

TOWARDS EXPLAINING GROWTH OF PRIVATE AND PUBLIC SERVICES IN THE EMERGING MARKET ECONOMIES

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Abstract

The employment in public and private services in Emerging Market Economies (EME) has undergone disparate patterns of change during the transition. The paper reveals the main determinants of employment growth in different service groups in the period 1995-2008. Standard variables (per capita income, productivity gap and government expenditure) provide insufficient explanation for the increasing share of services employment while transition reforms indicators exert statistically significant influence. Estimations differ substantially for public, mixed and private services. Deviations from the theoretical framework and patterns in developed economies are observed that need to take into account path dependency of the convergence process of emerging market economies in major service groups. The findings are inconclusive and call for the extension of research towards additional explanatory factors and improvement of data set.

Keywords: employment growth, tertiarisation, public services, private services, transition

JEL classification: L80, L16, O41, O43

Introduction

Following the launch of the transition reforms the former socialist economies in Central, East and South Europe experienced fast and deep structural changes that have also been reflected in the composition of output and employment. The dominant trend related to de-industrialisation and major displacement of labor from manufacturing. Shift of employment towards services occurred in a very short period of time although the experience differs across countries. The employment growth of services in developed economies evolved fairly gradually over a longer period of time. As could be expected, the gap of the EME¹ behind the EU15 employment structure persists in total services, as well as in individual

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¹ In this paper the term EME denotes ten former socialist economies that became the new EU members in 2004 and 2007, and four additional emerging market economies that are in different phases of the EU accession process (e.g. Croatia, FRY Macedonia and Turkey as candidate countries and Albania as a potential candidate country).

service industries notwithstanding the considerable catching up since the early 1990s. In most countries the largest lag seems to exist in business services and in market services in general, due to the specific features of the past socio-economic system. The patterns and the dynamic of employment transformation of the two major categories of services (private and public)² differed substantially in individual EME owing on one hand to different backgrounds and to their respective level of development, and on the other hand to the speed and depth of the reforms. Prior to market oriented reforms, most services were provided by the public (state) sector while private firms who would supply services on market terms hardly existed. The change of the political system and particularly the introduction of the market mechanisms brought about rapid expansion of the private suppliers of services, driven by privatization, liberalization and deregulation of the economy. The reform process was delayed in the public services, which accounted for a relatively high share of the total employment at the outset of the reforms due to social equality and welfare considerations of the system.

The role of various determinants of services employment growth was explored extensively and was mostly based on the evidence of developed market economies or comparisons between developed and developing economies. Much less is known on how has the process of tertiarisation evolved in former socially planned economies where political, economic, social and institutional changes were very rapid in the last two decades. The major objective of the paper is to contribute to the narrowing of this gap and in particular to shed some light on the underlying reasons for the shift in employment towards services in the EME. Owing to the profound changes brought about by the introduction of market oriented reforms we distinguish between public and private services employment growth, as the two categories experienced different dynamics and patterns of change during the transition process. In general, market reforms gave impetus to the growth of private services while the public services stagnated. However, some services are increasingly supplied by both private and public suppliers' and the characteristics of growth patterns of such mixed services are less clear cut. The trajectories over the transition period differ also across major service industries. The paper attempts to identify major determinants of employment growth in services, examine the differences among three service categories (public, private and mixed services) and individual service industries. Apart for standard explanatory factors of services employment growth we seek to address the role of factors specific to transition processes and respective institutional change.

After the introductory note we briefly refer to the literature and empirical analysis of the determinants of services growth. The central part of the paper deals with the examination of factors that influenced the increase in services employment in EME in the period 1995-2008. It begins with the description of the methodological approach and variables for the

² The division between private and public service is commonly used in services research to distinguish between the heterogeneous services along the criterion the type of ownership of the services provider. Nonetheless, the dividing line is much less clear when it comes to the definition of private and public services for the purpose of empirical investigation. Due to data availability private and public services are most often approximated by data for market and non-market services. It is assumed that the market services are provided by the private companies in a competitive environment with little public regulation and that the non-market services are produced by the state or by the public institutions, predominantly financed by the public funds. The reality is however much more complex, with different combinations of services provision by private or public suppliers. Throughout the text we use the terms public/non-market services and private/market services interchangeably.

econometric analysis along with the presentation of data sets. Regression analysis is applied on panel data to estimate the significance of different explanatory variables on employment growth in services in general and for disaggregated service groups. Finally, the results are discussed distinguishing between the impacts of standard determinants of services employment growth and transition related factors referring to market reforms, institutional change and governance. Summary of preliminary findings and possible avenues of further research conclude.

1. Why is services employment expanding?

1.1 Evidence from the literature on long-term growth of services

Ever since the service sector emerged as an important part of market economies the scholars have sought to uncover the drivers underlying the growth of the service sector. An extensive body of literature focused on factors that have a critical impact on the increase in employment and value added in services. Not entering into details of the historical evolution of economic thought regarding the causes of the tertiarisation process (Messina, 2004; Maroto, 2009) it is safe to argue that initially two basic perspectives were proposed. In his pioneering work Clark argued that the increasing demand for services is the driving force of services growth (Clark, 1957) and has its origin in the “Engel’s law” and income elasticity of demand. Accordingly, growth of services employment is mainly explained as a result of shifts in income elasticity of demand. Most commonly used explanations relate services growth with income growth and one of the stylized facts of economic development is that the share of services in GDP and employment rises as per capita income increases (Francois and Reinert, 1996). Indeed, the expansion of services employment is unambiguously associated with the growth of living standards in modern economies. However, Messina suggests that the richest countries might have reached a saturation level in the expansion of the demand for services (Messina, 2004).

Other standard explanation claims that the supply side factors are responsible for the growth of services and this is most clearly recognized as Baumol’s „cost disease“. In his view the productivity growth in services is slower than in manufacturing causing the relocation of resources to lower productivity sector. In the long run the productivity differential slows down the total aggregate growth (Baumol, 1967). These two major approaches were considered sufficient to explain the long-term dynamic structural evolution (Rowthorn, Wells, 1987). While both of them attracted substantial support and refined argumentation of scholars the new dynamics of services development in the last three decades brought to the surface additional elements that have an impact on the services growth. These concern intermediate demand for services (Outlon, 2001) spurred by the increasing specialisation, technological progress and organisational change in the process of production (outsourcing of services) (Wölfl, 2005); increased competition between service suppliers on a global scale; institutional setting³, demographic developments that spur growing provision of certain public services and broader social considerations reflecting welfare state (D’Agostino et al., 2006). Finally, based on extensive survey of literature Maroto summarizes changes in four areas that give rise to services growth:

³ D’Agostino et al. quote a number of studies of European labour markets that have identified a significant effect of labour market institutions – such as the generosity of the unemployment benefits systems, the employment protection legislation, the degree of unionisation (2006, p. 11).

production factors (mainly labour and human capital); productive systems (flexibility and goods-services integration), markets and income and institutional system (public services, regulations, cultural and social changes) (Maroto, 2011).

A number of studies have empirically confirmed most important factors that lie behind the employment growth in services and they often pointed to a combination of factors. Per capita income, size of the welfare state and the extent of female employment are found to be the main drivers of services employment growth in OECD economies in the period 1984-1998, along with some other factors such as labour market institutions (OECD, 2000). Similarly, the study by Messina reveals positive impact of per capita income and the size of the public sector on service employment for the sample of 27 OECD economies for the longer time period (1970-1998). In addition, productivity differential between services and manufacturing, the investment rate, the degree of urbanisation and the administrative burden on the creation of new firms are found to positively influence services employment growth while no such effect applies to female employment and employment protection legislation (Messina, 2004).

Following the econometric approach applied in previous studies D'Agostino extends the examination of the determinants of services employment growth in such a way so as to capture the heterogeneity of services (four service sub/sectors and twelve branches) and a broader set of determinants. The study confirms that GDP per capita is the strongest explanatory factor for services employment growth in EU15 in the period 1970-2001 and this is valid for all service sub/sectors and branches as well. Productivity growth differentials between services and manufacturing also affect employment growth in services, however to a much lesser extent than government consumption. Beyond these three core variables D'Agostino finds that a number of labour market institutions exert significant effect on services employment (union density, employment protection legislation, wage bargaining centralisation). Similarly, vacancies to unemployment ratio and skill level of labour force significantly influence service employment share, particularly in producer services (D'Agostino et al., 2006, p. 20). On the other hand, the analyses of the tertiarisation process and employment restructuring in the former socialist economies since early 1990s paid little attention to empirical investigation of determinants of services employment growth.

1.2 Stylised facts on services employment growth during transition

After the introduction of the political changes and market oriented reforms the EME have seen a severe decline of output and employment that was followed by a fairly rapid recovery. Since 1995 the economic restructuring as well as productivity and technological catching-up, were occurring fairly simultaneously. The adjustment process initiated by the implementation of market reforms brought about the shifts in the employment structures. The most significant refers to huge downsizing in manufacturing and even though the services sector became the major generator of new employment it was however not sufficient to yield overall positive employment growth in the EME. The employment levels did not reach those from the beginning of the transformation in most Central and Eastern European Countries (CEECs)⁴. It has been shown elsewhere that the CEECs have made a

⁴ Based on the analysis of five countries – Czech Republic, Hungary, Poland, Slovakia and Slovenia-Havlik points out that Hungary was the only country experiencing employment growth throughout the period 1995-2004 (Havlik et al, 2008, p. 39).

big leap forward since the launch of the reforms in the beginning of the 1990s and have narrowed the gap in services employment relative to the EU15 average⁵. The catching up process differed substantially across countries and across service activities, owing to different starting positions and to the efficiency in implementing the reforms. The convergence analysis by Burger and Stare points to a more rapid catching-up of CEECs in private services than in public services in the period 1995-2005 that is in line with different developments of both groups of services in the past. In particular, the over-employment in public services relative to their levels of per capita GDP was a common feature in a number of CEECs at the outset of reforms (Burger and Stare, 2010).

To acknowledge for the heterogeneity of services employment growth Rubalcaba and Di Meglio analysed the changes in three categories of services for old and new member states in the period 1995-2005. Apart for public and private services they introduce a third category of services, taking into account that some services have mixed properties and can be provided either by public or/and private suppliers. Results presented in table no. 1 show that in the period under observation the CEECs experienced faster growth in market and in public services employment relative to the EU15. The employment in mixed services declined in CEECs and increased weakly in EU15. CEECs record the largest gap in private/market services employment compared to EU15, due mainly to low employment share in business services. Even though these services recorded the most rapid growth rates among all services in the period 1995-2005 there is still substantial scope for catching up. There is almost no difference regarding the employment share in public services narrowly defined (only public administration) between old and new member states. Mixed services display a gap in CEECs employment share relative to EU15, however the result vary across service activities. The lag of CEECs behind the EU15 structure is the largest in health services while in education CEECs have even larger share of employment than the EU15 (Rubalcaba and Di Meglio, 2009).

Table no. 1: Share of services in employment, 2005 and annual growth rate, 1995-2005 (%)

	Share in 2005, in %		AGR 1995-2005	
	EU15	EU10*	EU15	EU10*
Market services	37,7	28,7	1,2	2,1
Distributive trades	15,1	15,3	-0,08	1,18
Hotels and restaurants	4,9	2,7	1,46	2,22
Water & Air Transport	1,7	1,1	2,09	1,59
Financial services	2,9	2	-0,74	0,81
Real estate, renting and business services	13	7,5	3,15	4,75
Public services	6,7	6,6	-1,12	1,36
Mixed services	25,3	22	0,5	-0,3
Education	6,7	7,6	0,36	0,66
Health and social work	9,8	5,7	0,93	-1,35
Other community, social and pers. services	4,9	3,6	1,19	0,93
Post and telecommunications	1,5	1,4	-0,93	-1,16
Inland transport	2,5	3,7	-0,83	-1,15

Note: CEECs that joined EU in 2004, without Bulgaria and Romania.

Source: Rubalcaba and De Meglio, 2009, based on EU KLEMS Database.

⁵ We do not enter into the discussion of differences between the old and new member states in other characteristics of employment, such as for example part time work that plays an important role in the old EU while it is almost negligible in the CEECS (Landesmann et al., 2004).

The analyses that have explored the drivers of structural change in CEECs in favor of services argue that the overall growth of the service sector during the transition can be attributed to the combination of factors: market oriented reforms (privatisation, regulatory reform, liberalisation), institutional change, per capita growth, technological modernisation and related adjustment of industrial production and business processes, organisational change towards the externalisation of non-core services, increased intermediate demand for services, the growth of consumer demand for services reflecting both large shortage in this field in the past and increased incomes (Mickiewicz and Zalewska 2002; Vidovic, 2002; Stare, 2007).

Related to the focus of our paper to investigate broader set of factors that influenced the growth of services employment we refer to Mickiewicz and Zalewska who studied the factors underlying the adjustment of employment structure in transition economies⁶ to the patterns in more advanced countries. Apart for per capita income, they included variation in current levels of economic activity, foreign trade intensity and the efficiency of reforms (approximated by EBRD transition index) as explanatory factors. Their empirical analysis confirms statistically significant influence of GDP per capita on services employment and positive influence of reforms that is however only marginally insignificant (Mickiewicz; Zalewska 2002, p. 23). They suggest that countries following an inconsistent approach to market reforms are characterised by a big slump of GDP, deep deindustrialisation and a larger share of agriculture in the total employment. On the other hand, they argue that the higher the quality of reforms the deeper is the structural adjustment towards more efficient labour allocation, where the service sector grows and the agricultural sector decreases (Mickiewicz; Zalewska 2002, pp. 28-29). To the best of our knowledge their econometrical analysis is among the few that attempted to explore determinants of shifts in employment structure in transition economies although it is severely limited by short data series (1998-2000). The aim of our paper is to apply similar econometric approach to a set of emerging market economies⁷ based on more recent data for 1995-2008 period and broaden the scope of explanatory variables for employment growth in three major categories of services.

2. Determinants of services employment growth in emerging market economies (EME)

2.1 Methodological approach and data

For the purpose of our analysis we distinguish between two categorisations of services: a) private and public services; b) private, public and mixed services. Private services are characterised by competitive markets, while public services are heavily regulated and predominantly financed by public funds. Mixed services are described as those services that are supplied by private companies and/or public institutions, involve public funds, are heavily regulated. In mixed services non-competitive market areas coexist with competitive ones (for example post and telecommunications; for the complete range of mixed services see table no. 1).

⁶ Their analysis includes CEECs, candidate countries as well as some CIS countries.

⁷ Ten CEECs, Albania, Croatia, Republic of Macedonia and Turkey.

A number of analyses have confirmed that the overall progress in services employment can be sufficiently explained by the growth of GDP/per capita. The growth of individual service industries' employment might however be significantly determined by other factors as well. In EME the peculiarities of the system transformation may have also played a role. The analysis of the principal determinants of employment growth in EME in public, private and mixed services aims to capture those impacts as well. It is performed on the basis of econometric analysis using available panel data for EME in the period 1995-2008. We estimate the influence of different explanatory variables for the structural shift towards increasing share of employment in services in general, and disaggregated to public, private and mixed services. The impact of standard determinants of services employment growth, such as GDP/per capita, technological change (approximated by productivity differences between manufacturing and services), and public sector expenditures will be complemented by testing for the impact of transition reforms (approximated by transition index of EBRD) and changes in governance (WB governance indicator).

2.1.1 The model

In order to study the impact of macroeconomic and institutional factors on the service sector employment share we estimate a simple panel data model for an unbalanced sample of emerging market economies⁸, over the period from 1995 to 2008 (depending on the specification). We consider the following pooled regression model:

$$y_{it} = c + \beta x_{it} + u_{it} \quad i=1 \dots N \quad t=1 \dots T_i \quad (1)$$

$$u_{it} = \alpha_i + \varepsilon_{it} \quad (2)$$

where ε_{it} is assumed to be normally distributed and such that

$$E(\varepsilon_{it}) = E(\alpha_i) = 0$$

$$E(\varepsilon_{it}^2) = \sigma^2 \quad E(\alpha_i^2) = \sigma_w^2 \quad E(\alpha_i \varepsilon_{jt}) = 0 \quad \forall i, j, t$$

$$E(\varepsilon_{it} \varepsilon_{js}) = 0 \quad \text{if } t \neq s \quad \text{or } i \neq j$$

$$E(\alpha_i \alpha_j) = 0 \quad \text{if } i \neq j.$$

N is the number of countries (up to 10 countries) and T_i is the sample length in country i . The left hand side variable y_{it} is the $((T_1 + \dots + T_N) \times 1)$ vector of services employment shares, while x_{it} is the $((T_1 + \dots + T_N) \times K)$ matrix of macroeconomic and institutional determinants. Furthermore, the fixed effect α_i is assumed to be randomly distributed across the cross-sectional units.

⁸ Ten NMS, three candidate countries (Croatia, FYR Macedonia, Turkey) and one of six potential candidate countries (Albania). D'Agostino et. al (2006) estimated similar model for EU15.

2.1.2 Description of variables

Service employment share – (y_{it}) is firstly observed for total services and two sub-categories: public and private services and secondly for three sub-categories - public, private and mixed services.⁹ Explanatory variables include:

- GDP/per capita in PPP, in some specifications Hodrick-Prescott Filter¹⁰ (HP filter), is used to control for a cyclical component and eliminate the impact of short run fluctuations in time series..
- employment rate¹¹, unemployment rate;
- productivity differences between manufacturing and services (labour productivity in services relatively to average labour productivity in manufacturing) ;
- relative share of public sector in government expenditure;
- FDI inflows;
- EBRD transition index (EBRDTI)¹²;

Missing data and limited time series for some countries and years required interpolation or imputation but allowed cross section analysis using unbalanced panel (see Appendix 1 on data sources).

2.2 Empirical analysis and discussion of results

Estimations were carried out sequentially. We started by estimating core model that includes basic macroeconomic determinants, and then added other potentially relevant macroeconomic and institutional determinants reflecting the transition. Sequential adding of explanatory variables has revealed multicollinearity among macroeconomic and institutional variables. GDP per capita is highly correlated with EBRD transition index ($R^2=0.63$), WB governance index ($R^2=0.67$) and with index of economic freedom ($R^2=0.40$). It confirms that major employment shifts towards services in the former centrally planned economies depend upon the macroeconomic and institutional determinants (Eschenbach and Hoekman, 2006).

⁹ Estimations of individual services industries (2-digit NACE) were also performed within each category of services. Since the results did not change the significance of the studied determinants within the category they are not discussed further. Nevertheless, some specifications for individual services (for example industries G, J, I, M, N) improved the results of previous estimations for private, public or mixed services.

¹⁰ According to Schlicht's proposal (2004) we set λ to 100 for annual data.

¹¹ Employment rate is used to check for country specific differences in the business cycle (Peneder, 2003).

¹² As the first phase of market-enabling reforms, involving market liberalisation and small-scale privatisation, was largely accomplished throughout the region, these indicators were not examined. Only the second phase of market-deepening reforms – large-scale privatisation and financial sector reform – had progressed in new EU member countries but was less advanced elsewhere - and the third phase, market-sustaining reforms – including governance and enterprise restructuring, competition policy and infrastructure – remain unfinished even in the most advanced countries in central eastern Europe and are at an early stage elsewhere in the transition region (EBRDTransition Report 2009).

Previous studies of the determinants of the increasing share of services employment that focused on developed or developing economies point to significant and stable impact of three major factors: GDP per capita, productivity gap and government expenditure for public services (OECD, 2000; Russo and Schettkat, 2001; Messina 2004; D'Agostino et al, 2006). When compared to these results our estimations for a set of EME could appear somewhat surprising at the first sight (table no. 2). We find productivity gap as the most important and significant determinant of services sector employment across all specifications, however it is only in private services that the coefficient assumes the expected value¹³. Public expenditures also significantly contribute to services employment growth (total services). Contrary to our expectations and to results of other studies GDP per capita does not show positive impact on total services employment share and does not improve significance even when smoothed by Hodrick-Prescott filter.¹⁴ We assume that the reasons for such outcomes are manifold and we deal with them when explaining the employment growth in disaggregated categories of services.

Other macroeconomic variables explored – FDI inflow and unemployment rate - bring no significant change. In most specifications¹⁵ the unemployment rate is not a significant determinant of services employment. Interestingly, the expansion of the specification reveals that FDI impact is significantly negative for total services employment (and also for public services, but insignificant for private services). Possible explanation for this trend could be that the bulk of FDI to EME was directed to manufacturing. This contributed to employment growth in manufacturing thus influencing slower growth of services share in employment. Indeed, the evidence of the effects of FDI inflows in transition economies shows both productivity increase and employment growth along with restructuring of manufacturing (Rojec, 1998; Hunya, 2000; Lipsey, 2002). Even though the market services also attracted a substantial amount of FDI it could be assumed that foreign ownership of service companies did not contribute as much to the expansion of employment as it did to streamlining the organisational processes and larger use of ICT. In both cases FDI inflows could produce a counteracting effect on the increasing services share in total employment.

Adding institutional determinants of employment growth in services approximated by EBRD transition index¹⁶ improves the explanatory power of the previous specifications and confirms significant impact.¹⁷ EBRD transition index positively influences total services employment.

Heterogeneity of services calls for a more disaggregated analysis of employment determinants in services. It should enable to better evaluate the impact of various factors on public and private services employment change. Separate estimations for public services

¹³ Lower productivity of services relative to manufacturing (increasing differences) is associated with a higher service employment share (thus negative coefficient value).

¹⁴ D' Agostino et al. (2006) who analysed the developments in EU15 however finds significant and strong positive correlation after controlling for cyclical effect. While D'Agostino uses Hodrick-Prescott filter as a separate variable, we applied the smoothing parameter on basic variables (using Stata option).

¹⁵ Except for selected individual market services such as for example distribution and business services.

¹⁶ WB governance index and index of economic freedom have been tested in empirical analysis but removed from estimation due to high colinearity with EBRD transition index.

¹⁷ R² increases from 0.0148 to 0.0325.

and private services (table no. 2) reveal differences between these two categories, and significantly improve the explanatory power of the model, but only for public services (see the increase in R^2). What is of particular relevance is that distinguishing between private and public services reveals the significant impact of GDP per capita growth. In private services, the impact of GDP per capita on employment share is significantly positive, while the opposite is found in public services. Although the negative sign of income determinant for public services employment might look surprising to some extent it is nevertheless in line with the findings of Burger and Stare (2010) that used similar data set as the present analysis¹⁸. In analysing structural changes in employment in CEECs they controlled for the level of development using GDP per capita benchmarks. On average, CEECs had disproportionately large share of employment in public services at the outset of reforms reflecting over-employment in these services. As a consequence, the convergence process in public services employment towards benchmark value for countries at the similar level of development occurred top-down and contrary to private services with bottom up convergence evolution. This suggests that public services employment experienced slower growth than per capita income affecting the negative sign of GDP coefficient. It is very likely that superfluous employment in public services in CEECs also influenced non significant effect of public expenditure on employment share in public services. Public expenditures are found to be significant determinant of employment share only in public administration.

In expanded model for public services EBRD transition index proved significant and the most important factor, followed by GDP per capita. The productivity gap remains a significant determinant and increases in importance compared to its effect for the total services employment.

The assessment of explanatory variables for private services employment points to GDP per capita as the most important determinant with significant and positive impact on employment share (table no. 2). The only other significant determinant of private services employment is productivity gap, which in line with theoretical assumptions shows negative impact on employment share, while all other determinants are insignificant.

The division of services to two major groups – public and private services – is not sufficient to address the mixed character of some services that pertains to their supply by both private and public providers. Accordingly, table no. 3 shows the results for three categories of services: public (public services1), private (private services1) and mixed services. Here, public services1 refer only to public administration and defence, while mixed services consist of education, health, other community services, post and telecommunication, inland transport. Private services1 only slightly differ from the previous private services category, hence the properties of estimations remain very similar¹⁹. The impact of various determinants again differs substantially among the three categories of services. GDP per capita and relative productivity seem to be irrelevant for public services1 employment, but relevant for both other categories of services. Transition indicator, public expenditure and FDI inflows have significant impact for public services1 employment, with EBRD transition index as the most influential. This could be explained by institutional changes that required new employment in public administration and were triggered off both by the

¹⁸ The analysis by Burger and Stare (2010) refers only to ten CEECs that are new EU member states.

¹⁹ Private services1 exclude post and telecommunications and inland transport.

transition reforms and the accession process to the EU. Productivity gap is significant for mixed and private services, but shows the impact on mixed services in different direction, indicating decreasing employment share in mixed services with rising productivity difference. Following Baumol's argumentation mixed (ie. former public services) is not expected to attract additional employment (Baumol, 2001). Government expenditures contribute positively to public administration employment (at 5% significance). FDI inflows confirm significant negative impact on employment share of public administration.

Mixed services employment appears to be most affected by the process of transition, GDP growth and productivity differences. As expected, significant and negative impact of GDP per capita is relevant for mixed services as they capture the bulk of broadly defined public services. The over-employment in the past may thus primarily be the problem of mixed services that have experienced restructuring during the transition process. Along with GDP growth these sectors (particularly education, health and social services) faced poor competition, weak internationalization and consequently slower restructuring process in CEECs. The pressure to increase the efficiency in these services (that were traditionally offered exclusively by public sector in transition economies) was mirrored in slow employment growth. Restrictions to employment growth by public providers of services, limited competition and persistent regulation for private suppliers could offer additional explanation for the negative correlation between GDP growth and mixed services employment share, in addition to already observed over-employment at the start of the transition process. Productivity gap effect seems to contradict the theoretical assumptions - the larger the productivity difference between manufacturing and services the higher the increase in employment share. Among the three groups of services, mixed services are the most sensitive to transition reforms where deregulation in infrastructure (including the telecommunications and transport) could have an important effect. However, it needs to be observed that infrastructure reforms and competition policy are on average the weakest part of the transition reforms captured in the group of second and third stage EBRD indicator²⁰ leaving room for further improvements while large scale privatisation and banking and interest rate liberalization contributed the most to the transition reforms.

Table no. 2: Determinants of employment in services, public services and private services

	TOTAL SERVICES			PUBLIC SERVICES			PRIVATE SERVICES		
	Coef.	Std. Err.	t	Coef.	Std. Err.	t	Coef.	Std. Err.	t
lngdppc	-0.2757	.1262507	-2.18	-1.056.808	.2222	-4.76	0.2709	.1262369	2.15
lnrel_prod	0.3041	.0511891	5.94	0.8784284	.1131	7.7	-0.1211	.0595164	-2.03
lngovexp	0.4070	.2022251	2.01	0.2552359	.4231	0.60	0.0514	.1871422	0.27
lnunempl.	0.1016	.0897925	1.13	0.0389709	.1632	0.24	0.0584	.0877642	0.67
lnFDI	-0.0723	.0355693	-2.03	-0.1122286	.0638	-1.76	-0.0214	.0351752	-0.61

²⁰ EBRD second and third stage transition index includes the average of the following indicators: (i) Large scale privatisation, (ii) Enterprise restructuring, (iii) Competition Policy, (iv) Banking reform and interest rate liberalisation, (v) Securities markets and non-bank financial institutions and (vi) Overall infrastructure reform.

EBRDti	0.5872	.1278733	4.59	1.1039	.2306	4.79	0.0566	.12684	0.45
cons	2.5923	1.325	1.96	4.858	2.608	1.86	-5.5481	1.2733	4.63
N	1096			490			606		
R²	0.0468			0.1745			0.0282		
Adj. -R²	0.052			0.1643			0.019		

Note: Bolded values: significant at 5%.

Source: Own calculations

Table no. 3: Determinants of employment in public, mixed and private services

	PUBLIC SERVICES1			MIXED SERVICES			PRIVATE SERVICES1		
	Coef.	Std. Err.	t	Coef.	Std. Err.	t	Coef.	Std. Err.	t
lngdppc	-0.0558	0.0789	-0.71	-1.1253	0.2249	-5.00	0.2709	.1262369	2.15
lnrel_prod	-0.1870	0.1128	-1.67	0.265	0.0991	2.67	-0.1211	.0595164	-2.03
lngovexp	0.1501	0.1404	1.99	0.4754	0.4135	1.15	0.0514	.1871422	0.27
lnunempl.	0.0694	0.0586	1.18	-0.0168	0.1659	0.10	0.0584	.0877642	0.67
lnFDI	-0.0736	0.0221	-3.32	-0.0708	0.064	-1.09	-0.0214	.0351752	-0.61
EBRDti	0.3502	0.0805	4.35	0.9595	0.2340	4.10	0.0566	.12684	0.45
cons	-2.5279	.9116	-2.77	3.985	2.626	1.52	-5.5481	1.27335	-4.36
N	113			519			848		
R²	0.185			0.0798			0.0282		
Adj. -R²	0.1394			0.069			0.0185		

Note: Bolded values: significant at 5%.

Public services1 -Public administration and defense; **Mixed services** - Education, Health and social work, Other community, social and personal services, Post and telecommunications, Inland transport; **Private services1** - Distributive trades, Hotels and restaurants, Water & Air Transport, Financial services, Real estate, renting and business services.

Source: Own calculations

The estimations of the explanatory variables of employment growth in three differentiated categories of services reflect heterogeneity of services and bring some further insight. In particular, they reveal that the transformation of mixed services is most transition specific. It deviates from the theoretical expectations and patterns in developed economies in regard of income growth impact. Indicators of transition reforms and respective of institutional change have statistically significant effect for employment growth in public administration and mixed services while they are much less relevant for private services. In spite of some inconsistencies among various specifications of the model the results robustly show that determinants for private services employment are more similar to those valid for developed economies. Lower explanatory power of specification for private services however calls for additional determinants that may provide more refined results.

Differences in the role of GDP per capita for various subsets of services employment share require further research. One of the reasons of the poor explanatory power of macroeconomic determinants in general may lie in shadow economy that is estimated to have much larger weight in transition economies compared to developed economies (Schneider, 2002). The countries analysed in the sample belong to a group of countries with a large share of informal economy where the bulk of new employment, particularly in

services, has been created (ILO, 2002²¹). In 2001/2002 the average size of the shadow economy amounted to 16.7% of “official” GDP in 21 OECD countries and to 38.0% in 22 transition countries. The average size of the shadow economy labour force (in percent of the population of working age) in 1998/99 was estimated to 15.3% in seven OECD countries and 30.2% in 22 transition countries. The driving forces for the growth and size of the shadow economy (labour force) are an increasing burden of taxation and social security contributions, state regulatory activities, rigid labour regulation and less flexible employment forms. While shadow economy might be indirectly (and with a time lag) reflected in value added and GDP, service employment data might be persistently underestimated (downward biased)²² and may consequently result in the deviation of our results from theoretical assumptions

Overall, the empirical analysis and the discussion of results reveal the important influence of the transition process on the determinants of services employment in EME in the period 1995-2008. Nevertheless, the findings on some variables should be understood as inconclusive and only preliminary due to various reasons, such as for example data deficiency, particularly short time series and large amount of missing data. Further, the present study includes fourteen EME while a broader set of transition and emerging economies could increase variations among countries and also enable better insight into “transition specific determinants”. On the other hand the comparison with EU27 or OECD countries in disaggregated service industries could improve the understanding of traditional macroeconomic variables in EME. We may also assume that inconsistent results for the explanatory power of productivity differences in the case of private services is related to problems in measuring services output that are even more relevant in transition economies. Inklaar demonstrates that around thirty percent of market services output is deflated by unacceptable or biased methods; this share is the biggest in business services and in financial intermediation²³ while in hotels and restaurants it is rather limited. Variations across countries are even larger (Inklaar et al., 2008).

The areas proposed for further analysis (e.g. shadow/informal economy, improvements in productivity measures, increased number of countries within sample, longer data series) may in the future lead to a more conclusive results concerning the determinants of service employment in EME. In any case, the observed differences in determinants of services employment among sub-sets of services in EME witness a need for disaggregated analysis.

Conclusions

Since the introduction of market reforms the transition economies have seen considerable structural changes as evidenced in a number of studies. The service sector in particular underwent rapid transformation owing to a large neglect under the previous socio-economic system when most services were provided by the public (state) sector or internalised in large manufacturing companies. With the change of the political system and particularly with the introduction of the market mechanisms the private suppliers of services in the EME experienced a rapid growth driven by privatization, liberalization and deregulation of

²² For example in retail, cleaning, catering, etc.

²³ Nearly half of output, suggesting that measured trends could not accurately reflect actual developments in prices and quantities.

the economy. New services, not available in the past, were introduced by local and foreign suppliers. Gradually, the supply and range of services available to final and intermediate consumers increased. Public services grew much slower than private services since the former accounted for a high share of the total employment relative to income level already at the outset of the reforms. We suggest that this has an important bearing on results of the empirical analysis performed in the paper.

Alongside the rising GDP per capita the EME experienced similar growth pattern as developed market economies, where services account for a dominant and still growing share of employment. Several studies have empirically identified the most important factors that lie behind the raising share of services employment in developed market economies. Among them, per capita income seems to have the biggest explanatory power, followed by productivity differential between services and manufacturing, and the size of the welfare state. However, other determinants deserve attention as well (e.g. labour market institutions, the investment rate, vacancies to unemployment ratio, skill level of labour force, female employment rate, etc.). To the best of our knowledge similar empirical exercise and related analysis was not performed to take account of employment changes in transition economies that have recently become new EU members or are in the different phases to the EU accession. The contribution of our paper in filling this gap is the extension of a standard set of variables with transition specific ones, more recent and longer period of time and the distinction of the results for various subsets of services. The latter proves to be essential for the explanation of the changes in employment share.

In line with the findings of studies for developed market economies we would have expected that similar set of major determinants could substantially explain the growing share of services employment in EME. Besides, we attempted to test the validity of transition related explanatory variables (FDI inflows, transition reforms indicator and governance indicator), due to the major changes in regulatory framework and institutional set up triggered off by market oriented reforms. A caveat applies that deficient data, short time period and reliability of data may have considerable impact on results. We anticipate that even though various data sets for services in general suffer from imperfections (e.g. measurement of productivity) they are all the more important in EME. Much larger share of shadow economy in these countries compared to more developed economies also affects the trends in official data for services employment and imposes additional inconsistencies in properly capturing the dependent variable in our econometric model. Inevitably, the results obtained should be interpreted with much caution.

The estimation of determinants of services employment growth in EME in the period 1995-2008 brings somewhat surprising results. Basically, it turns out that GDP per capita fails to explain the increasing share of services employment in EME while government expenditures are statistically significant determinants. Besides, transition reforms exert the biggest and statistically significant influence of services employment share and improve explanatory power of the previous specifications. Whereas some of the above results are unexpected in the framework of stylized facts on structural change they earn more credibility when perceived through the lens of the convergence patterns in two major service groups – public and private services. Here, specifically the over-employment in public services in these countries at the start of the transition needs to be mentioned and hence their disproportionate share in total employment relative to income level. Taking into account this feature it becomes more plausible that income growth per se could not reveal

positive impact on public services employment share. In fact, its impact was negative and statistically significant that may have resulted in poor explanatory power of GDP per capita for total services employment. Private services have experienced fairly different changes in EME during transition, which have been manifested in gradual decrease of the gap in employment share behind the EU15. Our analysis confirms that per capita income growth was the most important determinant of the increasing share of private services employment while the productivity gap between services and manufacturing provided additional statistically significant influence. Leaving aside other variables it is safe to conclude that in the period 1995-2008 transition related determinants performed the strongest and statistically significant impact on employment share in public services whereas per capita GDP growth in EME could explain only the employment trends in private services.

Distinction among public, private and mixed services brought some further insight into the explanatory determinants of services employment share. In particular, it reveals that the transformation of mixed services is most transition specific. They show deviations from the theoretical expectations and patterns in developed economies in regard of productivity difference and of income growth impact, as its coefficient is significantly negative. The indicators of transition reforms and institutional change are more relevant for public administration and mixed services than for private services. While EU accession process and transition reforms achieved so far speeded up convergence in public administration, these seem insufficient for catching up of employment in market services where EME experience the largest lag behind EU15.

To conclude, the findings of the paper do not suggest that standard explanations of services growth and stylized facts of structural change are not valid for EME. The results based on available data rather indicate that the transition process and related characteristics disrupt the explanatory power of standard explanatory variables for the increasing share of services employment in EME. Disaggregation of results for the public and private services points to past developments and path dependency as the most probable explanation for such an outcome. Refinement of data, longer time series and introduction of additional factors that may have an influence is proposed as a potential extension of research in the future.

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Appendix 1: Data description: definition and data sources

For some countries and years we had to impute missing values by linear interpolation to give a balanced panel. All macroeconomic variables are taken as logarithm of values

Services employment share: Number of employees in public, private and mixed services in total number of employees, for each year of 1995-2008 period. EU KLEMS database (www.euklems.net), for 2006-2008 extension of series with annual growth rate by Eurostat; Data for Bulgaria and Romania from Eurostat data base. Data for Albania, Croatia, Republic of Macedonia were obtained from WIIW data base and data for Turkey from Turkish statistical office.

Logarithm values are taken in estimations.

- *GDP per capita* in PPP in million of USD for each year of 1995-2008 period, taken from WDI

Hodrick-Prescott (HP) Filter is used to eliminate a cyclical component in time series

-*productivity differences*, value added per employee in services (for each of the studied category, two digit disaggregation) in relation to average value added per employee in manufacturing EU KLEMS database Data for Albania, Croatia, Republic of Macedonia were obtained from WIIW data base.

-percentage of public sector expenditure; total Government finance statistics- WDI base

- FDI inflows: source WDI, BOP approach

- *EDBR transition index* : Second phase reforms indicator; based on the average value of six selected indicators: (i) Large scale privatisation, (ii) Enterprise restructuring, (iii) Competition Policy, (iv) Banking reform and interest rate liberalisation, (v) Securities markets & non-bank financial institutions, (vi) Overall infrastructure reform. Time series for Turkey includes only two years.

-*WB governance index* available from 1996-2008, linear interpolation was used for missing years (1997, 1999 and 2001) Average ranking based on (i) Voice and Accountability, (ii) Political Stability, (iii) Government Effectiveness (iv) Regulatory Quality (v) Rule of Law, (vi) Control of Corruption.

- *Employment rate / Unemployment rate*: share of employed in total population /share of unemployed in active population; ILO statistical service.