Research Statement

Shahar Rotberg

My research uses quantitative general-equilibrium models with rich household heterogeneity to study housing and tax policy. The unifying theme is that policy conclusions in these areas depend critically on behavioral response margins that the literature has often not considered thoroughly. When I take these margins seriously and discipline them with empirical evidence, standard policy conclusions frequently change, sometimes reversing entirely.

My published work spans housing and non-housing taxation, homeownership policies, and offshore tax evasion. My current work extends this approach to rent control, homelessness and addiction policy, condominium markets, technology adoption, and policy uncertainty.

1 Published work

The Implications of Housing for the Design of Wealth Taxes. My first paper (Rotberg, 2022), sole-authored, reexamines the case for replacing the capital income tax with a wealth tax. Guvenen et al. (2023) show that this replacement raises welfare by shifting the tax burden from productive entrepreneurs to wealthy but unproductive households, but their model abstracts from housing.

I show that once housing is modeled separately from productive capital, this conclusion changes substantially. Under uniform wealth taxation, landlords pass the housing tax to renters as higher rents. Because rental units have a binding minimum size (a friction I document and that becomes central to my subsequent work), low-income renters cannot downsize, and thus must absorb large rent increases not offset by wage gains. The reform generates aggregate welfare losses concentrated among the very population it is meant to help. It becomes welfare-improving only under differential structures: either taxing productive capital more heavily than housing, or exempting housing below a threshold.

This paper established the methodological identity that runs through my subsequent work: a quantitative GE framework with rich heterogeneity, calibrated to real data to take seriously response margins the margins the literature has often overlooked.

Mortgage Interest Deductions? Not a Bad Idea After All. My second paper (Rotberg and Steinberg, 2024a), with Joseph Steinberg (University of Toronto), overturns a decades-long consensus on homeownership subsidies. The literature on the mortgage interest deduction (MID) and the tax exemption of imputed rents (see, e.g., Gervais, 2002; Garriga and Schlagenhauf, 2009; Nakajima, 2010; Floetotto et al., 2016; Sommer and Sullivan, 2018; Karlman et al., 2021) concludes that these policies are welfare-reducing because they redistribute from poorer renters to richer homeowners.

We show this rests on two assumptions inconsistent with the data, and that correcting both reverses the welfare ranking. First, the literature assumes a near-perfectly elastic rental supply. We make a methodological contribution by being the first to structurally estimate the rental supply elasticity, identifying it from the share of property taxes borne by renters (see, e.g., Orr, 1968; Carroll and Yinger, 1994; Schwegman and Yinger, 2020; Institute on Taxation and Economic Policy, 2018). The implied elasticity is 1.4, an order of magnitude lower than prior quantitative studies have assumed. Second, the literature allows renters to consume arbitrarily small amounts of housing. We calibrate

a minimum rental size to match the share of severely cost-burdened renters in the SCF.

Once both assumptions are corrected, eliminating the MID reduces homeownership, raises rental demand, and generates substantial rent increases that harm low-income renters most. The same friction recurs across my housing work: when low-income renters cannot adjust housing consumption in response to price changes, policies that raise rents in equilibrium tend to harm the populations they are intended to help.

Tax Evasion and Capital Taxation. My third paper (Rotberg and Steinberg, 2024b), with Joseph Steinberg, is motivated by the policy debate over taxing the ultra-rich more heavily, including the Warren and Sanders wealth tax proposals. The standard quantitative public finance literature (e.g., Trabandt and Uhlig, 2011; Guvenen et al., 2023) finds that substantial capital income tax increases would raise revenue and that wealth taxes would improve welfare, conclusions that assume households do not respond by concealing wealth. Empirically though, roughly four percent of U.S. household wealth is held in offshore shelters (Zucman, 2013), concentrated almost entirely among the ultra-wealthy (Guyton et al., 2023).

The methodological challenge is that the U.S. has never had a wealth tax, so there is no domestic evidence on responses. Our contribution is to use observed offshore evasion under the current U.S. capital income tax as the calibration anchor: because the same evasion technology nests both capital income and wealth, this allows us to generate endogenous wealth-tax responses without needing to assume them. Thus, our model is the first dynamic GE framework with endogenous evasion through tax shelters; closest prior work (Di Nola et al., 2021; Shourideh, 2014) is either static, partial-equilibrium, or features environments where evasion does not occur in equilibrium. We validate the model by reproducing wealth tax elasticities estimated for other countries that have implemented such taxes (Seim, 2017; Jakobsen et al., 2018; Zoutman, 2018; Brulhart et al., 2016).

Once evasion is incorporated, the revenue-maximizing capital income tax rate generates ten times less revenue, the revenue-maximizing wealth tax rate four times less, and the Warren and Sanders proposals generate near-zero net revenues, deliver only an illusory reduction in inequality (reported inequality falls substantially more than actual inequality), and reduce welfare for nearly all households. The implication is that standard revenue projections substantially overstate what these policies can deliver once realistic behavioral responses are accounted for.

2 Papers under revision and under review

Rent Control? Bad in Theory, Not Always in Practice. My fourth paper (Rotberg and Zhang, 2025), with Lin Zhang, is under revision at the *European Economic Review* after a positive first-round response. We have finished the revision and responded to every comment thoroughly.

The vast majority of economists oppose rent control, and the standard argument rests on the Second Welfare Theorem: deregulate, then redistribute landlord profits via lump-sum taxes and transfers. We build a GE model with uninsurable income risk, moving costs, minimum housing requirements, and an explicit homelessness margin, calibrated to Toronto, and ask how the welfare ranking of rent control versus decontrol depends on the efficiency of the surrounding fiscal system.

The closest prior work, Favilukis et al. (2023), also finds that rent control can improve welfare in a GE framework but assumes rental income is untaxed and evaluates welfare for the existing

population, including incumbents who directly benefit. We extend along four dimensions: (i) we allow the fiscal flow generated by housing policy to be taxed and redistributed, enabling comparisons across different redistribution schemes; (ii) we evaluate welfare for newborns rather than incumbents, a more stringent test; (iii) we distinguish unit control from tenancy control, which differ in their welfare profiles; and (iv) we incorporate homelessness as an endogenous outcome.

Under realistic redistribution (income tax cuts or even targeted transfers to renters) rent control improves welfare relative to decontrol despite its allocative distortions. Only under near-first-best redistribution does decontrol dominate. Unit control delivers higher welfare than tenancy control and substantially reduces homelessness.

The broader implication is that the standard policy prescription most economists support to deregulate and redistribute is correct only when redistribution is itself efficient; however, in fiscal environments where it is not, which describes most real-world cases, rent control is the welfare-dominant policy.

Housing First or Treatment First? My fifth paper (Rotberg, 2025), sole-authored, is under review and is my job market paper. It extends my methodological GE approach into a new domain: whether housing assistance for the homeless should be conditioned on sobriety.

Housing First (HF) advocates argue that unconditional housing provision is essential because recovery from addiction is harder while homeless. Treatment First (TF) advocates argue that conditioning housing on sobriety strengthens incentives to remain sober and attached to the labor market. Existing evidence comes from RCTs (Tsemberis et al., 2004; Larimer et al., 2009; Goering et al., 2014; Aubry et al., 2016) with short horizons that cannot speak to long-run behavioral responses, fiscal sustainability, or housing-market adjustments.

I build a quantitative GE model in which drug experimentation, addiction, mortality, unemployment, and homelessness arise endogenously and interact with housing-market equilibrium, building on the classical rational-addiction literature (Becker and Murphy, 1988; Greenwood et al., 2024) and the recent structural homelessness literature (Aiyagari and Zhao, 2024; Abramson, 2024).

In the model, I divide rationality across two margins where policy operates. I do not assume addicts are rational: addiction is modeled as a persistent state with low, exogenous exit probabilities, generating zero participation elasticity on the addiction margin and capturing the clinical reality that quitting is largely outside the addict's immediate control. But the initiation decision is modeled as forward-looking and is responsive to incentives, consistent with empirical evidence that users and non-users are well-informed about addiction risk and that drug markets exhibit robust price responsiveness at the participation margin (van Ours, 1995; Saffer and Chaloupka, 1999; Gallet, 2014).

The first methodological contribution is to micro-found, rather than assume, the empirical concentration of drug use among low-income households. Prior models generate this pattern by assuming systematically different preferences, such as Greenwood et al. (2024). In my framework, addiction-related mortality risk truncates the expected continuation value of life, and I prove that this truncation imposes a disproportionately larger loss on individuals with higher lifetime resources, endogenously reversing what would otherwise be a positive income gradient.

The substantive contribution is to recognize that the HF-versus-TF debate has misframed the policy choice as a single binary, when it actually involves two separable dimensions: voucher generosity and sobriety conditionality. Holding generosity fixed, TF reduces moral hazard and thus reduces addiction but raises homelessness. When both dimensions are varied jointly, however, the welfare-maximizing policy combines universal voucher provision with sobriety conditionality. Relative to the current rationed-HF benchmark, universal TF increases the value of not using drugs and thus reduces addiction by 36 percent. Since it is universal it also reduces homelessness by 63 percent. Together, this improves labor-market outcomes, nearly pays for itself, and raises welfare in both the short and long run.

Can Spatial Aggregation Mislead Policy? My sixth paper, sole-authored, turns the lens of my earlier housing work onto the modeling framework itself. General-equilibrium models with tenure choice, the workhorse for evaluating policies like the mortgage interest deduction, price housing in the aggregate: one economy-wide rent and house price wherever a household lives. Monocentric-city models in the Alonso–Muth–Mills tradition instead price housing location by location but abstract from the choice between owning and renting. Neither can capture how a housing policy working through the own-versus-rent margin plays out across a locally priced city. I develop what is, to my knowledge, the first monocentric-city model with endogenous, spatially varying tenure choice in which owner and rental markets clear location by location, and I calibrate it to U.S. data using the same property-tax incidence and cost-burden targets that discipline Rotberg and Steinberg (2024a). Because American cities are sharply sorted by income and rents are set in local markets, both of which I document in the data, the households a policy reaches and the households who bear its consequences often live in different parts of the city, a spatial incidence that an aggregate-price model cannot see.

Using the model, I evaluate three policies, repealing the mortgage interest deduction, a California-style renter tax credit, and an inflow of high-income immigrants, and show that each welfare verdict can flip once housing markets clear locally and tenure is a choice. Repealing the deduction lowers welfare under aggregate clearing but raises it under local clearing, because the rent increases are confined to the rings where the itemizing owners who lose the deduction actually live, sparing the poor renters clustered near the center. The renter credit reverses in the opposite direction: aggregation hides a welfare loss, as the excluded poorest renters lose roughly four times as much as the aggregate model reports, while much of the subsidy leaks to landlords. The immigration experiment turns a local gain into an aggregate loss for similar reasons. In every case tenure choice is the hinge, as recalibrating the model as a renter-only economy makes the reversals vanish. The broader, methodological message is that because current general-equilibrium housing models have either local prices or tenure choice but not both, the welfare verdict of any policy whose effects run through where people live and whether they own or rent risks coming out backwards.

3 Ongoing Work

The Tragedy of the Condos. In ongoing work with Lu Han and Shang Zeng (both from University of Wisconsin–Madison), we investigate a puzzle we documented empirically: condominium ownership in major U.S. cities is concentrated among higher-income households even after controlling for proximity to the city center and other observables. This is puzzling because condos are smaller,

cheaper, and largely promoted as an entry point to homeownership for lower-income households.

Our hypothesis centers on the institutional structure of condominium maintenance. Because of the shared nature of condos, they enjoy economies of scale in major repairs. However, to capture this advantage the free-rider problem must be solved through mandatory annual contributions that cannot be deferred. Owners who fail to pay are forced to sell, often at a loss. Single-family homeowners face no analogous obligation; they can defer maintenance during low-income periods and retain their home. This creates asymmetric exposure to unemployment risk: condo ownership offers lower expected costs but a tail risk of forced sale. Households with higher and more persistent unemployment risk, who tend to be lower-income in the data, therefore sort into single-family homes despite the higher cost.

We develop a quantitative GE model with heterogeneous unemployment risk, mandatory condo maintenance contributions, and endogenous tenure choice. The model is complete; calibration, simulations, and writing are next. We will use it to evaluate a policy in which the government subsidizes condo maintenance fees during unemployment spells, where we account for moral hazard channels that work against the subsidy. The stakes are substantial: condos are one of the most attractive housing forms in dense urban areas, especially for low-income households, where affordability pressures are most acute.

The Curse of Partial Technological Adoption. In ongoing work with Efraim Benmelech (Northwestern Kellogg and NBER), we study how collateral frictions and technology adoption shape production. The collateral value of a technology depends on its resale value to lenders, which in turn depends on its installed base. This creates an externality across firms: each firm's adoption decision affects the borrowing terms available to every other firm.

Building on the collateral-and-financing literature (Benmelech and Bergman, 2009, 2011), we develop a model with heterogeneous firms choosing between an old, lower-productivity technology and a new, higher-productivity but more expensive one. Both the interest rate on borrowed capital and required self-financing depend on the installed base of the relevant technology. The result is what we call the curse of partial adoption: along a transition, and even in some long-run equilibria, partial adoption can reduce aggregate output relative to no adoption at all. The mechanism is that partial adoption degrades the collateral value of the old technology without yet generating enough installed base in the new technology to make it cheap to finance.

The model is fully specified and coded. We plan to calibrate it to U.S. locomotive micro-data we have from the steam-to-diesel transition (1930–1959). Preliminary results suggest substantial aggregate output effects, with implications for current debates over green-energy transition and AI adoption.

Progressive Wealth Taxes Revisited. In ongoing work with Shang Zeng, we extend the framework from Rotberg and Steinberg (2024b) to study how *uncertainty* about future progressive wealth taxes (PWTs) affects household behavior. In our model, a PTW tax may appear in any given period and disappear in any subsequent one. We calibrate to four years of taxation per twenty.

The paper makes two contributions. Substantively, we find that occasional PWTs raise welfare, output, and wages, and can even raise inequality, in contrast to my earlier finding that permanent

PWTs reduce welfare through evasion.

Methodologically, the paper develops a solution method for heterogeneous-agent models with multiple aggregate state variables that move independently in equilibrium, addressing a class of problems that existing methods cannot handle. The model has three aggregates (corporate capital, entrepreneurial input, and aggregate hidden wealth) that affect different equilibrium objects through distinct channels: production prices, government transfers, and entrepreneurial collateral. Standard Krusell-Smith would require tracking each as a separate aggregate state, which is computationally infeasible given the six-dimensional individual state space we already have. We collapse the three aggregates into a one-dimensional regime-conditional weighted index, with weights chosen to maximize forecasting accuracy of prices within each regime. This dimensionality reduction enables tractable solution of a class of models that arise in macro public finance, housing, and other areas where production and fiscal channels generate multiple independent aggregates. The paper is in the final stages of preparation.

AI, Labor Markets, and Housing Markets. Another project with Shang Zeng will study how aggregate uncertainty about labor market disruptions, particularly from AI, propagates through housing markets. The model will feature heterogeneous households facing employment risk, owner-occupied and rental housing with inelastic rental supply, LTV and PTI constraints, and aggregate regime shifts in the unemployment process. Methodologically, the project will extend the aggregate state index approach developed in our wealth tax paper to housing models, where house prices and rents respond to different aspects of the wealth distribution and can move independently under inelastic rental supply, in contrast to the user cost relation that ties them together when rental supply is elastic (Kaplan et al., 2020). Substantively, the project will study how AI-driven higher unemployment uncertainty affects house prices, rents, homelessness, and welfare across the income/wealth distribution, contributing to a growing literature on the macroeconomic effects of automation and AI (Acemoglu and Restrepo, 2022; Korinek and Stiglitz, 2019).

4 Summary

Across all my published, under-review, and ongoing work, the methodological identity remains consistent: build the model carefully, discipline the response margins with strong empirical evidence, and let the policy conclusions follow. The substantive domains will continue to expand as new policy questions arise where this approach can deliver answers that partial-equilibrium analysis cannot.

References

Boaz Abramson. The welfare effects of eviction and homelessness policies. *Working Paper*, 2024.

Daron Acemoglu and Pascual Restrepo. Tasks, automation, and the rise in u.s. wage inequality. *Econometrica*, 90(5):1973–2016, 2022. doi: 10.3982/ECTA19815.

S. Rao Aiyagari and Kai Zhao. Homelessness. *Working Paper*, 2024.

Tim Aubry et al. A multiple-city RCT of housing first with assertive community treatment for homeless canadians with serious mental illness. *Psychiatric Services*, 67(3):275–281, 2016.

Gary S. Becker and Kevin M. Murphy. A theory of rational addiction. *Journal of Political Economy*, 96(4):675–700, 1988.

Efraim Benmelech and Nittai K. Bergman. Collateral pricing. *Journal of Financial Economics*, 91(3): 339–360, 2009.

Efraim Benmelech and Nittai K. Bergman. Bankruptcy and the collateral channel. *Journal of Finance*, 66(2):337–378, 2011.

Marius Brulhart, Jonathan Gruber, Matthias Krapf, and Kurt Schmidheiny. Taxing wealth: Evidence from switzerland. Working paper 22376, NBER, 2016.

Robert J. Carroll and John Yinger. Is the property tax a benefit tax? The case of rental housing. *National Tax Journal*, 47(2):295–316, 1994.

Alessandro Di Nola, Georgi Kocharkov, Almuth Scholl, and Anna-Mariia Tkhir. Tax evasion and self-employment in a cross-section of countries. *Journal of Monetary Economics*, 118:198–209, 2021.

Jack Favilukis, Pierre Mabille, and Stijn Van Nieuwerburgh. Affordable housing and city welfare. *Review of Economic Studies*, 90(1):293–330, 2023.

Max Floetotto, Michael Kirker, and Johannes Stroebel. Government intervention in the housing market: Who wins, who loses? *Journal of Monetary Economics*, 80:106–123, 2016.

Craig A. Gallet. Can price get the monkey off our back? A meta-analysis of illicit drug demand. *Health Economics*, 23(1):55–68, 2014.

Carlos Garriga and Don E. Schlagenhauf. A general equilibrium analysis of inflation and mortgage default. *Working Paper*, 2009. Federal Reserve Bank of St. Louis.

Martin Gervais. Housing taxation and capital accumulation. *Journal of Monetary Economics*, 49(7): 1461–1489, 2002.

Paula Goering et al. National at home/Chez soi final report. *Mental Health Commission of Canada*, 2014.

Jeremy Greenwood, Nezih Guner, and Karen A. Kopecky. The downward spiral: A macroeconomic analysis of the opioid crisis. Working Paper 24-18, Federal Reserve Bank of Cleveland, 2024.

Fatih Guvenen, Gueorgui Kambourov, Burhanettin Kuruscu, Sergio Ocampo, and Daphne Chen. Use it or lose it: Efficiency and redistributional effects of wealth taxation. *Quarterly Journal of Economics*, 138(2):835–894, 2023.

John Guyton, Patrick Langetieg, Daniel Reck, Max Risch, and Gabriel Zucman. Tax evasion at the top of the income distribution: Theory and evidence. *Working Paper*, 2023.

Institute on Taxation and Economic Policy. Who pays? A distributional analysis of the tax systems in all 50 states. ITEP Report, 2018. URL `https://itep.org/whopays/`.

Katrine Jakobsen, Kristian Jakobsen, Henrik Kleven, and Gabriel Zucman. Wealth taxation and wealth accumulation: Theory and evidence from denmark. Working paper 24371, NBER, 2018.

Greg Kaplan, Kurt Mitman, and Giovanni L. Violante. The housing boom and bust: Model meets evidence. *Journal of Political Economy*, 128(9):3285–3345, 2020. doi: 10.1086/708816.

Markus Karlman, Karin Kinnerud, and Kasper Kragh-Sørensen. Mortgage interest deductions? Not a bad idea after all. *Working Paper*, 2021. Note: This is the prior literature paper, not to be confused with your JME paper of the same title.

Anton Korinek and Joseph E. Stiglitz. Artificial intelligence and its implications for income distribution and unemployment. In Ajay Agrawal, Joshua Gans, and Avi Goldfarb, editors, *The Economics of Artificial Intelligence: An Agenda*, pages 349–390. University of Chicago Press, Chicago, 2019. doi: 10.7208/9780226613475-016.

Mary E. Larimer et al. Health care and public service use and costs before and after provision of housing for chronically homeless persons with severe alcohol problems. *Journal of the American Medical Association*, 301(13):1349–1357, 2009.

Makoto Nakajima. Optimal capital income taxation with housing. *Working Paper*, 2010. Federal Reserve Bank of Philadelphia.

Larry L. Orr. The incidence of differential property taxes on urban housing. *National Tax Journal*, 21 (3):253–262, 1968.

Shahar Rotberg. The implications of housing for the design of wealth taxes. *International Economic Review*, 63(1):125–159, 2022.

Shahar Rotberg. Housing first or treatment first? Under review, Review of Economic Dynamics, 2025.

Shahar Rotberg and Joseph B. Steinberg. Mortgage interest deductions? not a bad idea after all. *Journal of Monetary Economics*, 2024a. Forthcoming.

Shahar Rotberg and Joseph B. Steinberg. Tax evasion and capital taxation. *Journal of Political Economy*, 2024b. Forthcoming.

Shahar Rotberg and Lin Zhang. Rent control? Bad in theory, not always in practice. Revise and resubmit, European Economic Review, 2025.

Henry Saffer and Frank Chaloupka. The demand for illicit drugs. *Economic Inquiry*, 37(3):401–411, 1999.

David Schwegman and John Yinger. The shifting of the property tax on urban renters: Evidence from new york state's homestead tax option. Working paper, 2020.

David Seim. Behavioral responses to wealth taxes: Evidence from sweden. *American Economic Journal: Economic Policy*, 9(4):395–421, 2017.

Ali Shourideh. Optimal taxation of wealthy individuals. *Working Paper*, 2014.

Kamila Sommer and Paul Sullivan. Implications of U.S. tax policy for house prices, rents, and homeownership. *American Economic Review*, 108(2):241–274, 2018.

Mathias Trabandt and Harald Uhlig. The Laffer curve revisited. *Journal of Monetary Economics*, 58 (4):305–327, 2011.

Sam Tsemberis, Leyla Gulcur, and Maria Nakae. Housing first, consumer choice, and harm reduction for homeless individuals with a dual diagnosis. *American Journal of Public Health*, 94(4): 651–656, 2004.

Jan C. van Ours. The price elasticity of hard drugs: The case of opium in the Dutch East Indies, 1923–1938. *Journal of Political Economy*, 103(2):261–279, 1995.

Floris T. Zoutman. The elasticity of taxable wealth: Evidence from the Netherlands. *Working Paper*, 2018.

Gabriel Zucman. The missing wealth of nations: Are europe and the U.S. net debtors or net creditors? *Quarterly Journal of Economics*, 128(3):1321–1364, 2013.