

Research Statement

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Research Interests

Monetary Economics, Macroeconomics, Time Series Econometrics, Development Economics.

Research Summary

My dissertation is devoted to studying monetary policy and poverty in developing countries. Specifically, I study how monetary policy affects the welfare of poor households in developing countries with a particular focus on subsistence food consumption and inequality, as well as the channels through which monetary policy can affect poverty and inequality. The main contribution of my dissertation is finding evidence of a “*food price channel*” of monetary policy in developing countries.

Poverty and hunger are a primary concern of low-income countries, where they can have significant implications for long-term economic growth. Food intake below the biological minimum (2100 calories) leads to undernutrition, malnutrition and mortality, which represent a direct loss to the human capital and productivity, thereby reducing the pace and durability of economic growth. Many other studies have examined how physical productivity of labour and, thereby, employment and wages are related to food intake. In total, the economic cost of undernutrition is estimated to range from 2 to 3 percent of Gross Domestic Product (GDP) in low-income countries, to as much as 16 percent of GDP in most affected countries (like Ethiopia and Malawi).

Despite its importance, poverty and hunger have been largely ignored in the practice and conduct of monetary policy. Most papers in applied monetary economics are concerned with aggregate macroeconomic data, and ignore the possible consequences of monetary policy interventions on poor households. How do alternative types of monetary policy intervention affect food intake and welfare of the poor? This question has been relatively unaddressed and understudied in monetary policy literature. The objective and motivation of my dissertation is to fill the gaps in the literature.

In my dissertation, I find evidence of the impact of a “*food price channel*” of monetary policy on poor households in developing countries. The underlying mechanism is that, in order to stimulate the economy when the central bank employs an expansionary monetary policy, food prices being relatively more flexible, adjust quicker than the overall price level in the economy. Therefore an expansionary monetary policy shock generates an increase in the *relative* prices of food. At short horizons, over which wages are fixed, an increase in *relative* prices of food adversely affects poor households particularly because of three features that stand out among them - first, they are net buyers of food; second, they have limited ability to substitute food when relative food prices rise, due to a high share of food expenditure in total consumption expenditure and subsistence caloric

intake; and finally, they are financially constrained (unbanked population) because of which they are unable to borrow and insure against idiosyncratic risks. Presence of these features make poor households in developing countries highly sensitive to fluctuations in relative food prices and hold potential implications for their response to changes in monetary policy.

Interestingly, I also find that absent any of the above discussed features among the poor households of a country (the case of China), they will not be affected by the “*food price channel*” of monetary policy.

Working Papers

My dissertation includes three chapters on monetary policy and poverty. The first and third chapters are an empirical study. The second chapter is a theoretical study.

1. **De, K., The Food Price Channel: Effects of Monetary Policy on the Poor in India (JMP)**

Poverty and hunger have been largely ignored in the practice and conduct of monetary policy. This paper studies the impact of monetary policy on the distribution of food consumption in India, particularly focusing on the subsistence food consumption of poor households and inequality. Using household survey data from 1996:Q1 to 2013:Q4, I estimate the dynamic effects of monetary policy shocks on relative food prices and the distribution of food consumption in rural and urban India from a dynamic common factor model (Bernanke, Boivin, and Elias, 2005 and Stock and Watson, 2011), and identify monetary policy shocks using the sign restriction approach of Uhlig (2005). Factor-Augmented Vector Auto Regression (FAVAR) results show that an expansionary monetary policy shock increases the *relative* food prices, reduces the subsistence food consumption of poor households, and raises inequality across households in food consumption. This paper provides evidence of the impact of a “*food price channel*” of monetary policy on poor households in India. To the best of my knowledge, this is the first study to empirically analyze the impact of monetary policy on poor households in India. This study may hold important policy implications for Indian policymakers as well as those in similar low-income countries.

2. **De, K., The Food Price Channel of Monetary Transmission in Developing Countries: A Welfare Analysis**

I develop a theoretical framework to demonstrate the “*food price channel*” of monetary transmission and thereby quantify the overall welfare effects of monetary policy on households in developing countries. Relative food prices play a dominant role in the welfare of poor households in low-income countries because of three features that stand out among them - high share of food expenditure in total budget, subsistence caloric intake and financial constraints. I build the “*food price channel*” into a dynamic general equilibrium model, with heterogeneous agents (a fraction of whom, the poor households, have limited ability to substitute food in the wake of increasing relative food prices, and no access to the formal financial system), and two sectors that feature flexible food and sticky non-food prices. To evaluate the overall welfare effects of monetary policy on households, I derive a welfare loss function that represents a second-order Taylor series approximation to the level of expected utility of the representative agent in the rational expectations equilibrium associated with a given monetary policy. The theoretical-welfare approach followed in this paper holds implications for objectives and

designing of monetary policy in developing countries.

3. De, K., Can Food Price Channel Break Down? Evidence from Monetary Policy and Poor Households in China

I empirically investigate the impact of monetary policy on poor households in China. Using household survey data from 1996:Q1 to 2013:Q4, I estimate the dynamic effects of monetary policy shocks on relative food prices and the subsistence food consumption of poor households in urban and rural China from a dynamic common factor model (Bernanke, Boivin, and Elias, 2005 and Stock and Watson, 2011), and identify monetary policy shocks using the sign restriction approach of Uhlig (2005). Monetary policy shocks have contrasting effects on the food consumption of poor households across urban and rural China. Given an expansionary monetary policy shock, that increases *relative* food prices, the per capita real food consumption expenditure of poor households in urban China falls, but in rural China rises. This striking difference in the food consumption response of poor households across urban and rural China emerges from the differences in the characteristics of these households in the two regions. Whereas, poor households in urban China rely on cash purchases of food and respond negatively to an increase in relative food prices, poor households in rural China rely heavily on self-produced food and respond positively to an increase in relative food prices. Empirical evidence from rural China shows that household food self-sufficiency breaks the “*food price channel*” of monetary policy, that can potentially hurt poor households.

Future Research Agenda

Future research projects will focus on monetary policy and macroeconomic development issues. Following are the three research projects that form my future research agenda.

1. First, I intend to extend the second chapter of my dissertation to study how features of poor households (who comprise a sizeable proportion of the population) in developing economies, such as high share of food expenditure in total consumption expenditure, subsistence consumption of food, and financial constraints can affect the dynamics of such economies and formulation of their optimal monetary policies. *What should be the right price index that should be the focus of an inflation targeting central bank in a developing country?* I am curious to investigate this research question, and find out if a welfare maximizing central bank in a developing country needs to adopt a measure of core inflation targeting or headline inflation targeting.
2. A second project involves investigating some of the other channels, such as the *employment channel*, through which monetary policy can affect poverty and inequality in developing countries. I intend to empirically study the dynamic effects of monetary policy shocks on labor hours, labor income and labor supply of households in developing countries, to understand its implications for poverty and inequality.
3. Finally, I intend to broaden my research horizon to other areas of theoretical and applied macroeconomics with an emphasis on issues in emerging market economies. Going forward, I want to study how financial globalization can affect developing countries. For example, in the wake of the global financial crisis, many advanced countries resorted to UMPs and a zero lower bound interest rate, which led to huge capital inflows in EMEs like India and China, causing an appreciation of their exchange rate and adversely affecting their economy.

Using macroeconomic data and time series methods, I plan to empirically investigate the spill-over effects of unconventional monetary policies of advanced countries on emerging market economies.