



# Does federal contracting spur development? Federal contracts, income, output, and jobs in US cities<sup>☆</sup>



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## ABSTRACT

Firms and governments alike frequently court federal government contracts to generate more jobs and trigger economic growth. However, the employment and output impact of government contracts remains controversial. We use georeferenced data on United States (US) federal contracts, distinguishing between the location of the recipient and the location of the activity, for the years 2005–2014 in order to assess the employment and output impacts of federal contracting in metropolitan areas of the US. We resort to a shift-share instrument and precise location-specific fixed effects to estimate the causal impact of spending. Cities that receive more contract expenditure witness an expansion in output – with contracts generating \$1.4 per dollar spent – but experience only modest increases in employment. The impact is also constrained geographically and short-lived. The results suggest that, on average, the effects of federal contracting on local economies are modest, meaning that attracting federal contracts may not be an effective urban development strategy.

## 1. Introduction

In the fiscal year 2016, the US federal government awarded a total of \$409,229,751,215 in contracts above a \$3,000 threshold. These contracts financed essential public goods and services required for the economy to operate and for society to function. They were granted to firms across the US and were expected to create jobs and stimulate production in recipient firms and locations. Presidential economic advisors have viewed federal contracting as a development tool: a multiplier of \$1.6 in output was expected for every dollar of government spending [see the motivation for the 2009 fiscal stimulus package proposed by President Obama ([Economist, 2009](#))].

However, it was not only firms that pursued government contracts. As federal contracts are expected to generate jobs and trigger economic growth, local decision-makers have also actively courted them. As a norm, US Senators regularly use their websites to advertise successes in securing federal funding for their home states. Yet, the economic development impact of these contracts remains shrouded in mystery. The reasons for this are twofold. First, the effect of federal contracts on the development of cities and states has attracted relatively little interest despite the volume of funds disbursed. Second, the results of research

examining the geographical impact of federal intervention – through grants, subsidies and, to a much lesser extent, contracts – are far from homogenous. In terms of job generation, \$35,000 has been often quoted as the public expenditure needed to create a new job ([Ramey, 2011](#)). However, the range is vast: from \$25,000 to \$125,000 ([Shoag, 2013](#); [Wilson, 2012](#)). Similarly, various spatial quantitative analyses have suggested that the multiplier effect associated with government contracts may be as low as 0.5 or as high as 2.4 ([Nakamura and Steinsson, 2014](#); [Fishback and Kachanovskaya, 2010](#); [Clemens and Miran, 2012](#)).

This paper delves into the economic impact of federal contracts across urban areas in the US between 2005 and 2014. It exploits contract-level data to estimate the impact of federal contract spending on urban employment and GDP. The analysis also draws a distinction between where, on the one hand, the firm benefitting from the contract is located (recipient location) and where, on the other, the activity related to the contract takes place (location of the activity). The high granularity of the data collected allows us to go beyond previous literature and analyze the impact of national expenditure decisions as an exogenous source of variation in local contract expenditure at a city level. Moreover, we are able to control, in a more precise way than hitherto, for localized economic circumstances as well as for state-level political rep-

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resentation. These are factors that may otherwise bias the estimates of the GDP and employment impacts of public spending.

The results of the analysis show that federal contracting is a non-negligible driver of urban growth in the US. One dollar of federal contract spending generates close to \$1.4 in additional GDP. Output and employment increase in cities that benefit from more federal contract spending per capita. The employment effects are, however, lower than related studies suggest. Output changes are more often realized not in the cities where the contract is executed, but rather in those where the recipient firms are established. By contrast, cities where the contracts are executed witness moderate increases in employment.

Overall, our analysis suggests that the economic outcomes associated with federal contracts – once reverse causality and spurious trends are controlled for – are small and short-lived. No measurable output effects remain in evidence two years after a contract is awarded. Likewise, the output effects of federal contracts outside the location of expenditure are virtually negligible.

## 2. Public intervention and wages, jobs, and output

Government contracting is frequently regarded as a tool for economic development. Firms and local decision-makers lobby central or federal governments for contracts. However, the economic impact of public contract expenditure at the regional or urban scale has so far attracted limited attention and consequently remains poorly understood, especially in relationship to the greater scholarly interest in grants and subsidies.<sup>1</sup>

In this paper, we explore this question by linking our research to two strands of literature. First is the large body of literature estimating the output multipliers and employment impacts of fiscal spending. Our contribution to this strand is derived from our measurement of federal contract expenditure and our focus on urban outcomes. Second, the paper relates to research on the local employment, wage, and production impacts of public policies and to geographically targeted policies, such as spatial subsidies or zoning, aimed at attracting firms and creating jobs. While the territorial unit of analysis employed here is comparable to such studies, we examine a different kind of public spending: federal contracts. These contracts cater to public demand and are not motivated by the development of specific areas. They are awarded through competitive tenders and generally not targeted to individual firms or areas. Importantly, federal contract expenditure in the US is far larger than the budget for location-specific incentives.

### 2.1. Spatial variation in public expenditure, jobs, and output

Several recent papers have employed spatial variation in US public spending to identify job and output effects. The estimated job impacts vary with the identification strategy used. [Suárez Serrato and Wingender \(2016\)](#) used exogenous shocks to spending resulting from changes in county population and reported that every \$30,000 in spending creates one additional job. Allocation rules in fiscal spending – e.g., those related to the American Recovery and Reinvestment Act (ARRA) – have also been used as a source of exogenous variation in spending across states. Instrumenting state-level spending with ARRA allocation rules, [Wilson \(2012\)](#) estimated that a job is created for every \$125,000 spent. [Feyrer and Sacerdote \(2011\)](#) considered the impact of actual ARRA spending (including grants and loans) on employment-to-population ratios at the state and county level over 20 months of the program. Exploiting the years served by the local congressional delegation as an exogenous predictor of the amount of ARRA spending channeled to a specific location, they calculated that the creation of an additional job requires

<sup>1</sup> Focusing on federal contracting in cities has, nevertheless, advantages relative to research at a larger geographical scale, as the urban dimension permits methodologies for the identification of causal impacts of contract expenditure that are unavailable at larger territorial level.

between \$43,000 and \$100,000 of public spending at the state level, and between \$500,000 and \$3.3 million at the county level. [Chodorow-Reich et al. \(2012\)](#) similarly examined exogenous spending due to allocation rules and put the job cost at \$26,000. [Shoag \(2013\)](#) investigated state variation in public expenditure arising from (exogenous) financial shocks to state pension funds, calculating the cost per job at \$23,000. These job impact estimates have generally focused on employment changes within a particular state, ignoring the spatial impact of expenditure.

Subnational analyses have considered the output increase attributable to one dollar of public expenditure – the multiplier – to range between \$1.1 and \$2, although there are significant deviations. [Nakamura and Steinsson \(2014\)](#) explained state-level GDP per capita on the basis state-level military spending, using quarterly data between 1966 and 2006 and instrument military spending using a shift-share approach. They reported a multiplier of military spending on output of 1.4 for states (reaching 1.8 for census regions), which rises to 2.4 with the shift-share instrument. Similarly, [Shoag \(2013\)](#) found that the multiplier on state spending identified from pension fund return shocks is also 1.4. Higher multipliers (between 1.7 and 2) have been revealed by [Suárez Serrato and Wingender \(2016\)](#). Conversely, [Fishback and Kachanovskaya's \(2010\)](#) analysis of the New Deal grants at the state-level during the 1930s and 1940s yielded a significantly lower multiplier (1.1). Their estimates of the effects of government purchases (excluding direct transfers) rise to \$1.8, although the confidence intervals are wide. When accounting for the taxation financing expenditure, the multiplier may be lower – [Clemens and Miran \(2012\)](#), for example, show that balanced-budget multipliers can fall well below 1 – around 0.4.

Different multipliers on output and costs per employment have also been reported by the literature on local incentives, subsidies and zones. Firm subsidies and tax incentives are deemed to lead to increases in wages and employment, although the estimated impacts vary by methodology, program and location (cf. [Greenstone et al., 2010](#); [Ham et al., 2011](#); [Neumark and Simpson, 2015](#)). These multipliers are, however, less intimately related to our analysis, as such research concentrates on types of public spending that pursue different aims.

### 2.2. Going beyond past research

The paper takes the literature on spatial variation in public expenditure, jobs, and output as a starting point, but goes beyond existing knowledge on two counts. First, we focus on a significant source of public spending which has been neglected at the urban level. Much of the relevant urban-oriented work that precedes our research focuses on grants, subsidies, and general investment and development programs that purposely target job creation and production in specific geographical areas. The influence of public contracting on economic development has been largely ignored. The distinction between government subsidies or grants, on the one hand, and federal contracting, on the other is, however, important. Government contracting leads to the acquisition or production of public goods and services and investment. Local development is thus a side-effect or a byproduct. Subsidies and economic zone interventions are explicitly designed to promote development in specific areas. Because of this difference, the local effects of public contracts per dollar spent are conceivably smaller than those associated with public subsidies.<sup>2</sup> However, funds earmarked for public contracting tend to exceed those deployed as grants and subsidies, meaning that, despite a

<sup>2</sup> Public contracting is not mainly directed towards areas where the potential resources are under-utilized and therefore can crowd out private demand. Government contracts in some cases may also play a distinctive development role: competitions for contracts can take into account the city of the bidding firm. As that adds a different (political) motivation to the contract award, the impact may differ. Unfortunately, our dataset does not record that motivation. We design the empirical strategy to avoid that political targeting conflates with our causal interpretation of the impact of expenditure.

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