

Labour reallocation during the transition and post-transition period: the case of Poland

Stanislaw Cichocki¹

Abstract: Two main features of the reallocation process which took place in Easter European and Former Soviet Union countries can be distinguished: first was the decline in public sector employment due to the collapse of state owned enterprises and an increase in private sector employment as a new private sector emerged and public companies were privatized. The second feature was (and still is) the reallocation from manufacturing to service sector. Using data from the Polish LFS for the period 1995q1-2012q4 we analyze in a descriptive manner various flows related to labour force reallocation and their behavior over the business cycle. We show that jobs were mostly created in the service sector and destructed in the public sector.

We also show that flows from manufacturing to services (without a change in ownership) and are procyclical.

Keywords: labour reallocation, labour flows, transition, business cycle

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¹ University of Warsaw, National Bank of Poland, mail: scichocki@wne.uw.edu.pl

1. Introduction

Eastern European and Former Soviet Union countries underwent a significant transformation process over the last 25 years. Among others, this process affected the labor market and led to massive labor force reallocation. Two main features of this process can be distinguished. The first is the destruction of state owned enterprises and a decline of employment in the public sector combined with the emergence of a private sector and privatization of some of the public companies which led to a rise in employment in the private sector. The second feature was (and still is) the reallocation of labour from manufacturing towards services, a process which is also taking place in developed economies. The theoretical background for those two transformations of the productive structure can be found in Aghnion and Blanchard (1994), who focus on the process of ownership change; and Caballero and Hammour (1996a, 1996b, 1998, 2000), who deal with the sectoral reallocation of labour.

Another important issue when looking on labour reallocation in Eastern European and Former Soviet Union countries is the fact that the modern approach to labor market categories focuses not as much on the absolute size of each category, but on the flows between these categories, that is on the changes (Blanchard and Diamond, 1992; Davis, Faberman and Haltiwanger, 2005; Shimer, 2007). The inflows and outflows from one category to another are often very significant in numbers and more informative than the static size of labor market categories. Therefore a vast number of analyses focusing on labor market flows has been written over the last years (i.e. Elsby, Michaels and Solon, 2007; Petrongolo and Pissaridies, 2008; Nagypal, 2008; Elsby, Hobijn and Sahin, 2008; Gomes, 2010; Davis, Faberman and Haltiwanger, 2011; Davis and Haltiwanger, 2014).

In case of Eastern European and Former Soviet Union countries, the literature on labour flows in the context of labour reallocation is perhaps not as abundant, but still a rather significant amount of paper dealing with this issue can be found (i.e. Konings, Lehmann and Schaffer, 1996; Haltiwanger and Vodopivec, 2002; Brown and Earle, 2002, 2006; De Loecker and Konings (2006). However those papers present some shortcomings. First, most of them focus on the early period of transition (1990-1998) and only a few take into account the period after 1998 (i.e. Sibertova and Senaj, 2007; Gimpelson, Kapelushnikov and Lukiyanova, 2010). Almost none of them deals with labour market reallocation after 2004, an exception are Tyrowicz and van der Velde (2014), Mitra, Muravyev and Schaffer (2014).

Second, the papers on labour reallocation in Eastern European and Former Soviet Union rely on yearly data which can underestimate the size of labour flows being analyzed as i.e. a person can be unemployed, take up employment and be fired during the course of a year - this will not be captured when using yearly data. Third, because most papers on transition focus on the initial years and cover a rather short period of time² they do not analyze the behavior of labor flows over the business cycle.

This paper aims to address those shortcomings for Poland, the largest of the Eastern European economies. Using quarterly Labour Force Survey (LFS) data for the period 1995-2012 we analyze, in a descriptive manner, the flows related to labour force reallocation and their behavior over the business cycle. Our results show that jobs were created in the service sector and destructed in the public sector. Also some of the analyzed flows i.e. from manufacturing to services (but without a change in employer ownership) are procyclical whereas for some other flows the link to the business cycle is rather weak.

The paper is structured as follows. Section 2 reviews the relevant literature. Section 3 discusses the data and describes the labour flows related to reallocation. The behavior of these flows over the business cycle is discussed in Section 4. In the last section, we provide the conclusions from our study.

2. Literature review

Labour reallocation in Eastern European and Former Soviet Union countries consists of two distinct processes (transformations). The first one is the closure of inefficient state owned enterprises and a decline of employment in the public sector combined with the emergence of an (allegedly) efficient private sector. In this case, job flows may come in two different forms (flavors): privatization, when workers stay in the firm, but the ownership structure changes to private hands; or worker flows between different jobs in different companies, possibly with a spell of unemployment between them.

The theoretical background for this transformation is provided by the highly influential model of Aghion and Blanchard (1994), from now AB. Aghion and Blanchard pointed out that a (possibly transitory) non-employment spell usually happens with state support; while, at the same time, the collapse of the public sector limited the options to raise the funds necessary to intensify social safety nets expenditure. The state raises funds to finance safety nets by

² The longest period which is being analyzed in the literature on labour reallocation in Eastern European and Former Soviet Union countries is 1992-2001 (Maaso and Heshmati, 2004).

taxing labor, which pushes the (non-wage) cost of labor up. If the fiscal gap grows too fast (i.e. taxes are levied too high), job creation lags behind job destruction. The accumulating non-employment pushes wage claims down, but the tax wedge prevents vivid job creation, deepening the social costs of public-to-private sector reallocation. If speed of job destruction is synchronized with the capacity of the emerging private sector to create new jobs, the non-employment pool is low, fiscal needs small, levied taxes are less distortionary, and the economy may find itself on a fairly efficient equilibrium. Otherwise, an unstable high non-employment equilibrium emerges. Consequently, the relation between job creation and unemployment has an inverse U shape. Clearly, both the 'non-employment' and the 'taxes' should be taken figuratively, not literally. Benefits may comprise also pre-retirement benefits made available to individuals aged between 40 and retirement age to discourage them from participating in the labor market, as has been frequently done. Also taxes should be viewed in a broad sense as they may encompass the opportunity costs of expanding productivity enhancing infrastructure instead of benefits.

The second feature was (and still is) the reallocation of labour from manufacturing towards services. Its theoretical background is provided by Caballero and Hammour (1996a,b, 1998, 2000), from now on CH. Caballero and Hammour developed a family of models for structural restructuring with two particular features: capital specificity and incomplete contracts. Capital is specific to a given relation in the sense that if the relation is broken a part of the capital is lost. Training of employees is an example of capital-specificity. In the model, capital specificity leads to the generation of quasi-rents (a surplus over the value of the match) which can be partially appropriated by workers, even though they are firm specific. This operation is possible due to incomplete contracts. With considerable adjustment costs, impulse to reallocate labor may yield excessive job destruction and insufficient job creation due to the inherent incompleteness of the employment contract. Different characteristics and the institutional arrangements associated with an employment contract simply different scope of appropriation for the workers, which changes the bargaining balance between workers and employers. In a simple model, where all sectors have the same productivity, it produces a desynchronization of job creation and destruction, which eventually generates "sclerosis" of the economy; in other words, workers remain in less productive positions. If two sectors differ by productivity (as in AB model), appropriation leads to sudden increases in unemployment and slow job creation. In the limit, employers create little or no jobs at all, despite actual demand for the final product. Gradualism, the general recommendation from AB models, is not supported by these models, as it can only extend the transitional period, creating more

unemployment. Instead, policies to expand the high-productivity sector should accompany the measures to slow down job destruction in the inefficient sector.

A third feature can influence the forces from the AB and CH models: demographic changes. The entry of new workers with fresh education but no (or little) experience and exit of old workers whose skills are outdated. This affects both the relative bargaining position of the unemployed and the ability to "appropriate" the rent from the employment contract (important in CH model). Thus, demographic processes - especially in interaction with changes to the educational policy and social security - may reinforce or reduce the forces driving changes in the AB and CH models. Only in AB the obstacles are uniquely associated with an economic transition from a centrally planned, state-owned economy to a market oriented, private one. Mechanics studied in CH models may be driven by transition, but also by standard processes of business cycles and technological innovation as well as a gradual shift from manufacturing to services in middle income and advanced economies.

The empirical literature on labour reallocation in Eastern European and Former Soviet Union countries consists of a rather significant amount of papers. These papers apply a modern approach to labour market categories focusing not on their absolute size but on the flows between them. Precisely, they focus on jobs flows (job creation and destruction) and/or workers flows (hirings and separations) using either labor force surveys or firm level data obtained in various ways i.e. gathered by national administrations, from Amadeus database or from surveys designed and conducted by the researchers themselves.

Most of the studies focused on individual countries with the exception of Bilsen and Konings (1998) and Faggio and Konings (2003). In the first paper the researchers analyze job creation and job destruction for Bulgaria, Romania and Hungary during the period 1991-994 using a firm level survey. They show that job destruction rates are quite high in state owned enterprises and privatized firms in contrast to newly created private firms which have the lowest job destruction rate and the highest job creation rate. In terms of sectoral reallocation in all three countries job destruction is high in manufacturing whereas job creation for this sector is low. In contrast the service sector is characterized by a very high job creation and a low job destruction rate. This would confirm that new private firms emerge mostly in the service sector whereas the manufacturing sector is dominated by state owned enterprises.

Faggio and Konings (2003) analyze firm-level data using Amadeus database for Poland, Estonia, Slovenia, Bulgaria and Romania for the years 1993-1997. Their results show job reallocation taking predominantly place within and not between sectors which the researchers interpret as an evidence in favor of job flows from declining to growing firms and not from

declining to growing sectors. They also point to a job destruction rate in Poland, Estonia and Slovenia similar to advanced economies whereas for Bulgaria and Romania the job destruction rate was quite during the research period.

In case of single country studies, Konings, Lehmann and Schaffer (1996) analyze labour flows for the manufacturing sector in Poland during 1988-1991 using firm level data gathered by the Central Statistical Office. They show a high job destruction rate for state-owned enterprises from 1990 whereas the private sector had a high job creation rate. What's more in the private sector de novo and foreign-owned firms can be distinguished from privatized firms which did not differ greatly from stated own-enterprises regarding job destruction/creation.

The difference in job destruction/creation rate between state-owned and private enterprises for a transition economy is confirmed by Haltiwanger and Vodopivec (2002) who calculate over 100 estimates of job creation/destruction and hiring/separation rates in various cross sections for Estonia for the period 1989-1995 using labor force survey data. According to their results job destruction and separations took mostly place in large, state-owned enterprises in manufacturing whereas small private firms in the service sector exhibited a high job creation and hirings. However within sector reallocation was also fairly large.

Also De Loecker and Konings (2006) show differences in job creation/destruction for state-owned and private firms in a transition economy using data for Slovenian manufacturing firms from the statistical office for the period 1994-2000. The private firms are net job creators and state sector firms are net job destroyers as the formers exhibit a much higher job creation rate whereas the job destruction rate for both sectors is similar.

Brown and Earle (2003) analyze job creation/destruction and worker hirings/separations in Russian industrial sector during the years 1990-1999 using their own firm level survey. The obtained results point to increasing job flows especially job destruction and separations over time. The researchers attribute this result to the fact that they only analyze industry sector data which consist mostly of old state-owned enterprises from the Soviet era with grave problems of restructuring, downsizing and surviving.

However the literature on labour reallocation in Eastern European and Former Soviet Union can be characterized by several shortcomings. First, most of them focus on the early period of transition (1990-1998) and only a few take into account the period after 1998 (i.e. Sibertova and Senaj, 2007; Gimpelson, Kapelushnikov and Lukiyanova, 2010). Almost none of the literature deals with labour market reallocation after 2004, an exception are Tyrowicz and van der Velde (2014), Mitra, Muravey and Schaffer (2014), Svejnar, Tyrowicz and van der Velde (2015). Second, the papers on labour reallocation in Eastern European and Former

Soviet Union rely on yearly data which can have a negative influence of the size of labour flows being analyzed as i.e. a person can be unemployed, take up employment and be fired during the course of a year which corresponds to two flows (one from unemployment to employment and one from employment to unemployment) but neither of them will be captured when using yearly data. Third, because of the fact that most of the papers focus on the early period of transition and a rather short period of time - with an exception of Masso and Heshmati (2004) - they do not analyze the behavior of labor flows over the business cycle.

3. Descriptives

We use quarterly data from the Polish Labour Force Survey (LFS) for the period 1q1995 – 4q2012.³ These data allow for a complex analysis of labour market flows i.e. between employment and unemployment as each person is interviewed in four different quarters of the survey (the first and second quarter, the fifth and sixth quarter) and so a part of the labor market history of each person with additional information i.e. about the ownership type of its employer (public/private) can be observed. In this paper, we distinguish between the following flows:

1. AB – flows from public to private sector;
2. CH – flows from manufacturing to service sector;
3. ABCH – flows from manufacturing in the public sector to services in the private sector;
4. youth employment entry - flows of young people (18-25 years) from inactivity (but only connected to education) to employment;
5. elderly employment exit - flows of elderly people (45+) from employment to inactivity due to retirement.

In case of AB, CH and ABCH flows, we also look on opposite flows i.e. for AB opposite flows are flows from the private to the public sector.

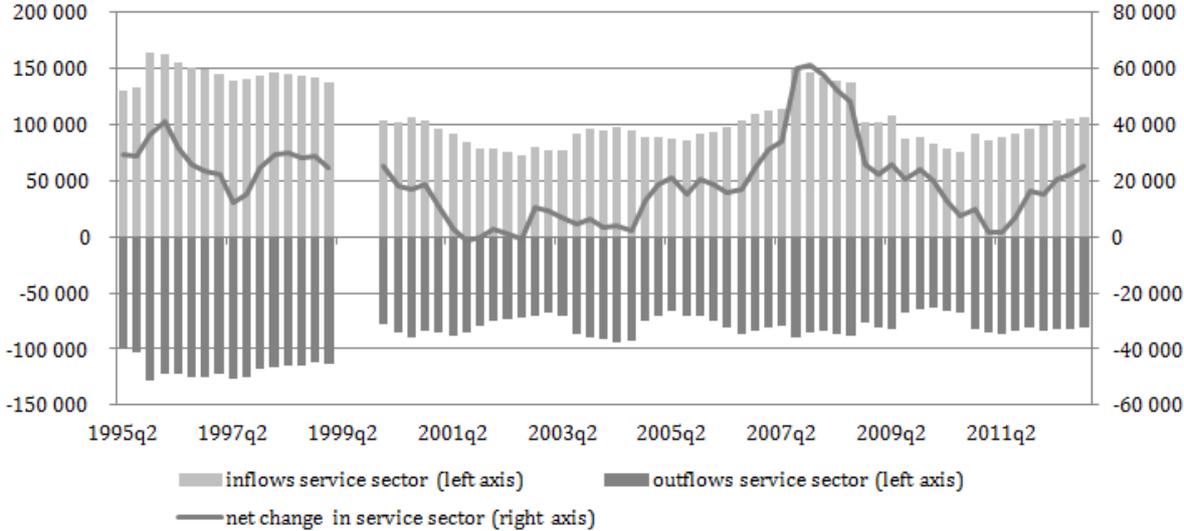
The main advantage of LFS over other available sources of data (i.e. data from the Central Statistical Office regarding employment) is the possibility of using micro data and so gross labour market flows can be estimated. Other available sources of data contain aggregated data

³ The research period is limited by data availability. The first LFS was conducted in Poland in May 1992 however the data from the LFS is only available from 1995 on. Another problem is a survey discontinuity during 2q1999-3q1999.

which only allows to take into account net changes in employment structure, which may hide significant variation at the individual level.

We start our analysis by looking at changes in manufacturing, services and public sector employment in the period 1995-2012 so as to have a general picture about labour reallocation during this period in Poland. Figure 1 shows inflows and outflows in service sector employment during the sample period.

Figure 1. Inflows, outflows and net change in service sector



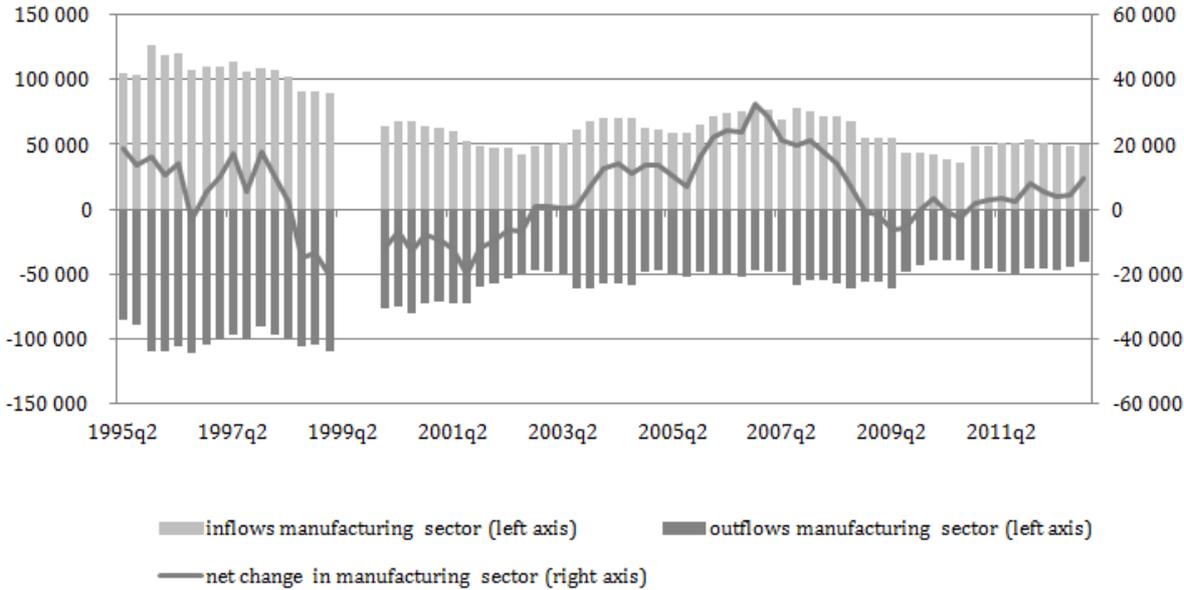
Source: Own calculations based on LFS.

In the service sector, employment rose by almost 57% between 1995 and 2012: from about 3.5 million persons in 1995 to about 5.5 million in 2012. During almost the entire period inflows into this sector were larger than outflows: on average 110 thousand persons were flowing in and 90 thousand were flowing out of the service sector per quarter. However, the size of the flows was not constant over time. In the early part of the research period (1995-1999) inflows into the service sector reached almost 150-160 thousand persons per quarter whereas outflows 115-125 thousand. From 2000 to 2003 both inflows and outflows diminished with a sharper decline in inflows, to about 80 thousand persons in 2002. This resulted in a decline of the net change of employment in the service sector to only a few thousand persons per quarter. From 2004 on inflows and outflows increased with inflows reaching a peak of around 140 thousand persons and outflows a peak of around 80 thousand in 2007/2008. After that both types of flows diminished but once again a sharper decline took place in the case of inflows. In the last part of the research period (2011-2012) inflows

increased steadily to about 100 thousand persons whereas outflows increased in 2011 and remained pretty stable from then on.

Figure 2 shows inflows and outflows in the manufacturing sector.

Figure 2. Inflows, outflows and net change in manufacturing sector



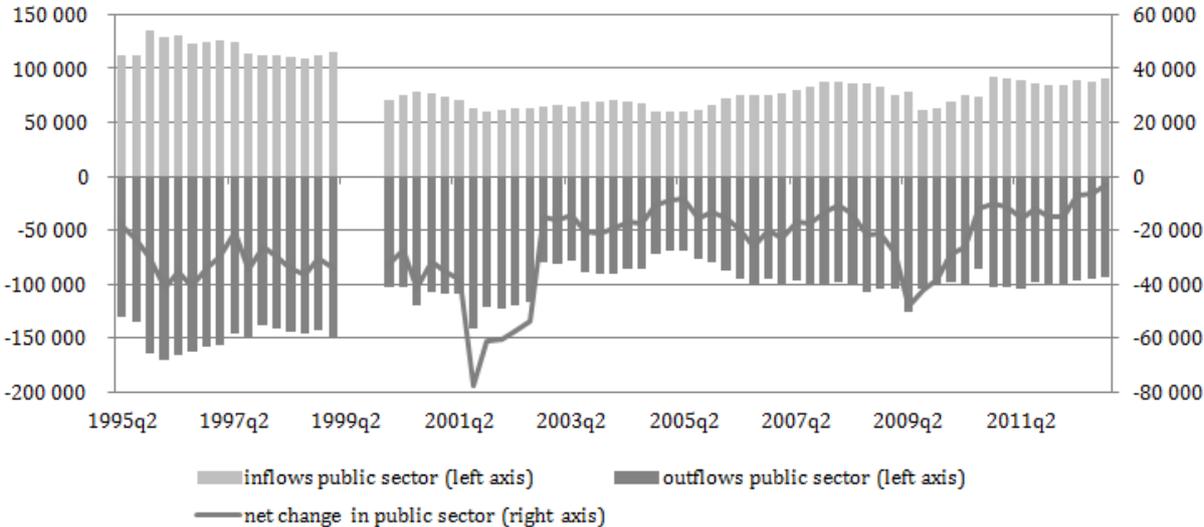
Source: Own calculations based on LFS.

In the manufacturing, employment decreased by about 8.5% between 1995 to 2012: from about 3.8 million persons to about 3.5 million persons. The main decline in employment in this sector according to the LFS data started in 1998 and lasted until the end of 2002: employment in the manufacturing sector decreased by about 250 thousand persons. Before that period inflows were bigger than outflows by about 15 thousand persons per quarter. Also after 2002 inflows dominated over outflows with a peak in the net change in employment in manufacturing of about 30 thousand persons in 2q2007. After 2008 both types of flows diminished till 2010 with a sharper decline in inflows. In the last part of the research period, inflows and outflows increased and then remained fairly stable. What is worth mentioning is the strong difference between the size of both types of flows in the early years of the research period (1995-1999) and 200-2012. During 1995-1999 inflows amounted to approx. 200 thousand persons per quarter whereas outflows the diminished to about 110 thousand per quarter on average.

Public sector employment decreased by almost 47% between 1995 and 2012: from about 7.3 million persons to 3.9 million persons. Figure 3 shows inflows and outflows from/to

public sector employment during the research period. The decline of employment in this sector took place since 1995 with outflows dominating inflows by approx. 40 thousand persons per quarter till the second half of 2001 when the net change in public sector employment reached its lowest value with a difference between outflows and inflows of 80 thousand persons. After that the net change in public sector employment remained negative but declined to less than 20 thousand persons per quarter. In 2009 it increased to over 40 thousand persons per quarter but then declined reaching about 6 thousand per quarter in 2012 due to a decrease in outflows from the public sector with inflows remaining stable.

Figure 3. Inflows, outflows and net change in public sector



Source: Own calculations based on LFS.

Changes in manufacturing, services and public sector employment in Poland in the period 1995-2012 show that jobs were created in the service sector and destructed in the public sector. The pictured is somehow mixed for manufacturing as jobs in this sector were mostly destructed from 1998 till 2003. However during 2003-2008 and from 2011 onwards more jobs were created than destructed in this sector.

We now move to the AB, CH and ABCH flows. Figure 4 shows those flows for 1995–2012 together with the opposite of each of those flows. Of the AB, CH and ABCH flows, the biggest are the AB flows: on average each quarter about 60 thousand persons changed employment from public to private sector without a change in industry. This number was a bit bigger during 1995-1999 and from 2010 on when it reached around 65 thousand persons per quarter. During 2003-2005 it diminished to approx. 40 thousand persons.

In comparison to the AB flows the CH flows are quite small: on average each quarter around 11 thousand persons changed employment from manufacturing to services without a change in the ownership-type of the employer. These flows were almost twice as big during 1995-1999. Then they decreased from 2000 till 2003 by more than 50% and later increased till 2007. From that point in time, those flows once again decreased till 2012 by about 60%.

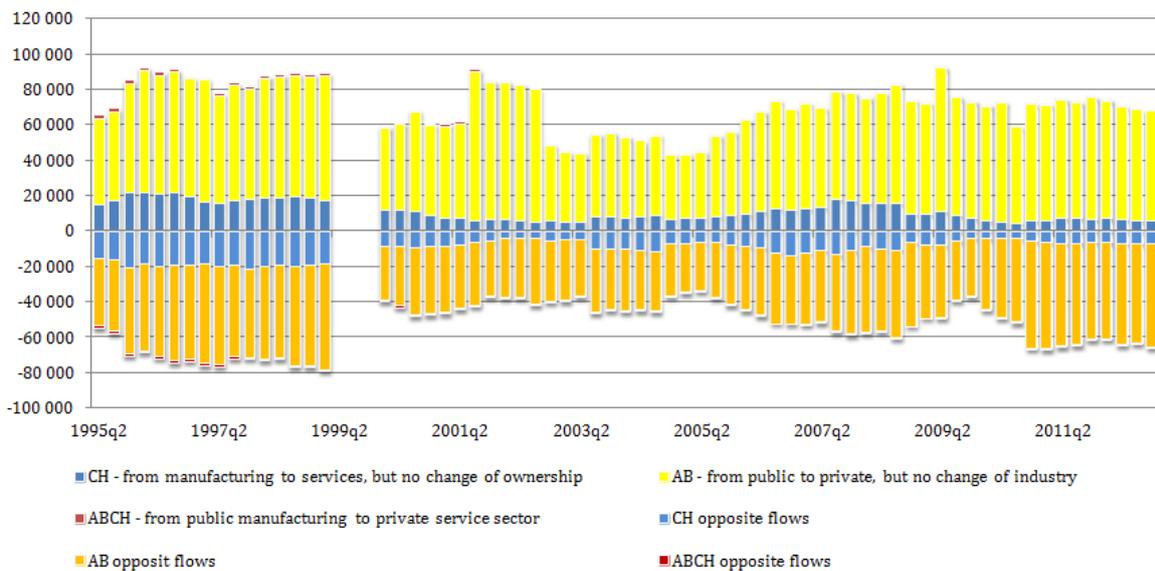
The smallest of the AB, CH and ABCH flows are the last ones. On average each quarter less than 1 thousand persons changed employment from a public employer in manufacturing to a private employer in services. However these flows vary over the research period: they are bigger during 1995-2001 and diminish gradually after 2001 to reach in 2012 about 10% of their value in the first year.

In case of the flows opposite to the AB, CH and ABCH flows, the biggest are the flows opposite to AB flows: on average each quarter about 43 thousand persons changed employment from private to public sector without a change in industry. This number was higher during 1995-1999 and from 2010 on when it reached more than 50 thousand persons. During 2003-2005 it diminished to approx. 33 thousand.

The flows opposite to CH flows are smaller: on average each quarter about 10 thousand persons changed employment from services to manufacturing without a change in the ownership type of the employer. These flows were almost twice as big during 1995-1999. Then, they decreased from 2000 till 2003 by more than 60% and later increased till 2007. From that point in time those flows once again decreased till 2012 by about 50%.

The smallest of the opposite flows are those opposite to ABCH flows. On average less than 1 thousand persons changed employment from a private employer in services to a public employer in manufacturing. These flows vary over the research period: they are bigger during 1995-1997 and diminish gradually after 1997 to reach in 2012 about 10% of their 1995 value.

Figure 4. AB, CH, ABCH and opposite flows



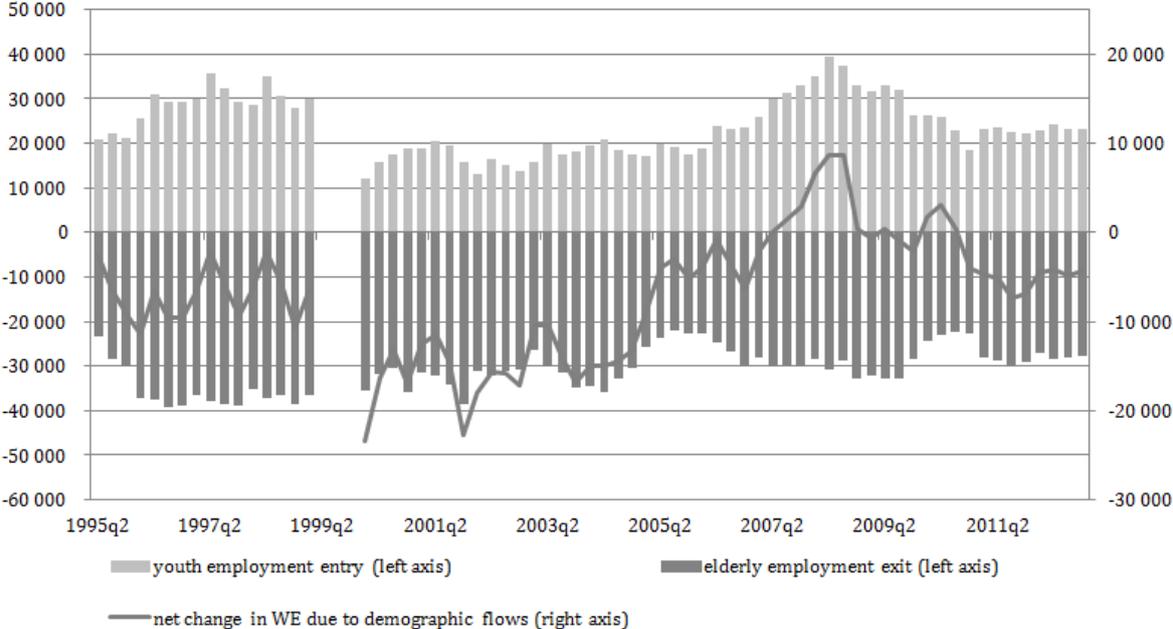
Source: Own calculations based on LFS.

In case of youth employment entry, flows on average each quarter approx. 24 thousand persons aged 18-25 years entered employment from inactivity (Figure 5). These flows were bigger in the first part of the research period reaching almost 29 thousand persons but declined strongly since 2000, reaching a minimum of approx. 14 thousand in the second half of 2002. They stay depressed until 2005 during, a period of declining GDP growth (compare next section). After 2005 those flows started to increase and during 2008-2009, they reached almost 40 thousand individuals. There are two reasons behind this development: the first is a booming economy in the years 2006-2008 providing many employment opportunities; the second is the entrance after finishing education of baby boomers born in the first half of 1980's. After 2009, youth employment flows declined in 2010 and remained stable ever since.

Lastly, we focus on elderly exit flows (Figure 5). During the first part of the research period, these flows were larger by approx. 7 thousand than youth employment entry flows. After 2000 elderly employment flows remain stable which combined with a fall in youth employment entry leads to a rise in the net change in wage employment due to demographic flows to more than 15 thousand persons leaving wage employment. A decrease in elderly employment flows occurs from 2005 till 2008 with youth employment entry dominating by approx. 10 thousand. After 2008 elderly employment exits declined in 2010 but increased in 2011 and remained stable after that. However due to a smaller increase in youth employment

entry flows from 2011 on the net change in wage employment due to demographic flows was negative.

Figure 5. Youth employment entry and elderly employment exit

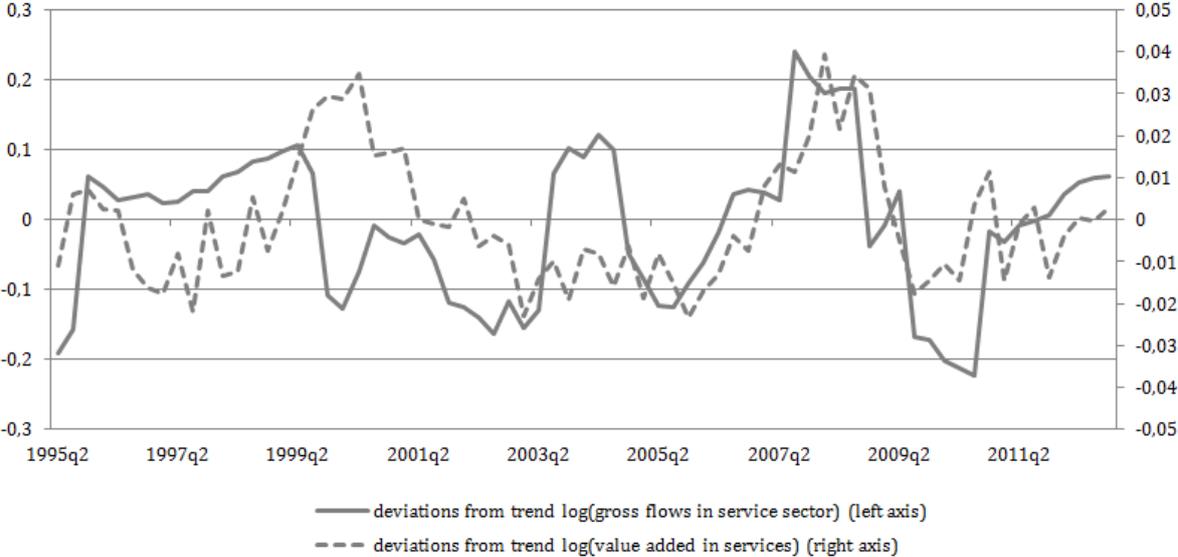


Source: Own calculations based on LFS.

4. Cyclical patterns

We now turn to the cyclical patterns of the flows described above. Figure 6 shows the deviations from the trend of log gross flows in service sector and the deviations from the trend of log value added in this sector. The trend was obtained using a Hodrick-Prescott filter with a penalty parameter set to 1600 for the growth component as suggested for quarterly data (Hodrick and Prescott, 1997; Ravn and Uhlig, 2002).

Figure 6. Deviations from trend of log gross flows and deviations from trend of log value added in service sector

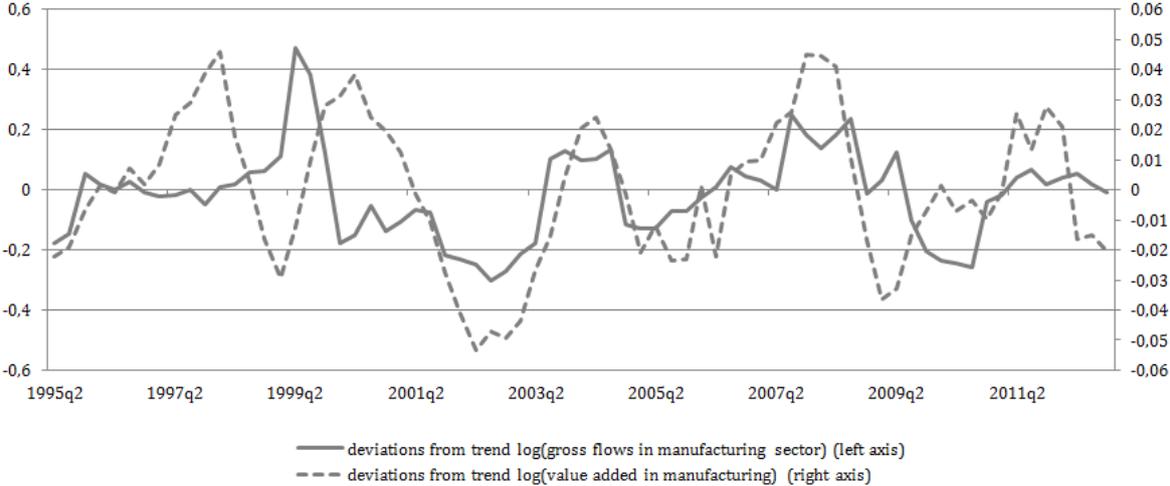


Source: Own calculations based on LFS and Eurostat.

A link between the gross flows in service sector and the business cycle seems to exist since 2000: in periods of weak economic growth (2001-2004, 2009-2010) those flows were diminishing whereas in periods of booms (2006-2008) they were increasing, especially during the boom of 2006-2008. The relation between the business cycle and gross flows in the service sector is confirmed by a correlation which is equal to 0.29 and significant at 5% (Table 1). Also the correlation between those flows and the LFS unemployment rate is significant at 5% and equal to -0.29 confirming a link between those flows and the business cycle.

In the case of gross flows in manufacturing sector the picture seems to be similar (Figure 7).

Figure 7. Deviations from trend of log gross flows and deviations from trend of log value added in manufacturing sector

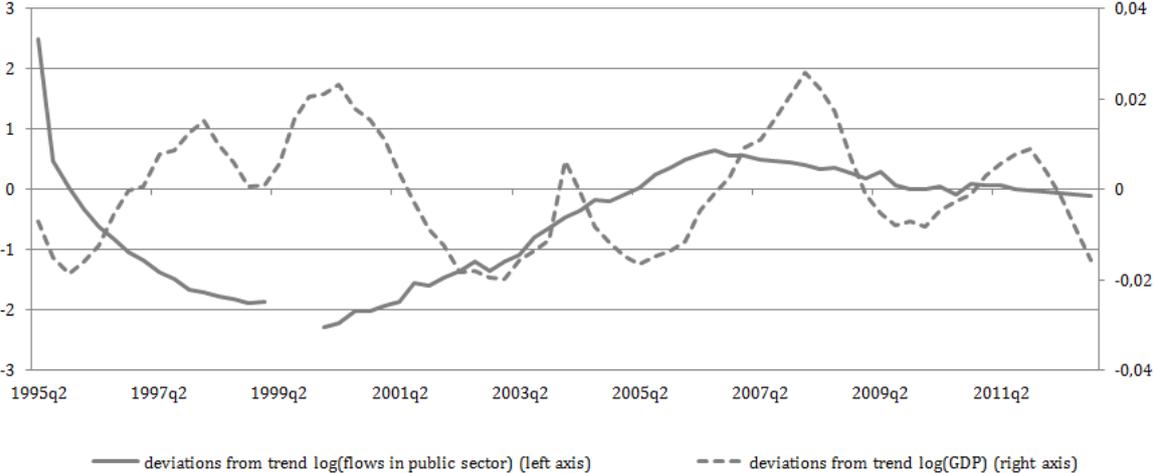


Source: Own calculations based on LFS and Eurostat.

As in the case of the service sector, a link between the gross flows in manufacturing and the business cycle seems to exist from 2001 on: in periods of weak growth those flows diminished and in periods of booms increased. The correlation between those changes and the deviations from the trend of log value added in manufacturing is equal to 0.33 and statistically significant at 5%. Also the correlation of those flows with the unemployment rate is statistically significant at 5% and equal to -0.35 (Table 1).

The picture for the public sector is somehow less obvious (Figure 8).

Figure 8. Deviations from trend of log gross flows in public sector and deviations from trend of log GDP

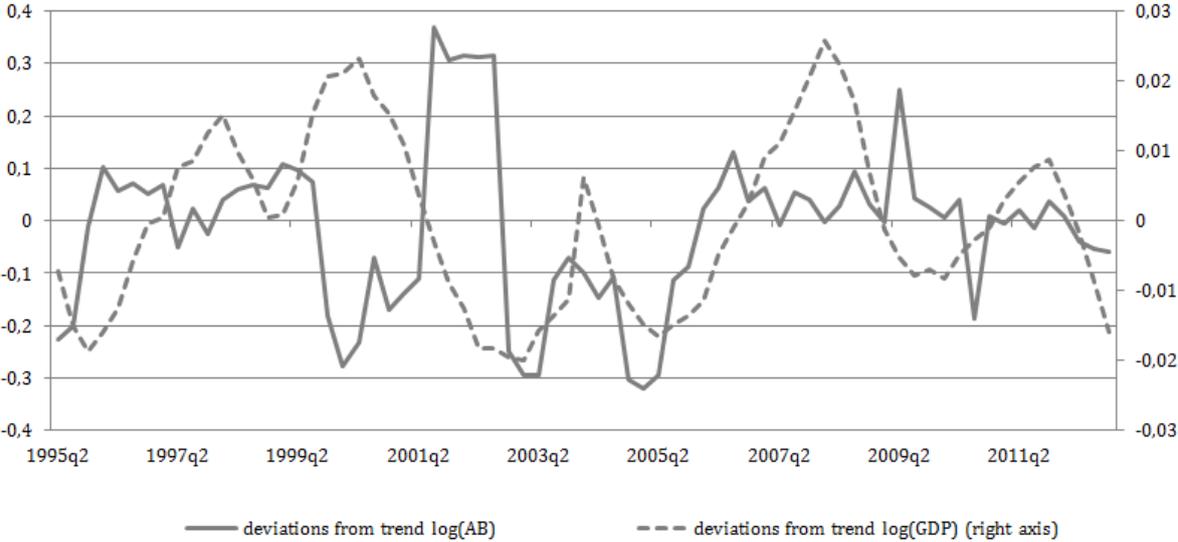


Source: Own calculations based on LFS and Eurostat.

Gross flows in public sector seem to be weakly related to the business cycle: they decline during 1995-1997, a period of weak economic growth but do not seem to react during periods of booms. The weak link between these flows and the business cycle is confirmed by an insignificant (at 5%) and weak correlation of 0.04 between these changes and the deviations from trend of log GDP. However the correlation of these changes with the unemployment rate is higher (-0.31) and statistically significant (Table 1).

We now move to the AB, CH and ABCH flows. For the biggest of these flows, the AB flows the relation with the business cycle is not quite clear (Figure 8). These flows seem to be depressed during recessions (2002-2004) and rise during booms (2006-2007). However in other periods no relation with the business cycle seems to exist. This is confirmed by the correlation between the AB flows and the deviation from trend of log GDP equal to 0.02 and statistically insignificant at 5%. On the other hand the correlation of these flows with unemployment rate is significant at 5% and equal to -0.26 (Table 1).

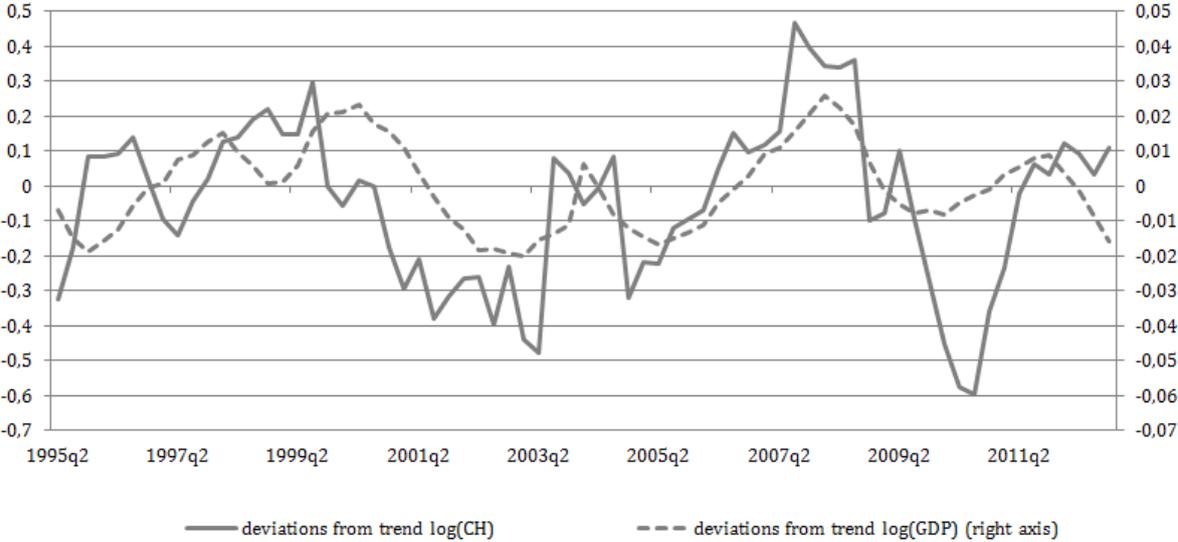
Figure 9. Deviations from trend of log AB flows and deviations from trend of log GDP



Source: Own calculations based on LFS and Eurostat.

The CH flows seem to vary strongly with the business cycle and are procyclical: in times of high economic growth around flows from manufacturing to services increase. When economic growth was weak these flows diminished (Figure 9). A strong link between the CH and the business cycle is confirmed by statistically significant (at 5%) and rather strong correlation with the deviations from trend of log GDP (0.50). The correlation with the unemployment rate is also significant at 5% and equal to -0.38.

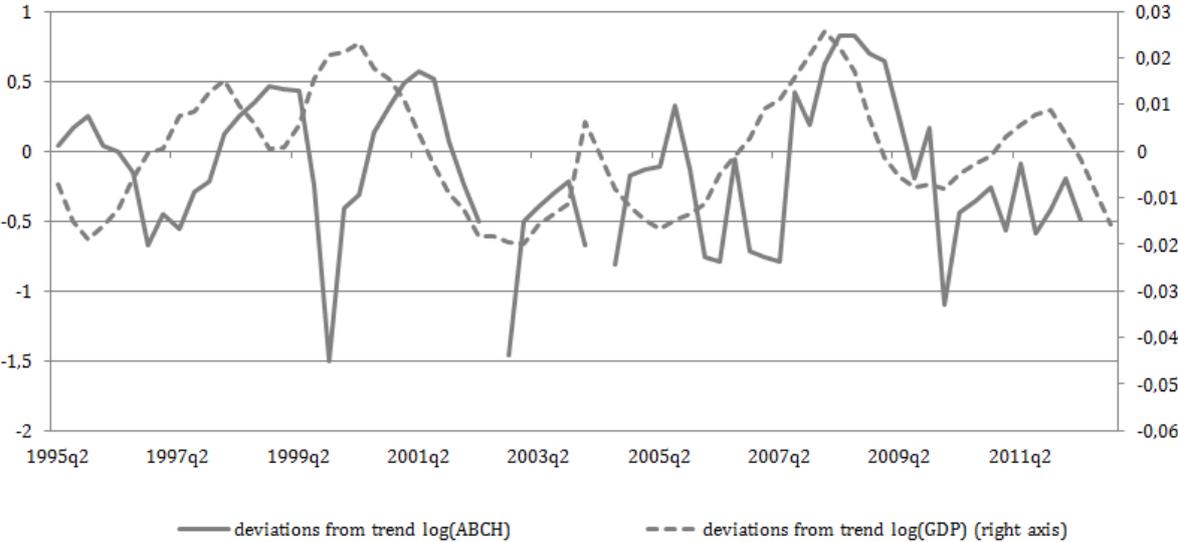
Figure 10. Deviations from trend of log CH flows and deviations from trend of log GDP



Source: Own calculations based on LFS and Eurostat.

Also in case of ABCH flows the relation to the business cycle seems no to be clear. These flows seem to be depressed during recessions (2002-2004) and rise during booms (2006-2007). However in other periods no relation with the business cycle seems to exist. This is confirmed by a weak and insignificant (at 5%) correlation with deviations from trend of log GDP: 0.21. On the other hand the correlation of these flows with unemployment rate is significant at 5% and equal to -0.28 (Table 1).

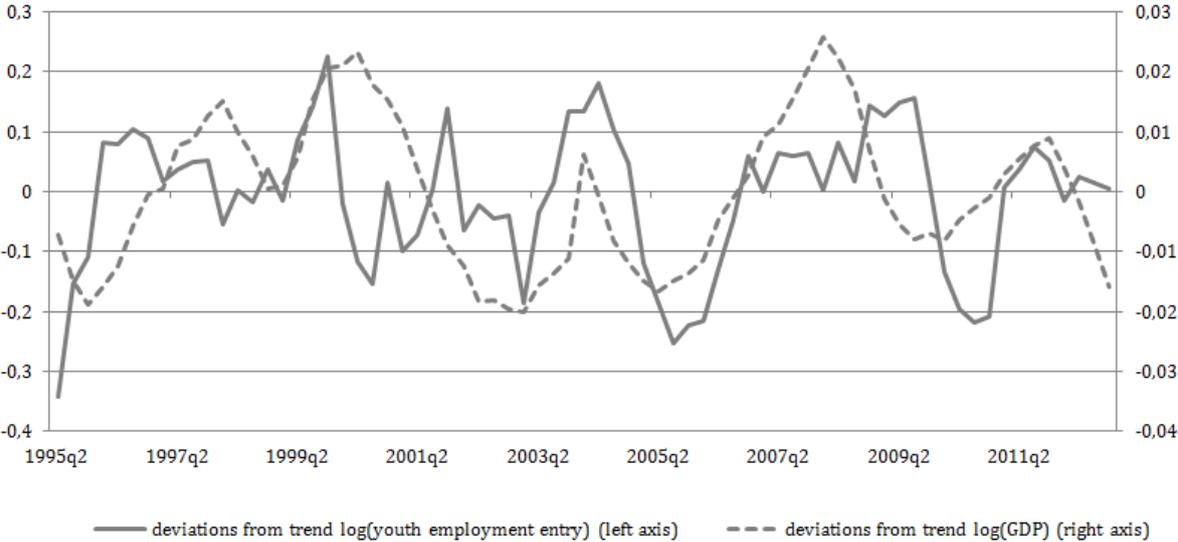
Figure 11. Deviations from trend of log ABCH flows and deviations from trend of log GDP



Source: Own calculations based on LFS and Eurostat.

Coming to youth employment entry flows we can observe a link between these flows and the business cycle. This link is similar as for gross flows in service sector. Youth employment flows were declining during periods of weak economic growth when the number of job opportunities was small and raising in periods of booms when job opportunities were numerous. The strong link with the business cycle is confirmed by significant (at 5%) correlations of 0.30. with the deviations from trend of log GDP. The correlation with the unemployment rate is insignificant at 5% and equal to -0.21

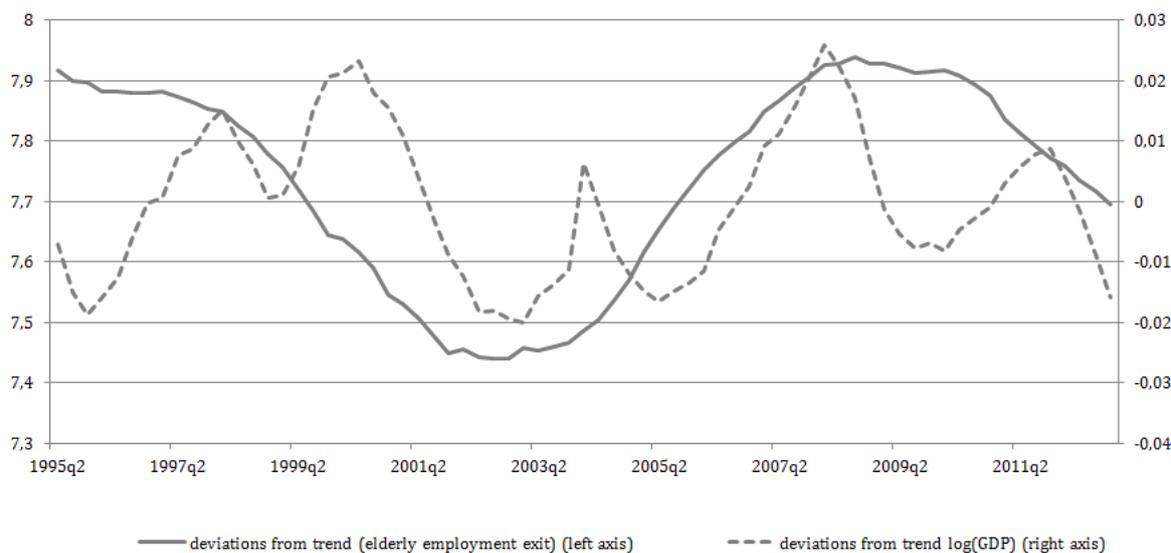
Figure 12. Deviations from trend of log youth employment entry flows and deviations from trend of log GDP



Source: Own calculations based on LFS and Eurostat.

In the case of elderly employment flows, the pattern resembles that of youth employment flows. In times of weak economic growth, the number of elderly people moving from employment to inactivity decreases, this could suggest that employers are less willing to separate from those people than from other ones i.e. younger and less experienced. In times of boom elderly employment flows increase and a possible explanation could be the fact that employers are more willing to separate from those persons and employ younger people. Also in case of these flows the correlation with deviations from the trend of log GDP and is statistically significant at 5% and equal to 0.29. The correlation with the unemployment rate is insignificant at 5% and equal to -0.09

Figure 13. Deviations from trend of log elderly employment exit flows and deviations from trend of log GDP



Source: Own calculations based on LFS and Eurostat.

Table 1. Correlations of deviations from trend of log specific flows with deviations from trend of log GDP and unemployment rate

Deviations from trend of log(specific flow listed below)	Deviations from trend of log GDP (log value added in case of services and manufacturing)	Unemployment rate
Gross flows in service sector	0.29*	-0.2966*
Gross flows in manufacturing sector	0.3307*	-0.3475*
Gross flows in public sector	-0.0412	-0.3056*
AB flows	0.0232*	-0.2595*
CH flows	0.5025*	-0.3773*
ABCH flows	0.2079	-0.2801*
Youth entry	0.3002*	-0.2138
Elderly exit	0.2933*	-0.0876

* - significant at 5%

Source: Own calculations based on LFS and Eurostat.

5. Conclusions

Labour reallocation is an inherent feature of the transformation process in Eastern European and Former Soviet Union countries. Two main features of this reallocation can be distinguished: first was the decline in public sector employment due to the collapse of state owned enterprises and an increase in private sector employment as a new private sector emerged and public companies were privatized. The second feature was (and still is) the reallocation from manufacturing to service sector.

The empirical literature on labour reallocation in Eastern European and Former Soviet Union countries is not very abundant but still a rather significant amount of paper dealing with this issue can be found. The papers apply a modern approach to labour market categories focusing not on their absolute size but on the flows between these categories which are behind the changes in those absolute sizes. However this literature has several shortcomings. First most of it focus on the early period of transition (1990-1998) and only a few studies take into account the period after 1998. Second, the papers on labour reallocation in Eastern European and Former Soviet Union rely on yearly data which can have a negative influence of the size of labour flows being analyzed as i.e. a person can be unemployed, take up employment and be fired during the course of a year which corresponds to two flows (one from unemployment to employment and one from employment to unemployment) but neither of them will be captured when using yearly data. Third, because of the fact that most of the papers focus on the early period of transition and a rather short period of time they do not analyze the behavior of labor flows over the business cycle.

In this study we use data from the Polish LFS for the period 1995q1-2012q4 to analyze in a descriptive manner various flows related to labour force reallocation and their behavior over the business cycle. A detailed analysis shows that jobs were created in the service sector and destructed in the public sector: in 2012 employment was lower by almost 3.5 million persons as compared to 1995. What is more, the gross flows in the service sector seem to be procyclical. Also the flows in the manufacturing sector seem to be procyclical. In contrast, the link between the business cycle and gross flows in public sector is rather weak. Out of the flows from manufacturing to services, public to private sector and flows from manufacturing in the public sector to services in the private sector only for the second type of flows a strong and positive relation with the business cycle seems to exist. In contrast the AB and ABCH flows seem to be only weakly connected to the business cycle. However flows associated with

the entry of young people from inactivity (connected to education) to employment and flows of elderly people from employment to inactivity due to retirement are procyclical.

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