RESEARCH BRIEF

IQ, Expectations, and Choice

Human Frictions in the Transmission of Economic Policy

Based on BFI Working Paper No. 2018-07, "Human Frictions in the Transmission of Economic Policy," and BFI Working Paper No. 2018-08, "IQ, Expectations, and Choice," by Francesco D'Acunto, assistant professor, Boston College; Daniel Hoang, assistant professor, Karlsruhe Institute of Technology; Maritta Paloviita, adviser, Bank of Finland; and Michael Weber, associate professor, UChicago Booth School of Business

KEY TAKEAWAYS

- ✓ In the wake of the Financial Crisis and Great Recession, policymakers engaged in unconventional monetary policy
- ✓ One such policy tried to encourage near-term consumer expenditure by raising inflation expectations
- ✓ However, such policy subtleties were lost on most individuals, especially those with lower IQs
- ✓ New policies are needed that don't discriminate against lower-IQ individuals and, subsequently, would provide better results

In the months and years following the Financial Crisis and Great Recession of 2007-09, the Federal Reserve and the European Central Bank engaged in a number of unconventional policy measures meant to forestall a further drop in economic activity and, ultimately, to ignite economic growth. One of those measures, forward guidance, was intended to stimulate current consumption by informing the public that interest rates would be kept inordinately low for an extended period and hence increasing their inflation expectations.

The premise behind this policy was that consumers were fully cognizant of monetary policy and would believe that keeping interest rates low even after the recession would spark inflation in the future; therefore, they would spend their money in the near term before inflation kicked in. Likewise, consumers would wait to save in the future when interest rates were higher. That premise was flawed, according to Francesco D'Acunto, assistant professor at Boston College, Daniel Hoang, assistant professor at the Karlsruhe Institute of Technology, Maritta Paloviita, adviser at the Bank of Finland, and Michael Weber, associate professor at the University of Chicago Booth School of Business.

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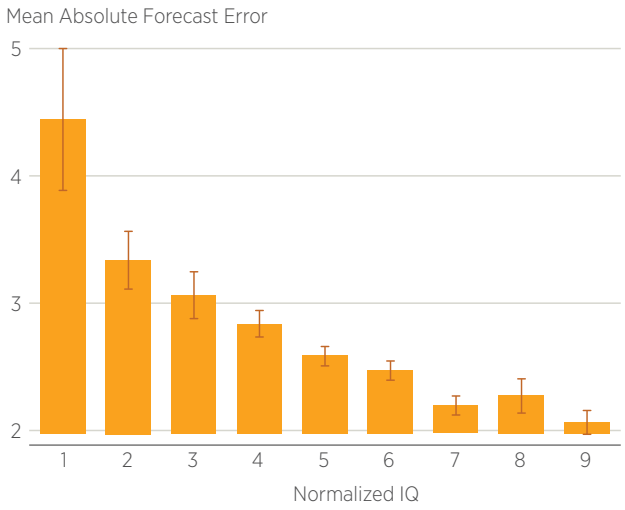
Figure 1: Forecast Errors for Inflation by IQ



Notes: This figure plots the average absolute forecast error for inflation (in percentage points) across IQ levels. Forecast error is the difference between the numerical forecast for 12-month-ahead inflation and ex-post realized inflation. Vertical lines represent 95% confidence intervals around the estimated mean for each bin. IQ is the standardized test score from the Finnish Defence Forces. IQ obtains integer values between 1 and 9. The sample period is from January 2001 to March 2015.

The authors investigate this issue in two papers, "IQ, Expectations, and Choice," and "Human Frictions in the Transmission of Economic Policy," which together tell a related story about consumers' understanding about policy.

Based on Finnish data that measures, in part, consumers' awareness and understanding of the economy and economic policy, the authors find that only the most intelligent consumers are aware of policy and its impact and, therefore, alter their behavior. This finding not only suggests that policies like forward guidance have little chance to succeed, but also that these policies may be inherently discriminatory because they favor those consumers with the wherewithal to react accordingly.

Policy for smart people

Fundamental to modern dynamic models in macroeconomics and finance is the idea of intertemporal substitution, which means in this case that people make consumption and savings choices based on the level of interest rates. As described above, if real interest rates are low, then all people in these models are inclined to spend their money; however, as interest rates increase, everyone is more inclined to save. These are known as representative agent models, and to the degree that they are true, they provide a powerful tool for policymakers, who can simply turn the knobs of interest rates and generate a desired amount of economic activity.

It turns out, though, that these assumptions about behavior are mostly not true. While there are some people who pay attention to policy and optimize their choices based on those measures, most people are either oblivious to policy or otherwise disinclined to pay heed. If a household wants a new refrigerator, say, or a new car or a computer, it is likely to consider its level of disposable income and not the path of future interest rates. Indeed, most people likely have little idea what rates are, either in the near or far term.

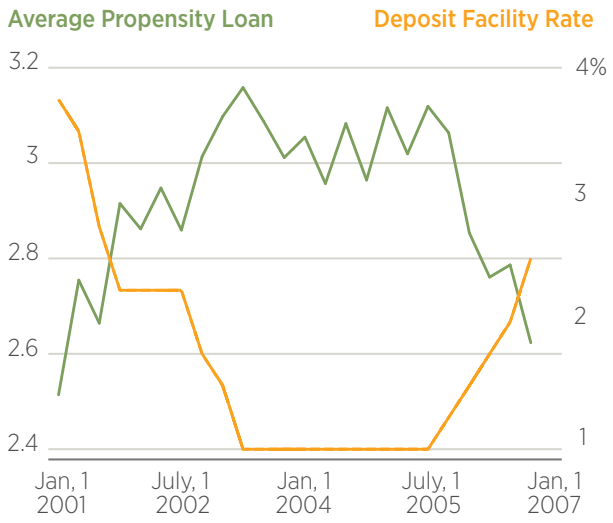
Anecdotally, and perhaps based on our own experience, it makes sense to question the assumptions of representative-agent models. The contribution from these two papers, though, is that they test this intuition against data that reveal what people know about policy and how they react to it. These data come from Finland, where all men around age 20 are required to take a standardized cognitive (IQ) test at the beginning of mandatory military service (the IQ data are from 1982-2001), and from a monthly consumer confidence survey conducted by Statistics Finland on behalf of the European Commission (1995-2015). These monthly surveys ask about general and personal economic conditions, as well as households' plans to spend, save, and borrow.

Given the homogeneous nature of Finland over that time, and given that all Finns receive a nearly free education through college, the country provides a good laboratory to disentangle the effects of cognitive abilities from important confounders like education levels and labor income. And the consumer confidence survey asks questions pertinent to policymaking, for example:

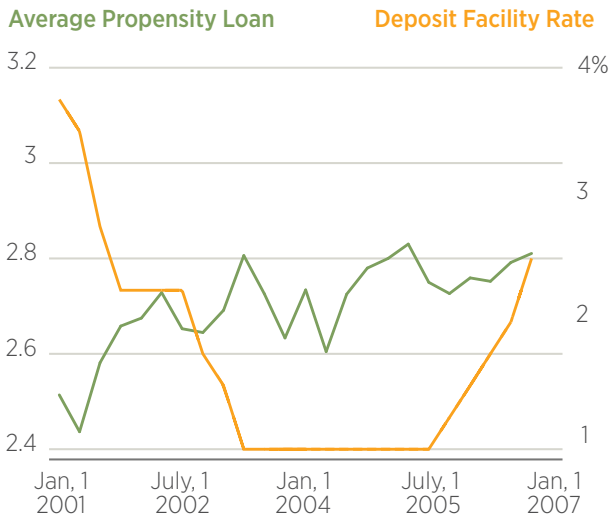
- *In view of the general economic situation in Finland, do you think that now it is the right moment for people to make major purchases such as furniture, electrical/electronic devices, etc.?*
- *How will consumer prices evolve during the next twelve months compared to the previous twelve months?*

Figure 2

Panel A: Borrowing: High-IQ Men



Panel B: Borrowing: Low-IQ Men



Notes: Panel A and B of this figure plot the cross-sectional mean of whether individuals think it's a good time to take out a loan in Finland by IQ levels. High-IQ men are all men with the highest 3 scores of the 9-point distribution. Low-IQ men are all men with the lowest 3 scores of the 9-point distribution. The authors use the confidential micro data underlying the official European Commission consumer confidence survey to measure the propensity to take out a loan. Statistics Finland asks a representative sample of 1,200 households whether they think it's a good time to take out a loan; higher values represent better times, which means that households are more likely to borrow.

From these and other questions—including those that ask for point estimates of past and future inflation—and from consideration of such demographics as age, education levels, marital status, income, household size, and employment status, the authors conclude the following (results are for men only since the military data set only includes men): Only men with high IQs adjust the amount they consume in response to changes in inflation expectations, and high-IQ men are also twice as sensitive to changes in interest rates when borrowing relative to other men.

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Low-IQ men make up more than half of the men and half of the income in the authors' sample, which suggests that their non-response to policy changes can be a primary factor in explaining the limited effectiveness of unconventional monetary policy like forward guidance. The authors then extend this analysis to more traditional monetary policy, or the setting of nominal interest rates, and they find that only high-IQ men react in accordance with policy's intent, as their propensity to borrow increases when rates fall and decreases when rates rise. For low-IQ men, there is no correlation between borrowing behavior and interest rate changes (see figure 2).

Conclusion

During and after the financial crisis, policymakers devised measures to affect household behavior by attempting to manage households' beliefs about future macroeconomic conditions, with the goal of encouraging consumption over savings. However, due to households' seeming inattention to, and understanding of, economic policy, those measures were not as effective as planned.

CLOSING TAKEAWAY

Short-term interest rates are the conventional monetary-policy tool of central banks, and consumer credit is a primary means of affecting changes to the real economy. However, if consumers don't play along, then such policies are necessarily suboptimal.

In their detailed analysis of a representative sample of Finnish men, the authors show that only those with high IQs change their consumption plans in line with the intended effects of policy.

This is not good news for monetary policymakers. Short-term interest rates are the conventional monetary-policy tool of central banks, and consumer credit is a primary means of affecting changes to the real economy. However, if consumers don't play along, then such policies are necessarily suboptimal. This provides a challenge for both policymakers and researchers. For example, policymakers could design policies that are easier to understand for the whole population. An example of such a policy was described by Weber et al. in their recent paper, "The Effect of Unconventional Fiscal Policy on Consumer Expenditure" (March 2018), wherein tax rates become the lever to persuade or dissuade consumer spending.

Novel communication strategies might also be necessary to inform most of the population. The financial services industry is well-served by traditional media and by their own news-gathering efforts, but most people do not closely track business and financial news or, it seems, understand its consequences.

Until such changes are made and proven effective, policymakers must seriously consider the potential discriminatory effects of monetary policy. While these effects are unintended they are no less real, and further research is needed to help design policies that not only mitigate these effects but also, broadly speaking, deliver more effective results.

READ THE WORKING PAPERS

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Human Frictions in the Transmission of Economic Policy

bfi.uchicago.edu/Weber-WP-201907

NO. 2019-08 · JANUARY 2019

IQ, Expectations, and Choice

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