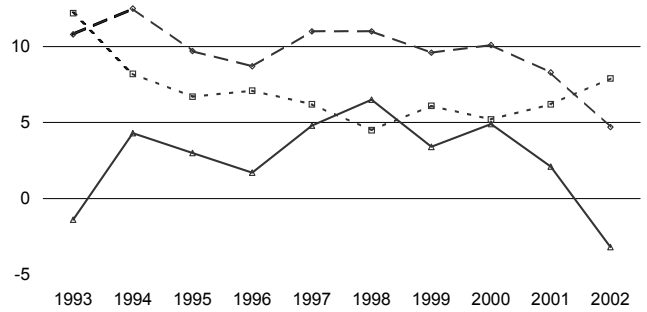


Romania

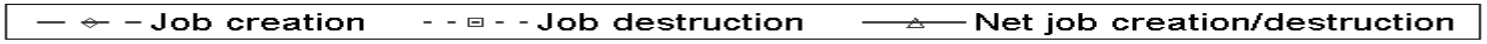
Foreign owned firms



Bulgaria



Hungary



Job destruction fluctuated more in Hungary than the relatively intensive job creation. Firms created relatively many jobs in all sectors, except for mining and energy sectors, with especially intensive job creation in capital-intensive sectors.

Job destruction strongly dominated job reallocation in Romania during the period 1999-2002, although the situation clearly improved markedly even in this short period. Labour intensive sectors, like light industries, fared somewhat better, but trade was the only sector with net job creation.

Ownership clearly was an important factor: the remaining state-owned sector had negligible job creation in Hungary and Romania, and although their job creation rate was somewhat larger in Bulgaria, it clearly was lower than in the private sector. On the other hand, foreign-owned firms were net job creators in the post-stabilisation Bulgaria, and in Hungary in the period 1994-2001. FDI clearly contributed substantially to job reallocation, to the restructuring of the economy.

Job destruction was very persistent in all three countries: persistence rates frequently exceeded 90%. The only exception was Bulgaria before stabilisation: the relatively low job destruction rates were coupled with low persistence, indicating that job destruction was frequently the result of random fluctuations rather than restructuring in that period. The huge persistence of job destruction indicates the depth of the restructuring process: inefficient firms, unable to compete under the increased pressure, had to downsize their activities permanently.

Job creation rates are less persistent, but these figures frequently still were larger than the roughly 60% typical to developed market economies. Small firms were less likely to create jobs permanently than larger ones. High persistence in both job creation and job destruction indicates a strong differentiation of firms: unsuccessful firms almost permanently downsized, while there were dynamic firms with substantial productivity gains, which could increase output at phenomenal rates. The *average* expanding firm grew by at least 25% annually in Hungary between 1992 and 2001, and by more than 30% in Romania between 1999 and 2002. However, in three out of four years the *average* expanding Romanian firm increased output by more than 50%, driven by huge productivity gains.

This rapid differentiation process means that the relatively stagnant aggregate employment was the outcome of the fast destruction of jobs at a large number of firms, unable to operate under the increased competitive pressure, and the usually somewhat slower, but still substantial job creation at the group of successful newly emerging firms, which, on the other hand, could gain market share extremely fast at the expense of the traditional old firms.

However, the characteristics of the emerging new economy also depended strongly on the intensity of the FDI: foreign-owned firms were key participants in the restructuring process. In Hungary, where FDI was large, job creation was especially fast in some capital-intensive sectors, while in the other two economies, where FDI flow was smaller, it was concentrated in some labour-intensive sectors. That clearly indicates the importance of liquidity constraints.

Interpretation

Ljungqvist and Sargent (2005, 2004, 2002) analysed the differences in EU and US employment experience. They give several alternative explanations why the US labour markets so much are more flexible than the (continental) European ones: intensive net job creation, lower unemployment, faster turnover rates. It clearly indicates that there is no single mechanism, able to explain the difference; several coinciding, interacting processes jointly generate this outcome. This model and its implications strongly motivated our interpretation of the labour market developments in the CEECs.

A planned economy operated differently from a market economy, thus, it required different skills from employees. Economic transformation destroyed many jobs in the initial phase of the transformation. Many jobs were no longer viable in the new environment: market economies required different skills, and many skills obtained in the planned economy suddenly became obsolete. The transition to market economy, however, was also accompanied by the sudden arrival of skill-biased technical progress. Skill-biased technical progress reshaped employment structure and work practices since the 1970's in developed market economies. Planned economies were largely insulated from these processes. But in the liberalised capital markets of the newly emerging market economies, physical capital was quickly replaced, and modern management practices were introduced together with the new technology. Structural changes, which took place over the decades in Western Europe, suddenly were imposed on the transition economies within a few years.

The twin process of marketisation and skill-biased technical progress substantially depreciated job-specific human capital. Well-educated people, having substantial general skills, could adjust, and acquire new skills relevant to the new market economy. The adjustment may have been costly to them, but it was feasible.

However, there was a large group of low skilled people, inherited from the socialist economy. Table 3.3.1 gives the distribution of educational attainment in the corporate sector in Hungary. Almost half of the workers only had very basic education: primary school at

most. The technologically backward, stagnant socialist economy needed many unskilled labourers, so they used to have secure jobs and after finishing school they never wanted to acquire any additional skills. Many of these workers did not have skills relevant to a modern market economy and their jobs were quickly destroyed by the skill-biased technical progress. They not only became unemployed; many of them are *unemployable* in a modern market economy. The most important reason why almost all CEECs are stuck with low employment ratio is this large group of poorly educated, low-skilled, unemployable people. Governments may, and probably should create workfare schemes, as a part of the welfare system, but that will only help few to upgrade their skills and return to the labour market.

Table 3.3.1 Distribution of employment in the corporate sector by education, percentages

	1986	1992	1995	2002
Less than 8 classes	10.82	3.53	1.72	0.55
8 classes	37.07	27.80	22.35	13.77
Vocational	25.08	31.60	31.76	33.40
Secondary	21.32	28.89	33.44	32.82
Tertiary	5.71	8.18	10.74	19.46

Price, trade and capital market liberalisation, marketisation of the economy meant an explosion of competitive pressure for the entire corporate sector. Macro-economic effects dominated any firm, sector or region specific element of the competitive environment of the firms. That explains why specific competitive pressure had little influence on corporate labour market behaviour: firms first and foremost had to adjust to the macro-economic fluctuations of competitive pressure.

Transition destroyed many firms, and many surviving firms had to substantially downsize; the transition to market economy destroyed many jobs, especially in the initial phase of liberalisation. But transforming economies also offered huge opportunities for those who could efficiently exploit them. The fast restructuring opened up markets with significant growth potential. The firms expanding in these segments created many jobs, when fast transformation started. However, the expanding firms imported modern management and marketing practices together with modern technologies; they needed workers having the relevant skills.

Households realised that human capital accumulation, *i.e.,* education is a key factor in adjusting labour supply to the emerging market economy. Education system responded relatively quickly in many CEECs: secondary and especially tertiary education expanded rapidly almost everywhere.[2] But that only increased the skills of young people entering the labour market. Thus, when many successful firms started to expand in the mature phase of transition, they quickly hit the skill constraint: it became increasingly more difficult to find workers with skills relevant to the market situation.

Fast expanding firms, able to operate successfully under the strong competitive pressure, could exploit the exceptional market opportunities created by the restructuring process. However, they were racing against time (and each other): the window of high-grow opportunity was only open until the market got saturated. Thus, successful firms were willing to hire skilled workers at (almost) any cost: as long as further rapid growth seemed to be possible, they were not sensitive to the wage cost; they were willing to share the return to technical progress with their skilled employees. That explains the intensive rent sharing at firms with no trade unions: the shortage of skilled labour forced companies to share these rents more effectively than any trade union could. But the benefits were not distributed evenly. Table 3.3.2 summarizes education specific returns[3], relative to (possibly unfinished) primary education in the Hungarian corporate sector in selected years: returns to education increased rapidly, but the gains were restricted to those with higher general training, who could adopt. In fact, those who had vocational training have crowded out the even less skilled people from the labour market, and they filled the positions with no specific skill requirement. Figures 3.3.7 and 3.3.8 depict education and age specific job flows in the Hungarian corporate sector. If a company got into trouble, it destroyed jobs irrespective of the skill level: jobs were destroyed with the same intensity for all education category, but especially jobs for elderly people were destroyed intensively. However, job creation was not only age, but also education specific: new jobs were mostly created for highly skilled young people.

[2]For example, entry quotas to state-financed tertiary education increased fourfold in a decade in Hungary.
[3]These were estimated in a Mincerian wage equation, including work experience, and fixed effects for occupation, sectors and regions, see Halpern and Kőrösi (1998)

Table 3.3.2 Returns to education (reference: primary school)

	1986	1992	1995	2002
Vocational	0.065	0.064	0.022	0.019
Secondary	0.140	0.202	0.164	0.322
Tertiary	0.448	0.581	0.560	0.971

Figure 3.3.7 Education specific job flows, Hungary

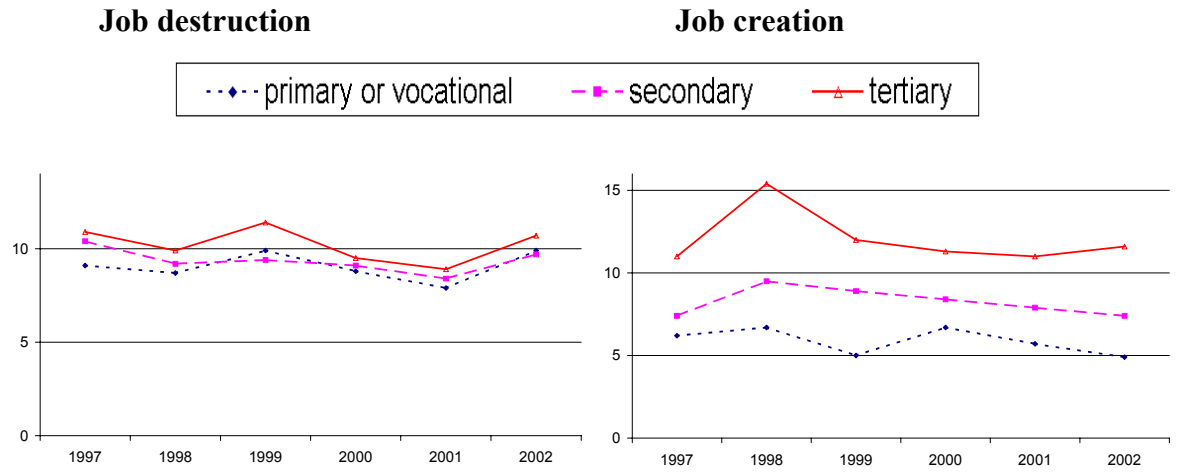
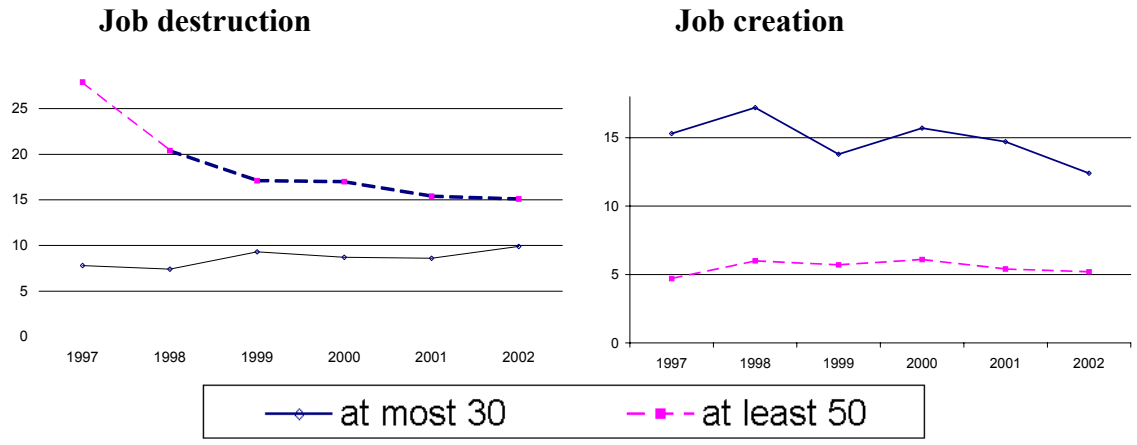


Figure 3.3.7 Age specific job flows, Hungary



Thus, competitive pressure first of all brought a very strong skill-specific selection to the labour markets of CEECs. This is a two-tier sorting: educated people have much higher employment probabilities, and employees with the right skills have much higher premia than in mature market economies. Both contributed substantially to the increase in income inequality.

The first tier seems to remain a serious problem for a long period in CEECs: those poorly educated people, who started work before transition, and have not participated in the formal labour market for decade or more, are likely to be unemployable, no matter the wage, even in a period of rapid economic growth. However, as transition creates the economic structures and practices characterising modern market economies, and the window of extraordinary expansion gradually closes, the extremely intensive job creation slows down to the intensity observed in any mature market economy. This slowdown in job creation, together with the increased supply of skilled labour will eliminate skill shortages, which will lead to a smaller willingness to share rents, and increase returns to education. We see signs of that happening in Hungary after the slow-down of export growth in 2001-2002. The same is likely to happen in other CEECs, when transition ends.

3.4 The interactions between households and the corporate sector in a broader socio-economic context

During the transition from plan to market, when households had to adjust to a new market-oriented situation, competitive pressure contained, at least, two elements: transition pressure and market pressure. At the onset of transition, the characteristics of the households (income, expenditure, assets, education, activity, age) changed dramatically. In all CEECs, households had to face a sharp decline of real incomes and of employment and growing inequality of income, expenditure and assets, which increased vulnerability and lowered the household adjusting capacity. At the subjective level, these processes functioned as negative signs, which determined the public opinion that poverty and unemployment are side-effects of a general adjustment and rising competition; these effects were neither a heritage of the socialist distorted economy, nor were they under the household control. Correspondingly, our analysis combined macro trends and micro data regarding the household behaviour and the individual actors' perceptions.

Within the COMPPRESS project we focused on the effects of competitive pressure during the restructuring period of transition, at the household level, in four countries: Bulgaria, Hungary, Romania, and Slovenia.

Methodology

The approach to this issue was designed to be comparative and required a specific methodology as the available data were not fully comparable. The analysis was generally based on comparing relative rather than absolute characteristics because the size and direction of competitive pressure resulted from a certain competitive situation depend on the relative rather than absolute differences of household characteristics. The analysis combines objective and subjective variables because the size and direction of competitive pressure resulted from a certain competitive situation depend also on the perceptions and expectations of the individual actors with regard to their household position. A large and consistent gap between objective trends/positions (e.g. regarding income, expenditure, assets, education, activity, age) and the subjective assessment of these variables may frustrate but also motivate the individual actors. Thus, the comparison of objective household data and attitudinal data has provided valuable information about the interaction between competitive pressure and satisfaction as well as future expectations of micro actors (household and individuals), which have policy relevance in the accession to the European Union process.

As the formal sector features prominently in most transition economies as population survival strategies under conditions of weak institutions, the analysis extends both to the formal and the informal sectors of the economy.

The incidence of poverty and income distribution

Measuring poverty in the CEECs is a difficult task as robust comparative data on poverty are rather nonexistent. The comprehensive survey of literature on this issue showed that poverty in transition economies is correlated with the dynamics of the national aggregate output. Poverty is primarily “shallow” and transient and thus, as the economy recovers, it is expected to diminish considerably. Most poor suffer of income/consumption poverty. Nevertheless, long-term poverty has become a growing problem in the four countries, and socially excluded groups or post-socialist underclass – concentrated in poor zones – have emerged in the area. These are only partially “new poor” in the past most of them held

marginal unskilled positions in the labour market and had significantly less endowed with various assets (poor education, lack of skills, no home ownership, being part of extended poor families, etc).

The second critical contributor to poverty is the rise in income inequality. In Bulgaria and Romania both inequality and poverty were more extended than in Hungary and Slovenia, during the period under investigation within this project.

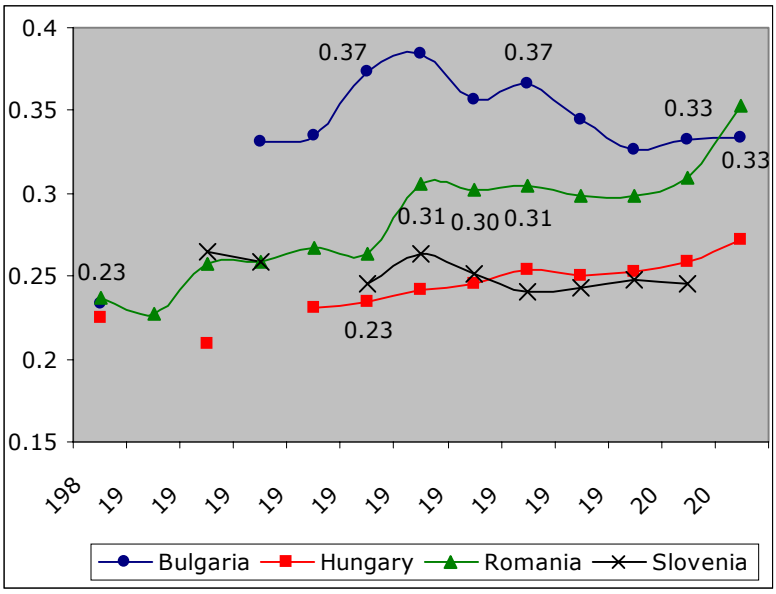


Figure 3.4.1 Distribution of income, Gini coefficient, 1989-2001

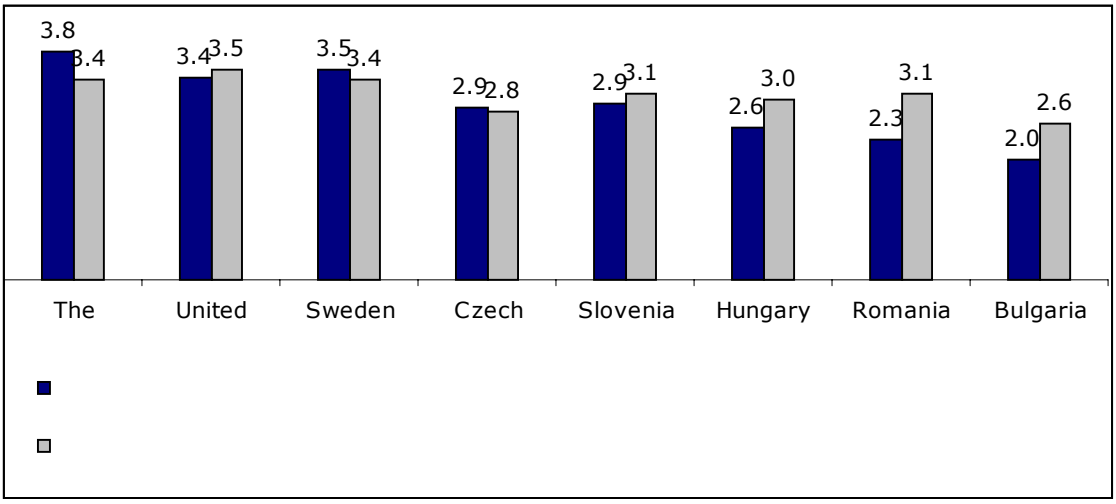
Notes: The distribution of individuals ranked by household per capita income. Estimates are based on interpolated distributions from grouped data from HBSs reported to the MONEE project.

Source: UNICEF, TransMONEE Database, 2003; Atkinson and Micklewright (1992); Milanovíc (1998).

Poverty is strongly correlated with lack of education and lack of work in the formal sector of the economy. These two factors appear to be the key determinants of poverty in all four countries and the way in which they are affected by the increasing competition will reflect in the extent and nature of future poverty. The risk of poverty is also linked to other household characteristics such as the number of income earners, size of household and number of children, all of which affect average income. For children and the elderly, poverty is linked to a decline in public transfers and other forms of income support. Rural poverty appears an issue only in Bulgaria and Romania, where rural residents have higher risk of poverty compared with their urban counterparts and also significantly lower living conditions. Ethnicity is also a strong correlate of poverty in both countries, especially in the case of Roma population. Children have high risk of poverty in Romania, Bulgaria, and Hungary. Risk of poverty of elderly is relatively high only in Bulgaria and Slovenia.

The uncertain and highly dynamic transition environment is associated with a consistent loss in people's satisfaction, but also with hopes for a better future. The deeper and longer the transition shock the lower the satisfaction and the trust in institutions.

Figure 3.4.2 Past/future evaluations of the household economic situation, eight European countries, 2001



Notes: Data for the Netherlands and Hungary are weighted. Both questions have a five-point scale, between 1 – "clearly deteriorate/d" and 5 – "clearly improve/d". Differences between mean values are statistically significant, according to an analysis of variance (p=.000) using Tukey's-b post-hoc test. Total valid N = 10,092 cases, respectively 10,074 cases.
Data source: HWF Dataset.

The system of cash transfers and taxes differs from country to country. The newly created social system in Bulgaria does not fulfil either income replacement or poverty relief. In Romania, the social safety net functions in reducing inequality, but covers the poor modestly. In Hungary and Slovenia, despite uncertainties and changes, the social system has contributed to alleviate the shocks of the transition to a much greater extent.

Social consequences of increasing competitive pressure at the macro level

In all four countries, increasing competitive pressure after 1990 resulted in more unemployed, more pensioners, less employment, particularly less employees (wage or salary earners). Romania appears to have suffered more and deeper negative effects: there was a substantially lower share of wage-earners and each of them was due to support 1.4 pensioners (in 2003) plus children and other inactive persons. In addition most of the self-employed were in fact 'disguised unemployed' surviving by doing subsistence agriculture on small plots. Bulgaria was in a somewhat better position compared to Romania by the end of the 1990s, yet it was characterized by high unemployment, high share of pensioners, and self-employment was largely a survival strategy for the unskilled. Hungary and Slovenia have done better; they recovered sooner, have better educated young people, and in relative terms are 'work-rich'. In Slovenia after the initial shock of the early 1990s the proportion of people aged 15-59 in paid

jobs grew, reaching a stable level at about 70% after 1998. In Hungary, the rise in employment occurred only after 1998, while in Bulgaria and Romania after the drop in early 1990s the share of employed in the population aged 15-59 remained broadly constant.

There have been major changes in the employment structure by sectors. Throughout the region there was a shift from manufacturing to services while agriculture was hit hard. As a consequence of the liquidation of agricultural cooperatives the number of agricultural earners fell dramatically in most CEECs. Romania was a notable exception, as employment in agriculture grew despite the fall in agricultural production. There, unlike in the other three countries, the major shift from manufacturing to agriculture resulted in much higher shares of self-employment and unpaid family workers in total employment.

The increased number of private enterprises and self-employed was largely a result of the general shift from manufacturing to services. In particular the number of individual entrepreneurs rose up already in the first years of transition. However, their share in employment varies across countries and remains very low in Romania. Due to the opportunities of employment in agriculture, unemployment in Romania is low and is specific to urban areas. By contrast, in Bulgaria rural unemployment is consistently double that in urban areas. While the Romanian rural people are registered as employed (self-employed or unpaid family workers) in agriculture, in Bulgaria rural people are registered as unemployed.

Overall, labour adjustment occurred differently in the four countries. In Bulgaria during the entire period it has been characterized by high unemployment and sharp and long lasting real wage decline (reaching a trough of cumulative 58% drop in 1996). The better "statistical look" in Romania is deceitful due to the high rate of "disguised unemployment" in agriculture and the delayed structural reforms in the country. Compared to these two countries, Hungary and Slovenia experienced a "soft transition": except for the first years after 1990, although both real wages and employment declined, they varied afterwards but in comparative terms have registered low-medium drop.

Whereas the average wage is highly affected by the level of competitive pressure in the corporate sector, the average pension is more the outcome of the social and income policy provided by the State. Comparing the dynamics of real pensions and real wages, it can be seen that in relative terms pensions were more adversely affected and have recovered more slowly. The average pension in Bulgaria and Romania is comparable to the minimum wage level.

These outcomes reflect the different approaches to income and social policy. Gradualism, consensus seeking and pragmatism are the terms that would probably best describe the approach taken by Slovenia in coping with changing economic and social

conditions. The Hungarian state has drastically shifted from a paternalist approach in the first years of transition (1988-1994) to a liberal one, which promoted a more and more restrictive policy after 1995 by tightening the eligibility criteria and lowering the benefits. Social policy in Hungary after 1995 did not compensate any more for the loss of income. Bulgarian policies focused on unemployment reduction during the entire period due to the very high incidence of unemployment. Active labour market policies were extensively applied, encouraging people to train and retrain, find a job, open a business and not to remain dependent on the state. During the 1990s the system was profoundly reformed. Social assistance was also linked to the unemployment policy with the risk of low coverage of the poor. Most benefits declined considerably in real terms while the expenditures for both education and health diminished considerably. In Romania, income policy has been highly distorted, with the tax burden among the highest in Europe. Labour market policy was initially mostly passive, and investment in education remained low or even declined. Recently there have been improvements as result of the economic reforms after 1996 and the reform of the social welfare system in 2001. Public expenditures on health have also been raised. The current social protection system contributes substantially to poverty reduction, a large share of the impact being due to pensions and child allowance.

Social consequences of increasing competitive pressure at the micro level

We analysed some of the social consequences of increasing competitive pressure at the micro level based on a common methodology and data provided by national Household Integrated Surveys[4].

Surveys at the household level indicate that in Slovenia, following independence in June 1991 and the transformation shock of 1991-1992, the socio-economic structure experienced little further change after 1993. Similarly, in Hungary the changes in the socio-economic structure slowed down after the first years of transition. Further important changes occurred, however, after the beginning of the recovery in 1997. By contrast, in Bulgaria the long and deep recession resulted in prolonged drastic changes in the socio-economic structure of households. In Romania the most radical transformations of the socio-economic structure happened during the period 1991-1993. After 1995, due to the second economic recession, the negative social transformations continued.

[4] Data used for the analysis cover the following period: Bulgaria – 1992, 1995, 1998 and 2002; Hungary – 1993, 1997, 2001; Romania – 1995, 1997, 2001, 2002; Slovenia – 1983, 1993, 1997/99, 1999/01.

The main transformations of the socio-economic structure in all countries comprise decrease of the share of employees, increase in the proportion of self-employed and pensioners, hike in the number and share of unemployed, decline in the share of children, and increase in the share of dependants aged 18 years or above. The share of employed (active earners) in the total population is low in all four countries. However, in Slovenia and Hungary this has started to increase with the recovery, whereas in Bulgaria and Romania the very recent economic recovery has not yet resulted in a notable increase in employment.

The household income sources have also undergone restructuring. In all countries, wages and salaries represented the main income source. The sharp increase of the share of pensioners is correlated with an increase in the share of pensions. Thus, pensions represented the second major source of income in all countries, except for Romania where they were the third major source. The shares of income from self-employment are still low, partly due to underreporting. Income from agricultural in Slovenia and Hungary represents a marginal source of income; however, in Bulgaria and particularly in Romania it has been a major contributor the household welfare. In all four countries, income from capital and property, wages and salaries, and income from self-employment (except for Romania) is concentrated in the upper side of the income spectrum. Among the bottom and middle-low groups, the prevalent income sources are from occasional work, secondary employment (including work in the informal sector) and unemployment benefits and other social transfers (except for Bulgaria). Pensions are concentrated in the lower and middle ladders of the income structure in all countries, except Bulgaria where they are concentrated at the top levels. Income from agriculture goes to the poor in Slovenia and Romania, whereas in Bulgaria and Hungary they go mainly to the better-off households. Social transfers other than pensions represent a minor contribution to the household budget. The share of this income source represented only 3-4% of the household disposable income in Bulgaria and Romania in 2002. In the two better-off countries this share was bigger, namely 6-7% in 2001.

In all countries, the two main contributors to total income inequality were wages and salaries, followed by income from household plot in Bulgaria and Romania, income from self-employment in Hungary, and pensions in Slovenia. Bulgaria and Romania were characterized by the highest income inequality, while Hungary by the lowest. In Slovenia the increase in inequality at the start of transition was followed by a decrease and then by stabilisation. In Hungary, data indicate a stable growth of income inequality between 1993 and 2001. In Romania, during the second recession period (1996-1999) income inequality decreased while poverty increased. By contrast, as the economy started to recover (2000-2002) poverty

decreased, while the income inequality increased. The growth in inequality in Bulgaria was very high during the period 1992-1995 but after 1995 income inequality has decreased.

Table 3.4.1 Changes (percentage of previous survey) in income inequality by country

Inequality measures	Slovenia			Hungary		Bulgaria			Romania		
	83-93	93-99	99-01	93-97	97-01	92-95	95-98	98-02	95-97	97-01	01-02
Quintile ratio	118.4	86.7	104.3	103.0	104.2	124.6	88.0	94.6	89.7	109.4	99.4
Income based Gini coefficients	119.0	87.2	99.9	100.6	105.7	118.1	89.9	97.4	91.7	104.3	100.8

Source: Authors' calculations.

In Slovenia the importance of the social protection system increased, with an increasing share of the population receiving cash benefits from this system (including pensions, parental and maternity benefits, sickness-leave allowances, child benefits, unemployment benefits, scholarships). The tax and social protection system contributed significantly to "smoothing" of income inequality and - even more - alleviating poverty. Hungary, after a populist generosity at the start of reforms, has continuously diminished support for the population. The stabilisation package in early 1995 included a reduction of the real value of various social transfers, primarily through inflation, resulting in a slight rise in inequality. The strong recovery between 1998 and 2001 did not affect the well being of about one third of the population. The inequalities grew further and a significant part of the losers of the previous period could not recover again. The social policy in this period partly cushioned the population around the lower middle of the income ladder, but it missed to reach the poorest. Bulgaria has implemented a rather thin and poorly targeted social policy by diminishing the support of the population. Romania increased somewhat the support for the population in order to compensate the massive lay-offs from industry that took place in 1995-1997. Afterwards, it reduced the social transfers and put more emphasis on active labour market policies, which do not show up in the households' disposable income.

How do poor people make a living? The income portfolio of the poorest is much more diverse and fragmented in Romania and particularly in Bulgaria compared to Slovenia and Hungary. In the latter two countries, the poorest are "working poor" as they make a living based on three sources of income: wages, pensions and other social transfers. In Bulgaria the income portfolio of the poorest changed drastically in time. However, during the entire period, it has been largely related to the informal sector, and "other social transfers" (except pensions). The access of the poorest Bulgarians to the formal sector of the economy appears rather restricted. In Romania the major source of income of the poorest has been subsistence agriculture. Pensions and other social transfers form the second important pillar of the income

portfolio of the poorest Romanian households. The third pillar consists in wages and income from non-agricultural self-employment. The share of wages in the portfolio of the Romanian poorest households is considerably larger when compared to Bulgarians but much lower, and declining, in comparison with the Hungarians and Slovenians poorest. The relatively large, and increasing importance of the income from self-employed in the portfolio of the poorest is striking. Because their access to the formal labour market has diminished the Romanian poorest have increasingly adopted self-employment as survival strategy.

In conclusion, in spite of the very different social policies implemented in Hungary and Slovenia, the income drop was lower, the inequality rose fewer and the risk of poverty has been considerably smaller compared to the situation in Bulgaria and Romania. However, in all four countries, some social groups became the "transition losers", first of all those who could not cope with the challenge of competitive pressure. The main poverty risk groups have been unemployed (or "disguised unemployed") and the dependants.

Due to the fact that in all four countries wages and salaries still represent the main income source, any policy measure associated with the income taxation system will influence the welfare of the population. The recent reduction in income tax rates in Romania, combined with the enhancement of the tax collection system, has been beneficial to the population. The introduction of the flat tax rate in Romania led not only to the increase of household net real revenues, but also to the increase of profits among Romanian firms. This policy measure expanded the tax base by bringing a lot of firms from the informal to the formal sector, as the competitiveness of the domestic firms has risen after reducing costs, despite the increased competition pressure perceived during pre- and post-accession periods. Income from agriculture in Bulgaria and particularly in Romania has been a major contributor the households' welfare. Therefore, taxing the agricultural revenues will affect the net income of households, but will reduce the potential primary budget deficits.

Pensions represent the second major (third in the case of Romania) source of income in all countries. The sharp increase of the share of pensioners is correlated with increase of the share of pensions. The level of social insurance tax rates is relatively high even when comparing with other European countries, and is a possible barrier in the entry of foreign firms on the domestic markets even under the expansion of the EU single market. Therefore it may be a factor that partly contains competitive pressure in the short run.

The impact of the informal sector

Our research focused on the potential and already observed impact of the informal economy, particularly on competitiveness, labour markets and the business environment. This analysis includes only Bulgaria, Hungary and Romania; Slovenia was not included due to its small share of informal sector.

The shares of informal and underground sectors in national output vary from country to country. The informal economy has a larger share than the underground sector in Romania, while in the other two countries (Bulgaria and Hungary), different estimates point to a narrower gap. Romania is a distinctive case particularly due to its high share of agriculture both in GDP and in employment. The developments within the informal sector in each of the three countries followed similar patterns. In the beginning of transition, all countries witnessed a strong increase of the informal sector, followed by a decrease after reaching a stable growth path. The main reasons for the mushrooming of informal activities were the fast dismantling of the former restrictions coupled with slow establishment of market regulatory institutions.

The main determinants of the increase in the size and share of the informal economy include the dynamics of economic output, the income tax rate, the size of non-wage paid labour force, the unemployment rate and the long-term unemployment rate, and the real wage index. The increase in income inequality, the high variability of the fiscal system and the increasing gap between the level of official tax rates and the effective tax revenue shares in the GDP, the institutional structure and the administration inference in the economy were also important in inciting more underground/informal actions.

Turning to competitive pressure, the informal economy was an escape solution for new SMEs to survive competition from subsidised state-owned institutions and foreign-owned subsidiaries, which used monopolistic tools to gain higher shares on the fragile and weakly protected (against monopolistic behaviour) emerging markets. Faced with increasing bureaucratic obstacles and growing corruption, more and more SMEs increased their informal activity.

In terms of the policy implications, consistent fiscal policy, based on non-discriminatory treatment of economic agents and sectors within economy, helps reducing the informal share of the economy. Lowering the tax rates can encompass partially the negative outcomes, by making formal sector more attractive – supply of social insurance – and increasing domestic cost-competitiveness. The structure of the labour market is an important

factor in determining both the share of informal sector and the effects of increased competitive pressure. A large rural population, as it is the case in Bulgaria and Romania, may lower the immediate effect of competition, but also the beneficial long-term effect of technological progress brought by the entry of foreign investments.

Subjective well-being

With respect to subjective well-being, our research focused on three topics: (1) relation between the objective household standard of living and the subjective well-being of individual actors; (2) relation between income mobility and life satisfaction and (3) population demand for redistribution. The analysis focused on the determinants of subjective well-being used satisfaction variables as proxies. Country studies were realized independently based on poorly comparable data. However, the cross-country comparisons were extended by using comparable explanatory models (Bulgaria was not included due to lack of relevant data).

Our analysis highlights that in all three countries (Hungary, Romania and Slovenia) "objective" household income has significant and positive effects on satisfaction. As a general rule, people with larger incomes are more satisfied than the others. Also individuals (not necessary with larger incomes but) considering themselves wealthier look more satisfied. However, above a certain income the level of satisfaction is decreasing, or, at least, stagnating. By contrast, unemployment as well as other marginal positions on the labour market (casual work, underemployment but also disabled) significantly diminish well-being. Not only people with marginal positions on the labour market are more dissatisfied than the others, but also those who feel their positions at risk as a consequence of increasing competitive pressure. Thus, as the countries recover from the transition shock and the growing national income starts to contribute to increasing households income and more new sustainable jobs are created is to be expected an increasing general level of satisfaction.

Secondly, the analysis on Hungary and Romania shows that health related problems negatively affects people satisfaction, while education (particularly the tertiary one) significantly increases satisfaction. Thus, social policies in health and education areas that succeed to cushion population against transition adversities increase both life chances and general level of satisfaction of the population.

Lastly, the "satisfaction loss" during the transition was not the result of increasing competitive pressure alone; it is also a matter of subjective definition of transition as "dangerous" for the self and the relatives. In the general environment of uncertainty and rapid

change, how people perceive their actual social position, past mobility and prospect of upward mobility in the future represents very powerful predictors of the subjective well-being both.

The findings regarding relation between income mobility (objective and subjective) and life satisfaction were drawn from a case study for Hungary (panel data are not available in the other three countries). Upward mobility increases satisfaction, but people who had just recently reached a certain income level are less satisfied than those who succeeded to keep at that level for a long while. Furthermore, relatively smaller satisfaction of the upward mobile people is prevalent in the competitive sectors of the economy is a fact that points out that satisfaction is eroded by uncertainty even under conditions of upward income mobility.

Income growth within uncertain circumstances generates relatively smaller rise in satisfaction. If this uncertainty expands also to the future and many are thinking that they cannot expect further improvements, then after a while this may cause also the decrease of satisfaction. Thus, a relatively small but steady growth of population income under the conditions of positive prospects for future seems that would cause larger increase in satisfaction than unusual and one-time raise in income.

The main determinants of demand for redistribution were determined based on two case studies (for Romania and Hungary) and one comparative study including USA and European countries (among which Hungary). According to the results: there is a rather high demand for redistribution both in Hungary and Romania; wealthier individuals are less favourably to redistribution policies; the lower the level of education achieved by an individual the larger his/her support for redistribution; people with marginal positions on the labour market (disabled, unemployed, underemployed) are more in favour of redistribution than the others; health problems (of the individual or of a family member) are a strong predictor of demand for redistribution; people who experienced in the past (in the first years of transition) poverty or hardship (their household was in one of the five lower income deciles) are more in favour of redistribution than the others; the more the people feel that inequalities are increasing (particularly by illegitimate means), the more they favour redistribution policies.

In Romania a series of regression models showed that the satisfaction with government performances has no influence on demand for redistribution policies. In fact, satisfaction with government performances has influence neither on individual's belief regarding the role of the state, nor on poverty ideology. By contrast, agents satisfied with government performances are more likely to perceive inequality as diminishing, corruption as less, and success possible by means other than illegal.

The highest demand for redistribution comes from rural residents, particularly women, poorly educated persons, poorer both in "objective" and "subjective" terms, persons that believe in the maximal role of the state, and individuals who think that the poor are victims of the transforming society, while the rich gain their fortunes by illegal means. Thus, in Romania, the demand for redistribution is a combined effect of selfish motives with the agents' perception of the process that generates income distribution and income mobility as distorted. In relative terms, the individual's ideology and perceptions of other people's opportunities have more predictive power than his/her position in the social structure.

4. Towards an integrated socio-economic model of competitive pressure and social values

4.1 Integrating the links between firms, institutions and individual perceptions

As seen, the main workpackages of the COMPPRESS project have produced sectoral empirical analysis of various links and interactions between firms, institutions and individuals in the four CEECs and on the effect of competitive pressure on these links and interactions. In what follows we present a synopsis of the main links and interactions identified through our research, with a view to portraying a broader picture of the existing complex socio-economic structure. Using this holistic multidisciplinary approach, we proceed with an attempt to join together the identified links in an integrated socio-economic model of competitive pressure and social values.

The empirical analysis of the interactions of firms, markets and institutions under competitive pressure has identified the following main links and interactions:

- During the period of economic transformation there has been an intensive entry by new firms into the CEECs' product markets (both foreign firms and de novo local firms) and this process has been accompanied by intensifying competitive pressures, which strongly affects the inter-firm interactions but also the interactions between firms and workers.
- Firms are indeed very sensitive to competitive pressure: they react and respond to changing competitive pressure by adjusting their behaviour and performance accordingly. We have identified observable responses to changing competitive pressure in aspects such as: the production technology, the efficiency of factor utilization, the firm's capital structure, the demand for different production factors, the firm's pricing behaviour, etc.

One specific outcome is that the actual enterprise responses to competitive pressure may differ in the stages of economic transformation in these countries.

- The sheer number of competitors in the segments of the product markets has a healthy effect on enterprise performance, inducing efficiency gains and reducing price markups.
- Through the generated competitive pressure, FDI firms operating in the local markets act as powerful engines of restructuring and change in the CEECs' domestic product markets. However, there are also negative spillovers of excessive foreign induced competitive pressure. The latter may lead to declining of local firms while foreign controlled firms tend to exploit local market imperfections and to collect larger monopolistic rents than domestic firms.
- Progress in institutional reforms – namely the establishing of functioning institutions of the market economy – is positively associated with the firms' productive efficiency. Moreover, institutional reforms act in conjunction with competitive pressure, reinforcing its positive effect on the firms' behaviour and performance.

The empirical analysis of the interactions between firms and workers under competitive pressure has highlighted the following key links and interactions:

- The restructuring of the firms and markets during the transition from plan to market entails a process of massive reallocation of resources (both physical and human capital) within the economy.
- During the first phases of transition the increased competitive pressure triggered fast destruction of jobs in a great number of CEEC firms; this was accompanied by slower, but still substantial job creation at the group of successful newly emerging firms, which could gain market share at the expense of the traditional old firms.
- Job flows across the CEECs depended strongly on the intensity of the FDI which were key participants in the restructuring process. Job creation was especially fast in successful FDI firms.
- Most newly created jobs require specific skills (modern management and marketing practices together with modern technologies). The changes in education and vocational training allow young people to acquire such skills and be employable. By contrast, workers in traditional firms often find it next to impossible to obtain the necessary skills and many of then are basically unemployable.

- Output elasticities are generally very stable with manufacturing sectors characterized by higher output elasticity than other sectors indicating that *ceteris paribus* increasing manufacturing output generates slightly more jobs than similar growth in other sectors.
- Wage elasticities display characteristic behavioural differences, partly reflecting variations in competitive pressure. When the macro environment is unstable, wage elasticities are larger in absolute terms.
- Rent sharing in wage setting seems to be widespread, albeit declining, in the CEECs; in any case this practice if significantly more prevalent than in mature market economies, partly due to competition among successful firms for scarce human capital resources.
- Overall, the surge in competitive pressure in the CEECs has contributed to a very strong skill-specific selection in the labour markets. Compared to mature market economies educated people have higher employment probabilities while employees with the right skills have higher premia. Both contributed to the increase in wage and income inequality.

The empirical analysis of the interactions between households and the corporate sector under competitive pressure has highlighted the following key links and interactions:

- The increasing competitive pressure in the CEECs after 1990 resulted in major societal structural changes and stratification, with *inter alia* declining labour force participation (many dropouts from the labour market), declining employment ratios (less employment), high unemployment rates, increasing dependency ratios (more pensioners).
- Growing competitive pressure has contributed to the ongoing social stratification. Those social groups who could not cope with the challenge of competitive pressure were forced out of employment and of the labour market altogether and became the transition losers. The main poverty risk groups are the unemployed and the economically dependent people.
- The structure of household incomes has undergone dramatic changes. While in four CEECs, wages and salaries are the main income source, with the sharp increase of the share of pensioners, pensions have moved to the second major source of income (except for Romania where they are the third major source of income).
- Growing competitive pressure has contributed significantly to increasing income inequality. Thus the competition-driven differentiation in wages and salaries is the key underlying factor for the inequalities in total income.
- Whereas average wages are influenced by competitive pressure, the average pensions are more the outcome of the social and income policies pursued by governments.

- Regarding subjective well-being, while people with larger incomes and those considering themselves wealthier are more satisfied, above a certain income the level of satisfaction is decreasing or stagnating. Maintaining a good level of income is more important for overall satisfaction that just upward income mobility.
- Not surprisingly, societal marginalisation (e.g. unemployment and underemployment) – largely driven by growing competitive pressure – significantly reduces subjective well-being.

Integrating these results implies identifying chain causal links as well as cross-cutting aspects and links that can be traced through several stages of our sectoral analysis.

Here are some of the important chain causal links that have been identified, and partly quantified, in the context of the COMPPRESS project. Since they have been explored in great detail both in various deliverables and in the previous parts of this paper, we just outline the chains.

- Market structure – competitive pressure – productivity and x-efficiency gains – demand-*cum*-competition for skilled and motivated labour – skill-based wage formation (rent sharing and skill premia) – wage and income differentiation – well-being perceptions.
- Opening up of CEEC markets – growing foreign competition on domestic markets (FDI firms and imports) – positive spillovers (industrial restructuring, diffusion of managerial and technological know-how, job creation, etc) – negative spillovers (driving out local firms – job destruction, emerging new monopolies, FDI enclaves, etc) – labour market segmentation.
- Competitive pressure – firm adjustment (restructuring but also entry and exit) – job creation and destruction – worker flows – individual success (high paid jobs) and failure (marginalization) – objective and subjective well-being
- Institutional reforms – development of well functioning markets – level of competitive pressure – firm adjustment (incl. rising productive efficiency and responsible market behaviour by firms) – social cohesion – well-being perceptions.
- Competitive pressure – changing labour demand – overhaul of the labour market – income formation – social stratification – demand for redistributive policies.

Here are some of the important cross-cutting issues and links that have been identified in the context of the COMPPRESS project. We do not discuss here competitive pressure *per*

se, which, being the key topic and integrating link of the COMPPRESS project, is also a central cross-cutting issue.

A key overarching cross-cutting result in the COMPPRESS project is that, compared to the past, the economic and social value of human capital in the CEECs has increased enormously, partly as a result of the growing competitive pressure:

- One of the most noticeable features of the transition-related economic restructuring in the CEECs has been the rapid transformation of human capital as a key production factor: if this process took decades to materialise in mature market economies, the transition to a human-capital based post-industrial economy was accomplished within a decade.
- Its rising economic value is reflected in the notable changes in the returns to human capital, which reflect marketable knowledge and skills embodied in the human capital.
- Human capital is becoming a key driving force in shaping the labour market performance in the CEECs. Labour markets have become skill-segmented, with emerging shortages in the high skill segments accompanied by oversupply of low-skill labour.
- The social value of human capital is reflected in the rapidly growing demand for good education and vocational training in marketable skills. The subjective value of marketable knowledge and skills is evidenced in the surveys of individuals' perceptions.

Partly related to the above, the ongoing income differentiation and the related individual perceptions are also affected by the process of human capital formation in the CEECs.

- One of the results obtained in Workpackage 4 (*The effect of competitive pressure on income distribution and social policy*) is the identification of key objective and subjective factors which can explain material and general satisfaction of the population and the demand for redistribution. *Inter alia*, we conclude that the perception of relative income/wealth position and the perception of relative income mobility play crucial role in the formation of subjective welfare.
- In turn, the results of Workpackage 3 (*Competition-driven labour market developments, their institutional and policy implications*) highlight the main driving forces of job creation and destruction, including the role of skills, as well as the determinants of the returns to human capital.
- Overall, one can conclude, that the core determinants of income differentiation and the resulting individual perceptions are rooted in the process of human capital formation, including the acquisition of various skills to be employed in the labour market.

These – as well as other similar existing – cross-cutting and chain causal links are the core of the methodological approach of developing an integrated socio-economic model of competitive pressure and social values. In the following section we present an example of a prototype model developed on the basis of this methodological approach.

4.2 A prototype model of competitive pressure and subjective welfare: the case of Hungary

We illustrate some of the features of this integrated methodological approach on the example of a prototype modelling framework of competitive pressure and social welfare in Hungary. The objective of this exercise – in line with the main objectives of the COMPPRESS project – is, by drawing from earlier results obtained within different workpackages – to come up with better understanding of the link between competitive pressure, gainful employment, income differentiation and subjective welfare. In turn, this integrated framework can be used as a testing ground for different policy options.

As already noted, the perception of relative income/wealth position and the perception of relative income mobility play crucial role in the formation of subjective welfare. In turn, skills are among the main factors in explaining the process of job creation and destruction and the returns to human capital. Therefore, the core determinants of income differentiation and the resulting individual perceptions are rooted in the process of human capital formation, including the acquisition of various skills to be employed in the labour market.

Drawing on these outcomes, at this stage we try to identify the main links and interactions between labour market, institutions (particularly government) and subjective welfare of the households. Doing this we go further in our analysis, explaining the differences between subjective wealth position and factual income level, and between subjective income mobility and factual relative income mobility.

Analysing the above mentioned interactions we mainly concentrate on the effects of competition-driven labour market developments on subjective welfare, and the interrelation between policy decisions and subjective welfare. Individuals' attitude toward redistribution influence the policy making process and the government usually aims to boost the subjective well-being of the population. This – sometimes unsuccessful – intention of the government is especially strong in election years. As 2002 was an election year in Hungary, the analysis of

the relationship between objective variables referring to the period 2000-2002 and subjective variables of the year 2002 (e.g. the relationship between income mobility in 2000-2002 and subjective well-being in 2002) can highlight several important policy-relevant conclusions.

In the remaining part of this section we first outline the economic background of competitive pressure in this period and look at the specific features related to the household level.[5] We then proceed with the analysis of the income level and income mobility perception differences, drawing on previous WP4 results. The main findings of the modelling exercise based on this integrated framework are then summarized with special emphasis on the policy conclusions.

The effect of competitive pressure at the household level

We present the dynamics of macro data of real per capita GDP and employment in Hungary between 1989 and 2002, and the dynamics of micro data of household income between 1993 and 2002, computed from the Household Budget Surveys (see Figure 4.2.1).

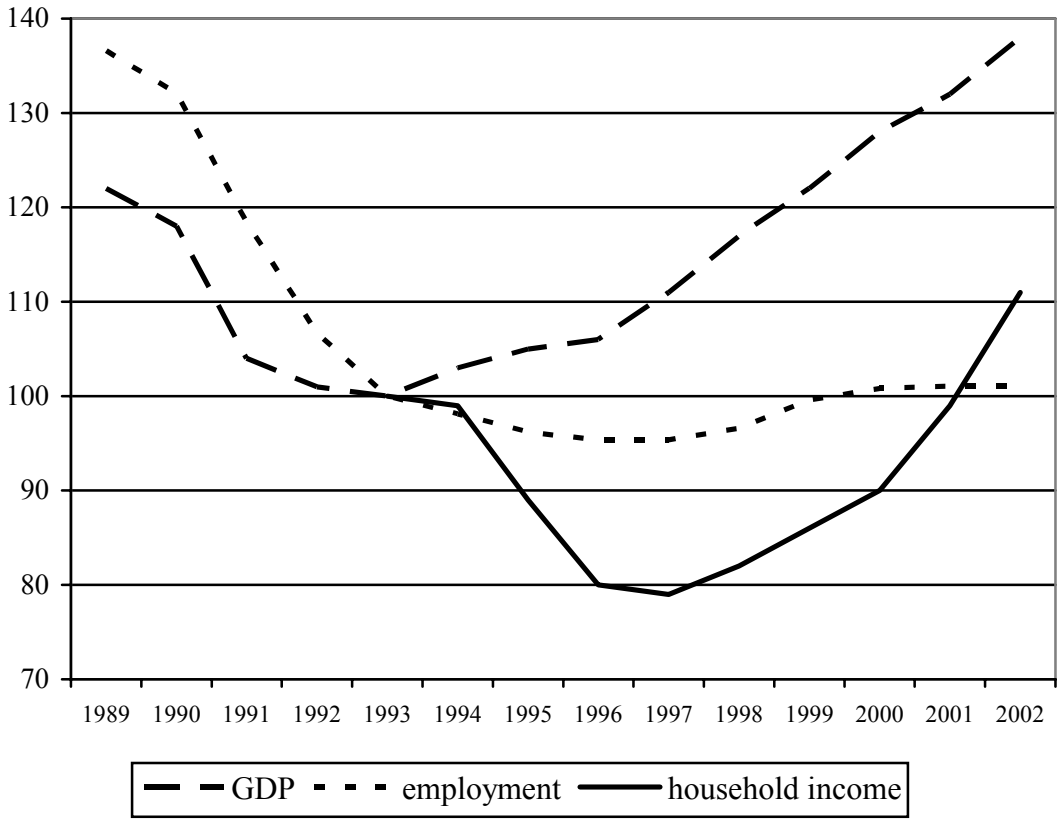
The drastic decline of GDP lasted until 1992 and GDP reached its trough in 1993 but then dynamically increased after 1994. Employment dropped dramatically until 1993, and kept slowly declining until 1997. The drop in employment was almost 30 per cent between 1989 and 1997. In 1997-1998 employment rose somewhat, but it stagnated after 1999. The employment rate remained very low, at around 56%-57%. After the trough in 1997, real household incomes increased rapidly. Between 2000 and 2002 this growth was extremely fast, more than 20 per cent, what is much higher than the growth of GDP in this period. This dynamic growth can mainly be explained by political and not by economic reasons. In 2001, before the parliamentary elections in May 2002, the outgoing government increased social benefits and public wages, generating a considerable extra household income flow. The new government – satisfying the supposed demand for redistribution of people – continued this kind of redistributive policy, endangering the financial balance of Hungary with this step.

Generally speaking the effect of competitive pressure on subjective welfare depends mainly on the relative rather than the absolute differences of household characteristics (activity, income and expenditure, assets, education, age) and the personal perception of these household positions. Thus the key characteristics of competitive pressure situation on household level in this period were: large insecurity, including possible and expected labour

[5] For measuring subjective variables a supplementary survey was attached to the 2002 yearly interview of the 2000-2002 Rotation Household Panel (asked in March 2003). We have 3540 set of answers from the adult members (age ≥ 18 years) of 1903 households.

market shocks and possible and expected income shocks; general uncertainty (loss of orientation); growing income and wealth inequalities as well as new possibilities, including large relative mobility. In what follows we try to describe and partly measure the role of these characteristics.

Figure 4.2.1 Real GDP, employment and per capita household income in Hungary, 1993=100



Source: Statistical Yearbook of Hungary 2002, HCSO, Budapest, 2003; Economic Survey of Europe, UN ECE, 2005, No. 2; COMPPRESS Deliverables 14 and 23.

Subjective, absolute and relative mobilities

For measuring different types of mobility, first we define *subjective mobility*. The question behind this variable was the following: "How has the financial situation of your family changed during the last three years?", and the possible answers were: considerably declined, slightly declined, did not change, slightly improved, considerably improved. In measuring absolute mobility, the 2002 real income was compared to the average income of

the years 2000 and 2001, and these income changes were classified into five categories. In Table 4.2.1 '<0.8' means that the average real equalised income of the given person in the years 2000 and 2001 is less than the 80% of his/her real income in 2002; '0.8< <0.9' means that this average is between the 80% and 90% of the income in 2002, etc. The bounds of these categories are not chosen by chance, we use that (rounded) values which lead the maximum rank-correlation between the categories of the absolute and subjective mobility.

To generate the relative mobility variable we order the people in the sample according to their equalised income, and normalise the sequence between 0 and 100 per cent. We call this parameter the relative income position of the individuals, what is a simple generalisation of the decile or percentile structure. The difference of relative income positions between two time periods can be used to measure relative mobility. Taking this measure as a starting point we can introduce further mobility variables. We can classify the differences putting them into categories according to the extent of downward and upward changes of the relative income positions at 10 and 20 per cent level. For example, we regard a person mobile at the 10 per cent range, if his/her relative income position difference is ten per cent, at least. We chose the 10 and 20 per cent range in mobility measure because these values lead to the maximum rank-correlation between the categories of the relative and subjective mobility.

The results presented in Table 4.2.1 and 4.2.1 and Figure 4.2.2 suggest that more than two third of the respondents perceive smaller improvement or bigger deterioration in their material situation than it is observable in their absolute real income changes. People perceive the changes in their material situation according to the changes in their relative positions, rather than the changes in their absolute income levels. That is, the subjective mobility is closer to the relative mobility than to the absolute one. On average even the level of relative mobility is underestimated in the perception. Below we show that this fact can be explained by uncertainty.

Satisfaction

Both the subjective wealth position on the poor-rich scale and factual income position have positive and partly independent effect on satisfaction. The first effect is stronger, however, below a certain income level the factual income position has its independent impact on satisfaction.

The main outcomes with respect to uncertainty/stability can be summarised as follows.[6] People belonging to marginal activity groups (casual workers, unemployed, disability pensioners, living on subsidies) are less satisfied compared to other actives and inactives. That is, the satisfaction level of casual workers and disability pensioners – *ceteris paribus* – does not differ from the satisfaction of the unemployed. Going into disability pension was a typical way in Hungary of escaping from the labour market during the economic transformation, as an alternative to unemployment. The family members of marginal activity groups are also less satisfied compared to other actives and inactives. Marginal activity groups and their family members together are the 30% of the population.

Graduates are more satisfied than the others (after controlling for the income differences). We can explain this fact by their reduced uncertainty and better perspectives on the labour market (*cf.* Figure 3.3.7). Regarding satisfaction there is no difference between 8 classes and vocational school education level. Population with 12 classes education level is more satisfied than people with lower education only at the 10% significance level. These results absolutely reflect the changes in skill specific returns in Hungary (see Table 3.3.2). The direction and speed of these changes (mainly the quickly increasing returns of tertiary education) form the expectations of the people and this explains the skill-specific satisfaction differences after controlling for the income differences. In households which contain couple all of the family members are more satisfied. Members of households having debts are less satisfied.

[6] The detailed estimation results can be found in Tables A.1 and A.2 in the Appendix.

Table 4.2.1 Distribution of subjective and absolute income mobility, 2000 - 2002

number of observations = 100%

	Absolute mobility					
Subjective mobility	< 0.8	0.8< <0.9	0.9 < < 1.1	1.1< <1 .2	1.2 <	Total
Considerably declined	**1**	2	4	3	5	14
Slightly declined	2	**2**	7	6	11	27
Did not change	3	2	**11**	8	18	42
Slightly improved	1	1	3	**3**	8	16
Considerably improved	0	0	0	0	**1**	1
Total	7	6	25	20	43	100

Note: < 0.8 means that the real equalised income of year 2002 is less than the 80% of the average income of 2000 and 2001; *0.8< <0.9* means that the real income of year 2002 is between the 80 and 90% of the average income of 2000 and 2001, etc.

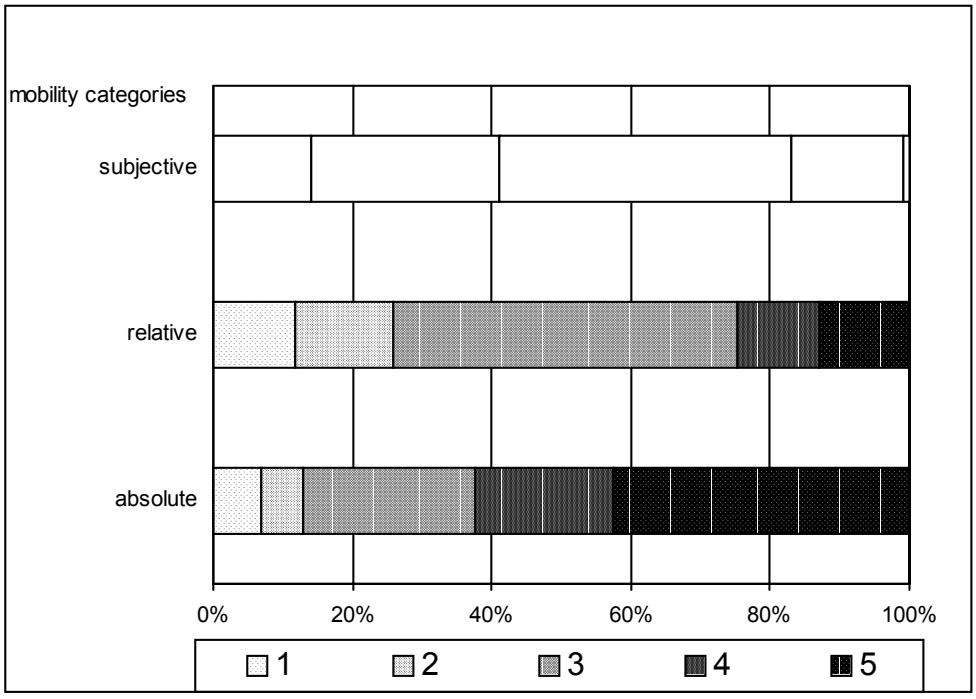
Table 4.2.2 Distribution of subjective and relative income mobility, 2000 - 2002

number of observations = 100%

	Relative mobility					
Subjective mobility	< -20%	-20< <-10	-10< <10	10< <20	20% <	Total
Considerably declined	**1**	3	7	1	1	14
Slightly declined	3	**4**	14	3	3	27
Did not change	6	5	**21**	6	5	42
Slightly improved	1	2	8	**2**	3	16
Considerably improved	0	0	1	0	**0**	1
Total	12	14	50	12	13	100

Note: Relative mobility is measured by the difference of relative income position in 2002 and the average of relative income positions in 2000 and 2001. *< -20%* means that this difference is less than -20, on a 100 degree scale, -20< <-10 means that it is between -20 and -10%, etc.

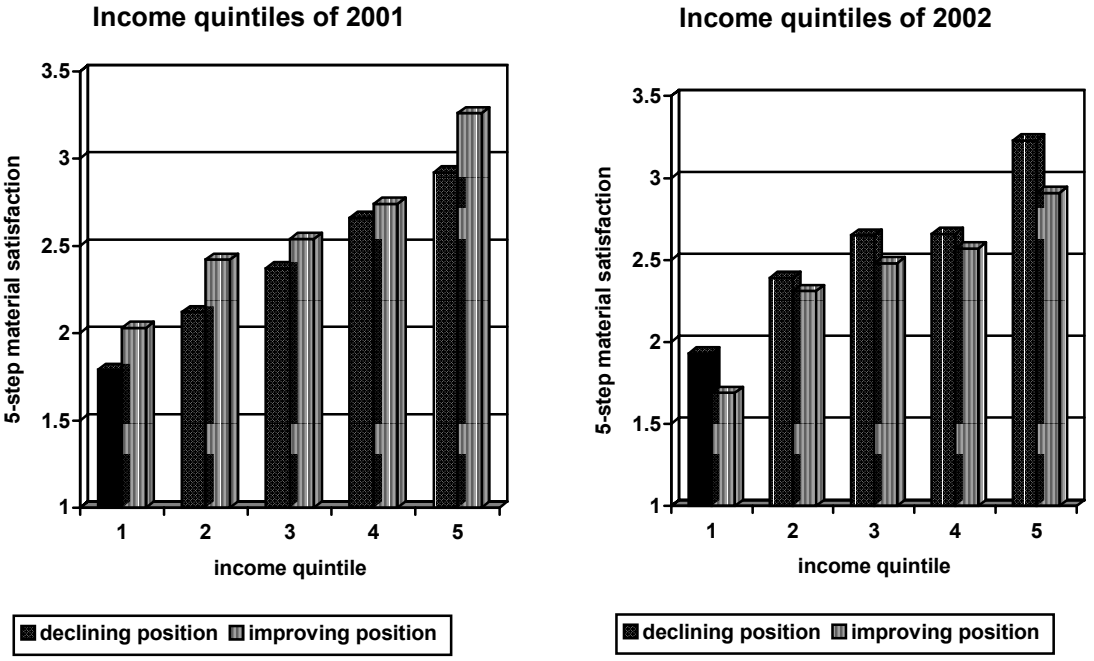
Figure 4.2.2 Distribution of subjective, relative and absolute income mobility



Note: See previous tables for the definition of the categories of subjective, relative and absolute mobilities.

As to mobility, the effect of subjective mobility on satisfaction is positive while the effect of factual relative mobility is negative. Figure 4.2.3 helps in interpreting this seemingly paradox observation.

Figure 4.2.3 Average material satisfaction of households with declining / improving relative income position between 2001 and 2002 by income quintiles of 2001 and 2002



We can see that people who have already had their present relative income positions are more satisfied than the newly upward mobile ones. Detailed analysis shows that the negative effect of relative mobility on satisfaction is caused by upward mobile people working in the competitive sector and by their family members. We can conclude that people working in the competitive sector perceived their new income position uncertain and unstable, they assumed income trends to turn back in the future, and this perception had the negative effect on their satisfaction.

Other subjective variables – such as values and expectations – also affected individuals' perceptions. Thus people thinking that the government should tax more heavily the income of the rich are less satisfied than the others; positive expectations for personal and children's future increase satisfaction; positive expectations related to the future prospects of the labour market positively correlate with satisfaction. Other non-personal expectations –

expectations on the economic situation, or the market of consumer goods in Hungary – do not affect satisfaction.

From these findings we may draw important policy relevant lessons. Income growth within uncertain circumstances generates relatively smaller rise in satisfaction than could otherwise be expected. If this uncertainty also influences expectations and many people reckon that they cannot expect further improvements in their financial and labour market positions – employment is stagnating at a low level – this may have a negative effect on satisfaction. By contrast, policies continuously raising the income of the population, even modestly, and expanding the opportunity scope for individuals, may induce a positive effect on satisfaction.

The demand for redistribution

Here we summarise the most important results of modelling the demand for redistribution in two directions: restricting the income of the rich and allocating more income to the poor.[7] Demand for redistribution is slightly decreasing with subjective income/wealth position but is not related to factual income. Higher recreation expenditures are in general associated with less support for redistribution. The labour market situation of the respondents strongly affects their attitude towards redistribution. Thus entrepreneurs, managers oppose restricting the income of the rich while members of marginal activity groups prefer redistribution for the poor but do not feel special antipathy towards the rich. Lower education level is associated with more support for redistribution. The diminishing relative returns to the lower education (see Table 3.3.2) form negative expectations related to the future relative income. People suffering these changes wait help from the state. The more an individual is concerned about losing his/her job, the more the support for redistribution.

Social mobility also has affects on the attitude towards redistribution. Downward mobile people are more in favour of redistribution than the others. By contrast, those upward mobile people whose income was below the median in 2000 support redistribution for the poor. Finally, other subjective variables also affect this attitude. The more people feel that inequalities are increasing, the more they favour redistribution. Dissatisfied respondents are more favourably inclined towards redistribution. The most frustrated are the indecisive people – those who have no clear knowledge about the future; they are also more averse to the rich. We can find negative correlation between expected mobility (personal or intergenerational)

[7] The detailed results can be found in Tables A.3 and A.4 in the Appendix.

and support for redistribution (prospect of upward mobility reduces the demand for redistribution).

Main factors influencing the income level perception difference

As noted, the subjective wealth position has an important role in explaining both the subjective well-being and the demand for redistribution. In the case of subjective well-being, the factual income level also has a significant effect. Below we analyse the origin of the difference between subjective wealth position and factual relative income level.

The supplementary interview includes an Economic Ladder Question for 2002. Respondents were asked to place their household on the poor-rich scale of the income/wealth ladder containing 9 brackets. According to the responses we calculate the difference of the ranks of subjective wealth position and income categories. This difference is called income level perception difference. According to this definition, the income level perception difference correlates negatively with the income level: people belonging to the highest income category cannot rank themselves in a higher category, and so on, this difference cannot be positive. During our calculation this effect was filtering out. Note that the subjective wealth position measures the position on the poor-rich scale, while the objective income level indicates the income position of the household. If the income level perception difference is positive, it may mean that the respondents subjectively value their position higher than their factual one, but it may also mean that the wealth position is better than their income position.

The detailed results of modelling the income level perception difference are presented in Table A.5 in the Appendix. First we summarise the most important observations gained from the model with objective explanatory variables. In the case of people belonging to the marginal activity groups their subjective position is lower than their factual income level. To a smaller extent the same outcome features in the case of the family members of people belonging to the marginal activity groups. One may conclude that the members of marginal activity groups undervalue their relative position. The average income level perception difference of people with secondary education is bigger than that of people with lower level of education and much smaller then that of with tertiary education. There is no difference between people with only elementary school or vocational school attainment. This observation can be explained by the fact that the return-differences of vocational and elementary education have almost disappeared in the last 10-15 years (see again Table 3.3.2).

Younger people (between 18 and 39) value their position relatively higher than the others. This is clearly coming from the difference in perception, as seen from the comparison with elder people living in the same household, the difference being related to the better expectations of the young population.[8] The average income level perception difference of students in tertiary education is larger than that of other people. This finding can be linked again to the more stable labour market position of young and highly educated people.[9] The average income level perception difference of family members of households containing couples is larger than that of others without couples. People living in Budapest value their position relatively worse than the others and this can be explained by the comparison effect. Expenditure on culture recreation is positively correlated with the income level perception difference: the bigger the share of expenditure on recreation, the bigger the income level perception difference. The average income level perception difference of people owning a passenger car is bigger than that of others. This wealth variable is also suitable for filtering out the effect of wealth from modelling income level perception difference. Upward mobile people value their position relatively worse than the others; the actual wealth position of the former is obviously worse than that of people with this higher income for a longer while.

The impact of subjective variables on income level perception difference is clearly associated with perceptions, not with the difference between wealth and income position. Those people who are uncertain in their future labour market prospects value their position worse than the others. People who expect that joining EU has negative or no effect on the labour market positions of the Hungarian employees value their position worse than the others. The more the people are concerned about the idea that they or a family member may lose her/his job, the worse they value their position compared to their factual income level. From this respect the situation of people who responded “do not know” to this question is very similar to those who answered “very concerned”.

People who are completely uncertain whether they will be able to find another job not worse than the present one and people who gave the answer “do not know” value their position relatively much lower than the others. Taking into account the latest two correlates, the dummy variable for the young becomes insignificant. In the case of age the prospects and the bigger chance of finding a better job are playing important role in valuation of wealth position. Those people who do not see any chances for improving their financial situation value their position much worse than the others. Respondents who essentially agreed with the statement that the government should restrict the income of the rich value their position

[8] As already discussed, young people have better employment chances than the elder (see Figure 3.3.7).
[9] See also Figure 3.3.8.

relatively worse than the others. Respondents who essentially agreed with the statement that the government should allocate more income to the poor value their position relatively worse than the others. People who expect that joining EU has positive effect on the labour market positions of the Hungarian employees value their position relatively better than the others.

Main factors influencing the mobility perception difference

As seen, the role of subjective income mobility is especially important in shaping individuals' perceptions. In contrast with objective mobility, the more people value their subjective mobility positive, the more they are satisfied with both their financial situation and their life in general. Perception of upward mobility – in contrast with objective mobility – thus gives an additional surplus to satisfaction. The difference between relative and subjective mobility shows that a considerable part of people with increasing relative income position do not value this growth, and the majority of respondents underestimate the real size of changes in their material situation.

Table A.6 in the Appendix illustrates the main determinants of the difference between subjective and relative mobility. Modelling the difference between the subjective and objective mobility, we number the categories of both subjective and relative mobility from 1 to 5, and subtract these values from each others. The difference, called mobility perception difference, was explained in an ordered logit model on household level. Naturally, this mobility perception difference essentially depends on the categories of relative mobility. For example, if one of the households belongs to the highest relative mobility category, this subjective mobility gap cannot be positive. For filtering out this effect we apply relative mobility also as an explanatory variable in the model.

The main findings can be summarised as follows. The mobility perception difference has a positive and significant relationship with the level of income; the lower the income category of a household in the final year, the smaller the perceived income mobility compared to its factual relative mobility. Expenditure on culture, entertainment and travel is positively correlated with the mobility perception gap. Households that have the highest share of expenditure on recreation tend to overestimate their past mobility, and households who are on the other end of the scale tend to underestimate it. After controlling for the income level, the bigger the share of expenditure on recreation in total household expenditure, the more these households perceive their income mobility higher than their factual relative mobility.

Analysing the relationship between mobility perception gap and the family structure of the households we find that households containing couples are likely to judge their past mobility more positively than the rest of the households. We find an opposite effect in the case of households with member(s) belonging to marginal activity groups. They underestimate their past relative income mobility compared with that of the others. When examining the effect of settlement type we find that households living in Budapest and in larger cities are more likely to underestimate their past mobility compared with that of the others.

Not surprisingly, the effect of age has the well-known U-shape, where we get the minimum value at about sixty.[10] Those aged about sixty underestimated their past income mobility compared with both the elder and the younger. The youngest households are the most positive in judging dynamics of their relative mobility.

The consistent gap between relative and subjective mobility explains the fact that both mobility variables have significant effect in explaining satisfaction. This consistent difference between the subjective assessment and the objective value of mobility may be caused by the uncertainty of the competitive pressure situation. This uncertainty characterizes most prominently the marginal activity groups, the middle aged households and households before retirement. It is also obvious that living in a household containing a couple is likely to be more secure than living in a mutilated family, and this extra security explains the more positive valuation of past mobility compared with that of the others.

The reference groups (that is, what people aspire to be) also play a very important role in subjective mobility formation. The influence of these subjectively chosen reference groups may also lead to the underestimation of the actual changes in financial position. This can be illustrated on the example of households living in big cities, and also explained by the special effect of income level in modelling the mobility perception gap.

5. Concluding remarks and further policy implications

This report seeks to present a concise synthetic and integrated summary of some of the main research results obtained in the course of the COMPPRESS project. The key topic and integrating link of the COMPPRESS project is that of competitive pressure. The effects of competitive pressure on the CEEC economies as well as its social consequences have been addressed and studies through sectoral analysis in four workpackages.

[10] The “age” of a household was measured by the average age of household members over eighteen.

Competitive pressure has many facets and has had wide-ranging effects on firms, households, institutions and society in the CEECs at large. It has been a major engine of economic restructuring in the CEECs and has contributed to improved resource allocation in these economies. Competitive pressure has also been of the main drivers behind the complete overhaul of the CEECs' labour markets. In turn, the societal upshots of competitive pressure are reflected in the changing individuals' perceptions and subjective well being. Notably, the growing competitive pressure in the CEECs has had both positive and negative economic and social effects; the balancing act for policy makers is to find the policy mix that enhances the positive spillovers and suppresses or at least reduces the negative ones.

In this report we present some of the main findings of the sectoral analysis undertaken within the COMPPRESS workpackages. Our main objective here is to highlight the main links and interactions between corporate sector, labour market, households and institutions related to competitive pressure, as identified and revealed in the project workpackages. We do this in the context of an integrated analytical framework, looking at interdependencies and interactions between corporate sector, labour market, households and institutions within an integrated analytical framework.

By integrating the main findings of the sectoral analysis, we identify main chain causal links as well as key cross-cutting issues and aspects of the overall project results. These chain causal links and cross-cutting issues are the core of the methodological approach towards an integrated socio-economic model of competitive pressure and social values. On the basis of this methodological approach we develop a prototype model of this type for the case of Hungary.

In turn, this prototype model of competitive pressure and subjective welfare helps highlight some additional policy implications and conclusions, on top of those identified with the help of sectoral analysis. In particular, we could mention the following. Labour market positions and labour market expectations have crucial role in shaping subjective welfare. People's tolerance of uncertainty and income risk are mainly determined by the assumed cost of loosing job and the extent of their concern about it. The relatively large dissatisfaction and the downward distorted mobility perception may reflect the social exclusion of the families of marginal activity groups. Education and larger cultural and recreation expenditures increase subjective welfare leading to larger satisfaction and lower demand for redistribution. Uncertainty and insecurity reduce the positive effects of upward mobility.

The demand for redistribution is influenced mainly by the labour market situation and expectations and not on the income level. Instead of direct income redistribution the reduction

of uncertainty on the labour market and raising employment ratio can be the most important governmental tools for increasing satisfaction and diminishing the demand for redistribution. Policies that raise the income of the population continuously, albeit to a relatively small extent, and provide new opportunities for individuals may induce more positive effect on satisfaction and may reduce the demand for redistribution.

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Appendix

Prototype model of competitive pressure and subjective welfare in Hungary: Detailed estimation results

Table A.1 Material and general satisfaction in 2002, Hungary Ordered logit estimates only with objective explanatory variables (N=3398)

	(1) material satisfaction	(2) general satisfaction
2nd + 3rd quintiles of equalised income in 2002	0.91 (0.18)**	0.54 (0.16)**
4th quintile	0.98 (0.21)**	0.65 (0.19)**
9th decile	1.33 (0.26)**	0.73 (0.23)**
Lower 5 percentiles of 10th decile	1.95 (0.28)**	1.37 (0.29)**
Upper 5 percentiles of 10th decile	2.29 (0.38)**	1.88 (0.33)**
Casual workers	-1.11 (0.31)**	-1.93 (0.27)**
Unemployed	-0.94 (0.22)**	-0.99 (0.22)**
Disability pensioners	-0.60 (0.17)**	
Living on subsidies	-1.54 (0.43)**	-1.25 (0.41)**
Adult household members of marginal activity groups [a]	-0.61 (0.17)**	-0.56 (0.14)**
Household contains couple (married or life-partners)	0.36 (0.12)**	0.38 (0.12)**
Household contains child(ren) under age 4	-0.72 (0.22)**	
Household contains permanently sick person		-0.31 (0.12)**
Student (after secondary school)		1.23 (0.25)**
Young (18-39 ages)	0.59 (0.12)**	0.62 (0.12)**
Elderly (55-X ages)	0.50 (0.12)**	0.55 (0.12)**
Graduated	0.39 (0.15)*	0.65 (0.15)**
Passenger car	0.29 (0.12)*	0.35 (0.12)**
Flat's/house's value between median and 90th percentile	0.25 (0.10)*	
Household has debts	-0.57 (0.21)**	
Relative inc. pos.: up & in the lower 5 deciles in 2000 [b]	-0.30 (0.12)*	-0.33 (0.12)**
Rel. inc. pos. Of 2002 minus rel. inc. pos. of 2001 (cont.)	-0.89 (0.31)**	-0.69 (0.34)*
Pseudo R^2	0.088	0.081

Notes: Robust standard errors adjusted for clustering on households in parentheses.
* significant at 5% level, ** significant at 1% level.
Dependent variable of model (1): *To what extent are you satisfied or dissatisfied with the material situation of your household?* Dependent variable of model (2): *All things considered to what extent are you satisfied or dissatisfied with your life in general?* Possible answers: very dissatisfied (1), fairly dissatisfied (2), neither satisfied or dissatisfied (3), fairly satisfied (4), very satisfied (5).
[a] Marginal activity groups: casual workers, unemployed, disability pensioners, people living on subsidies.
[b] Relative income position increased from 2000 to 2001 and in 2000 the household was in the lower 5 equalised income deciles (dummy).

Table A.2 Material and general satisfaction in 2002, Hungary
Ordered logit estimates with objective and subjective explanatory variables (N=3398)

	(1) material satisfaction	(2) General satisfaction
2nd + 3rd quintiles of equalised income in 2002	0.53 (0.17)**	
4th quintile	0.56 (0.20)**	
9th decile	0.75 (0.25)**	
Lower 5 percentiles of 10th decile	1.28 (0.26)**	
Upper 5 percentiles of 10th decile	1.15 (0.37)**	
Ln(equalised house hold income in 2002)		0.54 (0.17)**
Marginal activity groups together [a]	-0.55 (0.17)**	-0.39 (0.13)**
Household contains permanently sick person		-0.25 (0.12)*
Student (after secondary school)		0.94 (0.26)**
Elderly (55-X ages)	0.54 (0.11)**	0.37 (0.11)**
Graduated		0.32 (0.14)*
Household has debts	-0.41 (0.19)*	
Relative inc. Mobility between 2000 and 2002 (cont) [b]	-0.80 (0.32)*	-0.84 (0.34)*
Subjective position in 2002: level 1 (from 8)	-5.01 (0.51)**	-3.63 (0.47)**
Subjective position in 2002: level 2	-4.16 (0.44)**	-3.36 (0.37)**
Subjective position in 2002: level 3	-3.18 (0.40)**	-2.59 (0.34)**
Subjective position in 2002: level 4	-2.49 (0.38)**	-2.11 (0.32)**
Subjective position in 2002: level 5	-1.72 (0.38)**	-1.34 (0.33)**
Subjective position in 2002: level 6	-1.38 (0.38)**	-0.84 (0.34)**
Subjective mobility: no change in material situation	0.64 (0.12)**	0.50 (0.11)**
Subjective mobility: slightly improved mat. sit.	0.81 (0.18)**	0.72 (0.17)**
Subjective mobility: considerably improved mat. sit.	2.35 (0.99)*	
Essentially agree with restricting income of the rich	-0.22 (0.10)*	-0.22 (0.10)*
Opinion: no chance for the hh to obtain better mat. sit.	-0.36 (0.11)**	-0.38 (0.11)**
Expectations on children's future: much worse	-1.30 (0.43)**	-1.18 (0.31)**
Absolutely uncertain to find another job [c]	-0.45 (0.12)**	-0.60 (0.11)**
Effect of EU on the chance of employees: positive	0.35 (0.10)**	0.47 (0.10)**
Pseudo R^2	0.180	0.154

Notes: Robust standard errors adjusted for clustering on households in parentheses.
* significant at 5% level, ** significant at 1% level.
Dependent variable of the models are the same as in the previous Table.
[a] Marginal activity groups: casual workers, unemployed, disability pensioners, people living on subsidies.
[b] Relative income position in 2002 minus the average of the relative income positions in 2001 and 2002.
[c] This dummy variable indicates that he answer to the question *Imagine the situation that tomorrow you lose your job! How certain are you that you will be able to find another job not worse than the present one?* was "absolutely uncertain".

Table A.3 Demand for redistribution

Ordered logit estimates only with objective explanatory variables (N=3122)

	(1) restrict the income of the rich	(2) allocate more income to the poor
Log of equalised household expenditures	-0.41 (0.16)*	
Highest qualification ≤ elementary school (8 classes)	0.50 (0.13)**	0.61 (0.14)**
Highest qualification: vocational school	0.49 (0.14)**	0.33 (0.13)*
Self-employed	-0.68 (0.26)**	
Employment position: leader, manager	-0.59 (0.19)**	
Living on subsidies	1.64 (0.72)*	
Marginal activity groups together		0.31 (0.15)*
Family contains permanently sick person	0.40 (0.14)**	0.35 (0.16)*
Lives in Budapest		-0.45 (0.21)*
Hh contains child(ren) between age 7-24 years, not under 7	-0.34 (0.13)**	
Relative income position: up-up [a]	0.44 (0.16)**	
Rel. Inc. pos.: up-up & in the lower 5 deciles in year 2000 [b]		0.72 (0.25)**
Relative income position: down-down [c]	0.32 (0.14)*	0.29 (0.15)*
Expenditures on cultural activities and recreation	$-4.5 * 10^{-6}$ $(1.4 * 10^{-6})$**	$-3.9 * 10^{-6}$ $(1.7 * 10^{-6})$*
Passenger car		-0.30 (0.14)*
Flat's/house's value between median and 90 perc. (dummy)	-0.38 (0.12)**	-0.39 (0.13)**
Household has debts	0.60 (0.26)*	
Pseudo R^2	0.0648	0.0550

Notes: Robust standard errors adjusted for clustering on households in parentheses.
* significant at 5% level, ** significant at 1% level.
Dependent variable of model (1): *Do you agree that the government should restrict the income of the rich?*
Dependent variable of model (2): *Do you agree that the government should allocate more income to the poor?*
Possible answers: essentially disagree (1), more disagree than agree (2), more agree than disagree (3), essentially agree (4).
[a] Up-up: relative income position of the household increased both from 2000 to 2001, and from 2001 to 2002
[b] Relative income position increased from 2000 to 2001 and from 2001 to 2002, and in 2000 the household was in the lower 5 equalised income deciles.
[c] Down-down: relative income position decreased both from 2000 to 2001, and from 2001 to 2002.

Table A.4 Demand for redistribution

Models with *objective and subjective* explanatory variables (N=3122)

	(1) restrict the income of the rich	(2) allocate more income to the poor
Highest qualification ≤ elementary school (8 classes)	0.35 (0.14)*	0.62 (0.14)**
Highest qualification: vocational school	0.40 (0.14)**	0.33 (0.14)*
Self-employed	-0.81 (0.26)**	
Employment position: leader, manager	-0.61 (0.19)**	
Marginal activity groups together		0.28 (0.14)*
Relative income position: up-up [a]	0.37 (0.17)*	
Relative inc. pos.: up-up, in the lower 5 deciles in year 2000 [a]		0.60 (0.25)*
Relative income position: down-down [a]	0.32 (0.14)*	0.34 (0.15)*
Expenditures on cultural activities and recreation	$-5.1*10^{-6}$ $(1.4*10^{-6})$**	$-3.4*10^{-6}$ $(1.6*10^{-6})$*
Flat's/house's value between median and 90 percentile	-0.27 (0.12)*	-0.35 (0.13)**
Opinion: inequalities increased	-0.78 (0.12)**	-0.54 (0.12)**
Opinion: inequalities slightly increased	-0.76 (0.21)**	-0.61 (0.25)*
Opinion: no significant change in inequalities	-1.33 (0.28)**	-0.99 (0.32)**
Subjective position in 2002: level 2 or 3	-0.93 (0.26)**	-1.64 (0.40)**
Subjective position in 2002: level 4 or 5	-1.07 (0.27)**	-1.66 (0.40)**
Subjective position in 2002: level 6, 7, or 8	-1.50 (0.32)**	-2.15 (0.43)**
Subj. mobility: considerably improved material situation		1.50 (0.52)**
General satisfaction: very dissatisfied		0.37 (0.17)*
General satisfaction: very or fairly dissatisfied	0.29 (0.12)*	
Concerned about job loss: fairly concerned	-0.36 (0.13)**	-0.32 (0.16)*
Concerned about job loss: doesn't know		-0.48 (0.18)**
Concerned about job loss: a little bit	-0.44 (0.14)**	-0.69 (0.17)**
Concerned about job loss: not at all	-0.95 (0.22)**	-0.77 (0.22)**
Effect of EU on the chance of employment: doesn't know	0.23 (0.12)*	
Future prospects: work, children & belongs to inc. quint. 1, 2 [b]	-0.43 (0.15)**	-0.51 (0.18)**
Expectations on fin. sit. of the hh: considerably declines	0.62 (0.24)**	
Expectations on fin. sit. of the hh: considerably improves	0.65 (0.301*	
Expectations on children's future: doesn't know or much worse	0.47 (0.20)*	0.68 (0.25)**
Pseudo R^2	0.1098	0.0974

Notes: Robust standard errors adjusted for clustering on households in parentheses.
* significant at 5% level, ** significant at 1% level.
Dependent variable of model (1): *Do you agree that the government should restrict the income of the rich?*
Dependent variable of model (2): *Do you agree that the government should allocate more income to the poor?*
Possible answers: essentially disagree (1), more disagree than agree (2), more agree than disagree (3), essentially agree (4).
[a] See notes to previous Table.
[b] This dummy variable signs that the answer to the question *"Do you see any chance for your household to obtain a better financial position?"* was work prospects, children's future prospects, or other prospects **and** the person belonged to the 1st or 2nd income quintile in 2000.

Table A.5 Ordered logit estimation of income perception difference in 2002, Hungary (N=3419)

	(1) only objective explanatory variables	(2) objective & subjective explanatory variables
Casual workers	-1.31 (0.45)**	-1.10 (0.42)**
Unemployed	-0.72 (0.22)**	-0.75 (0.20)**
Disability pensioners	-0.61 (0.18)**	-0.60 (0.18)**
Living on subsidies	-1.47 (0.55)**	-1.17 (0.52)*
Adult hh members of marginal activity groups [a]	-0.53 (0.16)**	-0.47 (0.15)**
Highest qualification: secondary school (12 classes)	0.27 (0.12)*	non-sig.
Graduated	1.08 (0.17)**	0.83 (0.16)**
Young (18-39 ages)	0.24 (0.10)*	non-sig.
Student (after secondary school)	0.83 (0.31)**	1.03 (0.39)**
Household contains couple (married or life-partners)	0.47 (0.12)**	0.49 (0.11)**
Lives in Budapest	-0.64 (0.18)**	-0.77 (0.17)**
Share of expenditures on culture and recreation (cont.)	3.30 (1.20)**	non-sig.
Household has passenger car	0.41 (0.13)**	non-sig.
Relative inc. mobility between 2000 and 2002 (cont.) [b]	-0.68 (0.34)*	-0.83 (0.32)**
Concerned about job loss: very concerned [c]		-0.88 (0.21)**
Concerned about job loss: fairly concerned		-0.49 (0.21)*
Concerned about job loss: a little bit		-0.43 (0.20)*
Concerned about job loss: doesn't know		-0.84 (0.22)**
Able to find another job: absolutely uncertain [d]		-0.27 (0.13)*
Able to find another job: doesn't know		-0.27 (0.13)*
No chance for the household to obtain better mat. situation [e]		-0.51 (0.11)**
Effect of EU on the chance of employees: positive [f]		0.41 (0.11)**
Restricting income of the rich: essentially agree [g]		-0.28 (0.11)**
Allocating more income to the poor: essentially agree [h]		-0.34 (0.12)**
Inequalities considerably increased in last years [i]		-0.72 (0.18)**
Inequalities increased in last years		-0.42 (0.18)*
Inequality changes in last years: doesn't know		-0.84 (0.27)**
Pseudo R^2	0.266	0.289

Notes: Robust standard errors adjusted for clustering on households in parentheses.
* significant at 5% level, ** significant at 1% level.
Dependent variable of the models: serial number of subjective position on the poor/rich scale (numbered from 1 to 8) minus serial number of factual income eighth (both categories are measured on personal level).
The estimates of the income level dummies are omitted from the table.

[a] Marginal activity groups: casual workers, unemployed, disability pensioners, people living on subsidies.

[b] Relative income position in 2002 minus the average of the relative income positions in 2001 and 2002.

[c] The related survey question: *To what extent are you concerned about the idea that you, or somebody else in your family lose his/her job?* The possible answers were: *very, fairly, a little bit, not at all concerned.*

[d] *Imagine the situation that tomorrow you lose your job! How certain are you that you will be able to find another job not worse than the present one?* The possible answers: *absolutely uncertain, fairly uncertain, fairly certain, absolutely certain.*

[e] *Do you see any chance for your household to obtain a better financial position?* The possible answers: *no chance,work prospects, health status prospects, children's future prospects.*

[f] *According to your opinion, what kind of effect will have Hungary's joining the EU on the chances of the Hungarian employees?* The possible answers: *positive effect, no significant effect, negative effect.*

[g] *Do you agree, that the government should restrict the income of the rich?* The possible answers: *essentially agree, more agree than disagree, more disagree than agree, essentially disagree.*

[f] *Do you agree, that the government should allocate more income to the poor?* The possible answers: *essentially agree, more agree than disagree, more disagree than agree, essentially disagree.*

[i] *What do you think, how have the income and wealth inequalities changed in Hungary from the middle of the 1990s?* The possible answers: *considerably increased, increased, slightly increased, no significant change, slightly decreased, decreased, considerably decreased,.*

Table A.6 Ordered logit estimation of mobility perception difference in 2002, Hungary (N=1895, household level)

Household belongs to the 2nd, 3rd or 4th quintile of equalised income	0.96 (0.18)**
Household belongs to the 9th decile of equalised income	1.39 (0.25)**
Household belongs to the 10th decile of equalised income	2.35 (0.27)**
Household contains member belonging to marginal activity groups [a]	-1.04 (0.16)**
Household contains couple (married or life-partners)	0.49 (0.12)**
Age of the household (continuous variable) [b]	-0.0605 (0.0250) *
Age of the household squared	0.0005 (0.0002) *
Household lives in big city (Budapest or county seat)	-0.56 (0.13)**
Share of expenditures on culture and recreation (continuous)	4.28 (1.36)**
Pseudo R^2	0.284

Notes: Robust standard errors adjusted for clustering on households in parentheses.
* significant at 5% level, ** significant at 1% level.
Dependent variable of the model: serial number of the subjective mobility category minus serial number of the relative income mobility category of the household. For the categories see Table 4.2.2.
The estimates of the income level dummies are omitted from the table.
[a] Marginal activity groups: casual workers, unemployed, disability pensioners, people living on subsidies.
[b] The average age of household members over eighteen.