The (In)validity of the Ricardian equivalence theorem–findings from a representative German population survey☆

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A B S T R A C T

In this paper, we utilize data from a German population survey to test the validity of the Ricardian equivalence theorem (RET). In 2013, 2,000 representatively chosen people were asked whether they have altered their consumption and saving behavior in response to the significant increase in public debt that occurred between 2008 and 2012. Our findings reveal notable deviations from RET. However, we cannot rule out that the majority of Germans behave ‘partly’ in a Ricardian manner. This could either indicate a large fraction of rule-of-thumb or impatient consumers in the economy, or a widely prevalent mix of partially Ricardian and partially non-Ricardian behavior. Moreover, using multinomial logit regressions, we find that individuals’ consumption responses are significantly related to their economic situation, time preferences, education, and age.

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1. Introduction

The recent financial crises and the associated economic downturn have revitalized research into the efficacy of fiscal stimuli and the size of fiscal multipliers. In contrast to ambiguous results in older literature, recent studies report notable and robust effects of fiscal policy on the real economy (e.g., for the United States: Romer and Romer, 2010; Favero and Giavazzi, 2012; for Germany: Hayo and Uhl, 2014a; for the United Kingdom: Clayne, 2013).

These empirical findings contradict predictions derived from the Ricardian equivalence theorem (RET), which plays an important role in macroeconomic theory. RET suggests that fiscal stimuli—that is, deficit-financed public spending hikes or tax cuts—will lead to a crowding out of private consumption, thus decreasing the effectiveness of fiscal policy in boosting economic activity. Although studies showing the effectiveness of fiscal policy may cast doubt on RET’s validity, ultimately,
they provide only indirect evidence of RET’s usefulness for explaining empirical data. Hence, a large number of empirical studies attempt to directly test RET.

The results from these studies lead to widely varied interpretations. For instance, Seater (1993: 182) states: ‘Although tests of Ricardian equivalence do not quite give an unambiguous verdict on that proposition’s validity, I think it reasonable to conclude that Ricardian equivalence is strongly supported by the data’. Quite the reverse is claimed by Romer (2006: 572), who writes that ‘there is little reason to expect Ricardian equivalence to provide a good first approximation in practice’.

Underlying these results are two dominant strands of empirical research. The first strand employs macroeconomic data to test empirical predictions following from RET. Particularly common is the estimation of (static) aggregate consumption functions as well as consumption Euler equations using multivariate regression analysis or VAR models (e.g., Feldstein, 1982; Evans, 1988, 1991; Becker, 1997). Relying on microeconomic data to check the validity of RET, the second strand utilizes laboratory experiments (e.g., Adji et al., 2009; Cadsby and Frank, 1991; Slate et al., 1995). However, findings are generally inconclusive. Within both literature strands, there are some studies that provide evidence in support of RET and some that reject the existence of a Ricardian motive in private consumption. Moreover, both macroeconometric and experimental approaches have been fiercely criticized. Macroeconometric studies are not only subject to a serious identification problem due to the simultaneity of aggregate income, consumption, government revenues, and expenditures, as well as public debt, but may also suffer from various types of misspecification (e.g., Bernheim, 1987; Cardia, 1997). Experimental laboratory setups, on the other hand, involve hypothetical scenarios and decisions made in a highly artificial environment, thus raising questions about their relevance for daily decision making and casting doubt on their ability to ensure external validity for a representative sample of the population.

There is a third, infrequently employed, way of testing RET: directly asking people about their economic reactions. We believe that the survey framework, although not without its own problems, is a promising alternative to the other two ways of testing RET. Bearing in mind the methodological drawbacks of the extant literature, we designed a specific population survey to assess the relevance of RET for peoples’ consumption choices. In the first quarter of 2013, roughly 2000 representatively chosen German citizens aged 14 or older were interviewed face-to-face with the help of pen pads. The survey was carried out by the GfK, the largest survey institute in Germany.

In a first step, the interviewees were asked whether the noticeable increase in public debt in Germany between 2008 and 2012 has affected the share of income they spend or save. We believe the timing of the survey facilitates the purpose of our analysis. The German government’s reliance on deficit financing in the aftermath of the recent financial and economic crisis allows us to study changes in private consumption in response to an actual and notable increase in public debt. Thus, in contrast to laboratory studies, our survey refers to a real-world scenario. Relevance is enhanced by the fact that the increase in public debt was significant enough to exert a noticeable influence on the government’s intertemporal budget constraint. Over the course of the crisis, the debt-to-GDP ratio of the German general government rose from 65% in 2007 to 81% in 2012. In 2009, that is, right in the middle of this period, the German parliament introduced a balanced budget rule via a constitutional amendment. According to this rule, the public budget deficit at the federal-government level must not exceed 0.35% of GDP from 2016 onward. Thus, at the time the survey took place, it was already clear that the deficit-financed fiscal stimulus was only transitory and the adoption of austerity measures to be expected.

In a second step, we evaluate individual consumption reactions to a specific real-world fiscal policy change in Germany. A reduction in individual contributions to the statutory pension insurance system meant an increase in disposable income for wage earners and can be interpreted as a change in taxes for this group (see Hayo and Uhl, 2015). Referring to this payroll tax cut, interviewees were asked (i) whether they use the additional disposable income for consumption or saving and (ii) whether they believe that the contribution cut implies higher contributions in the future or a reduction in pension payments.

While we do not have direct evidence that Germans are aware of the transversality condition and the possibility that it can be violated, our survey participants expressed great concern over the long-term development of public debt. Hayo and Neumeier (2017) show that the German population has a clear preference for fiscal consolidation and Hayo and Neumeier (2016) provide evidence of overwhelming public support for the introduction of the balanced budget rule noted above.

Our survey allows us to directly link cause—that is, public debt accumulation—and consequence—that is, changes in private consumption. We believe that this approach avoids the type of identification issues that commonly afflicting macroeconometric studies and, thereby, provides more direct evidence as to the chain of causation.

Moreover, the representativeness of our data ensures external validity to a much larger degree than that achieved by using small samples of, typically, economics students. Thus, instead of measuring a specific group’s response to an artificial and counterfactual scenario, we ask a representative sample of ordinary people about their actual reaction to a real-world event they can relate to and that has been widely and repeatedly discussed in all forms of media.

In addition, the large number of individual observations makes it possible to investigate whether the inclination to behave in a (non-)Ricardian manner is related to interviewees’ personal characteristics. In the extant literature, several studies cast doubt on the general validity of RET by pointing out various restrictive assumptions underlying its theoretical framework. Our survey framework allows us to evaluate the importance of factors believed to invalidate RET, such as economic well-being, time preferences, and (economic) sophistication.

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1 See Seater (1993) and Ricciuti (2003) for detailed literature reviews.
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