

The Local Effects of Monetary Policy

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Abstract

This paper surveys the literature on the relationship between banking and space. Many studies have documented disparities in the regional responses to monetary policy shocks. Given the fact that monetary policy affects some regions of a country more than others do, this review of the large stance of empirical studies examines how monetary policy may affect regions differently, and why. It reveals that certain regions of a country are consistently more affected by monetary policy than others due to the fact that those regions have a relatively high share of their economy in interest sensitive industries more susceptible to negative monetary policy shocks.

Keywords: monetary theory, financial geography, geography of money and finance.

JEL classification: B20, E12, R30.

Introduction

The first paper which helps me to clarify the relationships between spatial economics and monetary economics is David Bieri's paper (2017) "Back to the future: Lösch, Isard, and the role of money and credit in the space-economy". Bieri argues that the continued separation of monetary theory from price theory in regional thought represents a radical departure from the intellectual origins of the field of regional science, which has its roots in the pioneering work of August Lösch (1906-1945) and Walter Isard (1919-2010). In combining key elements of inter-regional trade theory and location theory, both Lösch's and Isard's treatment of monetary aspects of the 'space-economy' gave rise to spatialized interpretation of the non-neutrality of money — an area of research that has gained significant relevance once again in light of recent economic events.

According to Avetisyan (2019) financial geography defined it on three parts: financial geography (generally), distance relationship in banking, and commercial banks location analyses. It fails to discuss the relationship between two important parts of financial geography: financial centers and monetary policy. This paper is devoted to an analysis of the literature and some key points on the relationship between monetary

¹ This paper does not represent the views of the Central Bank of Armenia. The views expressed in this paper are those of the author and should not be interpreted as those of the Central Bank of Armenia.

policy and regional science. Critically, I argue that regional development models miss financial variables, and monetary economics misses spatial variables.

In Hutchinson and McKillop's (1990) analysis of a national economy's regional economic activity, for example, the impact of a region's financial sector on its local economy has been largely ignored. In an important respect, this stems from the regional economic theory's tendency to assign a residual role to regional financial sectors. Mackay and Molyneux (1996) show that the close contact between finance and industry and between the regions is part of the supposed institutional make-up of Continental European economies. Although differences in ownership concentration, company laws and forms of corporate control have been widely discussed in the academic literature, much less attention has been paid to the regional characteristics of bank lending. Many economists argue that financial factors play no role in regional development (Manso et al. 2015, Marrocu and Paci 2013, Cooke and Leydesdorff 2006). These authors state that since regions are small and open, they face a horizontal supply of finance within national boundaries, as long as near perfect inter-regional capital mobility exists. Therefore, financial resources will flow into those regions, which are willing to pay higher interest rates whereas the other regions will experience financial outflows. This traditional view sees the banking system as being neutral to regional development since it simply allocates scarce financial resources among regions (see Rodríguez-Fuentes 2006, pp. 1-9). Within this theoretical framework the contribution of the banking system to regional growth is limited to its direct impact on regional employment or income.

Sometimes, however, it is acknowledged that the banking system might not be neutral when there exists some kind of market failure, such as imperfect or asymmetric information, which may stop interregional financial flows. Following Chick and Dow (1988), this paper will argue that banks do not behave as simple intermediaries since they are mainly responsible for credit creation/provision and not for credit distribution. More particularly, the paper will state that banks may influence regional development by means of producing a regional pattern of credit availability, which is likely to be more unstable for some regions (the low-income ones) than for others. Regional analysis has usually lacked references to financial and monetary variables. Leaving aside the widely held belief that money helps little to explain regional income differences, there are, among others, according to Rodríguez-Fuentes (2006, p. 4), there are three main factors, which could explain this lack of references:

- a) *Regional economists have usually followed the orthodox assumption that money and monetary policy are neutral in the determination of real income, at least in the long run. The point here has usually been that if money does not really matter at national level, as orthodox monetary theory suggests, it should not matter at the regional level either.*
- b) *Regions do not dispose of monetary tools. If one region does not really have the chance to run its own monetary policy, is there any point in studying the topic?*
- c) *If regions had their own monetary tools, their extreme openness and perfect capital mobility would leave them without control over their monetary conditions (money supply would be horizontal at some interest rate level and, therefore, endogenous).*

In fact, this is what the global monetarism theory foretells for small and open economies.

Monetary Space

Walter Isard first introduces the expression 'space-economy' in his QJE (1949) survey article, wherein he defines the term as "concern[ing] itself with the local distribution of factors and resources as well as with local variations in prices, and thus with the immobility and spatial inelasticity of factors and goods" (p. 478). Isard's usage of the term is clearly inspired by its German origin in the *Raumwirtschaft* (spatial economy). According to Ron Martin (2011), monetary space conceived as a homogeneous aggregate suggests an almost perfect international currency market and an approximate unity in exchange rates. Theoretically, this would be the monetary space of a gold standard functioning without resistance or friction. Actually, we see areas where currencies exchange under almost perfect market conditions, and where the price of one currency in relation to another is relatively uniform. History has recorded in this respect only international monetary spaces insufficiently homogenized (Perroux 1950). Martin (2011, p. 590) argues further for a

"...coherent and generally accepted body of theory of what the French spatial economist Francois Perroux, writing over 50 years ago, called 'monetary-space'. Certainly our understanding of the geography of financial crises is very underdeveloped. We know from studies such as that by Kindleberger (1996) that financial bubbles and crises, once set in motion, tend to develop over time in a characteristic way. But such studies have little to say on why financial bubbles develop when and where they do, and even less about how they unfold over space as well as time."

According to Perroux (1950, p. 98), monetary space as a field of forces is not easily understood if one is in the path of the forces; it is seen more easily in terms of a "network" (in the mathematical sense) of payments, or by means of the description of monetary flows. A center (or pole) has then to be chosen, from which one draws the "network" of payments towards or from other centers; or from which emanate, and to which come, monetary flows. The most significant of these "centers" are complex aggregates of monetary and financial organisms – the "places". The monetary flows attracted towards or issuing from one of these financial "places" of the nineteenth or twentieth centuries, the variations of their direction, their composition and their volume, actualize a monetary space that is not fully independent of the one described as defined by a plan, but which cannot be approximated or reduced to it. Francis et al. (2012), using a large Bayesian SVAR with city-level data, find significant and important cross-metro-area variation in the response of employment to a monetary policy shock. This variation is observed among cities even in close geographic proximity and even within the same state. In testing the channels, through which monetary policy affects employment, Francis et al. (2012) find – at the city level – propagation effects to be important for explaining the cross-sectional variation of the "most common" recessions across the cities. The more traditional channels of monetary policy, such as the interest

rate channel (measured with the manufacturing share) or the equity channel (measured with house prices and home-ownership rates), appear to be less important for explaining the business cycle variations across the cities.

Regional monetary policy

An important reason why monetary policy tends to be largely ignored in economic theories of development is mainly because of a traditional postulate that money is neutral (at least in the long run). Thereby, monetary variables are only considered as a medium of exchange with no implications for long-run economic development. Nonetheless, money is not necessarily neutral because of the potential relevance of market failures, such as asymmetric information problems, which will result in, for example, spatial segmentation of capital markets.

Rodríguez-Fuentes (2006) in “Regional Monetary Policy” shows that development has rekindled academic and policy interest in understanding the regional impacts of monetary policy. The European Central Bank (ECB) itself recognizes that “the setting of a precise objective for monetary policy in a monetary union ... takes into account the existence of inflation differentials across regions in the union to avoid some regions being forced to structurally operate at excessively low or negative inflation rates” (Darvas and Wolff 2014, ECB 2003, Angeloni and Ehrmann 2007). The “old” literature on the regional impact of monetary policy could be found in Rodríguez-Fuentes and Dow (2003). Dow and Rodríguez-Fuentes (1997) show in a survey of the regional finance literature the regional impact of monetary policy. “Regional Monetary Policy” by Carlos J. Rodríguez-Fuentes (2006) surveys and extends the research that has been done so far. His particular contribution is to build on the foundational work of Sheila Dow and Victoria Chick (1988) to explore how regional differences have influenced credit availability.

The way how money can affect output due to imperfect information was first studied by Lucas Jr (1972) and Phelps (1970). The Lucas-Phelps model was used and further developed by, amongst others, Blanchard and Kiyotaki (1987) and Rotemberg (1987). It emphasizes that unanticipated monetary policy may affect real variables (in contrast to anticipated ones). Keynesian economics emphasizes price stickiness (including wages and interest rates) that arise in a market, where information does not flow properly among economic agents (see Chick and Dow 1988). Regional banking systems can affect the transmission of central monetary policy decisions to local economies. Dow and Chick (1988) provide the foreword to Rodríguez-Fuentes’ “Regional Monetary Policy”, and rightly commend the analysis for being grounded in its application to regional economies, both within and among nations. The core of the book highlights two ways in which there may be significant regional differences in banking systems. The first is that a region’s banking system may be at a different stage of development than others in the monetary union. At an early stage of development, banks can be constrained by the quantity of reserve assets in the system, making the local supply of money more vulnerable to policy shocks. The second way is that there may be regional differences in the liquidity preferences of financial actors (including

the banks). Such differences can result in different lending behavior by regional banking systems in the face of tighter monetary policy implemented by the European Central Bank.

These two considerations gave rise to what Rodríguez-Fuentes terms ‘the behavioral effect’ of monetary policy on regions, to be considered alongside or as an alternative to ‘the structural effect’ that has been the focus of much research in this field. Dow and Montagnoli (2007) discuss reduced-form regional analysis that focuses on the transmission of monetary policy through aggregate demand to prices via the labor market (using Phillips curve analysis). This type of analysis is still evident in the analysis of the Bank of England (as set out, for example, in its quarterly Inflation Report). Indeed, one argument for paying attention to the regional dimension is that, if the inflation/unemployment trade-off is different in different regions, then the national trade-off, which aggregates the regional trade-offs, is less favorable (Archibald 1969), and monetary policy would be more efficient with a more homogeneous Phillips curve trade-off. Warning signals for rising inflation are likely to emerge from the regions, which are reaching capacity limits.

Points for discussion

Economic theory suggests potential causes for the asymmetric responses of real activity to a monetary policy innovation:

- Local banks in some regions are more interest-sensitive than others in terms of credit supply, because of balance sheet differences. Overall it is to be expected that banks with less liquid balance sheets respond more fully to monetary policy.
- There can be a regional pattern to bank credit even with national banks. Their credit creation responds differently in different regions to changes in monetary conditions because of the different regional effects of monetary policy on perceived lender’s risk. This will depend not only on the state of local industry, but also on asset values for collateral and on the banks’ knowledge capacity.
- The repo rate change may feed through differently into the cost of credit in different regions, where this cost includes fees, charges and product discounts, which can more readily vary regionally than posted interest rates.
- Differential pricing and availability of credit is facilitated if borrowers in some regions are relatively more dependent on local credit supply (this would be the case if there is a relatively high incidence of small and medium enterprises (SMEs) as compared to multinational corporations). Even if there is a national banking system, SMEs will be more dependent on banks than larger companies with access to capital markets (for supporting evidence for the UK, see Ganley and Salmon 1997). There is scope, then, for the banks to exercise discriminatory monopoly power.
- Regional interest-elasticity of demand can differ if the sectoral balance differs by region; this argument could also be extended to the exchange rate channel (where other things being equal the exchange rate appreciates when interest rates rise). On balance, sectors with significant capital requirements and stockholding are more

interest-sensitive than others since borrowing costs are a higher proportion of total costs, and export sectors are more exchange rate sensitive. So regions with an emphasis on manufacturing and natural resource extraction, particularly for export, will respond more than others to a rise in borrowing costs. This argument is typical of much of the traditional regional finance literature, and was the conventional explanation for aggregative results showing different effects of national monetary policy on regional GDP, as discussed in the previous section (Rodríguez-Fuentes and Dow 2003).

- Some regions may be more interest-sensitive than others in terms of credit demand for reasons of liquidity preference. If indeed the banks are less willing to lend and asset prices are expected to weaken, borrowers in peripheral regions will anticipate heightened financial vulnerability. When monetary conditions tighten, therefore, there will be a greater unwillingness to be exposed to debt obligations. Thus, the asset price channel may operate through reducing the willingness to borrow. Moreover, households' wealth portfolios may differ in composition from region to region as a result of both different population structure and financial literacy. In both cases, a monetary policy shock is transmitted to the regions in an asymmetric way, preventing the policy to work fully.
- These factors, which point to a flatter demand curve for credit in less affluent regions, are countered by a major factor that reduces the elasticity of demand, that is, the relative lack of access to alternatives to bank financing. This is generally the case for SMEs, but also for borrowers relatively remote from the financial center. If this effect dominates, then bank borrowing will be discouraged less by interest rate rises; the consequences will then be felt on income and employment.
- Arguably, monetary policy operates as much by the effect of statements by the MPC² members about the reasons for policy decisions and more generally in speeches and publications as it does by changing the repo rate. Friedman (1999) emphasizes the role of central bank announcements in monetary policy, although he also stresses that these announcements need to have credibility in terms of actual effects of policy on interest rates (Dow et al. 1990).
- There may be differential regional effects if expectations and confidence are more vulnerable to discouragement in some regions than others. If confidence in expectations is punctured, or indeed if expectations are confidently held about worsening demand conditions and about local asset values, then that will discourage both credit demand and supply, and the investment, output and employment which would otherwise have been financed.
- Further, banks' knowledge base for risk assessment is better in some regions (normally in the core) than in others (normally in the periphery) (Porteous 1995). Then the response of national banks to a change in expectations will tend to be more exaggerated for peripheral regions (for evidence along these lines for Spanish regions, see Rodríguez-Fuentes 2006).

² There exists significant differences between Federal Reserve's Federal Open Market Committee (FOMC) vs. central banks following a system similar to Bank of England's Monetary Policy Committee (MPC).

Summary

This literature review shows the importance of monetary theory in regional development, and the importance of spatial effects on monetary policy. The paper focuses attention on these two questions, which are usually ignored in empirical analyses. The interest rate channel hypothesis assumes an increase in the cost of borrowing. The equity channel of monetary policy works through a wealth effect triggered by decreased interest rates. As pointed out by the literature, we should search for other reasons for these types of asymmetries. An interesting conclusion from reviewing all these studies is that a different mix of industries in the regions is the only convincing explanation for regional asymmetric responses to monetary policy shocks. In contrast, a traditional effect through a credit channel that may be operating at the national level is not reflected in the regional asymmetries.

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