Economic Studies 162

Linuz Aggeborn

Essays on Politics and Health Economics
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ECONOMICS AT UPPSALA UNIVERSITY

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:

* Labour economics
* Public economics
* Macroeconomics
* Microeconometrics
* Environmental economics
* Housing and urban economics

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Abstract

Essay I (with Mattias Öhman): Fluoridation of the drinking water is a public policy whose aim is to improve dental health. Although the evidence is clear that fluoride is good for dental health, concerns have been raised regarding potential negative effects on cognitive development. We study the effects of fluoride exposure through the drinking water in early life on cognitive and non-cognitive ability, education and labor market outcomes in a large-scale setting. We use a rich Swedish register dataset for the cohorts born 1985-1992, together with drinking water fluoride data. To estimate the effect we exploit intra-municipality variation of fluoride, stemming from an exogenous variation in the bedrock. First, we investigate and confirm the long-established positive relationship between fluoride and dental health. Second, we find precisely estimated zero effects on cognitive ability, non-cognitive ability and education. We do not find any evidence that fluoride levels below 1.5 mg/l have negative effects. Third, we find evidence that fluoride improves labor market outcome later in life, which indicates that good dental health is a positive factor on the labor market.

Essay II: Motivated by the intense public debate in the United States regarding politicians’ backgrounds, I investigate the effects of electing a candidate with earlier experience from elective office to the House of Representatives. The U.S. two-party-system with single-member election districts enables me to estimate the causal effect in a RD design where the outcomes are measured at the election district level. I find some indications that candidates with earlier elective experience are more likely to be members of important congressional committees. I also find some indications that directed federal spending (pork barrel spending) is higher in those districts were the elected representative had earlier elective experience prior of being elected to the House, but the effect manifests itself some years after the election. In contrast, I find no robust or statistically significant effects for personal income per capita or unemployment rate in the home district.

Essay III: This paper uses Swedish and Finnish municipal data to investigate the effect of changes in voter turnout on the tax rate, public spending and vote-shares. A reform in Sweden in 1970, which overall lowered the cost of voting, is applied as an instrument for voter turnout in local elections. The reform increased voter turnout in Sweden. The higher voter turnout resulted in higher municipal taxes and greater per capita local public spending. There are also indications that higher turnout decreased the vote share for right-wing parties. I use an individual survey data set to conclude that it was in particular low income earners that began to vote to a greater extent after the reform.

Essay IV (with Lovisa Persson): In a theoretical model where voters and politicians have different preferences for how much to spend on basic welfare services contra reception services for asylum seekers, we conclude that established politicians that are challenged by right-wing populists will implement a policy with no spending on asylum seekers if the cost is high enough. Additionally, adjustment to right-wing populist policy is more likely when the economy is in a recession. Voters differ in their level of private consumption in such a way that lower private consumption implies higher demand for basic welfare services at the expense of reception of asylum seekers, and thus stronger disposition to support right-wing populist policies. We propose that this within-budget-distributional conflict can arise as an electorally decisive conflict dimension if parties have converged to the median voter on the size-of-government issue.
Keywords: Fluoride, Cognitive ability, Non-cognitive ability, Income, Education, Employment, Dental health, Political Leadership, American politics, Regression discontinuity, Voter turnout, Local public finance, Sweden, Finland, Right-wing populism, welfare chauvinism

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Dedicated to Susanna
List of Papers

The following papers are included in the thesis:

1. Aggeborn, L., Öhman, M., (2016), The Effects of Fluoride In The Drinking Water. (In manuscript)


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Being a PhD Student is nothing less than a privilege. You are allowed to do research in an intellectual environment on topics that you care about. The privilege is even greater if you are fortunate to be a PhD student surrounded by brilliant and friendly coworkers as I have been.

The most important person for a PhD Student is the main supervisor. A good supervisor is a combination of three things: A commander, a mentor and a good friend. Eva Mörk manage to be all that and I have never regretted chosen Eva as my supervisor. Eva cares about her PhD Students and she invests a lot of time making us better researchers. Her feedback is sometimes tough but always to the point and constructive. Eva’s support and encouragement during these years helped me writing a much better thesis than I otherwise would have.

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Uppsala, June 2016
Introduction

“Economics is what economists do”\textsuperscript{1}  
— Jacob Viner

This thesis consists of four separate essays where the first is on health economics and the last three within the field of political economics. Three of the essays are empirical whereas the last essay is theoretical. Although all of the chapters are founded in the microeconomic tradition, it would be inadequate to say that the thesis has a unifying theme. The goal with this introduction is to put the four essays into context and give some background of the different topics that are studied in the thesis. A recurrent question I often face from people not familiar with the economic field is how my work is research in economics in particular. Common claims are that the research questions are more related to public health or political science. This introduction addresses these inquiries where I argue that the four essays are clearly within the field of economics, both in terms of methodology and study objects. I do this by summarizing the four essays and then very briefly discussing the current focus of economic research. Since the thesis is eclectic, the introduction also includes a short overview of economists’ focus on issues related to health and politics. It would be impossible to review the complete history of both political economics and health economics in this introduction. The aim with the second-part overview is therefore simply to introduce the reader to the research topics and to give some historical background to the questions in focus.

1 Summary and discussion of the four essays

The first three chapters in the dissertation are empirical where data is used to test hypotheses. Common for the empirical chapters is the focus on causal questions and the use econometrical methods. In essay 1, me and my coauthor investigate the effect of fluoride exposure on cognitive

\textsuperscript{1}Many economists believe that Jacob Viner is the person this quote originates from. Backhouse and Medema (2009) is a paper on how economics should be defined where the authors have not been able to trace the quote to a specific publication. They refer to a publication of one of Viner’s students, (Boulding, 1966, p.1), who in turns claims that it was a spoken quote.
development and later labor market outcomes. Fluoride has for a long time been applied to teeth since fluoride improves dental health, but recent evidence suggests that fluoride may have negative side effects on the central nervous system. Fluoride is added to dental products, but fluoride also exists in the drinking water. Since some countries artificially fluoridate their drinking water to improve dental health, the question has policy implications. We investigate whether fluoride has negative effects on cognitive development by using Swedish register data. Our paper is to our knowledge the first that address this question in a large scale empirical set-up with individual register data. In essay 2, politicians’ background before being elected to office and its impact on how efficient they are in representing their constituents are in focus. The data originates from the U.S. House of Representatives where I explicitly study the effect of having earlier experience from elective office before being elected to the House on outcomes on the election district level. In essay 3, the effect of voter turnout on policy outcomes and vote shares for political parties in local elections is studied, where Swedish and Finnish municipal data is applied. In the last chapter me and my coauthor develop a theoretical model of politics that can explains how established politicians react when they face right-wing populist challengers.

Applied econometric methods with a specific emphasis on causal issues have been cornerstones in applied empirical economic research during the last decades. Economists have been increasingly concerned with how to identify the effects of a certain variable using exogenous variation to mimic an experimental situation. Although descriptive evidences and correlations are interesting, causal relationships are often the primary focus when testing economic hypotheses. Angrist and Pischke (2010) discuss the development of better empirical tools within economics and the casual revolution that has transformed the field. All three of the empirical essays in the thesis are founded in this tradition and causal interpretation of the estimated effects stands in the center of the analysis.

Different methods and techniques are applied to study the causal effects of interest in the first three empirical papers. When estimating the effect of fluoride is essay 1, we exploit the fact that the bedrock varies exogenously which yields different levels of fluoride. In essay 2, the aim is to study the effect of electing a person with earlier elective experience to the House of Representatives. To estimate the causal effect, I exploit the fact that the United States has a two party system and that certain elections are close. This creates a situation who is elected in a district near the 50 percent threshold that is as good as randomly assigned. In paper 3, the focus is on voter turnout and its effects on policy outcomes. The introduction of a common election day in Sweden for both parliament and municipal elections is used as an instrument for
voter turnout in municipal elections. Finnish municipalities constitute
the control group where Finland kept an election system similar to the
old Swedish election system.

The data materials for the three empirical essays are also different, es-
pecially in terms in number of observations. In essay 1, we use Swedish
register data with several hundred thousand observations on the indi-
vidual level. Register data is particularly suitable to the questions in
focus in essay 1 where we can follow individuals in the data material
to look at different outcomes from different years to study the effects of
fluoride. In essays 2 and essay 3, smaller data sets in terms of number of
observations are applied. American data is generally not as detailed as
Swedish data and the outcomes in the second essays are measured at the
election district level. In essay 3, Swedish data on the municipal level
constitute the data material. Because there are only a certain number
of municipalities, the number of observations becomes fewer in this case.
To work with individual register data is undoubtedly a luxury because
of its rich structure. There are however many important research ques-
tions that cannot be answered with Swedish individual register data,
where one often has to rely on smaller data sets. The research questions
in essay 2 and essay 3 are examples of this.

The fourth essay is theoretical. Economic theory has become increas-
ingly mathematized with a special emphasis on equilibrium analysis. In
comparison to other social sciences, economists conduct their theoret-
ical work with fewer words and with more math. The primary reason
for explicitly stating assumptions and using formalized notation in the-
torical work is to verify that the theory is logically coherent and that
the conclusions follow from the initial basic fundaments. In that sense,
essay 4 is in accordance with modern economic research. It is however
important to remember why theoretical models are created. In light
of the positivistic approach to science that dominates economics, the
ultimate goal is empirical testing. The reality is out there and it can be
measured and investigated. The goal in the future is to empirically test
the predictions in essay 4 that established politicians mimic right-wing
populists when there is a high relative cost of immigration and that this
mimicking behavior is expected to be more common when the economy
is in a recession.

In conclusion, the three empirical essays and the theoretical essay are
methodologically in line with contemporary economic research in its fo-

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2Milton Friedman argued in Friedman (1953) that a theory can only be falsified and
never confirmed – an idea related to Karl Popper’s view on falsificationism (Boumans
and Davis, 2010, chapter 3). According to Friedman’s view on science, assumptions
may be unrealistic as long as the theory explain empirical phenomenon accurately.
This view is somewhat contrasted in Gilboa et al. (2014) who see economic theories
as analogies that can explain certain economic cases, but not general phenomena.
cus on causal effects (the empirical essays) and its formalized approach (the theoretical essay). However, the questions studied may at a first glance not be considered as economic. There has been a gradual movement where economists study questions that are not clearly related to classic economic hypothesis. Some people have taken this very far arguing that the methods and the research tools in themselves constitute what economics is really about. To quote Jacob Viner: “Economics is what economists do”, (Boulding, 1966, p.1). This argument has some merits and the field has undoubtedly broadened. Martén (2016) shows in the introduction to her thesis that the classifications codes for economics research (JEL-codes) have been widened. Fourcade et al. (2015) discuss economists’ meddling into other social sciences and how economics differs from other fields. Law and economics, behavioral economics and neuroeconomics are just a few examples of new dynamic subfields that have emerged in recent decades. This development is often referred to as economic imperialism and might intellectually be traced back to the idea of a unifying science proposed by the logical positivists. Although the idea of economic imperialism is illustrative for recent development in the social sciences, I do not think my thesis is particularly imperialistic. At a first gaze, the thesis is connected to questions normally posed within political science, public health and medicine, but my take on these questions are profoundly based on economic queries.

Classic labor and public economic issues concern taxation, public expenditures, intergovernmental grants, economic policy, wage structures, human capital accumulation and unemployment. Economists have for a very long time studied these issues and this thesis does not deviate from these core outcomes. My take on these study objects are admittedly a bit more peripheral. As economists we must however tackle these issues from various angles. To put it in econometric lingo: The left hand side of the regression equations in the thesis is clearly economic, but the right-hand side deals with matters that have not always been considered as economic variables. In the first essay, we study the effect of fluoride congestion on income, employment status, education, cognitive ability and non-cognitive ability. All these outcomes are fundamental variables in the labor economic literature. In essay 2, the outcome variables in the main analysis are personal income per capita, unemployment and directed federal spending. Committee placement of the elected representative is also studied. The first three variables are without doubt outcomes that have been in focus in a number of public and labor economic papers. Tax rates and public expenditures together with vote shares for political parties are the outcomes of interests in essay 3. In the theoretical essay we create a model where macroeconomic shocks and relative prices are key ingredients. Hence, I do not consider my
thesis as an attempt to invade other research areas, but rather as an aim to broaden the economic field.

In conclusion, the thesis is a typical thesis in economics both in terms of methodology and outcome variables. In the next part of the introduction I give a brief overview why economists became interested in issues related health and politics and how we can motivate to study these topics from an economic angle. The overview is not a complete review of the history of political and health economics, since such an analysis would be a research project in its own right, but rather a broadened background to the research questions in the thesis.

2 A short introduction to health and political economics

Economists’ interest in health was from the beginning primarily twofold. The health care market was on its own right an interesting market to study, see for example Arrow (1963) for seminal work. The theoretical literature on moral hazard is also much connected to the study of the health care market. Concepts related to the health care market such as medical insurance have therefore also been studied within the field of health economics where Pauly (1968) is one example of an influential paper. Throughout the history of health economics, cost-benefit analyses of various health measures have also been a significant part of the literature.

Parallel to the study of the health care market and cost-benefit analyses, there was also a focus on individual health status where Grossman (1972) theorized that health should be seen as an investment by the individual. The author also included a notion that an individual has an inherited health factor and that health depreciates over time. Cunha and Heckman (2007) create a model of cognitive and non-cognitive ability and how different factors throughout life affect a person’s skill level. Although the focus is not on inherited factors in essay 1, fluoride exposure is potentially one aspect that can determine a person’s health capital in terms of cognitive and non-cognitive ability before the person in question has any means of privately investing in his or her own health.

Another important reason for why economists became interested in health is because of its clear connection to individual labor market outcomes. The effect may go both ways, where health affects productivity and that a person’s labor market situation in the same time affects the individual’s health. There is also a literature that has specifically focused on health in early life. Case et al. (2005) for example demonstrated that childhood health is a determinant for both socioeconomic status and health later in life. Essay 1 is much in line with this litera-
ture. Health adds to the explanations of why certain people are more successful than others on the labor market.

What is interesting is that health economics in itself is not that well-founded in a theory-tradition of its own right. Health status affects a person’s length of life and Grossman (1972) pointed out that a person can choose his or her own health status by investment in health. Other than this notation of seeing health as a personal investment choice, there are not that many theoretical health models except for the theoretical foundations behind cost-benefit analysis and the discussion about moral hazard. The theory in this case mostly comes from outside of economics where economists have formalized and tested medical hypothesis with econometric methods. One reason for why health economists have not developed theoretical models of health in a higher degree is potentially because economists do not have a comparative advantage in medical knowledge. If we return to the idea of economic imperialism, it is clearly so that economists have entered into the field of epidemiology, but economists seldom add insights about basic mechanisms in biology and medicine. Certain parts of epidemiology are however connected to the social sciences and economists’ interest in individual health may offer additional insights to areas where economic outcomes and factors are involved.

In contrast to health economics, political economics rests on an immense theoretical tradition with separate theoretical models explicitly developed for political economics issues. Several textbooks about political economic theory have been written and it is not my aim to fully review this huge literature. Instead I would like to briefly comment on certain papers that have been important for this thesis. Whereas health economists borrow hypothesis from medicine, political economists have been productive in creating models about politics. This work has undoubtedly been inspired by and influenced by research in political science. One way to make a distinction between political science and political economics is that political scientists put larger focus on the political sphere in itself, whereas political economists’ primary interests is on public (economic) policy and how the political sphere affects policy outcomes.

It is not straightforward to pinpoint an exact year when political economics emerged as a separate subfield, but it is fair to say that political economics has its roots in the 1950’s when economists realized that they needed to incorporate the actors within the public sector – primarily politicians – to explain economic phenomena. The size of the public sector had steadily grown to comprise a larger share of GDP and contemporary economists did not have the proper models to understand the mechanisms behind the growth of government and how actors within the public sector behave. Economists knew how to explain price mech-
anisms on different markets and the incentives that firms face, but the political sphere was considered as something essentially different. Politicians, in contrast to consumers and firms, were assumed to be driven by ideology and for the common good. The public choice school challenged this narrative by modelling political actors as self-interested and utility maximizing. The notion of market failures was as a consequence complemented by the idea of political failures, where the classic public economic idea that a benevolent social planner can offer an efficient outcome was challenged by the conclusion from political economics that politicians themselves can give rise to inefficient outcomes. Essay 3 is much connected to the literature about the size and growth of government where essay 3 focus on voter turnout and how a variation in voter turnout affects tax rates and public expenditures.

Figure 1 displays general government’s expenditures as share of GDP in various developed economies. The fact that the government’s expenditures constitute such a large share of total GDP is motivation in itself why economist should keep studying political decision-making.

Figure 1. General government’s total expenditures as percent of GDP. Data from 2013

Data Source: OECD.Stat.

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3See the discussion in the introduction (chapter 1) in Persson and Tabellini (2000) and Downs (1957b)
Persson and Tabellini (2000) argue in their first chapter that modern political economics can be traced back to three separate traditions: the public choice school within economics, the macroeconomic tradition of analyzing the incentives of policy makers and the rational choice school within political science. The first concrete signs of political economics reasoning can be found in Hotelling (1929). This is an article about competition in a market with few actors, where Hotelling introduces distance as a factor. He concludes that stores have incentives to move closer to each other to maximize profit. In a passus in the end of the article, he writes that the same reasoning could be applied to the Democratic Party and the Republican Party in the United States. They had, according to Hotelling, moved closer and closer in terms of policy positions.

Downs (1957b) and Downs (1957a) bring economic theory to the political area by describing the incentives of political parties in a two-party system to converge towards the median position. This idea constitutes the median voter theorem, or the Hotelling-Downs model, which is still a workhorse model within political economics. Downs was also one of the first to note that economists cannot treat politicians’ actions as exogenous. Instead, political outcomes are according to Downs the results of utility maximizing politicians serving their private interest, where Downs modeled them as office-motivated.

Later political economic models introduced policy preferences for politicians while Osborne and Slivinski (1996) and Besley and Coate (1997) modeled the choice of becoming a politicians in a Citizen-Candidate framework. Citizens decide whether to run for office in the Citizen-Candidate model, where they implement their preferred policy if elected to office. The Citizen-Candidate model has given rise to a new strand of models that have focused on the policy preferences and characteristics of elected politicians. Besley (2005) emphasized that economists should study the characteristics of elected politician to a greater extent and the new literature on political leadership follows in that tradition. Essay 2 is a part of this political leadership literature where the focus is on earlier elective experience.

Special emphasis has also been put on analyzing rent seeking behavior among incumbent politicians in the political economic literature where Barro (1973) and Ferejohn (1986) are seminal papers. The political agency model in Besley and Smart (2007) is a development within this theory tradition which we follow suit in essay 4, although our focus is on established politicians’ behavior when they face right-wing populists challengers.
3 Concluding remarks

Hopefully I have at this point convinced the reader that political and health economics are important subfield within economics and that my focus on voter turnout, the background of elected politicians, the incentives of established politicians and fluoride are important aspects to consider when analyzing economic outcomes. The choice of research topics has nonetheless not only been driven by a will to contribute to the discussion within academia. Research should not take place in a vacuum and an important inspiration for studying these topics comes from the public debate. The potential dangers associated with fluoride is a highly debated topic; both by scientists, but also among the public. If one listen to the political discussion in the United States one cannot fail to hear the constant return to the issue of politicians’ background. Voter turnout is also debated, where there is a discussion in Sweden whether the constitution should be changed back to having separate election days for parliamentary and local elections. The issue of how established politicians are challenged by right-wing populist is a well-debated topic during the last years. Hopefully, the conclusions presented in the thesis can add substance to the public discussion.
References


Electronic data sources
