Economic Studies 168

Sebastian Escobar
Essays on inheritance, small businesses and energy consumption
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The Department of Economics at Uppsala University has a long history. The first chair in Economics in the Nordic countries was instituted at Uppsala University in 1741.

The main focus of research at the department has varied over the years but has typically been oriented towards policy-relevant applied economics, including both theoretical and empirical studies. The currently most active areas of research can be grouped into six categories:

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Abstract


**Essay 1:** People’s planning to evade the inheritance tax curtails its merits. However, the extent of planning remains a matter of argument. According to popular belief, it is widespread, but few estimates have been presented. This study estimates the extent of estate size under-reporting, a form of inheritance tax planning, using the repeal of the Swedish tax on spousal bequests, in 2004, and a regression discontinuity design. The results show that, on average, estate sizes were 17 percent lower, and the share of estates that completely escaped tax payments was 26 percent larger due to under-reporting. As a consequence, government revenues from the tax were only half of what they would have been without under-reporting. Moreover, preferences and means for under-reporting were not only prevalent among the wealthy, but also among those receiving relatively small inheritances. The study contributes to a growing literature on tax avoidance and evasion by estimating the extent of estate size under-reporting, its effect on government revenues and by showing that it was widespread in the population.

**Essay 2:** There is an ongoing debate about whether or not inheritance and estate taxes are effective in raising revenues and in contributing to a more equal society. The different views on transfer taxes are largely dependent on beliefs about whether people plan their wealth to avoid these taxes. In this paper, we follow Kopczuk (2007) and study people's planning response to the onset of terminal illness. An extension of Kopczuk’s work is that we can effectively control for responses in wealth caused by terminal illness but unrelated to tax planning. We do this by exploiting a tax reform in Sweden that removed the incentives for people to plan their estates to avoid inheritance taxation. We find some evidence of long-term terminal illness inducing responses consistent with tax planning, but that these are not widespread or efficient enough to reduce the overall tax burden in the study population. Our results, similarly to those of Kopczuk, show that people appear to postpone some decisions about their estates until shortly before death.

**Essay 3:** Small businesses form an essential part of all economies, making it necessary to understand the conditions under which they operate. This paper contributes to that understanding by studying how survival, income and profits of small businesses change when their owners receive inheritances. Using a difference-in-differences strategy and Swedish registry data on small businesses and estate reports, it is shown that survival rates increase with almost three percentage points when the owners receive inheritances of, on average, SEK 275,000. However, the profits of the surviving small businesses and the income of their owners do not increase, indicating that the inheritance did not increase survival by making investments possible, investments to increase profits and income, but by enabling small business owners of lower ability to subsist. The study contributes to the literature on the conditions for small businesses by providing causal evidence on the effect of increased access to capital among existing businesses. It thereby complements the rich literature on the role of capital for small business start-ups.

**Essay 4:** This article shows that a simple monetary incentive can dramatically reduce electric energy consumption (EEC) in the residential sector and simultaneously achieve a more desirable allocation of EEC costs. The analyses are based on data from a policy experiment conducted in 2011 and 2012 by a private housing company in about 1,800 apartments. Roughly 800 of the tenants (treatment group) were subject to a change from having unlimited EEC included in their rent to having to pay the market price for their own EEC. This change was achieved by installing EEC meters in each apartment. Tenants in the other 1,000 apartments (control group) experienced no policy change and were subject to apartment-level billing and metering during the entire study period. Using a quasiexperimental research design and daily data on EEC from 2007 to 2015, we estimate that apartment-level billing and metering permanently reduce EEC by about 25%. Moreover, we show that households reduce EEC immediately after being informed that they will be billed for EEC, the reduction is larger when the production cost is higher, and
the reduction in EEC comes almost exclusively from households with very high EEC before the policy change. Finally, we show that apartment-level billing and metering are cost-effective, with a cost per reduced kilowatt hour of US$0.01, and for each invested dollar, the social value of reductions in air pollution, including CO$_2$ emissions, is $2.

Keywords: estates, bequests, inheritance taxes, tax evasion, tax avoidance, liquidity, entrepreneurship, small business, sub-metering, environment, smart meters, energy conservation, quasi experiment

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ISSN 0283-7668
ISBN 978-91-85519-75-0
urn:nbn:se:uu:diva-320724 (http://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-320724)
To Hanna
Acknowledgements

My supervisors, Mikael Elinder and Henry Ohlsson, have guided me through these years of thesis writing. Mikael, you have helped and motivated me to become a better researcher. The door to your office has always been open and no matter what problem I have faced—in life or professionally—you have always had an insightful comment and a word of encouragement. Henry, your enthusiasm and optimism have been an inspiration to me. Discussing a project with you always reminds me that research is fun. Also, your wisdom and knowledge, which you happily share, have greatly improved my research.

I am grateful to Joacim Tåg and Martin Nybom for their helpful comments on my licentiate and final seminars. I am also grateful to Wojciech Kopczuk for inviting me to spend a semester at Columbia University; to Daniel Waldenström for providing me with data that made this thesis possible; to the Jan Wallander and Tom Hedelius foundation and to Che-Yuan Liang, who generously shared his research grant, for their financing of my studies.

During my studies, I have been privileged to have what is best described as an informal supervisor. Oscar Erixson, thank you for the time you have selflessly spent on reading, commenting and helping me develop my work. I am indebted to my coauthor Ingel Petré for introducing me to the subject of free riding in energy consumption. This resulted in our paper together with Mikael, a paper that constitutes the fourth chapter of this thesis. Per Engström and Niklas Bengtsson deserves special mention, not only for all the lunches I have enjoyed with you, but also for your comments on my work and your support in general. I am grateful to the participants at the inheritance law and economics seminars for our fruitful discussions. I am also grateful to Håkan Selin for sharing his great knowledge on public economics (and football), and to Adrian Adermon for always being helpful when I have had problems with econometrics, typesetting or STATA programming.

I was lucky to start the PhD program in 2012 as this meant that I were to spend the much dreaded first year with Jacob, Evelina, Kristin, Olof, Gunnar and Josefin. Your support and friendship has been invaluable to me. There are various other people at the department that deserves mention for comments, suggestions, help and for making my work easier
in general. I would like to thank my fellow PhD students over the years. A special thanks to Erik, Susanne, Mattias N, Selva, Johannes, Mattias Ö, Fredrik, Oskar, Lovisa, Henrik, Aino-Maja, Irina, Maria, Christina, Daniel, Jenny, Anna, Glenn, Jon, Paula, Lucas and Arnaldur for all the lunches and breaks we have shared. A special thanks to Jonas and Linuz for being such excellent travel companions in New York. A special thanks also to the always dependable administrative staff: Ann-Sofie, Emma, Javad, Katarina, Nina, Tomas, Stina and Åke.

There are several other people who mean a lot to me, who are always helpful and who have always been there for me in some way or the other. My non-economist friends, grandparents, cousins, aunts, uncles, sister’s fiancé and my soon to be in-laws, I would like to thank all of you.

I am fortunate to have such a loving and supporting family. To my mum, dad and sister: Thank you for always encouraging me in my academic ambitions and for putting up with my “thousands of questions”.

My last thanks go to Hanna, my future wife. Thank you for always being my biggest fan, for always believing in me and for always knowing how to make me laugh. Had you not, I would never have managed to write this thesis. I love you.

Uppsala, April 2017
Sebastian Escobar
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Introduction

According to Montaigne, studying philosophy is a preparation for death.\textsuperscript{1} Although in a more practical sense than Montaigne intended, this is especially true when writing a PhD thesis mostly concerned with inheritance and inheritance tax planning.

The result of my preparations—I hope well in advance—lies before you. It is a total of four self-contained articles, or thesis chapters, out of which two regard inheritance tax planning, one regards the effect of inheritance on small business owners and one regards electric energy consumption of tenants. The chapters are associated methodologically; they present research in applied econometrics, trying to credibly estimate causal effects. They also use Sweden as an experimental setting, but with the ambition to learn about human behavior, not specific to that context.

With respect to their topics, the chapters may appear miscellaneous. However, they all study expressions of human behavior with possibly important external effects. For instance, a decedent or heir who plans in order to reduce tax payments contributes less to government revenues, which means that there are less revenues to spend on schools, health-care, police etc. A tenant, who overuses electric energy, because unlimited use is included in the rent, is letting others pay for his or her excessive consumption. And, a business owner who expands the business as a result of an inheritance may hire more people and contribute to economic growth. In other words, all chapters study individual behavior that may have important implications for other people than the individual himself.

Inheritance tax planning

The growing interest in wealth and wealth inequality, in recent years, has resulted in a rebirth of the debate on inheritance taxation, a debate in which some argue that the tax is a useful tool to reduce wealth inequality, others question this, and yet others are more concerned by the tax’s possibly detrimental effects on savings and labor supply. One of the most common concerns, however, is that the tax is easy to avoid and evade, perhaps even easy enough to render it useless.

\textsuperscript{1} The observation predates Montaigne, who cites Cicero’s Tusculan Disputations i.31.
Several studies show that people try to reduce inheritance tax payments and that they to some extent succeed in these attempts. For example, Eller and Johnson (1999) find that reported estate sizes are, on average, about 12 percent higher after the estate reports have been audited than before, which suggests that people under report or fail to declare assets that are supposed to be included in the estate. Similarly, several studies have shown that the value and asset composition of decedents’ estates differ from the value and asset composition of living individuals’ wealth, which also indicates inheritance tax planning (see e.g., Wolff (1996), Poterba (2000), Eller, Erard, et al. (2001), and Poterba and Weisbenner (2003)). Other studies have even shown that more people are reported to pass away just after rather than just before inheritance tax repeals, suggesting that they postpone their death or in other ways manipulate the reported date of death to circumvent taxation (Kopczuk and Slemrod 2003; Gans and Leigh 2006; Eliason and Ohlsson 2008, 2013).

The first two chapters of this thesis contribute to this literature by studying the Swedish inheritance tax on bequests between spouses and the extent to which the decedent and surviving spouses planned to minimize their tax payments. The chapters take two distinct viewpoints. The first takes the perspective of the surviving spouses and studies their planning, while the second takes the perspective of the decedents and studies planning carried out by them. The results of the chapters show little evidence of tax planning on behalf of the decedents, but extensive tax planning carried out by the surviving spouses; they under-reported estate sizes with almost 20 percent to evade taxation.

The chapters having different viewpoints stresses an important feature of inheritances and inheritance taxes: they concern two parties, and the actions of one party with respect to the inheritance may influence the actions of the other. This two-sidedness may help in explaining why there is no evidence of planning carried out by the donors in Chapter 2. As pointed out by Kopczuk (2007), inheritance tax planning comes at a costs to the decedent: the psychological cost of thinking about one’s mortality, or the cost of giving up control over wealth. Thus, when it is easy for the surviving spouse to evade taxes, as suggested by the findings of Chapter 1, it makes sense for the decedent not to bear the cost of inheritance tax planning. This shows that there is a point in seeing the two chapters together, even if each of them studies the behavior of distinct actors, and they are thus self-contained.

2. Remember Pascal’s *Pensee*, “It is easier to bear death when one is not thinking about it than the idea of death when there is no danger” (Pascal 1995).
Although the Swedish inheritance tax has been repealed, it is useful to study the Swedish experiences of the tax, as these may be informative also on tax planning in other countries. The concerns regarding the tax being easy to avoid and evade were not unique to Sweden, and its design—being an inheritance tax—made it representative of the most common form of transfer taxation (Henrekson and Waldenström 2016). This being said, it should be remembered that the findings concern spousal bequests and that tax planning with respect to spousal bequests may differ from planning with respect to other bequests, for instance intergenerational bequests.

One reason for such differences is that spousal bequests typically imply that the decedent’s full estate is transferred to only one individual—the spouse. This may make under-reporting with respect to spousal bequests easier than under-reporting with respect to intergenerational bequests. Intergenerational bequests often imply that the estate is divided among several heirs, meaning that each heir may have an incentive to get his or her exact share of the estate and the value of that share correctly specified in the estate report to avoid future disputes with the other heirs. As the estate report has to be filed to the tax authority, this may counteract the incentives for under-reporting.

Another reason for such differences is that planning with respect to spousal bequests may be easier than planning with respect to intergenerational bequests due to the fact that the inheriting spouse has more influence over decedent’s wealth before death than for instance inheriting children. The surviving spouse typically shares wealth with the decedent and has thereby decision right on its disposition. In addition, there are typically more opportunities for tax planning with respect to spousal bequests, as wealth can be transferred between spouses through marital agreements. However, note that Chapter 2 shows little evidence on this kind of planning (i.e., planning carried out before demise). This suggests that even less pre-mortem planning should be expected with respect to other bequests.

A question that arises when reading the two chapters is on whether or not the inheritance tax is desirable. The question that reoccurs from time to time in public debate, because even though the Swedish inheritance tax is dead, the idea of the tax is not. The findings presented in this thesis suggest that the tax is problematic—at least with respect to spousal bequests. We see that it leads to extensive under-reporting, which substantially reduces the revenues it raises, possibly by as much as 55 percent. More importantly, it is difficult to defend a tax that appears to be so easy to evade, as there is an obvious risk of taxing honesty.
The effect of inheritance on small business survival

Economists and policy makers have long been interested in small businesses and the conditions under which they operate. A reason for this is that small businesses form an important part of the economy, constituting the majority of firms in sectors such as construction, services and manufacture (OECD 2016). Another reason is that some small business owners may be entrepreneurs, contributing with job creation and dynamism to the economy.

Chapter 3 of this thesis studies the effect of an inheritance on small business owners: whether or not it makes their businesses survive longer, and whether or not they use the inheritance for investments to increase income and profits. The effect of the inheritance may be informative on the studied businesses’ ability to obtain finance, and inheritance has been used with this purpose before, in particular with respect to small business start-ups (see, for instance, Evans and Jovanovic (1989), Holtz-Eakin et al. (1994), and Lindh and Ohlsson (1996)).

The effect of inheritance is informative on the owner’s access to capital because if lending markets function well, then we should expect no increase in small business survival due to the inheritance. With well-functioning lending markets, business owners should already have the capital they need for their businesses, making additional capital redundant. If business survival rates nevertheless increase, then there is reason to believe that the owners lacked access to the capital they needed in order to continue to run their businesses, before they received the inheritance. Such a finding could be seen as evidence of lending markets not working properly and as a call for subsidies to small businesses.

However, an important issue is on whether the small business owners run their businesses because they are profitable. As argued by Blanchflower and Oswald (1998), people may run businesses to consume non-pecuniary benefits associated with business ownership, such as the joy of being one’s own boss, a flexible time schedule, self-fulfillment etc. If this is what motivates the studied business owners, then they may lack access to capital not because of mal-functioning lending markets, but because banks are unwilling to finance their consumption of these benefits.

The results of Chapter 3 show that business survival increases when the owners receive inheritances but not that the businesses’ profits nor that the owners’ income increases. This suggests that the businesses that survived did not do so because of increased investments. If that would have been the case, then we would have expected the income and profits to increase as well. Instead, the findings suggest that the owners of the businesses that survive because of the inheritance are motivated by non-
pecuniary benefits; they use the inheritance to continue the consumption of the benefits, even though their businesses are of low profitability.

An implication of this interpretation is that these business owners are unlikely to be entrepreneurs, according to its common definition (growth driven and innovative (Gartner 1990)). The implication of the interpretation is consistent with the point made by Henrekson and Sanandaji (2014), namely that small business ownership does not accurately capture entrepreneurship. It also suggests that the observed increase in survival should not be taken as an argument in favor of policies to increase the access to capital in the studied population, if the purpose of such policies is to encourage entrepreneurship.

Free riding in electric energy consumption

The fourth chapter of the thesis studies the change in electric energy consumption (EEC) when tenants' EEC becomes individually metered, and they have to pay for their own consumption instead of having unlimited EEC included in the rent. Its lessons are particularly important because of their policy implications. To understand individual energy consumption, and the ways in which it can be reduced is essential for our endeavors to reduce CO₂ emissions and fight global warming. The lessons are also important for what they tell us about human behavior in general. Having unlimited EEC included in the rent creates a so-called commons problem, in which people's self-interested use, or overuse, of electric appliances is in conflict with the common interest of keeping electricity costs and carbon emissions low.

The results of the chapter show that these conflicting interests are, indeed, a problem among the studied tenants. When tenants have to pay for their own consumption, EEC decreases by one third, which suggests that they over-consumed electricity before the change of price schedule. More importantly, the results also show that it is almost exclusively a small group of high consuming individuals who change their behavior. The high consuming individuals were free riding under the earlier price schedule, thereby letting the landlord and in the long run their neighbors pay for their high level of consumption, a level they did not find it worth to pay for themselves when the price schedule changed.

The results of the chapter suggest that letting people pay for their own EEC is a useful strategy to preserve energy and reduce carbon emissions. However, the unused potential of such a policy in Sweden is limited, as most housing units already have individual metering and billing of EEC. The lessons of the chapter are nevertheless important, because individual
metering and billing are not as common in all countries (e.g., Canada (Dewees and Tombe 2011)). In developing countries, where power grids are less developed, the savings potential is likely to be large, and as living standards are raising in many countries, so is energy consumption, making it even more important to consider the results of the chapter.
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