Economic Policy Papers

Macroeconomic Policy and Household Economics

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

Mei Dong
University of Melbourne
Australia

Ling Sun
Brock University
Canada

Randall Wright
University of Wisconsin
Federal Reserve Bank of Minneapolis

EXECUTIVE SUMMARY

Multiperson households are less reliant on cash than single people because they are more likely than singles to rely on home-based production to meet their daily needs.

This conclusion, supported by recent empirical research, suggests that fiscal and monetary policies that make market-based transactions more expensive will favor the formation of households. Individuals will seek to minimize costs due to such policies by forming partnerships, whether through marriage or less-formal arrangements.

Fiscal policies, such as consumption and incomes taxes, and monetary policy that raises inflation can thereby influence societal structure as well as behavior within households.

Introduction

What factors lead individuals to form households—that is, to enter into partnerships like marriage or to cohabit more generally, have children, take on roommates and so on? While love enters the equation, clearly, many of the goods and services that individuals desire can be either purchased in the market or produced in the home. In recent research (Burdett et al. 2015), we advocate the idea that households are alternatives to markets as institutions for organizing economic and other activity, that individuals form such partnerships when it is economically beneficial to do so, and that this process is strongly influenced by economic policy.[1]

The general idea is based on a classic paper by Ronald Coase (1937), who asks why some economic activity is organized within firms, as opposed to by 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. Coase argues that firms exist in part because 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 that takes place on a market must also be taken into account.

In addition, Coase emphasizes government regulation/intervention in markets:

> 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'être. ... 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.

By establishing firms and organizing them to minimize transaction costs and government regulation, entrepreneurs avoid costs and inconveniences associated with markets. Their very existence testifies to the notion that markets are imperfect and that firms can reduce search, taxation and other frictions. Businesspeople sometimes need services (e.g., legal, accounting or secretarial), all of which are available on the market, but engaging them involves transaction costs. When these costs are high, managers may profit by bringing some of this activity *in house* by setting up a legal team, accounting department or secretarial pool.

Coasian theory applied to households

Here we apply the same logic to households, with families as a leading example, (although, again, the idea applies to other partnerships).[2] Just as with goods and services that entrepreneurs may demand, much of what individuals need can be provided *either* by the market *or* within the household. This list of individual demands might include cooking, cleaning, child care and even companionship. Logic suggests that if the costs of using markets are higher than the costs of meeting needs internally, 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 less as a team. For instance, single individuals can engage in preparing meals and related activities on their own, but it might be better with a partner. Much research suggests that, on average, people are fairly willing to substitute between market and home goods.[3]

Therefore, when individuals find themselves in a longer-term situation where the cost of using markets is higher, they are more inclined to set up households and increase home production relative to market purchase. In search theory, it takes time and other resources to get a (good) job; that is not so different from buying a house or finding a spouse. Since such activities are time-consuming, rational individuals use *reservation strategies*: They continue looking until they come 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 in *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 these models consumers sometimes need money (i.e., *cash* and not just purchasing power), based on ideas in a framework called New Monetarist Economics (Lagos et al. 2015). This research seeks to explain the use of various payment instruments, such as currency, credit and debit.

How is this relevant? In brief, inflation may have a greater impact on single people than on multiperson households because the former are more likely to transact in markets using cash, and inflation "taxes" holdings.

Many frictions influence partnership formation, but taxation is one for which data are 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) 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 often than home goods are. Indeed, home goods 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 cash more than many family activities do.

Empirical research

This evidence suggests that being single is cash intensive. We investigate that hypothesis systematically using microeconomic data from various countries and find that singles indeed use cash more than married people, controlling for differences in age, income, employment and so on. It is best to check the primary source for details, 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. The same woman (controlling for age, education and so on) would hold about 50 percent more currency if she were single. Note that this is only money in the purse/wallet; the data indicate that total holdings (including cash in the cookie jar, under the mattress and in other readily available places) can be four times higher for a single woman than a married woman of the same demographics. And this does not count demand deposits (i.e., savings and checking accounts), which for present purposes are similar to wallet cash. Both are liquid, low-interest assets.[5]

The impact of policy

Given that being single is cash-intensive, inflation (like any other tax) makes market activity relatively less attractive than household production, through marriage or other household formation. We therefore 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 we find some support for the idea that consumption and income taxes increase marriage and strong evidence that inflation does, too.

This effect emerges in theory narrowly interpreted because inflation taxes money holdings, which are higher for singles. More broadly, inflation is associated with a variety of problems, such as corruption, a poor legal system and so on, 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), for example, 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 online than to 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.

Endnotes

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

[2] 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).

[3] See Greenwood et al. 1995, Gronau 1997, Aruoba et al. 2014 and references therein.

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

[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.

[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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