Beggaring thy neighbor at the state and local level

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Abstract

Purpose – This paper aims to address a growing empirical literature which measures the size of the fiscal multiplier at the state and local levels. This literature generally fails to consider the reaction function of the central bank, which typically should be expected to offset local increases in spending by reducing it elsewhere in the currency area. This is true under rather orthodox assumptions, such as an inflation targeting central bank meeting its target.

Design/methodology/approach – The author reviews prominent examples of the literature and establishes the extent to which the empirical methodology avoids the issue he raises. Subsequently, the author discusses its importance.

Findings – Certain papers in the literature, especially Nakamura and Steinsson (2014), are careful about the issue. Most papers reviewed, however, are not.

Practical implications – There are severe limitations to papers using these methodologies. They are either contingent on very specific assumptions regarding central banks or lack policy relevance. Earlier methodologies, such as vector autoregression and the "narrative" method, deserve higher relative credence among methodologies applied to studying the size of the fiscal multiplier.

Originality/value – The current literature either entirely ignores the issue raised here or it is very briefly brushed aside. Considering the orthodoxy of the assumptions, at the very least, the issue deserves far greater recognition in the future. It may demand a broader re-evaluation of the family of methods.

Keywords Fiscal federalism, Fiscal policy, Macroeconomic policy, Local multipliers

Paper type Viewpoint

1. Introduction

Recent empirical work assessing the size of the fiscal multiplier has considered the effects of state and local spending on output and employment, instead of more traditional cross-national comparisons (for literature reviews, see Ramey, 2011 and Fuchs-Schuendeln, and Hassan 2015). Many of these studies are powerful econometrically and rhetorically, as they use the methodologies associated with the "Credibility Revolution in Empirical Economics" (Angrist and Pischke, 2010), meaning that numerous endogeneity or causality concerns are no longer present. This note takes no issue with the identification methods used by these papers; they are indeed persuasive. The issue I raise is their interpretation regarding their "general equilibrium" effects once other regions within a currency area are taken into consideration. Empirically, this argument finds some support in Dupor (2016).

A common starting point is that the multiplier measured in a given state or province, for example, is understated, because it ignores potential spillovers of this state's spending on its neighbors. If the state of New York builds a bridge in New York City and

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we measure the subsequent increase in gross state product of New York, we ignore the spillover spending effects in New Jersey and Connecticut. If this were the end of the story, then the measured multiplier would be the lower bound for the size of the multiplier. However, if the central bank of the currency area is meeting a nominal target, it will react to any unexpected increase in aggregate demand in one region of the country, implicitly, by cutting aggregate demand elsewhere. Otherwise, it would not meet its target. In other words, local multipliers resulting in positive overall multipliers in a currency area require very passive central bank policy functions to exist. The conditions under which the measured multipliers should be interpreted as anything but beggaring aggregate demand from other localities must be considered special, not general. Outside liquidity traps, this point is wholly consistent with the New Keynesian model.[1]

Not all literature has ignored the concerns I wish to address. In particular, Nakamura and Steinsson (2014) measure the effects of state and local spending *relative* to other states by "differencing out" the effects of national fiscal and monetary policy. Bruckner and Tuladhar (2014) find evidence consistent with the idea that the estimates of the regional multiplier should be viewed as an upper bound, not the lower bound for the "true" multiplier, given the possibility of national countercyclical monetary policy (in Japan, no less, making it a particularly strong finding). Jalil (2012) provides a powerful demonstration of the importance of considering monetary policy more generally. This note will review the literature on local multipliers as they relate to general equilibrium effects and offer an alternative interpretation of how this research should be framed.

2. Literature review

Unlike the articles referenced in the Introduction, most literature does not consider the response of a central bank, and, when it does reference it, it is often contained in a single sentence or paragraph.[2] Sometimes, monetary policy is "controlled for", but this is insufficient; it must be a conscious component of the modeling technique, as in Nakamura and Steinsson (2014). Alternatively, it can be explicitly and carefully addressed, as in Bruckner and Tuladhar (2014). One may dispute whether inflation (and aggregate demand) is always and everywhere a monetary phenomenon, but it does not matter how good an identification strategy is if the model does not allow for the possibility of monetary offset occurring across and within a currency area. Moreover, studies in addition to those discussed below make similar mistakes, but the issue is less germane to them.[3] In this section, I also do not discuss the point estimates of the local multipliers, as they are simply not essential to my argument. The argument is supported by Dupor (2016), who finds drastically different and lower multipliers when considered in aggregate, as opposed to only the effects of spending within individual states.

Often, the external effects of local fiscal stimulus are thought of in terms of spillover effects. An early example of measuring a spillover effect of government spending from one region to another can be found formally in Davis *et al.* (1997). Serrato and Winegender (2014) find positive spillovers across counties. Although they acknowledge the possibility that the spillovers are negative (though through shifting the supply of labor across counties), they note that their methodology cannot address "the impact of monetary policy in response to a fiscal shock." Wilson (2012, pp. 251-52) gives reasons why the local multiplier may be less or greater than the national multiplier, but

regarding the central bank, they actually argue that the state-level data are preferable, as monetary policy is constant across the country. Chodorow-Reich *et al.* (2012) use states' prerecession levels of Medicaid as an instrument for the level of relief aid for Medicaid states received as a part of the American Recovery and Reinvestment Act and explicitly ignore general equilibrium effects, noting deep within the paper that":

> […] [g]iven that the results from this cross-state approach do not incorporate general equilibrium effects, cross-state multipliers, or the response of the monetary authority, we interpret this multiplier as only suggestive of the national multiplier of policy interest (138).

In a working paper similar to Chodorow-Reich *et al.* (2012), Feyrer and Sacerdote (2012, p. 7) note in passing that their calculation may be entirely contingent on the central bank being unable to stimulate at the zero lower bound.[4]

Still, others do not account for the general equilibrium effects at all, such as Clemens and Miran (2012). Corbi *et al.* (2014) measure the positive local spillover, finding a small effect that is only sometimes statistically significant; monetary policy is controlled for, but total general equilibrium effects are not accounted for. Acconcia *et al.* (2014) also control for national monetary policy but do not account for general equilibrium effects. Shoag (2013) uses spending changes associated with public investment returns to identify the multiplier, concluding:

> […] [w]hile these results should be interpreted cautiously, the mounting evidence from a number of different studies on local, windfall multipliers suggests a growing consensus on this issue, both generally and post-2008.

The generality of the result may hold for the locality, but under normal macroeconomic conditions with monetary offset, this is a calculation of beggar-thy-neighbor, not increasing output overall for the currency area.

Of the eight primary examples cited in text above (and explicitly setting aside Nakamura and Steinsson, 2014 and Bruckner and Tuladhar, 2014), I should note that none are at all on the fringes of the profession. Acconcia *et al.* (2014) and Shoag (2013) published their studies in *American Economic Review*, and Chodorow-Reich *et al.* (2012), Clemens and Miran (2012) and Wilson (2012) published their studies in *American Economic Journal: Economic Policy*. Corbi *et al.* (2014) and an earlier version of study by Feyrer and Sacerdote (2012) were published in *NBER Working Papers*. Serrato and Winegender (2014) is a working paper that did not appear at NBER, but it has 85 citations to it, according to Google Scholar.

What follows is an important aside. A separate strand of literature also argues for the importance of agglomeration – network effects and increasing returns to scale – for the development of local economies (Ellison and Glaeser, 1999), which has at least at a time found support among a wide range of economists (Easterly, 2001, pp. 145-169; Glaeser *et al.*, 2003). However, this literature on agglomeration effects can easily be confused with traditional Keynesian multipliers (and vice versa). For example, Moretti (2010), in an article simply titled "Local Multipliers", provides baseline results for the effects of exogenous increases in the number of jobs in the tradeable and non-tradeable sectors, as well as skilled versus non-skilled jobs. Greenstone *et al.* (2010) documents this more extensively by examining the effects of large plant openings on subsequent levels of total factor productivity. Ultimately, the evidence is mixed and incentives may only have the intended effects under certain conditions (Wilson, 2009; Moretti and Wilson, 2013). Still, other studies look

at other supply side effects of regional aid, which may too be interpreted as an entirely different type of multiplier (Becker *et al.*, 2010, 2013). It is too easy, however, to conflate any of these effects with the effect of general government spending; if anything, terminology should be adjusted to reflect that, for example, the tax incentives for agglomeration are meant to address what amounts to a network externality. They may be policy-relevant, but must be thought of separately from the Keynesian multiplier.

To summarize, there are eight primary examples of papers that either altogether ignore the problem of central bank responses to local increases in aggregate demand or do not pay sufficient attention to it. Nakamura and Steinsson (2014) and Bruckner and Tuladhar (2014) address the issue appropriately. Other, less closely relevant examples of this problem exist. Elsewhere, there are still other studies which calculate local multipliers which should not be conflated with the traditional Keynesian multiplier. A correct interpretation of studies measuring the multiplier requires making monetary policy a key component of all analyses.

3. Role of the central bank

Any discussion of the size of the multiplier must be contingent on the response of the central bank (Sumner, 2013). The foremost questions are whether the central bank is *able* to control an economy's nominal variables and whether it is targeting one of them. If the economy is not in a liquidity trap and the central bank is targeting inflation, then the answer to both of these questions is presumed to be "yes". In that case, it must be presumed that all calculated local multipliers come directly at the expense of other localities within the currency area. If there are positive spillovers for a neighboring community, that too comes at the expense of others more distant but within the currency area.

That result is simply arithmetical. The national rate of inflation can be thought of as a weighted average of inflation across regions. If one region pushes its rate of inflation above where it would otherwise be via fiscal stimulus, this necessarily means that the central bank must react such that disinflation or deflation in the rest of the country occurs so as to hit the central bank's target overall. If a region is able to force the central bank to overshoot its target, it would raise the question as to why the regional legislative body is more knowledgeable in determining the national inflation target and why the central bank would fail to take this into consideration in the future.

Suppose the central bank is unable to control nominal variables. If the liquidity trap is binding, this may be true, but it does not necessarily cohere with much of modern macroeconomics. This is why prominent members of the profession must awkwardly qualify their statements in favor of fiscal stimulus with phrases such as "the central bank is unable or unwilling to but in any case does not, provide additional stimulus through quantitative easing or other means" (Delong and Summers, 2012, p. 236). Delong and Summers must appeal to a central bank's "unwillingness" to engage in alternative policies such as quantitative easing for fiscal stimulus to still be relevant. Alternatively, a "modern monetary theorist" would assert that the central bank has no ability to offset the actions of local governments (Wray, 2012), in which case, these multipliers could actually be taken at face value or even as lower bounds.

It is also possible that the central bank could be following another rule or target where offset would not be implied. It is incumbent on the proponent of local stimulus spending to show that the central bank is doing so. Even in the USA, following the crisis, the Fed has appeared to target approximately 4 per cent nominal gross domestic product (NGDP) growth since 2010, low levels of inflation notwithstanding. Regardless, a local multiplier corresponding to a multiplier greater than zero for the total currency area requires assumptions that are typically untrue. The local multiplier is in no way "general" for this reason.

This literature is regressive in other ways. Although the econometric methodology is of higher quality, the general perspectives are disturbingly similar to anachronistic arguments used by proponents of pork-barrel public works projects such as sports stadiums:

> Typically, such promotional studies project future impact and almost inevitably adopt unrealistic assumptions regarding local value added, new spending, and associated multipliers. They often use a regional input-output model that depends on outdated technical coefficients which are treated as invariant to shifts in supply and demand (Siegfried and Zimbalist, 2000).

This is all true, and it appeared economists agreed (Coates and Humphreys, 2008). But, if we are willing to let aggregate demand management return to the reasonable purview of state and local public finance, then there is not very much especially "wrong" with using input-output analysis as a baseline estimate of the economic impact of stadium building. From the Keynesian perspective, what is the difference between building a stadium and building a bridge? Is there a larger multiplier for concrete purchased to build a bridge than for concrete purchased to build a stadium?[5] It is difficult to imagine why this literature is not actively being exploited to pursue greater stadium subsidies, except that no academic economist feels politically motivated to do so.

This leads to the more general point: evidence that heterogeneity within a currency area is great enough that state and local governments can better target the appropriate level of aggregate demand is not actually evidence that state and local governments should try to do so. It is evidence that a country such as the USA is not an optimal currency area. Monetary policy is still the best way to manage aggregate demand during normal circumstances, per the New Keynesian consensus (Delong, 2000). Should monetary policy for the currency area be too blunt of a tool to manage aggregate demand within it, alternative regimes should be considered, whether that means a monetary system better at taking advantage of the price-species flow mechanism, more monetary powers devolved to regional banks or something else entirely. Fiscal stimulus, even when administered properly, is costly in the absence of very large multipliers (e.g. self-financing stimulus as a result of "hysteresis").

4. Conclusion

Empirical studies must make theoretical assumptions both in constructing tests and interpreting results. It is uncontroversial to claim, especially before the Great Recession, that central banks target inflation. This must inform any interpretation of measured local fiscal multipliers. The baseline assumption must be that local stimulus has no overall effect on the currency area; subnational governments are merely shifting demand from one part of the currency area to another. In other

words, the baseline assumption must be that measurements of local multipliers are measures of beggaring-thy-neighbor.

As long as multipliers are reported upfront as clearly contingent on either the theoretical assumption of the liquidity trap holding or on a subset of central bank policy functions, there is little to object to. Yet, by and large, concerns about how a central bank may respond are limited to one paragraph or less, if at all. The notable exceptions of Nakamura and Steinsson (2014) and Bruckner and Tuladhar (2014) differ greatly in this respect and deserve to be the starting point for further empirical research studying local multipliers.

Notes

1. It is debatable whether fiscal policy in the New Keynesian paradigm will not be offset even in a liquidity trap if, for example, the central bank partakes in Svennson 's (2003) "foolproof" method of exiting one.
2. The papers cited herein are primarily from the literature review performed by Fuchs-Schuendeln and Hassan (2015, pp. 32-38).
3. Cohen *et al.* (2011), Fischback and Kachanovskaya (2010) and Fischback and Cullen (2013).
4. The lack of emphasis in Feyrer and Sacerdote (2012) is less problematic considering that the working paper constrains itself to explaining the effects of the specific stimulus.
5. Of course, the rents from the stadium are more likely to accrue to team owners and players than to the working class, but *rents* and *spending* are completely different concepts.

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