Determining the dosage of policy instruments required for achieving the desired effect on the economy is important for macroeconomic policy. Tax hikes are expected to reduce consumer spending, whilst lower taxes are expected to increase spending. Economic research often uses theoretical models or statistical estimations, which don’t necessarily capture the actual policy effect on consumers. Professor Bernd Hayo, from the University of Marburg, used an often overlooked approach by exploring self-reported individual consumption responses to a real-world tax change in Germany.

The 2007 financial crisis and the associated economic slump, together with the economic crisis in the euro area, have generated renewed interest in the consequences of changes in government fiscal policy for economic activity. Fiscal policy, the increase and decrease of either government expenditures or taxes, is an important macroeconomic stabilisation instrument. Increasing taxes is assumed to decrease consumer spending, whereas the reverse response is expected for decreasing taxes. Economic research on the effects of tax changes tends to use theoretical models or statistical estimations, which often suffer from assuming non-realistic consumer responses or weak identification of the policy change. Professor Hayo and colleagues used a different approach by directly asking consumers about their behaviour to more accurately investigate the real-world consequences of increased taxation.

The Importance of Consumption Responses

In Germany, private final consumption expenditure accounts for approximately 60% of gross domestic product (GDP), suggesting that consumption responses are highly relevant when analysing the macroeconomic consequences of tax changes. Consumption responses to tax changes represent an important feature of public debate about effectiveness of fiscal stimulus but are also the core of the transmission of fiscal policy shocks in most macroeconomic models. Understanding responses to tax changes in Germany is thus important for both economic policy and academic research.

Taxation and Consumption in Germany

Statutory pension insurance in Germany is a pay-as-you-go system, where current contributions are used to pay for current pensions. The pension insurance contribution rate is divided between employers and employees. It’s financed by a proportionate tax on monthly income up to a defined income level. Future pension entitlements depend on the income of the insured but not on the contribution rate. In the beginning of 2013, about two months before the survey was conducted, contribution rates to the statutory pension insurance system in Germany were reduced from 19.6% to 18.9%, thus lessening the overall tax burden of employees and employers. The rate change needed to be implemented because the statutory pension insurance is not allowed to accumulate a substantial surplus, i.e. it can be interpreted as an exogenous, average size German tax shock. This context formed the real-world framework for Hayo’s research.

Survey Responses

Hayo’s research used a representative survey of the German population, with the analysis focusing on those who contributed to the statutory pension insurance system. When asking respondents about whether they planned to save or spend the additional household income received from the tax reduction, 58% stated that they intended to increase spending. These results suggest that taxation can significantly affect consumption.

Hayo also investigated economic and socio-demographic factors associated with consumption. Respondents’ perception that the tax change was either temporary or permanent was not significant, suggesting that both types of tax changes have similar effects on consumer behaviour. Expectations of future economic outcomes were also statistically insignificant, indicating that variation in expected income over the business cycle does not alter the impact of tax changes. Factual knowledge of the budget deficit, interest rate and inflation rate were also found to be nonsignificant. This suggests that economic knowledge is not associated with different consumption behaviour in response to tax changes. Interestingly, only 9% of survey respondents were able to correctly identify the previous year’s budget deficit, 36% chose the correct long-term interest rate and 66% selected the correct current rate of inflation. Based on these findings, it seems that respondents in Germany are not particularly well informed about macroeconomic variables that are frequently used in economic models.

Individuals who perceived the current return on savings to be low were much more likely to spend the additional money from the tax change. This highlights that interest rates are an important determinant of consumption and saving decisions. Such findings also reinforce concerns that a low level of interest rates results in lower savings. In addition, those with a high level of household income were 14% more likely to increase consumption in response to tax changes. This raises questions about the effectiveness of specific business cycle stimulus measures, such as increasing child benefit payments.

Conclusions

Hayo’s research has demonstrated the potential for tax changes to significantly affect consumption and economic activity. The use of survey data to investigate consumer responses allowed investigation of the economic and socio-demographic factors associated with consumption. Analysis of these factors provides three important contributions to the research literature.

Firstly, the finding that perceptions of the tax change being temporary or permanent were not significant. This finding is not consistent with standard macroeconomic theory, which suggests that temporary and permanent tax changes have different impacts on consumption. Secondly, demonstrating that individuals who perceive the attractiveness of saving to be low have a higher propensity to spend, supporting the view that low interest rates decrease saving. Thirdly, finding that households with higher income have a higher propensity to consume, running counter to conventional wisdom. Hayo’s research thus highlights the utility of using survey methods to investigate consumer responses to tax changes.
Bernd Hayo's work considers the effect of taxation on spending.

**Bio**
Bernd Hayo has been Professor of Macroeconomics at Philipps-University of Marburg since 2004. He received an MSc from the University of Bristol in 1993 and a PhD from the University of Bamberg in 1997 and worked at the Universities of Bonn and Duisburg-Essen as a post-doctoral researcher. He was a visiting professor at the Universities of Bonn, Frankfurt, Georgetown and Göttingen. His research focus is quite broad, typically employing empirical methods and concentrating on questions related to monetary and fiscal policy, political economy, and socio-economics.

**Collaborators**
Key collaborators in this field of research are Matthias Uhl (now at Deutsche Bundesbank) and Florian Neumeier (now at ifo Institute Munich).

**Key paper:**

**Related papers:**


**Personal Response**

**What role do you see for surveys as a research method within economics?**
Arguably, surveys are not sufficiently used in economics as a research method. Traditionally, it was considered an unreliable tool, inferior to econometric models using data provided by official statistics. However, many econometric models suffer seriously from so-called ‘identification problems’, i.e. the difficulty of measuring what the researcher is actually trying to measure.

Recently, economic experiments have become prominent as an empirical research method. Here, a common drawback is a lack of external validity, i.e. validity outside the typically non-representative group of probands. Surveys have the advantages that they are individual-based but can be made representative with regard to the relevant population and can address very specific research questions. Disadvantages of surveys are that they only measure stated rather than actual behaviour and are costly to implement.

**What are you currently working on?**
We just conducted a new multi-topic population survey on Germany, where we asked about attitudes towards refugees, migrants at the workplace, inflation and monetary policy, as well as local public finances. First results are summarised here: https://www.uni-marburg.de/fb02/makro/forschung/makspapers/paper_2018/19-2018_hayo.pdf.