Macro Policy and Household Economics

by

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Both theory and evidence suggest that fiscal and monetary policy have profound influence on household formation and behavior.

What factors lead to individuals forming households – i.e., entering into partnerships like marriage, or more generally, cohabiting, having children, taking on roommates etc.? While love enters the equation, clearly, many of the goods and services individuals desire can be alternatively purchased on the market or produced in the home. Recent research by Burdett et al. (2015) advocates the idea that households are alternatives to markets as institutions for organizing economic and other activity, that we form such partnerships when it is economically beneficial, and that this is strongly influenced by economic policy.[2]

The general idea is based on a classic paper by Coase (1937), who asks why some activity is organized within firms, as opposed to exclusively self-employed individuals who contract with one another as needs arise. Production could be carried on without firms, he says, with all activity orchestrated by markets for tasks by individual contractors. However, Coase argues that there are *transaction costs* or *frictions* in the marketplace:

> The main reason why it is profitable to establish a firm would seem to be that there is a cost of using the price mechanism. The most obvious cost of 'organizing' production through the price mechanism is that of discovering what the relevant prices are. ... The costs of negotiating and concluding a separate contract for each exchange transaction which takes place on a market must also be taken into account.

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[2]The notion of a household can include 1 person, as in the official Census definition, but we are more interested here in the formation of households with 2 or more people.

In addition, Coase emphasizes policy interventions:

> If we consider the operation of a sales tax, it is clear that it is a tax on market transactions and not on the same transactions organised within the firm. Now since these are alternative methods of 'organisation' – by the price mechanism or by the entrepreneur – such a regulation would bring into existence firms which otherwise would have no raison d'etre. ... Similarly, quota schemes, and methods of price control which imply that there is rationing, and which do not apply to firms producing such services for themselves ... encourage the growth of firms.

Firms thus help entrepreneurs avoid costs and inconveniences associated with markets. Their very existence testifies to the notion that markets are imperfect, and that firms are institutions that ameliorate search, taxation and other frictions. Businessmen sometimes need legal, accounting or secretarial services, e.g., all of which are available on the market, but that involves transaction costs. When these are high, it is worthwhile bringing some of this activity *in house* by setting up a legal team, accounting department or secretarial pool. Here we apply the same logic to households, with families as a leading example, although again the idea applies to other partnerships.[3]

As with legal, accounting or secretarial services that entrepreneurs may demand, many other goods and services that individuals demand can be provided either by the market or within the household, including cooking, cleaning, child care and even companionship. Logic suggests that if the costs of using markets are higher then individuals, like Coasian entrepreneurs, are more inclined to bring activity *in house*. This is especially relevant when market and home commodities are relatively good substitutes, and when home production is enhanced by forming a household that operates more or

[3]There is some precedent to noticing similarities between households and firms. Becker (1973) says "marriage can be considered a two-person firm with either member being the 'entrepreneur' who 'hires' the other," and search theorists often use their equations almost interchangeably to discuss marriage or employment (Mortensen 1988; Burdett and Coles 1999).

less as a team – single individuals can engage in preparing meals and related activities on their own, but it might be better with a partner. Based on much research (see Greenwood et al. 1995, Gronau 1997, Aruoba et al. 2014 and references therein), on average it seems that people are fairly willing to substitute between market and home goods.

Ergo, when they find themselves in a longer-term situation where the cost of using markets is higher, people are more inclined to set up households and increase home relative to market activity. In search theory, it takes time and other resources to get a (good) job, but that is not so different from buying a house or finding a spouse. Since it is time consuming, rational individuals use *reservation strategies*: continue looking until one comes across an opportunity where forming a partnership outweighs the benefits of continued search, including the payoff from being single plus the value of perhaps finding a better option. Using modern methods, it is possible to characterize rigorously how these strategies depend on parameters. As the idea concerns substitution between households and markets, recent research embeds this *general equilibrium* models where agents not only look for partners, but also trade market goods, labor and assets. Moreover, the markets incorporate tax, search and bargaining frictions to accommodate Coasian logic.

Additionally, in the models, consumers sometimes need money – i.e. *cash* and not just purchasing power – based on ideas in a framework called New Monetarist Economics (see Lagos et al 2015). This research endeavors to explain the use of various payment instruments, like currency, credit, debit etc. To see why this is relevant, note that many frictions influence partnership formation, but taxation is one for which data is available, including data on sales and income taxes, and especially on the inflation tax.[4] Money facilitates exchange in the presence of frictions, but this is hindered by inflation, which increases the cost of monetary exchange. There is evidence that items provided either in the home or by the market (e.g., food)

[4]To be clear, inflation is first and foremost a tax on one's holdings of money, whether in your pocket or in a typical low-interest checking account.

are more likely purchased on the market by single people (Simon et al 2010; Wong 2012). While these goods are not always purchased with cash, they are purchased that way more than home goods, which are not even traded, let alone traded for money, with exceptions like paying kids to do chores. Also, intuitively, singles go out more (e.g., on a date), which uses money more than many family activities.

This suggests that being single is cash intensive. Burdett et al. (2015) investigate that hypothesis systematically using micro data from different countries. They find that singles indeed use cash more than married people, controlling for differences in age, income, employment etc. It is best to check the primary source for details, since it is not uncomplicated to uncover the facts, but here's an example. The average married woman in one sample in 2009 had an annual income of around $27,000 and about $80 in her purse/wallet. After controlling for the effects of age, education etc., if the same woman were single she would hold about 50% more currency. Note that this is only money in the purse/wallet, and the data indicate that total holdings – including cash in the cookie jar, under the mattress, and in other readily available places – can be 4 times as big. And this does not count demand deposits, which for present purposes are similar to wallet cash: both are liquid low-interest assets.[5]

Given that being single is cash intensive, inflation like any other tax makes the market (marriage) relatively less (more) attractive. Burdett et al. (2015) then examine a sample of countries over many years to see if marriage rates are affected by fiscal and monetary policy, after controlling for other macro variables, like output growth and unemployment, as well as demographics. Again it is best to go to the primary source for details, but there is some support for the idea that consumption and income taxes increase marriage, and strong evidence that inflation does, too. The effect emerges in theory narrowly interpreted because inflation taxes money holdings, which are higher for singles. More broadly, inflation stands in for (is

[5]Burdett et al. (2015) do not have data on demand deposits, although Duca and Whitesell (1995) provide some independent evidence that singles have more money in these accounts, other things being equal. More work on this would be welcome.

associated with) a variety of problems, including corruption, a poor legal system etc., all of which encourage substitution out of the market and into household activity by individuals, just like frictions encourage the formation of firms in Coase's original thesis.

In conclusion, monetary and fiscal policy affect behavior within households as well as markets, and they affect the formation of households in the first place.[6] The research summarized above focuses mainly on bilateral relationships, but it is feasible and interesting to extend this to study, say, decisions to have children. We also downplayed details concerning tax codes that affect marriage (Chade and Ventura 2002). The general approach can be used to understand many other issues. Salcedo et al. (2012), e.g., attribute secular declines in household size to income growth plus home (market) goods being inferior (superior). A Coasian view might instead stress reductions in transaction costs: it is easier to shop on line than stand in line at the shops. While the exact magnitudes of the effects are still under investigation, we think that it would be a mistake to ignore household economics when analyzing the effects of macro policy. Monetary policy, in particular, through its effect on inflation and hence household formation, can have long-lasting effects on the structure of society.

[6]It is relevant to emphasize that household production is *not small* relative to market production – although output is harder to measure, the labor and capital inputs used in the home are similar in magnitude to those used in the market (Greenwood et al. 1995). Furthermore, including this in models substantially affects the predictions for the effects of policy; see Aruoba et al. (2014) for a recent quantitative application focusing on monetary policy and the effects on housing markets.

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