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The Increased Importance of Sector Switching: A Study of Trends Over a 27-Year Period

Abstract

Sector switching is new to the public administration literature, and our knowledge about its prevalence and trends is limited. Yet sector switching is an important phenomenon that casts light on public-private differences. We study sector switching in a modern economy, using unique Danish register-based employer-employee data covering more than 25 years. We find that sector switching constitutes 18.5 percent of all job-to-job mobility, and the trend is increasing both from public to private and from private to public. We also find an increase of sector switching for middle managers in both directions, while we only find an increase for administrative professionals from private to public and for top managers from public to private.

Keywords: Sector switching, public-private differences, New Public Management

Introduction

Sector switching, defined as people's job mobility between the private and public sectors (Bozeman & Ponomariov, 2009), is a phenomenon that has received scant attention in the public administration literature (Su & Bozeman, 2009a; Hansen, forthcoming). Nevertheless, from a broader societal perspective sector switching is of key importance. Sector switching has recently been argued to be an important phenomenon and a key source in understanding public-private sector differences (Bozeman & Ponomariov, 2009); it can be used to shed light on whether there has been convergence between the public and private sectors in the last decades; it is informative about how the private and public sectors can retain and attract competent employees (Tschirhart, Reed, Freeman, & Anker, 2008); it is relevant to studies of public values (de Graaf & van der Wal, 2008), e.g., in relation to whether or not sector switching influences public values; and it ensures knowledge flow between the sectors. Furthermore, individual organizations may benefit from sector switching, as it makes it possible to obtain new competences and insights from other sectors. But it can also be costly for organizations, as leaving employees impose replacement and training costs on the organization. This naturally depends on who the sector switchers are. In some cases too-low turnover can be a problem, although most often high turnover is seen as a problem for organizations (Griffeth, Hom, & Gaertner, 2000). For individuals sector switching may improve the person-organization fit (Jacobsen & Kjeldsen, 2013) and career prospects (Bozeman & Ponomariov, 2009).

At present the empirical knowledge about sector switching is limited, and little is known about its prevalence and trends. In this paper, we will fill this gap in the literature and determine the importance of sector switching in the Danish economy using unique register-based employer-employee data for a period spanning 27 years and including all employees in the workforce. Bozeman and Ponomariov (2009) recently made a call for this type of longitudinal study.

Sector switching has previously been analyzed with a focus on the characteristics and motives of the sector switchers and on the consequences of the moves. Managers tend to switch from the private to the public sector more often than non-managers (Su & Bozeman, 2009a). It is also established that switching into the public sector increases career opportunities, because the movers are more likely to be promoted and end up supervising a larger number of subordinates (Bozeman & Ponomariov, 2009). In addition, studies of sector switching have argued that highly educated employees constitute an attractive group to retain for both sectors (Hansen, forthcoming) because of their high levels of competences. In contrast to these prior studies, we analyze the importance and trends in sector switching. This will be done at the general level, i.e., for all employees, but also in relation to particular employee subgroups central to managerialism, i.e., managers and administrative professionals (Pollitt, 1990; Diefenbach, 2009).

Empirical work on sector switching has been based on surveys and occupied with unidirectional mobility, i.e., studies of mobility from the public to the private sector (Hansen, forthcoming) or from the private to the public sector (Bozeman & Ponomariov, 2009; Su & Bozeman, 2009a, 2009b). In regard to former studies, this paper makes a dual contribution. First, we make use of a single dataset to shed light on sector switching in both directions. Second, we do not rely on cross-sectional survey information but instead use register-based panel data. The implication is that our analysis is comprehensive when compared to earlier studies, as it covers a whole economy. Further, its reliability is judged to be much higher because the data is virtually free of measurement error and response biases.

Our data source is the IDA database, a register-based employer-employee dataset constructed by Statistics Denmark. This dataset starts in 1980. It contains information on all public and private sector employees in the Danish population. In the data it is possible to match employees to public and private sector workplaces and follow individuals over time. The data contains

extensive information on demographics, education, and organizational placement. Hence, by applying econometric techniques, we can use the data to identify trends in sector switching over a period of almost thirty years. It is also possible to control for a large set of confounding factors at different levels of analysis. This type of data and analysis is likely to be what Bozeman and Ponomariov (2009) had in mind when they made their call for longitudinal studies where sector switching could be studied in conjunction with additional information about the labor market and the state of the economy.

Our empirical analysis shows that sector switching is important for the Danish economy. On average, 3.44 percent of the workforce makes such a move each year, and the trend is increasing. The level of job-to-job transitions in the Danish economy is 18.6 percent, which means that $(3.44/18.6 =)$ 18.5 percent of all job-to-job mobility involves a sector switch. A more comprehensive analysis shows that the probability of moving from the private to the public sector has increased significantly (70 percent) from 1980 to 2006. An even stronger positive trend (a 90 percent increase) is found for mobility from the public to the private sector. The significance of the positive trend is robust to controlling for general trends in labor market mobility, unemployment, public expenditure, economic growth, and variables reflecting individual experiences and working conditions. The trends are also positive and significant in fixed-effects regressions. When looking at employees central to managerialism, we establish increasing sector switching trends for middle managers in both direction and for top managers from public to private as well as for administrative professionals from private to public. In the discussion section we relate these findings to the sector-switching literature and the literature on New Public Management. We will also discuss how our results are informative about public-private sector differences.

The structure of the paper is as follows. In the theory section we review the literature on sector switching and set up a number of hypotheses. In the following section we discuss the institutional

setting, data and the empirical methodology. This is followed by a section where we test the stated hypotheses. The discussion section relates our findings to the existing literature and provides directions for further research. Finally, we conclude.

Theory

Sector switching is a phenomenon which only recently has received attention in the public administration literature (Bozeman & Ponomariov, 2009; Su & Bozeman, 2009a; de Graaf & van der Wal, 2008; Hansen, forthcoming). This is despite the fact that it has been argued to be an important source in understanding public-private differences (Bozeman & Ponomariov, 2009). One reason for the lack of interest might be that it is often argued that sector preferences are rather fixed (Tschirhart et al., 2008) which would imply that sector switching is a rare event and thus of limited interest. Yet, we do not know empirically if this assertion is correct, as the prevalence and trends in sector switching have not been the key focus in former studies of sector switching. Instead the focus has been on the characteristics and motives of the sector switchers and on the consequences of the moves (Hansen, forthcoming; Bozeman & Ponomariov, 2009; Su & Bozeman, 2009a, 2009b).

Our starting point for hypothesizing about sector switching is the literature on private-public sector differences (Baarspul & Wilderom, 2011; Boyne, 2002; Rainey, 2009). In this literature it has been argued that sector differences are diminishing (Boyne, 2002; Poole et al., 2006) partly due to New Public Management (NPM), which traditionally is said to be the introduction of economic and management thinking from the private sector into the public sector (Hood, 1991). Through the years some studies have been critical of the impact of NPM, for example arguing that little evidence of its actual effects has been seen (Barzeley, 2001). Others say that NPM and sector convergence are mostly a myth (Goldfinch & Wallis, 2010). Nevertheless, there is a large literature on the impact of NPM in several countries (Pollitt & Bouckaert, 2011) including Denmark (Greve, 2006). One

empirical example of sector convergence is Poole et al. (2006), who study organizational behavior differences between the public and private sectors during a twenty-year period and find convergence to some extent. A similar picture is found in a more recent study by Morales et al. (*forthcoming*) on Dutch organizations. They argue that public and private organizations are becoming more similar in relation to organizational aspects. A natural consequence of sector convergence is that sector switching will increase as barriers are diminished.

Other arguments also point toward sector convergence. One such argument is that the institutional logic of the employees in the sectors has changed (Meyer & Hammerschmid, 2006), that employees have specific institutional norms and logics they follow (Thornton & Ocasio, 2008), yet these norms and logics can change over time if the institutional setting changes. This presupposes that NPM changes are related to changes in institutional logics where public employees are becoming more like private employee due to the gradual changes in norms and logics (Meyer & Hammerschmid, 2006). Hence, where institutional norms based on a traditional and bureaucratic public administration logic may have prohibited sector switching earlier, such sector switches have become easier as sector norms become more similar. For example, Meyer and Hammerschmid (2006) have shown that there is an association between sector switching (former private-sector experience) and having a new institutional logic in the public sector.

A second alternative argument is that structural changes such as outsourcing and privatization have shifted jobs between sectors. In this case there would be two types of effects: A direct effect when public tasks are moved to the private sector, which by nature implies sector switching, and an indirect effect where what were formerly solely public tasks suddenly become both public and private. Hereby the opportunities of switching back and forth increase. It has also been shown that many outsourced tasks are changed back to public production (Hefetz & Warner, 2004), which has an additional positive effect on sector switching.

As a consequence of these motivations, we hypothesize that sector switching will increase.

Hence, our first hypothesis:

H1: Over time there will be more sector switching.

In addition to the hypothesized increase in sector switching at the general level, we hypothesize that specific groups experience a disproportionate increase in sector switching, as sector convergence is more rapid in their domain. There are two groups for whom we expect to find such an increase: managers and employees with degrees in the social sciences, i.e., individuals with degrees in economics, management, law, psychology, or political science (Diefenbach, 2009). The reason is that the public and private labor markets for these two employee subgroups are argued to become more similar as a consequence of managerialism (Pollitt, 1990; Kirkpatrick, Ackroyd, & Walker, 2004). Here managerialism is understood as the separation between operational and supervision/leadership activities. The latter activity should be performed by a special group of people trained to think in these terms (Hood, 2005). Managers who are expected to know more about management and economic thinking and who are responsible for securing effectiveness and efficiency in modern public organizations are thus likely to be strongly affected (Diefenbach, 2009). Further support for these ideas comes from Bhatti and colleagues (Bhatti, Olsen, & Pedersen, 2011; Bhatti & Pedersen, 2009), who focus on NPM theory and argue that managers and employees with social science degrees are instrumental in the convergence between sectors because they influence innovation and contracting in the public sector. Thus, in addition to our main hypothesis that the level of sector switching has been increasing, we will hypothesize that this increase is also present for employees central to managerialism:

H2a: Over time there will be more sector switches for individuals in management positions.

H2b: Over time there will be more sector switches for individuals with higher educations in social science.

Institutional Setting, Data, and Empirical Methodology

In this section we provide some background on the Danish labor market and economic context. This is followed by a detailed introduction to the IDA data and the empirical methodology. We will also present some general results on labor mobility in Denmark.

Institutional Setting

The stated hypotheses will be tested in the Danish context. Denmark is a strong welfare state with a highly progressive tax system and low income inequality. Denmark is characterized by having a large public sector. According to our data, more than 900,000 people were employed in the public sector in 2006, which is 37 percent of all people employed. The number has decreased from 40 percent in 1980. This implies that the public sector accounts for a large part of Danish employment and economic activity. The public spending share may even exceed the employment share, as there is considerable contracting out in Denmark.

The Danish labor market has often been characterized as a system of “flexicurity” (Ministry of Employment, 2013), i.e., the labor market is “flexible” as employers can lay off employees with relatively short notice and at relatively low costs, but the system is also “secure” as unemployed individuals receive generous benefits (replacement rates, i.e., the ratio of unemployment benefits to former salary, of up to 90 percent for low-income earners) for a considerable time (up to 7 years in the sample period). One implication of this system is that employee turnover is at a very high level

in Denmark and comparable to the levels in the United States and the United Kingdom. This fact will be discussed further below.

The Danish labor market has a high (but declining) degree of unionization. This implies that wages have traditionally been set by collective agreements between unions and employer organizations with little room for individual wage bargaining. Over time, however, there has been more room for individual bargaining, particularly in the private sector. The recent “Wage Commission” (Lønkommissionen, 2010) has documented that public sector employees in Denmark are compensated at a lower level than private sector employees. However, they also find that public sector employees have shorter work hours and in general benefit from higher job security. These sector differences in salary and job security are classical ingredients in the literature on public and private differences (Rainey, 2009).

It has also been argued that the public sector in Denmark has been under the influence of NPM during the last decades (Greve, 2006). Reforms have been implemented over a longer period of time under both Social-Democratic and Conservative-Liberal governments. The main themes in the reforms are performance management, market mechanisms, consumer choice, e-government, deregulation, quality, management training, human resources, and top executive management (Greve, 2006). Despite a significant amount of contracting out, the overall picture is that the reforms are better characterized as modernization than as marketization (Greve, 2006).

Data and empirical methodology

We use the register-based employer-employee database known as the IDA database to test the hypotheses. The data is perfectly suited for the purpose, as they contain detailed information on all public- and private-sector employees in the Danish economy since 1980. Further, due to unique, individual, and firm identifiers, all employees can be tracked over time and across sectors. An

important additional feature of the data is that they contain detailed information on demographics, education, job level etc. Hence, we can use the data to study trends in sector switching over a period of 27 years at a general level (all employees) as well as for employee subgroups with particular characteristics. We do this by estimating a set of logit models for sector switching that include time trends and control for a comprehensive set of confounding factors that reflect the individual's experiences and the working context as well as the economic environment, i.e., the unemployment rate, economic growth, and public expenditures.¹

In the reminder of this section we present descriptive statistics on employee mobility in Denmark. When studying labor mobility in a Danish context, it is important to recognize that it is at a very high level. Frederiksen & Westergaard-Nielsen (2007) and Frederiksen (2008) document that the level of job separation in the private sector in Denmark is close to 30 percent per year. Hence, almost 30 percent of the employees in a particular workplace in a given year are not employed in that workplace the following year. Extending their analysis to include the public sector, we confirm this finding and establish that the high level of labor mobility extends to the economy at large (see Figure 1). That is, over the period 1980 to 2006, the level of job separation is between 28 and 35 percent. Interestingly, the level of job separation stays fairly constant over time, and estimation of a time trend reveals a positive but insignificant slope. This is regardless of the large structural reform in 2006, which changed the structure in the public sector between local, regional, and state levels (The Danish Ministry of the Interior and Health, 2004) and caused the level of job separation to jump to its all-time high of 35 percent.

Insert Figure 1 about here

¹ The resource-dependence argument (Pfeffer & Salancik, 1978) that environmental munificence influences organizational behavior, i.e., if a sector has a munificence environment, then this impacts sector switching toward this sector, lead us to include public expenditure as a control.

While the overall level of job separation has not changed significantly over the period 1980 to 2006, we document in Figure 2 that the level of job-to-job transitions has increased significantly. Early in the period, only around 16 percent of employees moved between workplaces in a given year, whereas job-to-job mobility in later years is closer to 20 percent. Estimation results show a significant increase in the level of job-to-job transitions of 0.15 percentage points per year.

Insert Figure 2 about here

A more detailed analysis reveals that the increase in job-to-job transitions is driven by mobility in the private sector (Figure 3, first picture) and not the public sector (Figure 3, second picture). As expected, the level of mobility between jobs in the private sector is fluctuating substantially, and it has a clear counter-cyclical pattern (which was also documented by Frederiksen & Westergaard-Nielsen, 2007). In contrast, job-to-job transition in the public sector is at a much lower level, (ignoring the reform year 2006). Regression analysis shows that while the trend in job-to-job mobility in the private sector is positive and significant, with the level of mobility increasing by almost 0.1 percentage points per year, the trend is clearly insignificant in the public sector. This is despite the high level of job-to-job transitions in the public sector during the reform year 2006, which also constitutes the end point of our data series.

Insert Figure 3 about here

Test of Hypothesis: Macro level

Our hypotheses focus on trends in sector switching. The first evidence for an increasing trend is established at the macro level using aggregate mobility data (see Figure 4). The first picture shows transitions from the private to the public sector and provides support for the first hypotheses that there has been more sector switching over time. The increase in mobility from the private to the public sector has been a significant 0.025 percentage points per year. With 1.5 percent of all working individuals making a move from the private to the public sector in 1980, 2.15 percent ($1.5 + 26 \times 0.025$) made such a move in 2006—an increase of 70 percent. This trend line implies that mobility from the private to the public sector accounted for 8.1 percent of total job-to-job mobility in the early years and for 11.6 percent by the end of the sample period.

The reverse flows from the public to the private sector (the second picture in Figure 4) also exhibit a positive trend. The trend line increases by a significant 0.038 percentage points per year. Around 1.1 percent of all employees made a switch from the public to the private sector in 1980. In 2006, 2.1 percent made such a move. This corresponds to an increase of almost 90 percent. This implies that 5.9 percent of job-to-job mobility in the early years was a sector switch from the private to the public sector, and in the later years these flows made up 11.4 percent of job-to-job mobility. Thus, the trend lines show that sector switching increases over the sample period from a level of 14 percent of job-to-job mobility to a level of 23 percent of job-to-job mobility—with an average across all years of 18.5 percent.

Insert Figure 4 about here

We can also establish trend lines for employees central to managerialism: top managers, middle managers, and administrative professionals. Managers are identified using Statistic Denmark’s definition of “main labor market status” for a given individual in a given year. The

variable distinguishes top managers and middle managers from other employees. When identifying administrative professionals we make use of the detailed information on education in the database. That is, we use the variable for “highest completed education” and pick the individuals who have a Master’s degree in political science, economics, law, or social science.

Figure 5 (first picture) shows the trend lines for transitions between the private and the public sector for all individuals, middle managers, and top managers. The results show that managers have a much lower transition probability than the rest of the labor market, but it is also noteworthy that the slope on the trend line for middle managers is more positive than that for the labor market in general. For top managers the slope appears to be similar to that of the general trend. When focusing on reverse mobility, i.e., mobility from the public to the private sector, the picture is somewhat different (Figure 5, second picture). Most notable is the crossing of the trend lines for “all” and middle managers. This indicates that the growth in cross-sector mobility for middle managers has increased considerably more than for employees in general.

Insert Figure 5 about here

The trends lines related to administrative professionals are present in Figure 6. A first thing to note is that the overall level of mobility for these individuals is much more in line with the labor market at large (as opposed to the much lower levels of transitions for managers established in Figure 5). For instance, the level of mobility from the private to the public sector for administrative professionals is only 0.2 to 0.3 percentage points below that of employees in general, and the reverse flows are about 0.1 percentage points above the general flows. In addition, the trend lines for administrative professionals are almost parallel to those of the labor market in general.

Insert Figure 6 about here

To shed additional light on the trend lines and their robustness at this macro level, we present a set of regressions in Table 1. In these models we regress the level of sector switching on a time trend, and we control for confounding factors such as general trends in labor mobility and economic conditions. Descriptive statistics are provided in Table A1 in the Appendix. At this level we are not able to control for covariates intended to capture individual experiences and working contexts, which will be done in the next section where we use individual level data.

Insert Table 1 about here

In Part A of Table 1 we present results on the flows from the private to the public sector. The variable year captures the time trend. The results show (Model 1 and 2) that the trend in sector switching is robust to controlling for changes in GDP (variables named dGDP). The trend also remains positive and significant when we control for the level of separations in the economy and the level of job-to-job separations (Model 3 and 4). Once we control for the unemployment rate, the positive sign on the trend line is preserved, but it is only significant at the 10 percent level (Model 5). A final covariate we include is the ratio of public expenditure to GDP. Also, in this model the trend is established to be positive and significant (Model 6). In Model 7 we include all covariates simultaneously, but because of the low number of observations available when operating at this macro level and the relatively large number of covariates, the model is useless. Instead, we present the preferred specification as Model 8. This model is tested down from model 7 and is selected for its performance. In this model, we control for the level of job-to-job separations in the economy and

establish that the trend in sector switching from the private to the public sector is positive and significant.

Changing focus to the flows from the public to the private sector (Part B of Table 1), we find results that mirror those from Part A. In all models (except for Model 7) the trend lines are positive and significant.

The results presented in this section provide some evidence for the stated hypotheses as we establish increasing trends in sector switching using macro level data. In the following section, we establish the trends in sector switching using individual level data. These results will be used as formal tests of the stated hypotheses.

Test of Hypothesis: Individual level

As argued, the first hypothesis states that there will be more sector switching over time. We evaluate this hypothesis by estimating the time trends in sector switching and statistically test if these trends are positive and significant. In practice this is done using logit models where the dependent variable is a dummy for sector switching. For example, when studying transitions from the private to the public sector, we take all employees who work in the private sector in time period t and construct a dummy for sector switching, which takes the value 1 if the employee is observed in the public sector in time period $t+1$; and 0 otherwise. The dependent variable is then regressed on a time trend and a large set of covariates that account for confounding factors such as the unemployment rate, economic growth, public expenditures, and variables reflecting individual experiences and work contexts.²

² The variables reflecting individual experiences and working contexts are: a quadratic in age, dummies for gender and marital status (married or cohabiting vs. single), dummies indicating the presence of children in different age groups (5 dummies), a detailed set of schooling dummies reflecting years of schooling (5 dummies), actual labor market experience (available from 1964), dummies reflecting the employee's job level within the firm (top manager, middle manager, white collar, blue collar, and "other"), and 9 sector dummies for subsectors/industries.

Part A of Table 2 contains regression results for private to the public sector switching. The first model includes a time trend and controls for covariates intended to capture individual experiences and working contexts. In the model we identify a positive and highly significant trend in mobility from the private to the public sector. In the second model we add a variable for the change in GDP (dGDP). The results show that the time trend remains positive and significant and that mobility from the private sector to the public sector is positively affected by growth in GDP. In Model 3 variables for leaded and lagged growth in GDP are included together with the variables from Model 2. The results show that lagged GDP growth has a positive effect on private to public sector switching whereas leaded GDP growth has a negative effect on such mobility. Model 4 is similar to Model 1 except that we have added a variable for the unemployment rate. In this model we find that the time trend remains positive and significant and that the unemployment rate has a negative effect on the mobility from the private to the public sector. Model 5 is similar to Model 4, but the unemployment rate is substituted with a variable for the public expenditure share, which is established to have a negative effect of the transition rate from the private to the public sector. Finally, in model 6 we include all the variables from Models 1 to 5 simultaneously and find that the time trend is positive and significant and that the effects (the signs) of the covariates are preserved. Hence, in accordance with Hypothesis 1 the trend in mobility from the private to the public sector increases over time.

Insert Table 2 about here

In Part B of Table 2 we show the results of logit models that are similar in structure to those presented in Part A, but the models are for the transitions from the public to the private sector. In all of these models the time trend is positive and significant, which provides additional support for

Hypothesis 1. The main discernible difference between Panel A and B is that the effect of growth in GDP is positive in Panel A and negative in Panel B, which implies that public to private sector switching is negatively influenced by GDP growth and private to public sector switching is positively affected by GDP growth.

To shed additional light on the trend lines, we reestimate the models using a more flexible specification. That is, instead of the trend we include a detailed set of year dummies. Reassuringly, the results (not shown)³ reveal pictures very similar to those presented in Figure 4 with positive and highly significant trend lines.

A final examination of Hypothesis 1 is presented in Table 3 where we present the results from conditional fixed-effects logit models. These models take into account that the transition probabilities may be influenced by unobserved individual heterogeneity which can be correlated with the x's in an arbitrary way. For example, some individuals may for unobserved reasons have a higher sector switching propensity, which leads to frequent sector switches. We will return to the issue of serial-sector switchers in the discussion section, but the important result obtained in Table 3 is that the trend lines remain positive and significant even when we control for unobserved individual heterogeneity.

Insert Table 3 about here

Thus, the empirical results provide strong support for Hypothesis 1. The models including a linear functional form for the trend presented in Table 1 and the models using a more flexible specification for the trend show significant and growing trends for sector switching in both directions. These results are robust to controlling for a large set of confounding factors including

³ Results are available upon request.

factors reflecting the individuals' experiences, working contexts, and general economic conditions. The results are also robust to controlling for unobserved individual heterogeneity.

The second set of hypotheses (H2a and H2b) states that sector switching has become more prevalent among managers and employees with longer educations within the social sciences. We test these hypotheses using the same methodology as above. That is, we estimate trend lines in logit models that have specifications similar to Model 6 in Table 2 using data for the focal group. The results are presented in Table 4.

Insert Table 4 about here

The empirical results provide support for Hypothesis 2a. The flows from public to private have increased significantly for both middle managers and top managers. The reverse flows, however, have only increased significantly for middle managers. For top managers the trend in mobility from the private to the public sector is virtually zero. These results are robust to controlling for unobserved individual effects. Thus, the overall conclusion is that sector switching has increased for managers.

The results presented in Table 4 also provide support for hypothesis 2b. For people with a higher degree in the social sciences, the probability of moving from the private to the public sector has increased significantly over the sample period, while we do not find a significant result concerning a move from public to private. However, in the fixed-effects model we do pick up a positive trend in the flows from the public to the private sector. Hence, we conclude that mobility for administrative professionals has increased between the two sectors over time.

The overall conclusion from the empirical analysis is that there is evidence for the stated hypotheses. There has been more sector-switching over time, and both administrative professionals and managers are moving between sectors to an increasing degree.

Discussion

The results presented in the previous sections show that sector switching is at a significant level in Denmark. On average it amounts to 18.5 percent of the economy's job-to-job mobility. Even more important in the present context is it that sector switching, both from the private to the public sector and from the public to the private sector, has increased.

One interpretation of these findings is that our results are consistent with a gradual introduction of NPM, by which an introduction of economics and management elements from the private sector into the public-sector administration has reduced sector differences (Hood, 1991; Pollitt & Bouckaert, 2011) and increased cross-sector mobility. That is, we see both an increase in sector switching at the general level and an increase for managers and administrative professionals who make up a group of key players in the literature on managerialism (Pollitt, 1990; Kirkpatrick et al., 2004). Thus, our findings are consistent with the findings in Greve (2006), who argues that the period we study has been subject to several NPM reforms in Denmark.

Our results may also be interpreted in the light of institutional theory. The main mechanism is then an institutional change in logics similar to that described in Meyer and Hammerschmid (2006), who study how managerial logics are introduced into the Austrian Rechtsstaat. In our context this change in institutional logic is related to public and private employees improving their understandings of the sectors, which makes sector switching more likely.

Another main result in our analysis is that, in particular, middle managers have experienced an increase in sector switching both from the private to the public sector and from the public to the

private sector. This could reflect that management practices in the public and private sectors are converging. Yet we do not see the same patterns of growth in sector switching for top managers. For top managers we only find a significant increase in sector switching from the public to the private sector. The reason for this may be economic (an issue we investigate further below) or that top positions in the public sector continue to require significant sector-specific knowledge. Further, for administrative professionals we find a significant increase in sector mobility from the private to the public sector in both the conventional logit and the fixed-effects model, but we only establish a positive trend in the fixed-effects model for the reversed flows. It is somewhat puzzling that we do not find a strong and uniform increase in sector switching in both directions for these employees as they often are the aim of public management reforms.

Implications for Future Research

In addition to the increase in sector mobility, we have established that some flows, such as the mobility from the public to the private sector for top managers, have increased substantially, whereas mobility in the opposite direction for these employees remains at a stable level. Economics models could be used to explain such findings. The argument would be that an unemployed search for a job and accept the first job with a wage that exceeds the reservation wage. In some cases the employee would then continue searching for better jobs (Mortensen & Pissarides, 1999), which may move them across sectors. We know from the work of the Wage Commission (Lønkommissionen, 2010) that private-sector employees are paid more than public-sector employees on average and that over time wage bargaining has been decentralized such that private-sector companies have more discretion when setting pay. This may explain the significant increase in the flows from the public sector to the private sector for top managers.

To shed some light on the economic motivations for sector switching, we estimate the returns to within- and cross-sector mobility using a setup similar to that of Frederiksen, Halliday, and Koch (2012). That is, we take a sample of individuals who were continuously employed during the period 1991 to 2000 (i.e., ten years) and estimate the returns to mobility using a dynamic panel data model (see results in Table 5). The first model we estimate is a simple OLS model that contains dummies for the various types of employee mobility (job-to-job mobility in the private sector, job-to-job mobility in the public sector, sector switching from private to public, and sector switching from public to private) and control for a quadratic in age, six education-level dummies, dummies for industry at a nine-digit level, and year dummies. Because the same individuals are observed repeatedly in the sample, we cluster standard errors at the individual level. In the second model we improve upon the first model by accounting for temporary shocks.

Insert Table 5 about here

The results (Model 2) confirm the conclusions established by the Wage Commission in the sense that a sector switch from the private to the public sector is associated with a wage decrease of 6.6 percent and a switch from the public to the private sector implies wages that are five percent higher. The returns to cross-firm mobility in both the private and the public sector are much lower. From the wage results it becomes clear that there are obvious economic motivations for moving between sectors. But we also learned from the Wage Commission's work that job protection is higher in the public sector (in Figure 3 we found a lower job-separation rate in the public sector, which seems to confirm this) and that work hours are shorter. Hence, preferences for these aspects of the work life may cause mobility away from the private sector.

Further, evidence that motivations beyond wages may be important is presented in Table 6. When looking at the individuals working in the public sector in 2000, 15 percent have worked in the private sector during the previous five years, and almost 30 percent have worked in the private sector within the last ten years. These numbers for cross-sector experience are only slightly lower when looking at private-sector employees in 2000. Adding to this picture is that serial sector switchers are common. As many as 8 percent of the individuals who worked in the public sector in 2000 had, over a ten-year period, experienced a move from the public sector to the private sector and back. For those working in the private sector in 2000, 9 percent were serial sector switchers. Hence, cross-sector experience is pronounced, and even serial switching is at a significant level. Whether this mobility is driven exclusively by economic considerations or whether other forces are at play is certainly a relevant issue that should be addressed in future research. In this research it seems relevant to jointly model initial sector choice and subsequent sector switching in a setup that accounts for sector asymmetry and employee heterogeneity.

Insert Table 6 about here

Another path to pursue would be to look more deeply into NPM. In this paper, we have argued that our results are consistent with a gradual introduction of NPM. Further research is required, however, to test whether NPM *is* the mechanism behind the documented increase in sector switching. One way to do this would be to investigate how specific NPM reforms influence various subsectors or employee subgroups. By comparing how NPM initiatives influence different subsectors over time, it will be possible to construct a more direct test for NPM.

It is also important to stress that our empirical findings are established for Denmark—a country with a large public sector. Moreover, the differences between sectors in Denmark may be small compared to those of other countries due to Danish employment regulations, the social system, which is accessible to all (irrespective of sector of employment), and the public health care system. Further, attitudes toward the public sector in Denmark are fairly positive compared, for example, to attitudes of people in the United States to their public sector (Greve, 2006). For these reasons, it remains to be seen whether our findings extend to countries with relatively smaller public sectors and countries where people have a different view on the public sector.

Finally, we have made a contribution to the ongoing and prominent debate on sector differences within the public administration and public management research literature (Boyne, 2002; Baarspul & Wilderom, 2011). For instance, several organizational and management theorists have questioned the overall importance of the sector distinction. They argue that sector differences are based on simplistic stereotypes and that a more generic view is beneficial (see Rainey, 2009, for a review of this discussion). Our results may challenge this view, as they indicate that there may be important differences between sectors, illustrated, for example, by the large sector differences in the levels of job-to-job mobility and the substantial pay changes following a sector switch. Our results thus indicate that sector differences are present but also that some sector convergence is likely to have occurred since the 1980s as sector switching has become more prevalent.

Conclusion

The main finding of this paper is that there has been an increase in sector switching over the last decades. The increase in flows has occurred from the private to the public sector and from the public to the private sector. It is also established that sector switching has increased for managers and administrative professionals. Combining these findings with the fact that 18.5 percent of job-to-

job mobility involves a sector switch emphasizes the importance of this phenomenon in modern economies. Yet the motives behind sector switching and sector choice are not well understood. We hope that our study has clarified that research into this is warranted and that it will motivate new research that uncovers the mechanisms behind the increase in sector switching.

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Figure 1

Job Separation in Denmark from 1980 to 2006

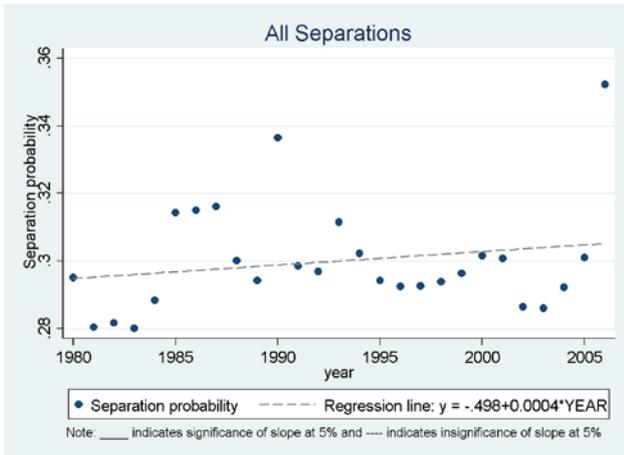


Figure 2

Job-to-Job Transitions in Denmark from 1980 to 2006

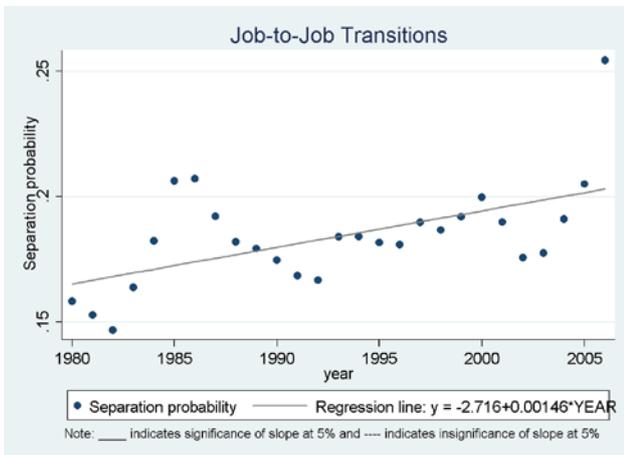


Figure 3

Job-to-Job Transitions in the Private and Public Sectors

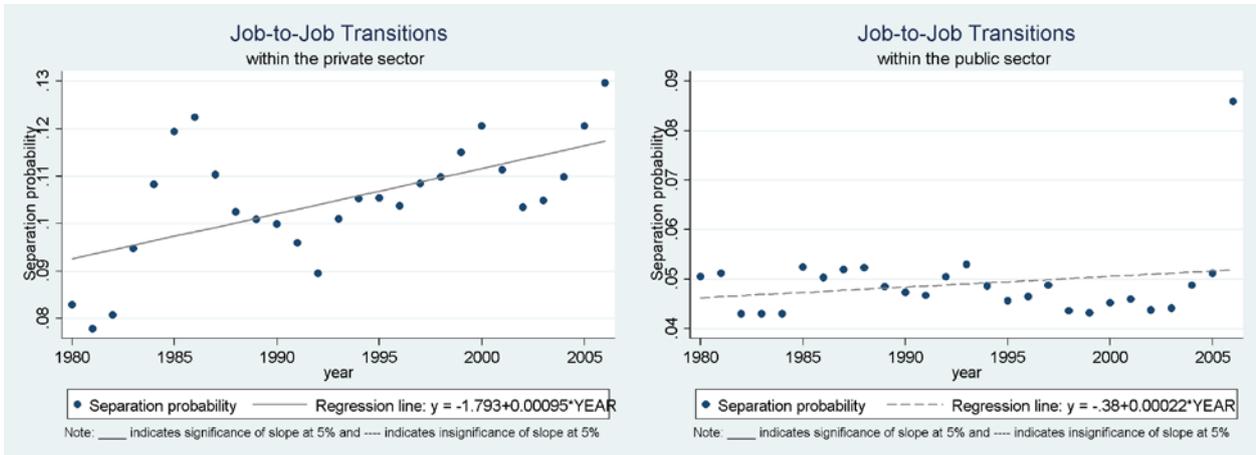


Figure 4

Sector Switching: Private to Public and Public to Private

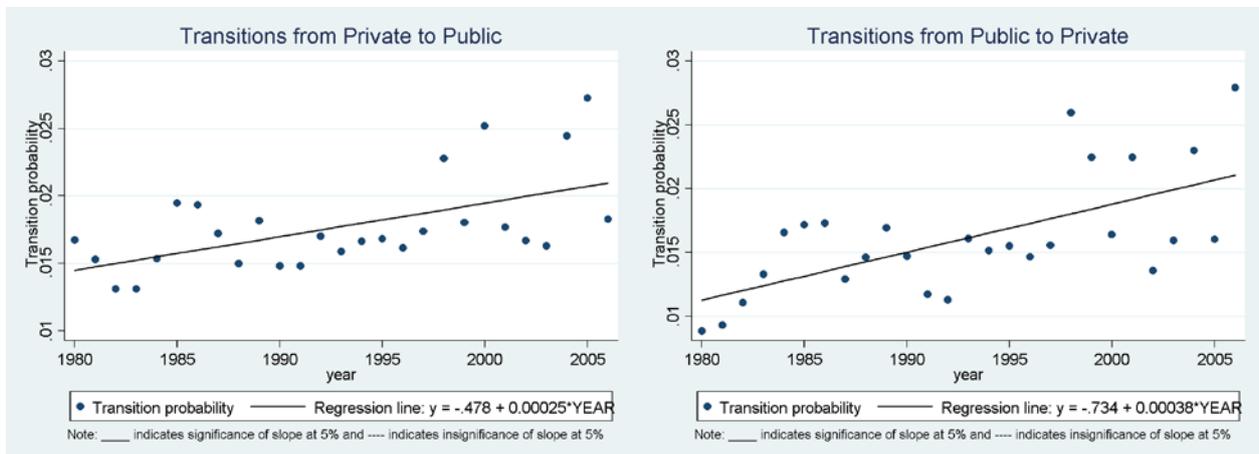


Figure 5

Managers' Sector Switching: Private to Public and Public to Private

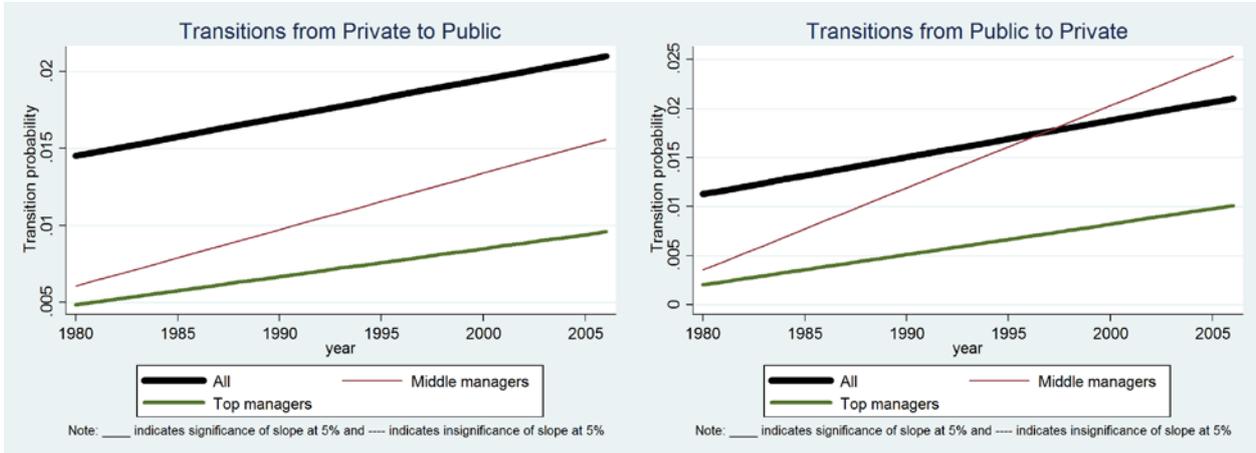


Figure 6

Administrative Professionals' Sector Switching: Private to Public and Public to Private

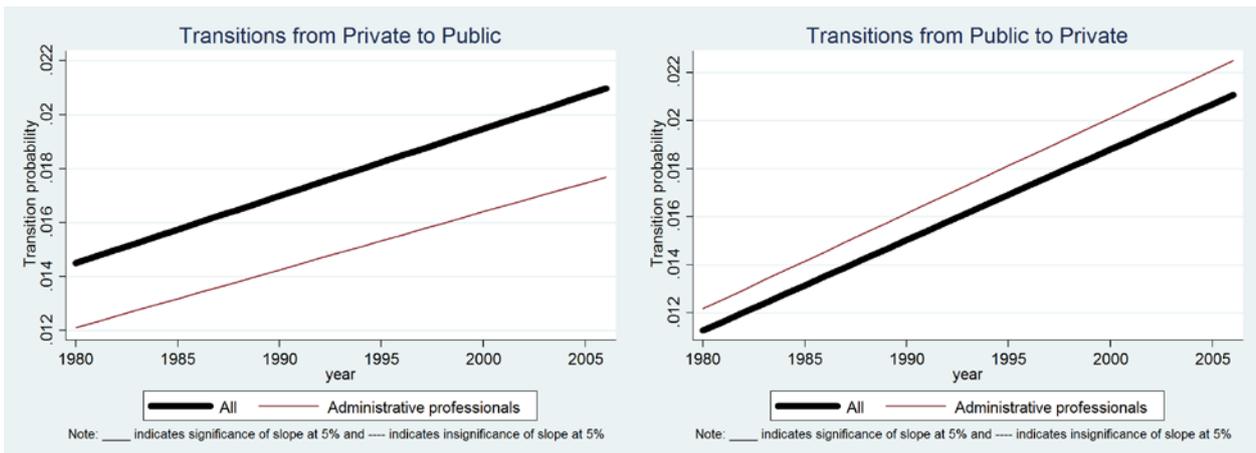


Table 1

Regression Models for Sector Switching

Part A	Private to public							
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6^l</i>	<i>Model 7</i>	<i>Model 8</i>
Year/100	0.028** (0.008)	0.023** (0.008)	0.025** (0.008)	0.018* (0.009)	0.016+ (0.009)	0.023** (0.008)	0.008 (0.010)	0.015* (0.007)
dGDP	-0.008 (0.034)	-0.010 (0.037)					-0.017 (0.047)	
dGDP lagged		0.047 (0.032)					0.021 (0.032)	
dGDP lead		-0.026 (0.037)					0.039 (0.044)	
All separations			0.004 (0.037)				-0.000 (0.056)	
Job-to-job separations				0.050 (0.033)			0.140+ (0.075)	0.114** (0.034)
Unemployment rate/100					-0.052+ (0.030)		-0.000 (0.000)	
Ratio of public expenditure to GDP						-0.057 (0.063)	0.044 (0.118)	
Constant	-0.531** (0.156)	-0.448* (0.160)	-0.476** (0.148)	-0.343* (0.166)	-0.293 (0.176)	-0.426* (0.156)	-0.182 (0.219)	-0.301* (0.137)
N	26	24	27	27	27	27	24	24
Adj. R-square	0.293	0.250	0.265	0.330	0.345	0.289	0.422	0.493

Note: Time period is 1980 to 2006. Significance levels (two-sided): ** p<.01, * p<.05, + p<.10.¹ The alternative specification using growth in public spending as an explanatory variable produces similar results.

Part B	Public to private							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6 ¹	Model 7	Model 8
Year/100	0.030** (0.009)	0.034** (0.010)	0.034** (0.009)	0.019* (0.009)	0.030* (0.011)	0.036** (0.010)	0.013 (0.013)	0.022* (0.009)
dGDP	0.048 (0.039)	0.061 (0.047)					0.081 (0.061)	
dGDP lagged		0.038 (0.040)					0.009 (0.041)	
dGDP lead		-0.0460 (0.046)					0.049 (0.058)	
All separations			0.084+ (0.043)				0.030 (0.073)	
Job-to-job separations				0.125** (0.034)			0.113 (0.097)	0.130** (0.045)
Unemployment rate/100					-0.046 (0.039)		-0.000 (0.000)	
Ratio of public expenditure to GDP						-0.062 (0.080)	-0.031 (0.154)	
Constant	-0.590** (0.177)	-0.668** (0.203)	-0.692** (0.173)	-0.394* (0.175)	-0.571* (0.227)	-0.677** (0.196)	-0.261 (0.284)	-0.452* (0.184)
N	26	24	27	27	27	27	24	24
Adj. R-square	0.324	0.292	0.447	0.587	0.394	0.375	0.426	0.458

Note: Time period is 1980 to 2006. Significance levels (two-sided): ** p<.01, * p<.05, + p<.10. ¹ The alternative specification using growth in public spending as an explanatory variable produces similar results.

Table 2

Logit Models for Sector Switching

Part A	Private to public					
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>
Year	0.008*** (0.000)	0.011*** (0.000)	0.007*** (0.000)	0.004*** (0.000)	0.008*** (0.000)	0.002*** (0.000)
dGDP		0.506*** (0.010)	0.389*** (0.010)			0.502*** (0.011)
dGDP lagged			0.271*** (0.011)			0.191*** (0.012)
dGDP lead			-0.427*** (0.011)			-0.382*** (0.011)
Unemployment rate/100				-0.020*** (0.001)		-0.027*** (0.001)
Ratio of public expenditure to GDP					-4.703*** (0.121)	-4.624*** (0.124)
N	35,794,864					

Note: Time period is 1980 to 2006. Significance levels (two-sided): ** p<.01, * p<.05, + p<.10. Standard errors are clustered at the level of the individual. All models control for the large set of covariates described in Footnote 3.

Part B	Public to private					
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>
Year	0.042*** (0.000)	0.039*** (0.000)	0.039*** (0.000)	0.032*** (0.000)	0.041*** (0.000)	0.030*** (0.000)
dGDP		-0.493*** (0.010)	-0.399*** (0.011)			-0.225*** (0.011)
dGDP lagged			0.369*** (0.013)			0.308*** (0.014)
dGDP lead			0.339*** (0.012)			0.432*** (0.013)
Unemployment rate/100				-0.044*** (0.001)		-0.047*** (0.001)
Ratio of public expenditure to GDP					-5.690*** (0.132)	-5.144*** (0.137)
N	23,152,172					

Note: Time period is 1980 to 2006. Significance levels (two-sided): ** p<.01, * p<.05, + p<.10. Standard errors are clustered at the level of the individual. All models control for the large set of covariates described in Footnote 3.

Table 3

Fixed-effects Logit Models for Sector Switching

	Private to public		Public to private	
	Logit	Fixed-effects logit	Logit	Fixed-effects logit
Year	0.002***	0.013***	0.030***	0.011***
	(0.000)	(0.001)	(0.000)	(0.001)

Note: The “logit models” are identical to those presented in Table 2 (Model 6), and they are presented again for convenience. Standard errors are clustered at the level of the individual. All models control for the large set of covariates described in Footnote 3.

Table 4

Logit Models for Sector Switching

		Public to private			Private to public		
		<i>Middle managers</i>	<i>Top managers</i>	<i>Administrative professionals</i>	<i>Middle managers</i>	<i>Top managers</i>	<i>Administrative professionals</i>
Logit	Year	0.019***	0.016***	0.002	0.041***	0.004	0.041***
		(0.001)	(0.003)	(0.003)	(0.001)	(0.005)	(0.003)
Fixed-effects logit	Year	0.037***	0.226***	0.094***	0.038***	-0.002	0.066**
		(0.005)	(0.074)	(0.025)	(0.006)	(0.039)	(0.027)
N		4,488,112	718,915	132,634	6,904,228	255,118	230,537

Note: Time period is 1980 to 2006. Significance levels (two-sided): ** $p < .01$, * $p < .05$, + $p < .10$. Standard errors are clustered at the level of the individual. All models control for the large set of covariates described in Footnote 3.

Table 5

Within and Cross-Sector Mobility and Earnings Growth

<i>Dependent variable:</i> <i>Change in real log labor income</i>	<i>Model 1</i>	<i>Model 2</i>
Sector switch from private to public	-0.031** (0.002)	-0.066** (0.002)
Sector switch from public to private	0.076** (0.002)	0.050** (0.002)
Job change in the public sector	0.016** (0.001)	0.005** (0.001)
Job change in the private sector	0.009** (0.000)	-0.00 (0.001)
<i>Age/10</i>	-0.196** (0.001)	-0.182** (0.001)
<i>Age²/100</i>	0.020** (0.000)	0.017** (0.000)
<i>Labor income growth (t-1)</i>		-0.242** (0.001)
<i>Labor income growth (t-2)</i>		-0.123** (0.001)
<i>Labor income growth (t-3)</i>		-0.049** (0.001)
<i>Constant</i>	0.372** (0.021)	0.297** (0.036)
<i>R-squared</i>	0.039	0.082
<i>Observations</i>	9,381,485	6,252,109
<i>Cochran-Orcutt (H₀:zero autocorrelation in errors)</i>	-0.197	-0.001
<i>P-value</i>	(< 0.001)	(0.416)

Note: Significance levels (two-sided): ** p<.01, * p<.05, + p<.10. All regressions control for six education-level dummies as well as nine industry dummies and year dummies.

Table 6

Serial Switchers and Cross-Sector Experience

<i>Data: Working individuals in 2000 and their 5- or 10-year employment histories</i>	Individuals working in the public sector in 2000		Individuals working in the private sector in 2000	
	All individuals	Continuously employed individuals	All individuals	Continuously employed individuals
<i>5-year employment history:</i>				
Cross-sector experience	0.15	0.11	0.11	0.10
Serial sector switcher	0.03	0.03	0.03	0.03
<i>10-year employment history:</i>				
Cross-sector experience	0.29	0.14	0.19	0.13
Serial sector switcher	0.08	0.04	0.09	0.06

Note: Employees with cross-sector experience have been observed to work in the opposite sector in the observation period. Serial sector switchers have moved from the current sector to the opposite sector and back during the observation period. In 2000 there were 865,910 individuals working in the public sector and 1,484,625 individuals working in the private sector.

Appendix

Table A1

Detailed Descriptive Statistics

Year	Job separations as a proportion of employment	Private-to-public sector switching	Public-to-private sector switching	Job-to-job mobility as a proportion of employment	Private-to-public sector switching as a proportion of job-to-job mobility	Public-to-private sector switching as a proportion of job-to-job mobility	Sector switching as a proportion of job-to-job mobility	GDP in DKK millions	Unemployment rate	Ratio of public expenditure to GDP
1980	0.295	0.017	0.009	0.158	0.106	0.056	0.162	392,875	6.6	0.271
1981	0.280	0.015	0.009	0.153	0.100	0.061	0.161	430,068	8.7	0.280
1982	0.282	0.013	0.011	0.147	0.089	0.075	0.165	491,088	9.3	0.284
1983	0.280	0.013	0.013	0.164	0.080	0.081	0.161	541,428	10.0	0.276
1984	0.288	0.015	0.017	0.182	0.084	0.091	0.175	597,727	9.6	0.257
1985	0.314	0.019	0.017	0.206	0.095	0.083	0.178	648,540	8.6	0.253
1986	0.315	0.019	0.017	0.207	0.093	0.083	0.177	698,783	7.5	0.242
1987	0.316	0.017	0.013	0.192	0.090	0.067	0.157	734,418	7.5	0.253
1988	0.300	0.015	0.015	0.182	0.082	0.080	0.163	762,213	8.3	0.258
1989	0.294	0.018	0.017	0.179	0.101	0.094	0.196	804,549	9.1	0.254
1990	0.337	0.015	0.015	0.175	0.085	0.084	0.169	840,648	9.3	0.251
1991	0.299	0.015	0.012	0.169	0.088	0.069	0.157	874,363	10.1	0.253
1992	0.297	0.017	0.011	0.167	0.102	0.068	0.170	906,595	10.9	0.253
1993	0.312	0.016	0.016	0.184	0.086	0.087	0.174	911,809	11.9	0.264
1994	0.302	0.017	0.015	0.184	0.090	0.082	0.173	976,945	11.8	0.255
1995	0.294	0.017	0.016	0.182	0.093	0.085	0.178	1,019,545	9.8	0.252
1996	0.293	0.016	0.015	0.181	0.089	0.081	0.171	1,069,488	8.2	0.254
1997	0.293	0.017	0.016	0.190	0.092	0.082	0.174	1,125,641	7.3	0.250
1998	0.294	0.023	0.026	0.187	0.122	0.139	0.261	1,163,616	6.0	0.256
1999	0.296	0.018	0.022	0.192	0.094	0.117	0.211	1,213,473	5.2	0.257
2000	0.302	0.025	0.016	0.200	0.126	0.082	0.208	1,293,964	4.9	0.251
2001	0.301	0.018	0.022	0.190	0.093	0.118	0.212	1,335,611	4.7	0.257
2002	0.287	0.017	0.014	0.176	0.095	0.077	0.172	1,372,737	4.8	0.262
2003	0.286	0.016	0.016	0.177	0.092	0.090	0.182	1,400,689	5.8	0.265
2004	0.292	0.024	0.023	0.191	0.128	0.120	0.248	1,466,180	5.8	0.265
2005	0.301	0.027	0.016	0.205	0.133	0.078	0.211	1,545,257	5.1	0.260
2006	0.352	0.018	0.028	0.254	0.072	0.110	0.182	1,631,659	3.9	0.259