Journal of Urban Economics 86 (2015) 98–110

Contents lists available at ScienceDirect

Journal of Urban Economics

www.elsevier.com/locate/jue

Organized crime and business subsidies: Where does the money go?

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ARTICLE INFO

Article history:
Received 20 March 2014
Revised 8 January 2015
Available online 22 January 2015

JEL classification:
H4
K4
O17

Keywords:
Business subsidies
Organized crime
Public transfers
Corruption

ABSTRACT

Business support policies are widespread in advanced countries, to foster employment and productivity. This paper analyses the role of organized crime in the allocation of public subsidies to businesses. We assemble an innovative data set on the Italian mafia at municipality level and test whether mafia-ridden municipalities receive a disproportionally higher amount of funds. We exploit exogenous variation at municipality level to instrument mafia activity and show that the presence of organized crime positively affects the probability of obtaining funding and the amount of public funds. Organized crime is also found to lead to episodes of corruption in the public administration sector. A series of robustness checks confirms the above findings.

1. Introduction

Business support policies are widespread in advanced countries, reflecting a general consensus about their ability to stimulate employment and productivity, especially in lagging areas. In 2012, the 27 EU countries spent €67bn on state aids (excluding those related to the financial crisis).[1] US state and local governments spend about $30–$40bn yearly on local development policies (Moretti, 2011). In recent years, such a huge amount of public funds has naturally been calling for rigorous counterfactual evaluations of these policies.

This paper proposes a complementary perspective: we study whether organized crime diverts public transfers to firms. This issue is particularly relevant because public subsidies to businesses are often framed within broader, place-based policies aimed at boosting economic activity in lagging areas and, at the same time, organized crime is more pervasive in underdeveloped regions. Additionally, by shedding light on the role of the quality of local governance in shaping the allocation of public aids, the issue we analyze is also high on the current policy agenda (Barca, 2009). Not surprisingly, the management of the EU cohesion policy 2014–2020 stresses the role of institutions and the quality of government in assigning funds.

We assemble an innovative dataset on crime at the municipality level in the Italian context. The Italian case is a relevant environment for this study for two reasons. First, the Italian mafia is an exemplar case and serves as a window into other types of criminal organizations that are embedded in the political and socio-economic spheres. Second, among developed countries, Italy is one of the countries most strongly affected by organized crime, as the mafia is diffusely present in at least 4 of the 20 Italian regions.

Mafia presence is measured using a unique and original data set made available by the Italian Ministry of the Interior, which provides detailed information on crime at municipality level during the period 2004–2009. In particular, we exploit the information provided by Article *416-bis* of the Italian Penal Code that regulates mafia-related crimes. We test the impact of the mafia in affecting the allocation of public subsidies to businesses, which are measured with the municipality-level funds granted through Law 488/92. This law has, for many years, been the main policy instrument used to reduce territorial disparities in Italy, by offering a subsidy to businesses willing to invest in poorer regions.

The law governing funding allocation had very detailed and specific criteria to assign funds, in order to reduce the risk of fraud

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[1] *Source:* European commission (http://ec.europa.eu/competition/state_aid/scoreboard/non_crisis_en.html).

http://dx.doi.org/10.1016/j.jue.2015.01.002
0094-1190/

(Bronzini and de Blasio, 2006). Nonetheless, according to investigative reports (Direzione Investigativa Antimafia, various years; Guardia di Finanza; Financial Times, 2010), organized crime found its way to circumvent these provisions. Public transfers might have been diverted through a number of accounting and financial mechanisms, including the creation of fictitious firms, which existed only on paper and whose sole purpose was to apply for public funding. Moreover, organized crime was also involved in the corruption of, or threatening, public officials who had different responsibilities in the allocation of funds.

In order to give a causal interpretation of the relationship between organized crime and public funding, endogeneity must be taken into account. It may arise due to omitted variables, measurement error and reverse causality. In order to deal with it, we focus our analysis on Sicily and explore the origins of the Sicilian mafia. Gambetta (1993) defines the mafia as "*[...] an industry that produces, promotes and sells private protection*" (Gambetta, 1993: page 1). Historically, the need for private protection emerged in Sicily for two interconnected reasons. First, starting from 1812, a number of anti-feudal laws promoted the opening up of the market for land, thus leading to an increase in the number of landowners. Second, in the wake of the new Italian State, a lack of property rights protection together with a vacuum of power, increased landowners' need for protection against unlawful expropriation. As a consequence, the Sicilian mafia emerged as a land protection industry. Assuming that the supply of protection is elastic, we expect that, in equilibrium, mafia presence was more likely to emerge in areas where the value of land was higher. Therefore, we instrument current mafia activity with exogenous historical and geographical measures of land productivity. In particular, we use rainfall shocks in the 19th century and geographical features at the municipality level as a proxy for land value.

We provide evidence that the presence of the mafia positively affects the probability of receiving funding (extensive margin) and the amount of public transfers (intensive margin): according to our estimates, mafia presence increases the likelihood of obtaining funding by 64 percentage points and raises by more than one standard deviation the amount of subsidies to businesses. These findings are robust to alternative econometric specifications, different measures of the mafia, and various estimation methods. We also provide evidence in support of the external validity of our findings by investigating the impact of the mafia on the allocation of other forms of funding to businesses.

Having established our core results, we turn to the interpretation. First, we test whether the positive relationship between mafia presence and public transfers is due to a more generous attitude of the State towards mafia-ridden areas. We show that, if anything, these areas are underfunded in terms of expenditure on culture and education, relative to those where the mafia is absent. Second, we explore the mechanism through which the mafia can divert public resources. We present evidence of the link between the mafia and local entrepreneurship and show that organized crime increases the number of episodes of corruption in the public administration sector. Finally, we disentangle the effect of organized crime from a more general criminal environment. To the best of our knowledge, this is the first study to analyze the causal impact of the mafia on the allocation of public transfers. By grabbing public funds assigned to poorer areas, organized crime effectively undermines growth, investment and development. From this perspective, our findings are relevant for the long-standing debate on the desirability and the design of public aids to firms.

Our study is related to four strands of literature. First, it broadly relates to the growing literature on the impact evaluation of public transfers to firms, whose overall picture indicates mixed evidence regarding the effectiveness of these public aids (Busso et al., 2013; Bondonio and Greenbaum, 2006; Criscuolo et al., 2012; Bronzini and de Blasio, 2006; Bernini and Pellegrini, 2011).[2] Differently from these studies, we do not focus on the counterfactual evaluation of a particular policy intervention, but stress the role of organized crime as a key determinant of the spatial allocation of funds. In this respect, our paper complements the existing studies with an emphasis on the role of institutional quality and, hence, it is also near to those works that examined the mediating role of institutions for the effectiveness of cohesion expenditure in the EU (e.g. Rodriguez-Pose and Garcilazo, 2013).

Second, our paper contributes to the emerging literature analyzing the economic consequences of organized crime. A study by Pinotti (forthcoming) estimates that organized crime is responsible for a 16% loss in GDP per capita over a 30 year period. Our paper sheds light on one mechanism through which mafia negatively affects the economy.

Third, this paper is linked to the recent literature analyzing the effect of an increase in the availability of public funds on governance and the spread of organized crime. Brollo et al. (2013) study the impact of an increase in federal transfers in Brazil on political corruption and on the quality of candidates. They provide empirical evidence that larger transfers induce an increase in corruption, while also reducing the quality of political candidates. Gennaioli and Onorato (2010) evaluate the spread of organized crime caused by an increase in public funding that followed an earthquake affecting two regions in Central Italy in 1997. Both studies look at the impact of public transfers on the spread of (organized) crime. We view our analysis as complementary to these studies. The purpose of the present work is to analyze how established organized crime, such as the Italian mafia, can affect the allocation of public transfers.

Finally, as far as the instrumental variable strategy is concerned, this work is related to papers that study the historical origins of the Sicilian mafia. These papers follow the original view of Gambetta (1993), according to which the mafia emerged in the last part of the 19th century as an industry for private protection. Skaperdas (2001) formalizes this idea, while Bandiera (2003) empirically supports it by showing that the mafia was more likely to be active in towns where land was more divided; Buonanno et al. (forthcoming) document that areas characterized by sulfur availability were also more affected by the mafia, while Dimico et al. (2012) show that mafia presence is related to citrus production.

This paper is structured as follows. Section 2 describes the empirical model. Section 3 presents a brief history of the mafia and identifies its exogenous determinants, which will be used in the instrumental variable analysis. Section 4 describes the data, while Section 5 presents the results. Robustness of the results is explored in Section 6. Section 7 presents further interpretation of the results. Finally, Section 8 concludes.

2. The empirical model

In this section, we outline the empirical framework and discuss the identification strategy that we adopt. First, we estimate two simple models (Probit and OLS) of the relationship between public funds (extensive and intensive margin) and mafia presence. The two econometric specifications read as follows:

$$Pr(Public\ funds\ dummy_i = 1) = \Phi(\alpha_1 + \alpha_2 mafia_i + \boldsymbol{X}_i'\boldsymbol{\beta}) \quad (1)$$

$$Amount\ Public\ funds_i = \gamma_1 + \gamma_2 mafia_i + \boldsymbol{X}_i'\boldsymbol{\beta} + \upsilon_i \quad (2)$$

[2] In particular, Bronzini and de Blasio (2006) and Bernini and Pellegrini (2011) evaluate the same policy intervention we study in this paper.