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Capitalization of central government grants into local house prices: Panel data evidence from England

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ABSTRACT

We explore the impact of central government grants on local house prices in England using a panel data set of local authorities (LAs) from 2001 to 2008. Electoral targeting of grants to LAs by the incumbent national government provides an exogenous source of variation in grants that we exploit to identify their causal effect on house prices. Our results indicate substantial or even full capitalization. We also find that house prices respond more strongly in locations in which new construction is constrained by physical barriers. Our results imply that (i) during our sample period grants were largely used in a way that is valued by the marginal homebuyer and (ii) increases in grants to an LA may mainly benefit the typically better off property owners (homeowners and absentee landlords) in that LA.

1. Introduction

Most countries have a system for allocating public funds from the central (or federal) government to regional and/or local jurisdictions and for redistributing revenues from higher to lower income areas. Reallocation of financial resources among jurisdictions is not just ubiquitous but also hugely quantitatively important. For example, in the UK local authorities (LAs) receive roughly 60% of their funding from central government grants (the remaining funding comes from the council tax, fees and charges), making LAs highly dependent on central government decisions. Other centralized European countries have similar reallocation schemes.

Although reallocation of higher level tax revenue to lower level jurisdictions may be comparably more important in more centralized economies, intergovernmental transfers are also hugely important in decentralized countries. For example, in the US, states' school finance equalization formulas reallocate significantly more money between school districts than the federal government spends on Medicare or on all federal income support programs combined.

If fiscal grants for a particular area increase, for reasons other than an increase in production costs or service needs (i.e., a windfall gain[1]), a non-Leviathan local government has essentially two options. It can either increase service quality or decrease local tax rates (e.g., the council tax rate in England or the property tax rate in the United States). In both cases the area becomes more desirable and the demand for housing rises. To the extent that the supply side does not fully respond to the demand shock, the primary effect of the grant should be to increase the value of local land and the property that sits on it.

Little is known empirically about whether, under what conditions and to what extent intergovernmental transfers, and in particular central government grants, are capitalized into property prices. In this paper we shed light on these questions by exploring whether the reallocation of financial resources from the British government to LAs is capitalized into house prices. Estimating the causal effect of grants

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[1] Throughout the paper we analyze windfall-type changes in grants (i.e., changes in grants that are *not* driven by changes in production costs or service needs). Compensation of differences in production costs or service needs across LAs is an important aspect of the British grant allocation system.

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on house prices is challenging because grants are allocated through formulae that include endogeneously determined characteristics of the LA, such as age structure and ethnic composition of the population. To overcome these endogeneity issues and identify the causal effect of grants on house prices we employ an instrumental variable strategy. We utilize strategic political considerations affecting grant allocation at the national level as a source of exogenous variation in grants.

Our results based on panel data (over a period of 8 years between 2001 and 2008) and LA fixed effects as well as IV regressions suggest that an increase in the per-capita grant allocation indeed leads to higher house prices.[2] Moreover, we find evidence on the positive dependence of the house price capitalization rate on physical constraints on housing supply (using elevation range measures).[3] Our core estimates indicate that central government grants are roughly fully capitalized into property values. In a private rental housing market without strict rent controls, a grant-induced rise in value should be passed on to tenants in the form of higher rents. Thus, in areas with less than perfectly elastic housing supply, an *increase* in grants may mainly benefit typically well-off property owners, absentee landlords and homeowners, while leaving private renters indifferent. This mechanism may jeopardize any redistributive aims of the grant allocation system.

Capitalization of central government grants may have a particular relevance in the light of the ongoing 'credit crunch' crisis. One consequence of this crisis is that public finances have come under enormous pressure in virtually all industrialized countries, not least in the United Kingdom. The crisis has also made it very transparent that public finances at all levels of government (national, regional and local) and housing markets are linked in complex and manifold ways. One consequence of the mounting pressure on public finances has been that governments across the globe are looking for novel and ingenious ways to raise additional revenue or cut spending to combat the growing budget deficits.

In the UK in particular, the political pressure to reduce the country's enormous public debt and deficit is very strong. At the same time, the incoming Conservative/Liberal Democrat coalition government has fond plans to devolve central power to the local level. All these political pressures and intended policy reforms will likely impact in a fundamental fashion on the way the central government allocates resources to LAs over the coming years.[4] These changes may well cause adjustment processes on local housing markets, which in turn may well have important distributional consequences. Our empirical findings that rely on past data imply that this is indeed likely.

2. Background, testable predictions and implications

The question of whether – and to what extent – local public spending and/or local taxes affect house prices has been widely studied. In a seminal paper Oates (1969) suggested that property taxes and public school spending are at least partially capitalized into house prices. Many subsequent empirical studies, whilst using better data, enhancing the methodology and making important qualifications, have largely confirmed this finding (see e.g. the survey articles by Chaudry-Shah, 1988, and Ross and Yinger, 1999; see also e.g. Palmon and Smith, 1998, or Hilber and Mayer, 2009, for more recent evidence). A much broader set of public goods, services and taxes than schools and the property tax have been found to capitalize. For instance, Ihlanfeldt and Shaughnessy (2004) show that impact fees are fully capitalized into land values and in a study on the US federal Empowerment Zone program, Hanson (2009) finds that local tax incentives for employers raise residential property values. However, the impact of central government grants – or more generally intergovernmental transfers – on property prices has received much less attention in this literature.

The theoretical framework developed in Brueckner (1979, 1982) provides a useful starting point for studying the impact of grants on house prices. In this framework, a local government finances the provision of local public services from a local property tax, with the objective of maximizing the value of its housing stock.[5] Following the conventional bid-rent approach, households (with homogeneous tastes, but heterogeneous incomes) are freely mobile between locations, so that they bid for units until the utility from dwelling there equals what they can get elsewhere. As a consequence, both the households' marginal willingness to pay for local public services and the local property tax are fully capitalized into house prices. The local government should set the level of public expenditures such that the capitalized tax needed to finance a further rise in services would just offset the capitalized willingness to pay for them. When this condition is met, public expenditure is *efficient* in the sense that it satisfies the Samuelson condition — at the margin, the aggregate willingness to pay for additional services equals their cost.

Within this framework, lump-sum grants would enter through the local government's budget constraint, while leaving its objective function unchanged. Hence, a local government would continue to provide public services until the capitalized tax needed to finance a further expansion would just offset the capitalized willingness to pay for it.[6] At this optimal level of expenditure, additional windfall-type central government grants to a local government should capitalize fully into house prices, irrespective of whether the local government would use them to provide additional/better local public services or cut taxes. In order to see this, note that additional grants that are fully passed on to households through a lower tax rate should capitalize fully irrespective of the level of public expenditure, but at the optimal level, this effect should be equal to the capitalized effect of additional public expenditure. So in particular, full capitalization may occur even if at the margin, local governments have a high propensity to spend out of central government grants — an empirical regularity that has been dubbed the *flypaper effect* (see e.g. Hines and Thaler, 1995).

Within the Brueckner framework – assuming that at the margin the propensity to spend out of grants is strictly positive – the condition that the level of spending is chosen optimally is not only sufficient but also *necessary* for full capitalization.[7] Suppose that for some reason spending on public services is below the level where it would maximize the value of the aggregate housing stock. This could be because of institutional constraints (e.g., property tax limits) or simply because local public policy is the outcome of a political process in which many conflicting interests interact. By implication, the capitalized willingness to pay for a raise in expenditure would exceed the capitalized tax needed to pay for

[2] Since grants have increased in most places during our sample period, we were unable to test for an asymmetry in the response to declining grants. The theoretical framework that is discussed in the next section does not suggest the existence of such an asymmetry.

[3] We draw on earlier work by Hilber and Vermeulen (2010) who study long-term supply constraints in England. Hilber and Vermeulen find that house prices in England react more strongly to increases in household earnings in places that have tighter regulatory and physical supply constraints. Relevant to the interpretation of the findings in this paper, Hilber and Vermeulen also document that the effects of supply constraints on the response of house prices to demand shocks is greater during boom than during bust periods. This suggests that capitalization of grants may be less dependent on supply constraints during bust periods.

[4] For instance, grants to LAs will be reduced by £1.165 billion in 2010–11 and several ring fences on spending are removed to enhance their autonomy (CLG, 2010).

[5] We ignore the role of non-residential property in this paper, since central government grants in the UK are by and large spent on services that benefit households rather than firms.

[6] See Barrow and Rouse (2004) for an extension of the Brueckner framework in this vein, although they apply it to state education aid to local school districts rather than central government grants.

[7] By assuming a positive propensity to spend out of grants at the margin, we rule out the situation of a local government that spends at a suboptimal level, but that passes all additional grants on through lower property taxes so that they capitalize fully. In view of empirical evidence on the flypaper effect, such a situation would seem unlikely to occur.