

EconomicDynamics Research Agenda

Volume 22, Issue 1 (April 2021)

Stefanie Stantcheva on Taxes, Transfers, and Redistribution



Stefanie Stantcheva is a Professor of Economics at Harvard and founder of the Social Economics Lab (<http://socialeconomicslab.org/>). She studies the taxation of firms and individuals, as well as how people understand, perceive, and form their attitudes towards public policies. See Stantcheva's [RePEc/IDEAS profile](#).

Introduction

Taxes and transfers are omnipresent in our daily lives, whether we notice them or not. They are also extremely powerful tools, with numerous cascade effects. A well-designed tax and transfer system is one that raises revenues and (potentially) redistributes income according to society's preferences at the lowest possible cost in terms of lost economic activity. A badly designed tax system can be regressive, hurt people with little ability to pay, and stunt productivity and economic activity. Improving tax and transfer systems is especially critical in light of rising inequality and tightening government budget constraints throughout the world.

In my research, I try to shed light on taxes, transfers, and redistribution more broadly. I approach these issues from several angles, namely studying the effects of taxes and transfers and how they should normatively be designed, but also shedding light on people's perceptions of taxes and public policies as well as the mental models they use think about them. This last angle has proven to be very valuable and leverages novel methods – social economics surveys and experiments – that I will write about below. I like to ground my research in

both theory and data. Often, the data itself is newly constructed for the project, whether through historical archives work or through online surveys and experiments.

Most of my papers fit in two broad areas, which I will summarize briefly, illustrating with some selected papers, as well as pointing to unanswered questions that could be fruitfully addressed by future research.

1. The long-term dynamic effects of taxation.

Taxes can have long-term – sometimes unexpected – effects that are important to take into account. The first part of my work centers around these dynamic, long-term effects of taxation: on savings and wealth; on human capital; and on innovation.

1.1 Human Capital

Human capital acquisition, whether through formal schooling, on the job training, or vocational training plays a key role in most people's lives. But the long-lasting student debt debates in the US have highlighted to what extent the cost of education can heavily burden people for many years. How should we finance human capital acquisition, formal education, college, job training, throughout life? What is the right system made of taxes, subsidies, grants, etc.? This is the question I ask in [Stantcheva \(2017\)](#). People not only start with different endowments in life, due to for instance differences in health, family backgrounds, or place of residence, but they also face many risks throughout their lives because of health shocks, labor market fluctuations, or depreciation of their skills due to trade or technology.

The government would like to ideally level the playing field between people with different endowments, provide people with enough funds to invest in their education, and also insure them against these major earnings risks they face. Yet, it also needs to raise sufficient tax revenues to make this spending sustainable and maintain incentives for work. The key friction is that there is asymmetric information, since people's productivity and its evolution is unobserved by the government. As a result, the government cannot see what part of agents' income is due to their own efforts versus to the shocks that they face. Therefore, there is a fundamental trade-off between efficiency concerns (maintaining work effort and investments in human capital) on the one hand and equity concerns (redistributing and insuring against the risks faced throughout life) on the other. The optimal system can be derived thanks to a dynamic mechanism design approach, that mixes a typical static screening problem using the first order approach with dynamic programming setup ([Farhi and Werning 2013](#); [Kapicka 2013](#))

I show that the optimal system can be implemented using income-contingent education loans. These are given out throughout life, whenever people need to invest in their skills. The repayment then happens according to a schedule that depends on income. People who do well and have higher incomes repay a higher share of their income; people with lower incomes repay a lower share. Insurance and redistribution are built into this repayment scheme, as those with high permanent lifetime incomes or those that experience a series of good shocks will pay more into the common pool than others (and may end up paying more than they get out of it). There already are versions of such income contingent loans in various countries, but they are typically only available for formal college, and only insure the downside (e.g., student loans can be forgiven in precarious situations) rather than also involving higher payments when things go well.

1.2. Innovation

Innovation is the engine of long-run growth and it does not happen magically. The parable of Newton sitting under the tree, with the apple falling and innovation happening is probably the exception rather than the norm. Inventors and firms that engage in innovation respond to economic incentives. For this reason, taxes on people and corporations that capture part of the profits and returns to innovations can potentially shape innovative activity.

In [Akcigit, Grigsby, Nicholas, and Stantcheva \(2018\)](#), we build on the groundbreaking work of [Akcigit, Grigsby, and Nicholas \(2017\)](#), who digitize the patent data going back to the beginnings of the patent office, and we

transform it into a long-run panel of all inventors who ever patent in the U.S.. We also construct a new corporate tax database going back to the early 20th century, with detailed tax rate and tax base information and combine these with a database of personal income taxation (from Bakija (2017)) and other economic outcomes.

We can thus systematically study how personal and corporate income taxes affected inventors (the micro level) and innovation in states (the macro level) throughout the 20th century. Inventors can respond to taxes by adjusting their time and resource inputs for innovation, by switching between the corporate and non-corporate sector, or by changing their state of residence. These margins of adjustment will lead to changes in the quantity, quality, location, and sectoral composition of innovation at the macro level.

We find that personal and corporate income taxes negatively impact the quantity of innovation, as measured by the number of patents and the number of inventors in a state. The quality of innovation on average is not affected, but the share of patents produced by firms rather than individual inventors declines when the corporate tax rate is higher. At the individual level, corporate income taxes only impact inventors who work in the corporate sector; while personal income taxes affect all inventors. Inventors are also significantly less likely to reside in states with higher tax rates. Overall, the macro effects of the corporate tax come mainly from mobility responses, which are likely to be zero-sum at the federal level; while the effects of the personal income tax come from mobility and innovation production responses.

In [Akcigit, Hanley, and Stantcheva \(2019\)](#), we go a step further and rather than documenting that general income taxes can negatively influence innovation, we ask what the right design of taxes and subsidies to foster innovation is. Across countries, governments intervene in the innovation arena to correct for uninternalized technology spillovers and social benefits of innovation, and these policies are very varied, costly, and not always as effective as desired. One of the key new features is asymmetric information: determining which firms are good at innovation and which ones are not is difficult. In the model, firms are heterogeneous in their research productivity, i.e., in their ability to convert a given set of inputs into an innovation output, but this productivity is private information (unobservable to the government) and there are both observable and unobservable R&D inputs. In addition, the returns to R&D investments are stochastic, so that the firm faces risks when it invests in innovation.

We formulate this problem as one of mechanism design augmented to account for inter-firm spillovers, and in which we do not restrict the policies the government can use. After deriving the constrained efficient allocations, subject to the information frictions and firms' incentive constraints theoretically, we estimate the model using firm-level data matched to the U.S. Patent Office data.

We find that asymmetric information significantly modifies innovation policies. Intuitively, how much innovation should be subsidized depends on the strength of the technology spillovers, the existing intellectual property rights regime (e.g., a patent system) and the need to screen bad firms from good ones, which constrains the policies. How much R&D should optimally be subsidized depends critically on a key parameter, namely the complementarity between observable and unobservable R&D inputs relative to the complementarity of R&D inputs to firm productivity. For instance, if R&D investment is highly complementary to firm productivity – as the data indicates – productive firms will be able to extract a large informational rent if their R&D is subsidized, which puts a limit on how well the government can correct for spillovers. We also show that it is possible to closely approximate the fully optimal policies with a simple parametric policy, that features a simple linear corporate (profit) tax, but declining marginal subsidies at higher R&D levels.

1.3 Capital and wealth:

The taxation of capital and wealth is a long-standing controversial topic in the public debate, where arguments center around equity and efficiency: who owns the capital and how strongly would capital react to taxes. The economic literature has developed many valuable, dynamic, and complex models to answer these questions. Yet, they are not easily linked to the public debate and it is hard – because of their complexity – to answer questions that are of direct policy relevance such as how to tax different assets owned by different people and with different elasticities, how to account for shifting between capital and labor income, take into account

heterogeneity in individual preferences or returns, nonlinear taxation, and more complex social fairness and equity concerns. In [Saez and Stantcheva \(2018\)](#), we try to connect the theory of optimal capital taxation to the public debate by providing a simpler framework to derive robust optimal capital tax formulas that are expressed in terms of estimable elasticities of capital supply with respect to the tax rate and of distributional considerations. The key feature of this framework is that individuals derive utility from wealth, which can be microfounded with bequest motives, entrepreneurship, or service flows from wealth, and that is also empirically important in order to explain the differences in concentration of wealth and labor income and very large wealth holdings. Generically, labor and capital income will not be perfectly correlated and there is (at least) a two-dimensional heterogeneity across people which means that labor (or total) income taxation alone will not be able to achieve efficient redistribution. While we generalize this in the paper, a very useful shortcut is to take utility to be linear in consumption so that there are no transitional dynamics and no sluggish adjustments of capital income to taxes. While important for studying insurance issues as in the New Dynamic Public Finance literature (see Golosov, Tsyvinski, and Werning (2006) for a comprehensive review), consumption smoothing due to concave utility is to a first-order less important when thinking about the taxation of capital income which is concentrated among top earners and in the long-run. Even if utility is concave in consumption, our formulas generalize as long as the government sets policy with the long-run elasticity in mind, which is both conceptually more sound and normatively more appealing to avoid governments repeatedly exploiting sluggish short-term responses of capital (and, in the limit, expropriating wealth). This simpler framework sheds light on the forces that shape capital taxation, in a way that is very similar to labor taxation and can be taken to the data.

2. Social Economics.

The second part of my research is sometimes called "Social Economics" because it studies how people reason, think, and form views about economics policies and issues based on broader considerations linked to society and social phenomena. It leverages large-scale online surveys and experiments as a research tool, to get into people's minds. Many of the projects done are through the Social Economics Lab at Harvard (<http://socialeconomicslab.org/>).

Surveys and experiments are a key tool. They allow us to measure things which are invisible in other data, no matter how good it is, namely, perceptions, attitudes, knowledge, reasoning. As economists, we typically prefer using a revealed preference approach, namely backing out preferences or beliefs from observed behaviors. We may even have some intrinsic mistrust of surveys, especially if we think of electoral polls or older-style surveys, which were used to measure things that are today much better captured in administrative data.

In principle, one may indeed write a fully structural parametric model of these intangibles, use observational data on a range of behaviors, and estimate the underlying unobservables. Yet, this not only requires a lot of structure and many difficulties to justify assumptions, but also a large set of identifying variations in the data, which are not generally available. For instance, we are not often asked to vote directly on a lot of separate issues, so that real-world variation is to a large extent missing. Furthermore, many policy views hinge on what we think others may do. For instance, do we think high income earners will stop working or move in response to taxes? Those higher-order beliefs about others are not clearly expressed in observed behaviors. In a nutshell, surveys are a more direct way of eliciting these intangibles and are a great complement to other methods.

Of course, for the results to be reliable, it is critical that these surveys are well-designed, carefully calibrated, and deployed on appropriate samples. A lot of work and thought goes into the design of these surveys and to ensure high quality answers, as well as representativeness of the sample.

I will now briefly describe four projects that leverage social economics surveys and experiments to shed light on how people reason about redistribution.

2.1 Intergenerational mobility and the American dream

In [Alesina, Stantcheva, and Teso \(2018\)](#), we study the link between intergenerational mobility and preferred

redistribution policies. Existing theories suggest that a stronger belief in equality of opportunity, i.e., that everyone has similar chances to start with, leads to more willingness to tolerate inequality of outcomes. Because – the reasoning goes – if everyone had the same opportunities to start with, then outcomes are more likely to be the result of individual merit. To test this, we run large-scale social economic surveys and experiments in five countries: France, Italy, Sweden, the U.K. and the U.S.

We find that Americans are more optimistic about mobility than Europeans, something that is in line with some of the stereotypically documented views. More importantly, however, Americans are too optimistic relative to reality, especially about the "American dream," i.e., the chances of making it from rags to riches. Europeans are instead too pessimistic, especially about the likelihood of staying stuck in poverty. Across countries, people believe that effort matters in order to escape poverty and move into the middle class, but not for making it to the very top.

Respondents who are more pessimistic about mobility support more redistribution, especially through "equality of opportunity policies," such as education or health policies, but also through equality of outcomes, such as *ex post* redistribution through progressive taxes and transfers, and safety net policies. This link is confirmed experimentally. If we show people pessimistic information on mobility, they become more supportive of redistribution. However, there is a subtlety. This pattern only holds for left-wing respondents across countries. Among right-wing respondents, those who are more pessimistic about mobility do not support more redistribution. And this appears in the experiment too: even if the information makes right-wing respondents more pessimistic about mobility, it does not change their policy views.

What can explain this? One explanation is the very negative attitude towards government that right-wing respondents have. They tend to view government as part of the problem rather than as the solution, along the lines of the writing in J.D. Vance's *Hillbilly Elegy* about the narrative on the right: "It is not your own fault if you are a loser, it's the government's fault."

2.2 Immigration and Redistribution.

In [Alesina, Miano, and Stantcheva \(2018\)](#), we draw the link between views on immigration and support for redistribution policies. We study two questions. First, do people (mis)perceive immigration and immigrants? Are their perceptions about the characteristics of immigrants in their country accurate? Second, what is the link between perceptions of immigration and preferences for redistribution? Theories have been written that generosity does not travel that well across national, ethnic, or religious lines and that people support more redistribution when they feel it benefits those more similar to them.

We find that across countries and groups of respondents, there are very stark misperceptions of immigrants. People tend to strongly overestimate the number of immigrants in their country, and especially the number of Muslim immigrants. They also think immigrants are less educated than they actually are, more likely to be unemployed, rely on government transfers, and not contribute to public finances. Because of this, simply making people think about immigrants by experimentally inverting the order in which they are asked questions about immigration versus questions on policies and thus priming them to think about immigration, makes them less supportive of redistribution. On the contrary, providing simple information about the number or origins of immigrants does not move people's views. When it comes to immigration, views appear to be more strongly driven by narratives rather than hard facts.

2.3. Understanding Economics: How do People Reason?

The third project is slightly unusual and part of a broader expedition to understand how people reason about economic policies. When people think of what policies to support, they may take into account several factors, some of which are in our economists' models, such as the perceived efficiency or distributional effects, and others which are not, such as more complex fairness concerns, and they may also assign different weights and magnitudes to each of these components.

Understanding the mental models people use to decide on policy issues gives us some of the well-known

advantages of a more structural approach relative to a reduced form approach. For instance, we can better understand where disagreements about policies lie, or where intervention may be needed, e.g., if there are correctable gaps in knowledge.

So far, I have examined tax policy, health policy, trade, macro, and climate change and environmental policies through this lens. In all these projects, I have detailed sets of questions to see how people reason about each policy's efficiency effects, distributional impacts, and fairness considerations. I also test the effects of showing respondents' short "Econ 101" videos that aim to explain the workings of the policy in neutral and pedagogical ways.

For brevity, let me describe some results from the tax project only here ([Stantcheva 2020](#)). It turns out that the key factors driving support or opposition to taxes are people's fairness concerns related to the perceived benefits of redistribution, followed by views on the government. Efficiency concerns play a more minor role in people's minds. What makes this both interesting and difficult is that fairness is in the eye of the beholder; fairness means very different things to different people.

In addition, partisan divergences are very large, not only in policy views, but also at every step of the reasoning about underlying mechanisms and effects. For instance, Democrats are more likely to believe that taxes have fewer economic costs, that tax cuts almost never "pay for themselves," and that people will not starkly change behaviors in response to tax increases. They also think that the "trickle-down" narrative is not a reality, that the distributions of income, wealth, and inheritances are unfair, and that taxing away parts of them is fair. There is even a "Polarization of Reality" ([Alesina, Miano, and Stantcheva 2020](#)) whereby there is partisan disagreement even on basic facts that are easily verifiable, such as the parameters of the tax system. People on the left believe taxes are lower and less progressive, or that inequality is higher than people on the right.

2.4 Social Position and Fairness views

How much people care about their relative standing to others has been a long-standing question in the economic and political science literatures: (Duesenberry 1949; Easterlin 1974; 1995; Blanchflower and Oswald 2004) as well as how social positions are important for fairness considerations (Boskin and Sheshinski 1978; Meltzer and Richard 1981; Benabou and Ok 2001; Alesina and Angeletos 2005)

In [Hvidberg, Kreiner, and Stantcheva \(2021\)](#) we ask how well people actually know their own position relative to others and how their views on the fairness of inequality depends on it.

We leverage a unique dataset based on the matching of responses from our own custom survey of a large sample of people in Denmark to detailed administrative data on their full income histories, life events, and true positions in the income distributions of different reference groups, i.e., large group such as people from the same cohort and of the same gender, living in the same municipality, having the same education level, or working in the same sector, as well as smaller groups such as neighbors, co-workers in the same firm, family members, and former schoolmates. We ask people about their knowledge of the income distributions in these reference groups, how fair they think income inequalities within these groups are, and about where they rank themselves within the various groups (i.e., their social position within each group). We also study how changes in social positions over the course of life, e.g., due to unemployment, health shocks, and promotions shift fairness views. In addition, we test a randomized treatment informing individuals of their true social positions.

We find that respondents are overall well aware of the income distributions and their own social positions, even though they underestimate the degree of inequality by systematically believing that the income levels of others are closer to their own than they actually are. Those who are ranked lower in a given reference group tend to overestimate their position, while those who are ranked higher tend to underestimate it. In addition, respondents' fairness views are strongly correlated with their social position. Informing them that they are ranked lower than they thought makes them think inequality is less fair; but telling them they are ranked higher than they thought has no effect. Finally, inequality is perceived to be most unfair among people with the same education level and working in the same sector. Yet, within these groups lower-income people

overestimate their position the most and respondents overall underestimate inequality the most.

2.5. Theory of Social preferences

The theoretical framework for thinking about preferences for redistribution comes from [Saez and Stantcheva \(2016\)](#), where we show that social justice, equity, and fairness principles can be captured in a tractable way using generalized social marginal welfare weights, which measure how much society values \$1 transfer to any given person. We also illustrate how online surveys can be used to elicit those social preferences. Indeed, these weights can depend on many different personal and social attributes and cannot always be backed out from a social welfare function. Appropriate weights can help rationalize some of the puzzles we see in the policy debate that are not aligned with traditional optimal tax theory and they can provide a unifying framework to think about different social fairness criteria proposed in the literature. In fact, the applications of this approach of using weights to capture the social value of transfers are not limited to taxation. Any setting that requires weighing winners and losers can make use of it.

3. Avenues for future research:

I can see many fruitful avenues for future research in these two areas. On the dynamic taxation side, first, a lot can be gained from applying the dynamic tax and mechanism tools to shed light on other areas, such as corporate taxation. Asymmetric information is a key feature in many areas and the methods described are well-suited to deal with. Second, it is important to go beyond solving for the fully optimal policy, and to also study how well simpler, approximate policies do. Third, creating the link to the data by estimating the models used and using these realistic parameters to study counterfactual and optimal policy in a quantitative way is crucial.

On the social economics side, there are a myriad of misperceptions, attitudes, and fairness concerns related to public policies that are still underexplored. I can see the approach of matching administrative data to survey data as a very promising one. In addition, there is a lot of scope to try and oversample specific groups of interest, specifically also the ones – e.g., minorities – that are not always well-represented in surveys.

References

Akcigit, Ufuk, John Grigsby, and Tom Nicholas. 2017. "The Rise of American Ingenuity: Innovation and Inventors of the Golden Age. NBER Working Paper 23047." *National Bureau of Economic Research*.

Akcigit, Ufuk, John Grigsby, Tom Nicholas, and Stefanie Stantcheva. 2018. "Taxation and Innovation in the 20th Century. NBER Working Paper 24982 [Revise and Resubmit at the Quarterly Journal of Economics]." *National Bureau of Economic Research*, Working paper series, .

Akcigit, Ufuk, Douglas Hanley, and Stefanie Stantcheva. 2019. "Optimal Taxation and R&D Policies. NBER Working Paper 22908 [Revise and Resubmit at Econometrica]." *National Bureau of Economic Research*.

Alesina, Alberto, and George-Marios Angeletos. 2005. "Fairness and Redistribution." *American Economic Review* 95 (4): 960–80.

Alesina, Alberto, Armando Miano, and Stefanie Stantcheva. 2018. "Immigration and Redistribution. NBER Working Paper 24733 [Revise and Resubmit at The Review of Economic Studies]." *National Bureau of Economic Research*. <https://doi.org/10.3386/w24733>.

———. 2020. "The Polarization of Reality." *AEA Papers and Proceedings* 110: 324–28. <https://doi.org/10.1257/pandp.20201072>.

Alesina, Alberto, Stefanie Stantcheva, and Edoardo Teso. 2018. "Intergenerational Mobility and Preferences for

Redistribution." *American Economic Review* 108 (2): 521–54.

Bakija, Jon. 2017. "Documentation for a Comprehensive Historical US Federal and State Income Tax Calculator Program." Working Paper. Working Paper Series. Williams College.

Benabou, Roland, and Efe Ok. 2001. "Social Mobility and the Demand for Redistribution: The POUM Hypothesis." *Quarterly Journal of Economics* 116 (2): 447–87.

Blanchflower, David G., and Andrew J Oswald. 2004. "Well-Being Over Time in Britain and the USA." *Journal of Public Economics* 88 (7–8): 1359–86.

Boskin, Michael J, and Eytan Sheshinski. 1978. "Optimal Redistributive Taxation When Individual Welfare Depends upon Relative Income." *The Quarterly Journal of Economics* 92 (4): 589–601.

Duesenberry, J.S. 1949. *Income, Saving, and the Theory of Consumer Behavior*. Economic Studies: No. 87. Harvard University Press. <https://books.google.com/books?id=yGMYAAAAIAAJ>.

Easterlin, Richard A. 1974. "Does Economic Growth Improve the Human Lot? Some Empirical Evidence." In *Nations and Households in Economic Growth*, edited by Paul A. David and Melvin W. Reder, 89–125. Academic Press. <https://doi.org/10.1016/B978-0-12-205050-3.50008-7>.

---. 1995. "Will Raising the Incomes of All Increase the Happiness of All?" *Journal of Economic Behavior & Organization* 27 (1): 35–47.

Farhi, Emmanuel, and Iván Werning. 2013. "Insurance and Taxation over the Life Cycle." *The Review of Economic Studies* 80 (2): 596–635.

Golosov, Mikhail, Aleh Tsyvinski, and Ivan Werning. 2006. "New Dynamic Public Finance: A User's Guide." In *NBER Macroeconomics Annual 2006, Volume 21*, 317–88. MIT Press.

Hvidberg, Kristoffer B, Claus Kreiner, and Stefanie Stantcheva. 2021. "Social Position and Fairness Views. NBER Working Paper 28099." *National Bureau of Economic Research*.

Kapicka, Marek. 2013. "Efficient Allocations in Dynamic Private Information Economies with Persistent Shocks: A First-Order Approach." *The Review of Economic Studies* 80 (3): 1027–54. <https://doi.org/10.1093/restud/rds045>.

Meltzer, Allan H, and Scott F Richard. 1981. "A Rational Theory of the Size of Government." *Journal of Political Economy* 89 (5): 914–27.

Saez, Emmanuel, and Stefanie Stantcheva. 2016. "Generalized Social Marginal Welfare Weights for Optimal Tax Theory." *American Economic Review* 106 (1): 24–45.

---. 2018. "A Simpler Theory of Optimal Capital Taxation." *Journal of Public Economics* 162: 120–42. <https://doi.org/10.1016/j.jpubeco.2017.10.004>.

Stantcheva, Stefanie. 2017. "Optimal Taxation and Human Capital Policies over the Life Cycle." *Journal of Political Economy*, 125 (6): 1931–90.

---. 2020. "Understanding Tax Policy: How Do People Reason? NBER Working Paper 27699." *National Bureau of Economic Research*. <https://doi.org/10.3386/w27699>.

Vance, J.D., *Hillbilly Elegy*. 2016. Harper.