Journal of Urban Economics 79 (2014) 91–107

Contents lists available at SciVerse ScienceDirect

Journal of Urban Economics

www.elsevier.com/locate/jue

The effect of public sector employment on local labour markets ☆

Giulia Faggio [a], Henry Overman [b,*]

[a] Spatial Economics Research Centre, London School of Economics, United Kingdom
[b] Department of Geography and Environment, Spatial Economics Research Centre, London School of Economics, United Kingdom

ARTICLE INFO

Article history:
Available online 31 May 2013

JEL classification:
H70
R12

Keywords:
Local labour markets
Public and private sector employment
Wages

ABSTRACT

This paper considers the impact of public sector employment on local labour markets. Using English data at the Local Authority level for 2003–2007 we find that public sector employment has no identifiable effect on total private sector employment. However, public sector employment does affect the sectoral composition of the private sector. Specifically, each additional public sector job creates 0.5 jobs in the non-tradable sector (construction and services) while crowding out 0.4 jobs in the tradable sector (manufacturing). When using data for a longer time period (1999–2007) we find no multiplier effect for non-tradables, stronger crowding out for tradables and, consistent with this, crowding out for total private sector employment.

1. Introduction

This paper considers the impact of public sector employment on local labour markets. When a new job is created in an area, additional jobs may be generated as a result of increased demand for locally produced goods and services. This positive effect on employment may be offset by general equilibrium effects induced by changing local wages or prices (Moretti, 2010). In other words, the 'multiplier effect' of the additional jobs may be offset by 'displacement' or 'crowding out' elsewhere in the local economy. For public sector employment these effects may be complicated by the existence of a private–public pay differential and the fact that the increase in employment may be funded through additional local taxes.

In this paper we clarify some of the conceptual issues concerning the impact of public sector employment on local labour markets. However, our main focus is on obtaining empirical estimates of the effects using data on employment for English Local Authorities. We consider the impact of public sector employment growth on private sector employment growth as well as other labour market indicators (unemployment, participation and working age population). Our preferred specification using changes from 2003–2007 implies a short run overall multiplier that is insignificantly different from zero. Public sector employment has little effect on total private sector employment in the short run. In contrast, in line with predictions from a basic conceptual framework, we find evidence of a multiplier effect for non-tradable sectors and a displacement effect for tradable sectors. Our preferred specification implies that each additional public sector job creates 0.5 jobs in the non-tradable sector (construction and services) while crowding out 0.4 jobs in the tradable sector (manufacturing). For a longer time period (1999–2007) we find no multiplier effect for non-tradables, stronger crowding out for tradables and, consistent with this, crowding out for total private sector employment.

These effects are of considerable policy interest. The relocation of public sector employment is sometimes suggested as a tool for helping address employment problems in declining areas. Offsetting this, it is argued that public sector employment (and associated private-public pay differentials) may crowd out the private sector. In the UK, these issues have recently been considered in two government-sponsored reviews (Lyons, 2004; Smith, 2010). They have also provided the background to a series of relocation exercises since World War 2 (Jefferson and Trainor, 1996). Notwithstanding the attention given by successive UK governments to the subject, no robust evidence of the empirical effects are available. In the UK, continued interest in these issues partly reflects concerns over the uneven spatial impact of public sector job cuts (Larkin, 2009; Webber and Swinney, 2010) but also interest in the wider impacts of moving from national to local (or 'market facing') pay.[1]

Surprisingly, to the best of our knowledge, this issue has been the subject of little (if any) systematic analysis. Since the late

☆ Helpful comments have come from two referees, seminar participants at LSE, ERSA, NARSC, the 2nd Barcelona Workshop in Urban Economics and, in particular, from Jan Brueckner, Paul Cheshire, Gilles Duranton, Steve Gibbons and Etienne Wasmer. Financial support is from BIS, ESRC and WG through the Spatial Economics Research Centre.

* Corresponding author.
E-mail address: h.g.overman@lse.ac.uk (H. Overman).

[1] See the December 2011 letters from the UK Chancellor to the Pay Review Bodies available from http://www.ome.uk.com/Article/Detail.aspx?ArticleUid=dfd0267d-9c7d-421b-80ba-71db9232f4b9.

0094-1190/$ - see front matter © 2013 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.jue.2013.05.002

1960s, a series of studies for both the UK and other (mostly European) countries have assessed the case for public sector relocation from capital cities to less-developed areas.[2] However, these studies focus on the financial costs and benefits of relocation and provide little empirical evidence on impacts on local labour markets. Indeed, descriptive evidence on the impact of past relocations is usually restricted to discussion of secondary data on overall public sector employment rather than actual data on government office relocations. This broadly descriptive literature incorporates academic papers (see, e.g., Marshall et al., 1991); government sponsored reviews (see, Lyons, 2004; Smith, 2010) and a small number of consultancy studies (see, e.g., Experian, 2004; Deloitte, 2004). BIS (2010) does consider the impact of public sector employment on private sector employment using a panel of data for English NUTS 3 regions from 2003 to 2008. We improve on those estimates by focusing on differences (i.e. changes over time), adopting an appropriate functional form and instrumenting to deal with the problems of endogeneity and reverse causality. As we show below dealing appropriately with the latter problem is crucial for understanding the impact of higher public sector employment.

Ex-ante *predictions* of the impact of public sector employment can be constructed using methods developed in the extensive literature on regional input–output models. These models use input–output tables to trace through the way in which local supply is likely to respond to an increase in economic activity. Such models usually provide a range of different multipliers but because they assume prices are fixed ignore any general equilibrium constraints that might lead to crowding out. Miller and Blair (2009) provide a classic textbook treatment. The US Bureau of Economic Analysis RIMS II is one of the best known and most widely used applications.[3] Regional computable general equilibrium (CGE) models impose more theoretical structure to try to address the problems arising from the fixed-price assumption inherent in input–output models. Such regional CGE models are fitted to data that has been adjusted so as to be consistent with the underlying theoretical model (a process known as calibration). See Partridge and Rickman (2010) for a recent survey. Input–output and CGE models have been widely used to *predict* the impact of local demand shocks but neither approach provides estimates of the actual impact of such changes.[4]

In the macro-economic literature, a limited number of studies have looked at the potential impact of public sector employment on labour market outcomes (e.g., unemployment and private employment). Using data for 22 OECD countries from the end of the 1960s to 1990, Edin and Holmlund (1997) find that a rise in public sector employment reduces unemployment by about 0.3% in the short-run, whereas there is no significant long-run effect.[5] When looking at the Swedish experience (with longer time series data), they find that the rapid growth in public sector employment in Sweden over the 1960s and the 1970s contributed to the low Swedish unemployment rate during those years. Their estimates indicate that the effect was at most one percentage point of unemployment during the booming years and much smaller after that.

Boeri et al. (2000) estimate that 10 additional public jobs crowd out 3 private jobs using a sample of 19 industrialised OECD countries over the period 1985–1992. Algan et al. (2002) focus instead on the long-run effects of public sector employment on both unemployment and private sector employment using a panel of 17 OECD countries between 1960 and 2000. They find that a rise in a country's public sector employment increases that country's unemployment. Furthermore, they find that public sector employment had, on average, a strong crowding out effect on private employment: creation of 10 public sector jobs tend to destroy 15 private sector jobs.[6] Although interesting, these estimates do not take into account, or do not solve in a satisfactory manner, possible problems arising from reverse causality or endogeneity.

Moretti (2010) does attempt to isolate the causal impact of local employment changes and is the paper most closely related to our own work. Using US Census of Population data for 1980, 1990 and 2000, he looks at the long-term change in the number of jobs in a city's tradable and non-tradable sectors caused by a permanent shock in the tradable sector. Results suggest a positive local multiplier of tradables on non-tradables (of about 1.6), but no impact of employment changes in one part of the tradable sector on the rest of the tradable sector. In contrast to our focus here, Moretti's definition of the non-tradable sector specifically excludes government jobs (along with those in agriculture, mining and the military). Thus, his paper is only concerned with multiplier effects between tradable and non-tradable components of the private sector.

Our work is also closely related to the migration literature, a popular strand of which considers the possible displacement effect of immigrants on natives using cross-regional (city or census track) data.[7] As we are also interested in the possibility of displacement (or a crowding-out effect) – but of public sector employment on private sector activity – it is possible to draw a parallel between the two approaches: one linking immigrants and natives, the other linking public and private sector employment. Indeed, our methodology uses an adapted version of that commonly found in the migration literature (specifically we use a version of Card's (2007) model adjusted to take into account improvements as suggested by Peri and Sparber (2011)).

Other related research documents the large share of public sector workers in the economy (ranging from 17% of total employment in the US to about 22% in Western Europe); the sorting and substantial movement of workers between the private and public sector (see Borjas, 2002); the existence of a public–private wage differential and its evolution over time (see, among others, Nickell and Quintini, 2002; Disney and Gosling, 2008 for the UK); and the impact of public investment on local employment and wages (Pissarides and Wasmer, 1999).

Theoretical work considering the interaction between public and private sectors within a local labour market is scarce. To the best of our knowledge, Burdett (2012) is the only study that presents an equilibrium search model of the labour market where a public sector is explicitly modelled.[8] Under a reasonable set of

[2] See, among others, Hammond (1967), Jefferson and Trainor (1996), Marshall et al. (2005a, 2005b), Marshall (2007) for the UK; Daniels (1985), Clark (1998), and Guyomarch (1999) for France; Cochrane and Passmore (2001), Haeussermann and Kapphen (2003) for Germany; Myung-Jin (2007) for Korea.

[3] See http://www.bea.gov/regional/rims/.

[4] In the UK, such IO/CGE approaches have been used to predict the impact of government relocations. Ashcroft and Swales (1982a,1982b) predict the impact of two relocations to Cleveland and to South Glamorgan, while Ashcroft et al. (1988) consider a further dispersal to East Kilbride. The latter predicts an employment multiplier of 1.14 in the short-run with the long-run impact predicted to be 10% higher.

[5] Edin and Holmlund (1997) argue that as wages and prices adjust, public sector employment would crowd out private sector employment with no impact on equilibrium long-term unemployment.

[6] This crowding out effect of public employment on private jobs depends importantly on the degree of public/private production substitutability (i.e., both public and private sectors competing in education, health and transport services) and on the size of job rents in the public sector (i.e., the potential misuse of public power for private benefits). Only for countries with a higher level of substitutability and/or higher public rents are the crowding-out effects significant and public sector employment significantly increases unemployment.

[7] See, among others, Borjas (2006), Card (2001, 2007), Card and DiNardo (2000), Cortes (2008); and Peri (2011).

[8] In the macro-economic literature, Holmlund (1997) presents a model where the size of the public sector matters for equilibrium unemployment. In his model, a rise in public sector employment reduces unemployment only if unions have weaker bargaining power in the public sector than in the private sector.