Unrealized Capital Gains Tax, Business Investment, and Wealth Inequality*

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Abstract

Unrealized capital gains constitute a large share of wealth at the top of the U.S. wealth distribution and are concentrated in privately held businesses, yet they remain untaxed under the current realization-based capital gains tax system. Motivated by recent proposals to tax unrealized capital gains, this paper studies the welfare consequences of accrual-based (mark-to-market) taxation using a quantitative general equilibrium model of entrepreneurship and business sales. I find that accrual-based taxation applied to all households reduces private business production by 8%, aggregate output by 5%, and consumption-equivalent welfare by 3%, as reduced entrepreneurial entry outweighs the benefits of greater business turnover. In contrast, applying accrual-based taxation only to very wealthy households can reduce inequality and generate welfare gains of up to 1%. Targeting wealthy households, who are more likely to be incumbent business owners, limits entry deterrence, while reduced capital accumulation lowers equilibrium wages and encourages entrepreneurial entry among less wealthy households.

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1 Introduction

In the United States, unrealized capital gains—increases in asset values that have not yet been realized through a sale—account for 42 percent of the net worth of households in the top 1 percent of the wealth distribution, and most of these gains reflect appreciation in *privately held businesses*.[1] Under the current realization-based capital gains tax system, these gains remain untaxed until realization, typically through a sale. Moreover, unrealized gains on assets held until death can escape capital gains taxation entirely because heirs receive a step-up in basis. This has motivated recent proposals to tax increases in asset values as they accrue, bringing unrealized gains into the tax base.[2] Such *accrual-based taxation* could increase the progressivity of the tax system, but it would also change entrepreneurs' incentives to create, operate, and sell businesses.

These incentive effects are at the center of the policy debate.[3] On the one hand, accrual-based taxation can reduce the distortionary *lock-in effect* of realization-based taxation: entrepreneurs may retain existing businesses to defer or avoid capital gains taxes rather than sell them and start new businesses (Chari et al., 2005; Cavalcanti and Erosa, 2007; Bhandari et al., 2024b).[4] By weakening this incentive, accrual-based taxation can promote business turnover. On the other hand, accrual-based taxation can discourage entrepreneurial entry: appreciation generated by successful business creation is taxed even when founders retain ownership, reducing the expected after-tax payoff from starting a business. This paper asks which effect dominates, how these effects interact with the distribution of wealth, and whether accrual-based taxation can improve welfare—and how the answer depends on which households are subject to the tax.

I answer these questions using a quantitative general equilibrium model of entrepreneurship

[1] Author's calculations from the Survey of Consumer Finances (SCF), averaged over the 2010–2019 waves. Privately held businesses account on average for 64 percent of the unrealized capital gains held by the top 1 percent, real estate for 22 percent, and stocks and mutual funds for 14 percent.

[2] The Biden administration's FY 2025 revenue proposals included a 25 percent minimum tax on income, including unrealized capital gains, for taxpayers with wealth above $100 million, as well as a separate proposal to treat transfers at death as realization events (U.S. Department of the Treasury, 2024). Related state-level mark-to-market proposals have been introduced in New York (S 165, 2025–26), Illinois (SB 3884, 2025–26), and Vermont (H 827, 2023–24).

[3] The Biden administration's FY 2025 revenue proposals emphasize two potential benefits: improving efficiency by reducing the lock-in effect created by realization-based taxation and reducing income and wealth disparities (U.S. Department of the Treasury, 2024). Opponents, meanwhile, highlight potential adverse effects on entrepreneurship. Representative Bryan Steil (R-WI), for example, argued that taxing unrealized gains "would reduce incentives for innovation and job creation" (Steil, 2022).

[4] As in these papers, the relevant reallocation margin is the sale of an existing privately held business to a new owner, possibly another firm, rather than an IPO or a partial equity issuance. In the secondary market for private businesses, majority-stake sales typically involve a near-complete transfer of ownership: on average, buyers acquire approximately 94% of the firm's equity, and founders retain a stake after the transaction in only 9.1% of cases (Mahone, 2023).

and business sales calibrated to the U.S. economy. The analysis focuses on privately held businesses because they account for more than half of total U.S. business net income and are an important component of wealth among the richest households.[5] I find that the welfare effects depend on who is taxed. Applied to all households, accrual-based taxation increases business sales, but the gain from weaker lock-in is outweighed by the loss from entry deterrence: aggregate output falls by 5 percent, and average welfare falls by about 3 percent in consumption-equivalent terms. Applied only to the wealthiest households—those in roughly the top 1 to 4 percent of the wealth distribution—it instead raises welfare, by up to about 1 percent. These households are more likely to be incumbent business owners than potential founders, so targeting them limits entry deterrence. Moreover, taxing the unrealized gains of wealthy households reduces their capital accumulation, which lowers the equilibrium wage and thereby encourages less wealthy households to start businesses. Together, these mechanisms help limit production losses and reduce inequality.

The main contribution of this paper is to show that the effects of accrual-based taxation depend on the distribution of wealth. Lock-in affects incumbent business owners' decisions to sell, whereas entry deterrence affects households' decisions to start businesses. The relative importance of these effects therefore depends on which households are subject to the tax. Recent quantitative studies of capital gains taxation and entrepreneurship focus primarily on firm dynamics, with less emphasis on the wealth distribution (Bhandari et al., 2024b; Azevedo et al., 2025). By modeling the concentration of entrepreneurial wealth, this paper evaluates the wealth-targeted tax designs featured in recent policy proposals.

The model builds on the framework of Chari et al. (2005) and centers on two margins: starting a business and selling it.[6] Households differ in labor productivity, wealth, and entrepreneurial talent, which captures their comparative advantage in creating new businesses rather than operating established ones. They choose whether to work or start a business. Business owners face collateral constraints and can either continue operating their businesses or sell them to acquiring firms, which face no such constraints. Business sales therefore allow entrepreneurs to specialize in creating

[5]Source: Internal Revenue Service, SOI Tax Stats—Integrated Business Data, https://www.irs.gov/statistics/soi-tax-stats-integrated-business-data. Profits from privately held pass-through businesses are also an important source of income for top earners; see Smith et al. (2019).

[6]Appendix A presents a simplified partial equilibrium version of the model that illustrates the two opposing production effects of accrual-based taxation highlighted in the policy debate: reduced lock-in and lower entrepreneurial entry.

new businesses and can enable existing businesses to operate at a larger scale. Entrepreneurial businesses produce differentiated intermediate goods for a competitive final good sector and charge markups, which raise their profits and market values. Finally, following Cagetti and De Nardi (2009), a life-cycle structure with altruistic bequests allows the model to capture step-up in basis at death: a business held until death passes to the owner's children, who can sell it immediately without paying capital gains tax on appreciation accrued before death.

I calibrate the model to U.S. data on entrepreneurship, business sales, unrealized business gains, and the wealth distribution. I refer to the calibrated economy under the current realization-based tax system as the *benchmark* and compare its stationary equilibrium with that under each reform.

The first experiment replaces realization-based taxation with accrual-based taxation for all households, keeping all tax rates at their benchmark values and letting government purchases adjust to balance the budget. Both sides of the trade-off are large: the number of businesses operated by acquiring firms rises by 24 percent, but the number of entrepreneurs falls by 28 percent. Entry deterrence dominates, so the number of operating private businesses falls by 18 percent, aggregate intermediate-goods production by 8 percent, and final output by 5 percent.[7] The reform also lowers the Gini coefficients of wealth and consumption partly by weakening the incentive to retain appreciated businesses until death. Despite these reductions in inequality, the decline in aggregate consumption leads to a welfare loss. Welfare losses are largest for young households, particularly those with low labor productivity, who are more likely to start businesses and thus more exposed to the entry-deterrence effect.

Next, I evaluate a *hybrid regime* in which accrual-based taxation applies only to households above a wealth cutoff, while households below the cutoff remain subject to realization-based taxation. This structure more closely resembles recent policy proposals. Consistent with proposals to tax previously unrealized gains at death (U.S. Department of the Treasury, 2024), the regime also eliminates step-up in basis. Government purchases are held fixed, and lump-sum taxes or transfers balance the budget.

Targeting the wealthiest households works through two channels. The direct effect falls on wealthy households, who are more likely to be incumbent business owners than potential founders,

[7] Abolishing the capital gains tax also removes lock-in without taxing gains from successful entry. In this counterfactual, the number of operating businesses increases by 14 percent and final output by 4 percent.

thereby limiting entry deterrence. The indirect effect operates through equilibrium prices. Because wealthy households hold a large share of aggregate wealth, taxing them reduces aggregate capital supply, raising the interest rate and lowering the wage. A lower wage reduces the opportunity cost of entrepreneurship for households below the cutoff, encouraging them to start businesses, a mechanism discussed in Brüggemann (2021).

The results show that the hybrid regime generates welfare gains when the wealth cutoff corresponds to the top 1–4 percent of households in the realization-based benchmark. Under these cutoffs, the indirect general equilibrium effects encourage entrepreneurial entry among households below the cutoff, limiting the decline in aggregate production while consumption inequality also falls. These welfare gains occur despite lower tax revenue, which requires additional lump-sum taxes to balance the budget, and persist when compared with a realization-based benchmark without step-up in basis (Appendix B.5). By contrast, extending accrual-based taxation to the top 5 percent strengthens the direct entry-deterrence effect: aggregate intermediate-goods production falls by about 4 percent, and welfare declines substantially.

1.1 Related Literature

This paper contributes to several strands of literature. First, it builds on research on capital gains taxation and business reallocation. Classic work studies the lock-in effect of realization-based taxation on portfolio choice (Balcer and Judd, 1987; Kovenock and Rothschild, 1987; Auerbach, 1989). Chari et al. (2005) and Cavalcanti and Erosa (2007) develop this mechanism in the context of entrepreneurial business sales, building on the framework of Holmes and Schmitz Jr (1990, 1995). I revisit this line of research to examine accrual-based taxation, under which reducing lock-in can come at the cost of discouraging business creation.

Recent work has examined how capital gains taxation affects entrepreneurship and business transfers. Bhandari et al. (2024b) study the taxation of privately held businesses in a model in which business capital is reallocated through indivisible sales. Their framework is closely related to this paper and features a similar trade-off: replacing realization-based capital gains taxation with an annual tax on the value of transferable business capital reduces lock-in but discourages entrepreneurial entry. The tax reform studied here, however, differs in its tax base: accrual-based

capital gains taxation applies to changes in business value rather than its level and therefore accounts for both gains and losses. In terms of tax structure, Azevedo et al. (2025) are more closely related. They study accrual-based capital gains taxation of venture-capital-backed startups, emphasizing ownership dilution from tax payments and the insurance benefits of loss refunds.[8]

Second, this paper contributes to the literature on taxation and entrepreneurship, which studies how entrepreneurial responses shape the aggregate and distributional effects of tax policy (Kitao, 2008; Cagetti and De Nardi, 2009; Scheuer, 2014; Brüggemann, 2021; Guvenen et al., 2023; Boar and Midrigan, 2023; Guo, 2026). I build on this literature by incorporating endogenous business sales and examining how capital gains taxation affects both entrepreneurial entry and business reallocation.

Finally, this paper relates to the literature on wealth inequality. In particular, existing research attributes wealth concentration to entrepreneurship (Quadrini, 2000; Cagetti and De Nardi, 2006; Gomez and Gouin-Bonenfant, 2024), heterogeneous returns on assets (Benhabib et al., 2011; Bach et al., 2020; Fagereng et al., 2020; Xavier, 2021; Brüggemann and Mahone, 2025), and capital gains (Robbins, 2018; Fagereng et al., 2019, 2024; Smith et al., 2023). The model brings these mechanisms together by allowing entrepreneurs to accumulate wealth through ownership of illiquid business assets that generate heterogeneous returns and unrealized capital gains.

The remainder of the paper is organized as follows. Section 2 presents the model, Section 3 the calibration, and Section 4 the extension to accrual-based taxation. Sections 5 and 6 analyze the economy-wide and hybrid reforms, and Section 7 concludes.

2 The Model

The model economy consists of households, acquiring firms, a competitive final good producer, and a government. Households are heterogeneous in labor productivity, entrepreneurial idea talent, and wealth. They choose whether to work or attempt to start a business. Entrepreneurial idea talent captures an individual's comparative advantage in creating a new, high-quality business relative to operating an established one. Each entrepreneur can operate at most one business and has the option to sell it in its entirety. These features follow the business-sale frameworks of Chari

[8]Other recent work studies capital gains taxation and lock-in in the context of financial-asset portfolios rather than business sales; see, for example, Aguiar et al. (2024); Ocampo-Diaz et al. (2026).

et al. (2005) and Cavalcanti and Erosa (2007).[9]

Production is organized into a final good sector and an intermediate goods sector. A representative competitive final good producer combines capital, labor, and differentiated intermediate goods supplied by entrepreneurial businesses. These businesses may be operated either by entrepreneurs or by acquiring firms. A large number of risk-neutral acquiring firms compete to purchase businesses offered for sale by entrepreneurs and operate them under new ownership. The government levies taxes to finance government purchases and pension transfers to retired households.

One of the model's contributions is to incorporate a key feature of the current capital gains tax system that can strengthen lock-in: the step-up in basis at death. Because unrealized gains on assets held until death can escape capital gains taxation, this provision creates an additional incentive for business owners to retain ownership and delay realization. To capture this mechanism, the model incorporates a life-cycle structure with intergenerational transfers, building on Cagetti and De Nardi (2009).

In addition, the model incorporates monopolistic competition to allow markups to contribute to entrepreneurial profits and, hence, business value.[10] Entrepreneurial businesses produce differentiated intermediate goods that are supplied to the final good producer, following Guvenen et al. (2023) and Rotberg and Steinberg (2024). Finally, the framework accommodates accrual-based capital gains taxation, allowing changes in business value to be taxed as they occur, regardless of whether the business is sold. Appendix A presents a simplified partial equilibrium version of the quantitative model that isolates the two opposing production effects of accrual-based taxation highlighted in the policy debate: reduced lock-in and lower entrepreneurial entry.

A. Demographics I adopt a life-cycle structure with intergenerational altruism, following Cagetti and De Nardi (2009), in which households pass through two stages of life: young and old. Each model period corresponds to one year. In each period, young households face a constant probability

[9]These assumptions are also consistent with more recent evidence on private-business ownership and sales. Smith et al. (2019) document that most top pass-through business owners own just one firm and nearly all top owners also report materially participating in their businesses. Bhandari et al. (2024b) document that intangible assets account for roughly 70% of the value transferred in private-business sales and assume the indivisible nature of business sales.

[10]Smith et al. (2019) document high profitability among top-owned pass-through businesses and discuss higher markups as one potential source. De Loecker et al. (2020), using publicly traded U.S. firms, provide broader evidence on rising markups, although their evidence does not directly apply to privately held businesses. The model abstracts from heterogeneity and time variation in markups and instead assumes a constant markup.

of aging, $(1 - \pi_y)$, while old households face a constant probability of dying, $(1 - \pi_o)$. Old households care about the utility of their offspring, who enter the economy upon their parents' death and inherit their parents' assets and any business owned by their parents. The probabilities of aging and death are calibrated so that the implied average lengths of the working and retirement periods are realistic.

B. Preferences Households derive utility from consumption according to a CRRA utility function, $u(c) = \frac{c^{1-\sigma}}{1-\sigma}$, and discount future utility by a factor β. Old households also value the lifetime utility of their offspring with weight η.

C. Heterogeneity Households are heterogeneous in labor productivity, $y \in \mathcal{Y} = \mathbb{R}_{++}$, and entrepreneurial idea talent, $\theta \in \Theta = \mathbb{R}_{++}$. A household's labor productivity follows an AR(1) process in logs with persistence ρ_y and innovation variance σ_y^2, with transition kernel $f(y' \mid y)$. Similarly, entrepreneurial idea talent follows an AR(1) process in logs with persistence ρ_θ and innovation variance σ_θ^2, with transition kernel $g(\theta' \mid \theta)$. The innovations to the two processes are independent for simplicity.

Given these heterogeneous characteristics, households endogenously accumulate assets, $a \in \mathcal{A} = \mathbb{R}_+$, and choose their occupation. Business ownership and business productivity are summarized by the state variable z, where

$$z = \begin{cases} z_0, & \text{if no business is owned,} \\ z_b \in \mathcal{Z}_b = \{z_1, z_2, \ldots, z_{N_z}\}, & \text{if a business with productivity } z_b \text{ is owned.} \end{cases} \tag{1}$$

The productivity states are ordered such that $z_1 < z_2 < \cdots < z_{N_z}$. The state variable z evolves through both endogenous decisions—including entry and sale—and exogenous shocks to business productivity.

Entry decision. In each period, young households in the no-business state, $z = z_0$, observe their entrepreneurial idea talent θ and choose whether to work or attempt to start a business. Households that choose to work remain in state z_0 in the next period. If a household attempts to start a business, business creation takes one period, and the household learns the productivity of the new business at the beginning of the next period. With probability δ_e, the entry attempt fails and the household

returns to z_0; otherwise, next-period business productivity z' is drawn from a distribution that depends on θ.

I assume that the startup-productivity distribution takes the following form. The specification is motivated by two empirical patterns: differences in subsequent startup growth largely reflect ex ante heterogeneity, and only a small fraction of young firms experience very rapid growth (Sterk et al., 2021; Decker et al., 2016). To capture these patterns, I model high-productivity startup outcomes as relatively rare and allow entrepreneurial idea talent to shift the distribution of initial business productivity.

$$h_e(z' \mid \theta) = \begin{cases} \delta_e, & \text{if } z' = z_0, \\ (1-\delta_e)\dfrac{\exp\left(-\frac{j}{\theta}\right)}{\sum_{m=1}^{N_z}\exp\left(-\frac{m}{\theta}\right)}, & \text{if } z' = z_j, \quad j = 1, \ldots, N_z. \end{cases} \tag{2}$$

Selling decisions. Households that already own a business, with $z = z_b \in \mathcal{Z}_b$, choose whether to sell it or continue operating it. Households that sell their businesses transition to the no-business state, z_0, in the next period. Conditional on continued operation and business survival, productivity evolves according to

$$\log z_{t+1} = \rho_z \log z_t + \varepsilon_{z,t+1}, \qquad \varepsilon_{z,t+1} \sim \mathcal{N}(0, \sigma_z^2). \tag{3}$$

Let $h(z_b' \mid z_b)$ denote the transition kernel for business productivity implied by (3), conditional on survival. Incumbent businesses whose owners choose to continue operating face a constant exogenous failure probability δ_c. I allow this probability to differ from the entry-failure probability δ_e. I set the two probabilities using empirical evidence on business failure and exit, with $\delta_e > \delta_c$ reflecting the higher failure rates associated with early-stage entrepreneurship. Conditional on the decision to continue, the transition kernel for the household's business-ownership state is

$$h_c(z' \mid z_b) = \begin{cases} \delta_c, & \text{if } z' = z_0, \\ (1-\delta_c)h(z' \mid z_b), & \text{if } z' = z_j, \quad j = 1, \ldots, N_z. \end{cases} \tag{4}$$

The household state vector is therefore

$$s = (z, a, y, \theta, \iota) \in \mathcal{S} \equiv \mathcal{Z} \times \mathcal{A} \times \mathcal{Y} \times \Theta \times \mathcal{I}, \tag{5}$$

where $\mathcal{Z} = \{z_0\} \cup \mathcal{Z}_b$ and $\iota \in \mathcal{I} = \{\text{young}, \text{old}\}$ denotes the household's life stage. Let Ψ denote the cross-sectional distribution of households over $\mathcal{S}$.

D. Technology An entrepreneur who operates a business produces a differentiated intermediate good using capital k and labor ℓ,

$$x_i = z_i k_i^{\varphi} \ell_i^{1-\varphi}. \tag{6}$$

When an acquiring firm acquires and operates a business, output is given by

$$x_i = \lambda z_i k_i^{\varphi} \ell_i^{1-\varphi}, \tag{7}$$

where λ captures the difference in operating efficiency between the entrepreneur and the acquiring firm, following Chari et al. (2005). In the calibration, $\lambda < 1$, which can be interpreted as capturing entrepreneur-specific human capital or organizational capital that is partially lost when the business is transferred.

The representative competitive final good producer uses capital, K_c, labor, L_c, and a CES aggregate of differentiated intermediate inputs, Q, to produce the final good:

$$Y = A K_c^{\alpha} L_c^{1-\alpha-\gamma} Q^{\gamma}, \qquad \alpha \in (0,1), \quad \gamma \in (0, 1-\alpha), \tag{8}$$

where A denotes total factor productivity.

To keep track of businesses that have been acquired from entrepreneurs, let Φ_t denote the post-trade finite measure of businesses operated by acquiring firms in period t. When an entrepreneur sells a business, it enters the distribution of acquirer-operated businesses. The survival and productivity transitions of these businesses are governed by the transition kernel $h_c(z' \mid z)$. Businesses that exit and transition to z_0 leave the distribution.

Let $\mathbb{1}_m(s)$ be an indicator equal to one if a household in state s operates its business in the

current period and zero otherwise. The CES aggregate of differentiated intermediate goods is

$$Q_t = \left(\int_{\mathcal{S}} \mathbb{1}_m(s) x(s)^\mu d\Psi_t(s) + \int_{\mathcal{Z}_b} x(z)^\mu d\Phi_t(z) \right)^{1/\mu}, \qquad \mu \in (0,1). \tag{9}$$

The first term aggregates intermediate goods produced by entrepreneur-operated businesses, while the second term aggregates intermediate goods produced by businesses operated by acquiring firms.

The representative competitive final good producer takes prices as given when choosing inputs. Let w denote the wage per efficiency unit and r the risk-free interest rate. The user cost of capital is $r + \delta$, where δ is the depreciation rate. Profit maximization implies

$$w = (1 - \alpha - \gamma)\, A K_c^\alpha L_c^{-\alpha-\gamma} Q^\gamma, \tag{10}$$

and

$$r + \delta = \alpha\, A K_c^{\alpha-1} L_c^{1-\alpha-\gamma} Q^\gamma. \tag{11}$$

Moreover, the implied inverse demand schedule for a differentiated intermediate good supplied in quantity x is

$$\xi(x) = \gamma\, A K_c^\alpha L_c^{1-\alpha-\gamma} Q^{\gamma-\mu} x^{\mu-1}, \tag{12}$$

where $\xi(x)$ is the price per unit of the intermediate good. Individual intermediate producers take (K_c, L_c, Q) as given and therefore face a downward-sloping demand schedule when $\mu < 1$.

E. Households Households' decision problems depend on both their life stage and whether they currently own a business. Accordingly, I define separate value functions by life stage and business status: (i) households without a business, $(z = z_0)$, and (ii) households with a business, $(z = z_b \in \mathcal{Z}_b)$. Young households without a business may attempt to start one. In the old stage, households cannot start new businesses: those without a business retire, while business owners may continue operating their businesses or sell them and retire, following Cagetti and De Nardi (2006).

Young households' problem.—A young household's occupational choices depend on whether it owns a business. Those without a business choose between working and attempting entry, while

those with a business choose whether to continue managing it or sell it:

$$V(z,a,y,\theta) = \begin{cases} \max\{V_w(z,a,y,\theta), V_e(z,a,y,\theta)\}, & \text{if } z = z_0, \\ \max\{V_s(z,a,y,\theta), V_m(z,a,y,\theta)\}, & \text{if } z \in \mathcal{Z}_b. \end{cases} \tag{13}$$

Worker. Workers earn labor income wy and asset income ra. Following Heathcote et al. (2017), let $T_y(Y) = Y - \lambda_y Y^{1-\tau_y}$ denote the progressive income tax function, where Y represents taxable household income. Let τ_c denote the consumption tax rate. Regardless of whether they age in the next period, workers remain in the no-business state z_0. Conditional on remaining young, the expected continuation value is taken over (y', θ') given (y, θ), using the transition kernels $f(y' \mid y)$ and $g(\theta' \mid \theta)$. If a worker becomes old, the household retires, and the continuation value is $W_r(z_0, a')$. The worker's problem is

$$V_w(z_0,a,y,\theta) = \max_{c,a' \geq 0} \left\{ u(c) + \beta \pi_y \mathbb{E}\left[V(z_0,a',y',\theta')\right] + \beta(1-\pi_y) W_r(z_0,a') \right\}, \tag{14}$$

subject to

$$a' = (1+r)\, a + wy - T_y(ra + wy) - (1+\tau_c)\, c. \tag{15}$$

Startup entrepreneur. Households who attempt to start a business spend one period building it, during which they continue working and earn labor income.[11] The next-period business state z' is drawn from $h_e(z' \mid \theta)$. Conditional on remaining young, the expected continuation value is taken over (z', y', θ') using the transition kernels $h_e(z' \mid \theta)$, $f(y' \mid y)$, and $g(\theta' \mid \theta)$. If the household becomes old, the continuation value is $W(z', a')$, with expectation taken over z' using $h_e(z' \mid \theta)$. The startup entrepreneur's problem is

$$V_e(z_0,a,y,\theta) = \max_{c,a' \geq 0} \left\{ u(c) + \beta \pi_y \mathbb{E}\left[V(z',a',y',\theta')\right] + \beta(1-\pi_y) \mathbb{E}\left[W(z',a')\right] \right\}, \tag{16}$$

subject to (15).

Manager. A managing entrepreneur chooses capital k, labor ℓ, consumption, and savings.

[11] Recent administrative evidence shows that a majority of founders receive positive wage income in the first year of a new venture; see Bhandari et al. (2024a).

Operating profits are given by

$$\pi(z,k,\ell) = \xi(x)\,x - (r+\delta)k - w\ell, \qquad x = zk^{\varphi}\ell^{1-\varphi}. \tag{17}$$

Capital input is subject to a collateral constraint that depends on the entrepreneur's assets:

$$k \leq \psi\, a, \tag{18}$$

where ψ governs the tightness of borrowing constraints. Conditional on remaining young, the expected continuation value is taken over (z', y', θ') given (z_b, y, θ), using the transition kernels $h_c(z' \mid z_b)$, $f(y' \mid y)$, and $g(\theta' \mid \theta)$. If the entrepreneur becomes old, the expected continuation value is taken over z' given z_b, using $h_c(z' \mid z_b)$. The value function for a managing entrepreneur is

$$V_m(z_b, a, y, \theta) = \max_{c,k,\ell,a' \geq 0} \left\{ u(c) + \beta\pi_y \mathbb{E}\left[V(z', a', y', \theta')\right] + \beta(1-\pi_y)\mathbb{E}\left[W(z', a')\right] \right\}, \tag{19}$$

subject to (18) and

$$a' = (1+r)\,a + \pi(z_b, k, \ell) - T_y(ra + \pi(z_b, k, \ell)) - (1+\tau_c)\,c. \tag{20}$$

Seller. When an entrepreneur sells her business, she pays a fixed transaction cost ϕ, which captures expenses associated with finding a buyer, completing paperwork, and other transaction-related activities. The business is transferred to an acquiring firm at price $p(z_b)$. Under realization-based taxation, the seller pays capital gains tax at rate τ_g upon sale.[12] Because the entrepreneur sells the business in the current period, she becomes a non-business owner in the next period. Conditional on remaining young, the expected continuation value is taken over (y', θ') given (y, θ), using the transition kernels $f(y' \mid y)$ and $g(\theta' \mid \theta)$. If she becomes old, she retires. The seller's problem is

$$V_s(z_b, a, y, \theta) = \max_{c,a' \geq 0} \left\{ u(c) + \beta\pi_y \mathbb{E}\left[V(z_0, a', y', \theta')\right] + \beta(1-\pi_y)W_r(z_0, a') \right\}, \tag{21}$$

[12] For simplicity, I normalize the tax basis of private businesses to zero, so taxable capital gains upon sale equal the business value, $p(z_b)$.

subject to

$$a' = (1+r)\,a + (1-\tau_g)\,p(z_b) - \phi - T_y(ra) - (1+\tau_c)\,c. \tag{22}$$

Timing of a business sale. Each model period corresponds to one year. At the beginning of the period, a business owner chooses whether to continue operating the business or to sell it. If the owner chooses to sell, the transfer is completed before the production stage, and the buyer operates the acquired business during the current period. Because selling a private business is time-consuming, the seller cannot simultaneously work or start another business during the sale period. The seller therefore enters the no-business state, z_0, at the beginning of the next period and chooses a new occupation then. This one-period occupational transition captures, in reduced form, the time and effort associated with arranging a private-business sale, consistent with the evidence in Mahone (2023).

Old households' problem.—Old households that own a business can choose either to continue managing it or to sell it and retire in the following period, whereas old households without a business are retirees. When an old household dies, its offspring enter the economy as young households, with labor productivity y and entrepreneurial idea talent θ drawn from their respective invariant distributions.

$$W(z,a) = \begin{cases} W_r(z_0,a), & \text{if } z = z_0, \\ \max\{W_s(z,a), W_m(z,a)\}, & \text{if } z \in \mathcal{Z}_b. \end{cases} \tag{23}$$

Retirees. Retirees receive pension income b in every period and remain retirees for as long as they survive. Upon death, retirees bequeath their financial assets to their offspring. Old households value the utility of their offspring with weight η. The retiree's value function is

$$W_r(z_0,a) = \max_{c,a' \geq 0} \left\{ u(c) + \beta\pi_o W_r(z_0,a') + \eta\beta(1-\pi_o)\mathbb{E}V(z_0,a',y',\theta') \right\}, \tag{24}$$

subject to

$$a' = b + (1+r)a - T_y(ra+b) - (1+\tau_c)c. \tag{25}$$

Manager. An old entrepreneur who continues to manage the business draws the next-period business-ownership state z' according to $h_c(z' \mid z_b)$. Upon death, their offspring inherit financial

assets a' and the business if it survives. The value function is

$$W_m(z_b, a) = \max_{c,k,\ell,a' \geq 0} \left\{ u(c) + \beta \pi_o \mathbb{E} W(z', a') + \eta \beta (1 - \pi_o) \mathbb{E} V_{\text{step}}(z', a', y', \theta') \right\}, \tag{26}$$

subject to (18) and (20).

Under step-up in basis, the tax basis of a business inherited by an offspring is reset to its market value at the time of inheritance. Fully incorporating this tax treatment would require tracking the tax basis as an additional state variable. To avoid this computational burden, I use a simplified treatment in which an offspring can sell the inherited business immediately without paying capital gains tax. If the offspring instead continues managing the business, subsequent sales are subject to the standard zero-basis assumption. This is modeled through the value function V_{step}:

$$V_{\text{step}}(z, a, y, \theta) = \begin{cases} \max\{V_w(z, a, y, \theta), V_e(z, a, y, \theta)\}, & \text{if } z = z_0, \\ \max\{V_s^{\text{inherit}}(z, a, y, \theta), V_m(z, a, y, \theta)\}, & \text{if } z \in \mathcal{Z}_b. \end{cases} \tag{27}$$

$$V_s^{\text{inherit}}(z_b, a, y, \theta) = \max_{c,a' \geq 0} \left\{ u(c) + \beta \pi_y \mathbb{E}\left[V(z_0, a', y', \theta') \right] + \beta (1 - \pi_y) W_r(z_0, a') \right\}, \tag{28}$$

subject to

$$a' = (1 + r)a + p(z_b) - \phi - T_y(ra) - (1 + \tau_c)c. \tag{29}$$

Seller. An old entrepreneur who sells her business in the current period becomes a retiree in the next period if she survives. Upon her death, her offspring inherit the bequeathed financial assets. The seller's problem is

$$W_s(z_b, a) = \max_{c,a' \geq 0} \left\{ u(c) + \beta \pi_o W_r(z_0, a') + \eta \beta (1 - \pi_o) \mathbb{E} V(z_0, a', y', \theta') \right\}, \tag{30}$$

subject to (22).

F. Price of private business Following Chari et al. (2005), risk-neutral acquiring firms compete to purchase businesses from entrepreneurs and operate them after acquisition. Unlike entrepreneurs, acquiring firms face no collateral constraints on capital inputs. Their before-tax operating profits

are given by

$$\pi_b(z,k,\ell) = \xi(x)\,x - (r+\delta)k - w\ell, \qquad x = \lambda z k^{\varphi}\ell^{1-\varphi}. \tag{31}$$

Competition among acquiring firms drives the net present value of acquiring a business to zero. Since the acquiring firm operates the business in the current period, the purchase price equals current after-tax operating profits plus the discounted expected continuation value of the business. Therefore,

$$p(z) = \max_{k,\ell\geq 0}\left\{(1-\tau_\pi)\pi_b(z,k,\ell) + \frac{1}{1+r}\int_{\mathcal{Z}} p(z')\,dh_c(z' \mid z)\right\}, \tag{32}$$

where τ_π denotes the corporate profit tax rate and $p(z_0) = 0$. Let $k_m(s)$ and $\ell_m(s)$ denote the optimal capital and labor inputs of managing entrepreneurs in household state s, and let $k_b(z)$ and $\ell_b(z)$ denote those of acquiring firms operating businesses with productivity z.

G. Government The government collects taxes on consumption, household income, corporate profits, and realized capital gains. Let $\mathbb{1}_w(s)$ and $\mathbb{1}_e(s)$ indicate whether a household without a business works or attempts entry in the current period, respectively. Let $\mathbb{1}_m(s)$ and $\mathbb{1}_s(s)$ indicate whether a business owner manages or sells in the current period, respectively. Let $\mathbb{1}_r(s)$ indicate whether a household is retired. Let $Y(s)$ denote taxable household income in state s, as specified by the occupation-specific budget constraints above. In the benchmark economy, government purchases G equal total tax revenue net of pension transfers. The government budget constraint is

$$G = \int_{\mathcal{S}}\Big[\tau_c c(s) + T_y(Y(s)) + \mathbb{1}_s(s)\tau_g p(z)\Big]d\Psi(s) + \int_{\mathcal{Z}_b}\tau_\pi\pi_b\big(z_b,k_b(z_b),\ell_b(z_b)\big)d\Phi(z_b) - \int_{\mathcal{S}}\mathbb{1}_r(s)b\,d\Psi(s). \tag{33}$$

H. Market clearing Capital demanded by the final good producer and by intermediate producers must equal aggregate asset holdings. The capital-market clearing condition is

$$K_c + \int_{\mathcal{S}}\mathbb{1}_m(s)\,k_m(s)\,d\Psi(s) + \int_{\mathcal{Z}_b}k_b(z)\,d\Phi(z) = \int_{\mathcal{S}}a\,d\Psi(s). \tag{34}$$

Labor demand by the final good producer and by intermediate producers must equal the total

efficiency units supplied by workers and startup entrepreneurs:

$$L_c + \int_{\mathcal{S}} \mathbb{1}_m(s)\, \ell_m(s)\, d\Psi(s) + \int_{\mathcal{Z}_b} \ell_b(z)\, d\Phi(z) = \int_{\mathcal{S}} \mathbb{1}_w(s)\, y\, d\Psi(s) + \int_{\mathcal{S}} \mathbb{1}_e(s)\, y\, d\Psi(s). \tag{35}$$

I. Equilibrium A stationary equilibrium consists of prices (r, w); aggregate inputs (K_c, L_c, Q); government purchases G; household policy functions for consumption and saving $\{c(s), a'(s)\}_{s\in\mathcal{S}}$; discrete occupational and sale choices encoded by $\{\mathbb{1}_w(s), \mathbb{1}_e(s), \mathbb{1}_m(s), \mathbb{1}_s(s), \mathbb{1}_r(s)\}_{s\in\mathcal{S}}$; entrepreneurial capital and labor choices $\{k_m(s), \ell_m(s)\}_{s\in\mathcal{S}}$; acquiring-firm input policies $\{k_b(z_b), \ell_b(z_b)\}_{z_b\in\mathcal{Z}_b}$; a purchase-price function $p(z_b)$; a stationary household distribution Ψ^* on $\mathcal{S}$; and a stationary finite measure Φ^* of acquirer-operated businesses on $\mathcal{Z}_b$ such that:

1. Given prices, the purchase-price function, and the demand schedule (12), households solve the dynamic programming problems in (13)–(30).
2. The final good producer optimally chooses inputs, and factor prices satisfy (10)–(11); intermediate-good prices satisfy (12).
3. Acquiring firms optimally choose capital and labor inputs, and the purchase-price function satisfies (32).
4. The government budget constraint (33) holds.
5. Markets clear, so (34) and (35) hold.
6. The household distribution Ψ^* and the measure of acquirer-operated businesses Φ^* are stationary under the induced policy rules and exogenous transitions, including demographic changes, business sales, productivity shocks, and business exits.

3 Calibration

Table 1 reports the parameter values used in the quantitative model. Some parameters are assigned externally based on the literature or direct empirical counterparts, while the remaining parameters are jointly calibrated to match targeted moments.

Table 1: Model Parameters

Parameter	Value	Source / Target
A. Externally assigned parameters		
A	1.0	Normalized
α	0.07	NIPA data, average 2010–2019
γ	0.51	Giandrea and Sprague (2017)
φ	0.61	SOI data, average 2015–2019
μ	0.80	Edmond et al. (2023)
δ	0.06	Cagetti and De Nardi (2006)
ψ	1.5	Kitao (2008)
δ_e	0.18	Fairlie (2022)
δ_c	0.08	BDS data, average 2010–2019
b	40% of average yearly income	Cagetti and De Nardi (2006)
τ_y	0.18	Heathcote et al. (2017)
ρ_y	0.95	Storesletten et al. (2004)
σ_y	0.20	Guvenen et al. (2023)
π_y	0.98	Average young period of 45 years
π_o	0.93	Average old period of 15 years
η	1.0	Cagetti and De Nardi (2006)
σ	1.5	Attanasio et al. (1999)
B. Jointly calibrated parameters		
β	0.95	Capital-to-GDP ratio
λ	0.96	Business unrealized gains to wealth ratio by entrepreneurs
ρ_z	0.74	Business unrealized gains share in wealth by top 1%
σ_z	0.24	Gini coefficient of net worth
ρ_θ	0.70	New-entrepreneur rate
σ_θ	0.16	Entrepreneur population share
ϕ	5.93	Seller share among entrepreneurs
τ_π	0.23	Corporate-profit tax revenue to GDP ratio
τ_g	0.18	Capital gains tax revenue to GDP ratio
λ_y	0.70	Income-tax revenue to GDP ratio
τ_c	0.07	Consumption-tax revenue to GDP ratio

3.1 Externally Assigned Parameters

Production-related parameters. In the final good production function, the capital share α is set to 0.07, based on the observed ratio of profits of domestic nonfinancial corporations to GDP. The intermediate-goods share γ is set so that the model's aggregate labor income share equals 58 percent, consistent with the estimate of Giandrea and Sprague (2017). The capital share φ in private business production is set to 0.605, based on the average ratio of labor costs to value added for S corporations reported in the Statistics of Income (SOI) Tax Stats during 2015–2019. The curvature parameter μ of the CES aggregator of intermediate goods is set to 0.80, implying a markup of 1.25, consistent with the average cost-weighted markup estimated by Edmond et al. (2023). As is standard in the literature, the capital depreciation rate δ is set to 0.06.

Pension transfer. Following Cagetti and De Nardi (2006), I set the pension benefit b to 40% of average annual labor income in the benchmark economy.

Labor productivity. Log labor productivity follows an AR(1) process. I set $\rho_y = 0.95$ following Storesletten et al. (2004) and $\sigma_y = 0.20$, consistent with standard calibrations in the literature.

Probabilities of aging and death. I set the probabilities of aging and death so that the expected durations of the young and old stages are 45 and 15 years, respectively. Assuming households enter the model at age 20, these durations correspond approximately to ages 20–65 and 65–80.

Private firm dynamics. I set the startup failure probability δ_e to 0.18, motivated by the first-year non-survival rate of new businesses reported by Fairlie (2022). The exogenous exit probability for incumbent businesses, δ_c, is set to 0.08, based on the average annual firm death rate in the Business Dynamics Statistics (BDS) over 2010–2019.

3.2 Internally Calibrated Parameters

The following parameters are calibrated jointly within the model:

- the discount factor β;
- the acquiring-firm operating-efficiency parameter λ;

- the persistence coefficient and innovation standard deviation (ρ_z, σ_z) in the process for z;
- the persistence coefficient and innovation standard deviation $(\rho_\theta, \sigma_\theta)$ in the process for θ;
- the fixed cost of selling a private business ϕ;
- the corporate-profit, capital gains, and consumption tax rates $(\tau_\pi, \tau_g, \tau_c)$ and the progressive income tax parameter λ_y.

These parameters are chosen jointly to target the empirical moments reported in Table 2: (i) the capital-to-GDP ratio; (ii) the ratio of unrealized business gains to entrepreneurs' wealth; (iii) the share of unrealized business gains in the wealth of the top 1%; (iv) the wealth Gini coefficient; (v) the new-entrepreneur rate; (vi) the entrepreneur population share; (vii) the seller share among entrepreneurs; and (viii) the revenue-to-GDP ratios for corporate-profit, capital gains, income, and consumption taxes.

Table 2: Calibration: Targeted Moments

Target	Data	Model	Source
A. Macroeconomic and wealth moments			
Aggregate capital to GDP	3.00	3.09	BEA, average 2010–2019
Business unrealized gains to wealth ratio by entrepreneurs	0.34	0.34	SCF, average 2010–2019
Business unrealized gains share in top 1% wealth	0.16	0.17	SCF, average 2010–2019
Wealth Gini coefficient	0.85	0.83	SCF, average 2010–2019
B. Entrepreneurship and business sales			
New-entrepreneur rate	0.02	0.01	Cagetti and De Nardi (2009)
Entrepreneur population share	0.07	0.05	SCF, average 2010–2019
Seller share among entrepreneurs	0.03	0.02	Bhandari et al. (2024b)
C. Tax revenue to GDP			
Corporate profit tax revenue	0.02	0.02	OECD, average 2010–2019
Capital gains tax revenue	0.01	0.01	OECD, average 2010–2019
Income tax revenue	0.18	0.19	OECD, average 2010–2019
Consumption tax revenue	0.04	0.04	OECD, average 2010–2019

Notes. Both business unrealized gains targets include only businesses owned by entrepreneurs, consistent with the model's business-ownership structure.

3.3 Validation

In addition to the targeted moments, the model reproduces several features of the wealth distribution, business transfers, and firm dynamics, as shown in Table 3.

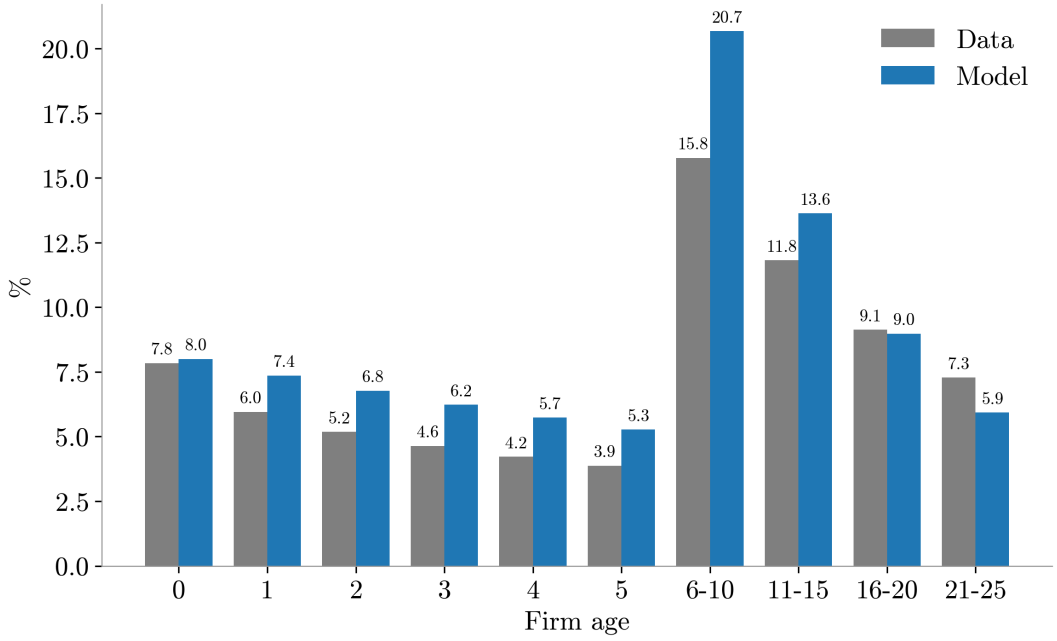
Wealth distribution. Although the wealth Gini coefficient is targeted, the model also reproduces the top 10 and top 20 percent wealth shares reasonably well. It similarly approximates the financial-asset shares of these groups and the Gini coefficient of financial assets. However, the model understates the top 1 percent shares of both wealth and financial assets. In addition, the model generates an aggregate bequest-to-wealth ratio close to its empirical counterpart.

Business transfers and firm dynamics. The share of sellers among all entrepreneurs is targeted in the calibration. The model also generates a median buyer-to-seller wage-bill ratio of 10.0, compared with 14.9 in the data. This captures the substantial difference in scale between buyers and sellers, although the model understates the empirical ratio. Because acquiring firms in the model do not face collateral constraints, I use transactions involving C-corporation buyers as the empirical counterpart. In addition, Figure 1 shows that the age distribution of operating businesses in the model is broadly consistent with that observed in the BDS data. The model distribution includes both entrepreneur-operated and acquirer-operated businesses.

Table 3: Calibration: Non-Targeted Moments

Statistic	Data	Model	Source
Wealth shares ($a + p(z)$)			
Top 1%	0.36	0.19	SCF, average 2010–2019
Top 10%	0.75	0.71	SCF, average 2010–2019
Top 20%	0.87	0.85	SCF, average 2010–2019
Financial-asset shares (a)			
Top 1%	0.32	0.20	SCF, average 2010–2019
Top 10%	0.73	0.68	SCF, average 2010–2019
Top 20%	0.86	0.83	SCF, average 2010–2019
Gini coefficient of financial assets	0.84	0.82	SCF, average 2010–2019
Bequests (% wealth)	0.01	0.01	Nishiyama (2000)
Median relative size of wage bill by buyer to seller	14.9	10.0	Bhandari et al. (2024b)

Figure 1: Firm age distribution



4 Model with Accrual-based Capital Gains Tax

This section modifies the model to incorporate accrual-based capital gains taxation. Under this tax system, changes in the market value of a business are taxed as they accrue, regardless of whether the business is sold.[13] For tractability, I assume full loss offsets, so declines in business value generate contemporaneous tax refunds.

4.1 State Augmentation and Accrual Tax Liability

To implement accrual-based taxation, I augment the household state with a lagged business-productivity state $z^- \in \mathcal{Z}$. This state records the previous period's business productivity, except when the household sold its business in the previous period, in which case it is reset to z_0. The augmented household state becomes

$$\tilde{s} = (z, a, y, \theta, \iota, z^-) \in \tilde{\mathcal{S}} \equiv \mathcal{S} \times \mathcal{Z}.$$

[13] I assume that the IRS can use financial information to assess the market value of a business, as it does for estate tax purposes.

The business value $p(z)$ defined in Section 2 is used for tax assessment, with $p(z_0) = 0$. The accrual-based capital gains tax liability is

$$T_g(z, z^-) \equiv \tau_g\big(p(z) - p(z^-)\big), \tag{36}$$

which can be negative (a rebate) when $p(z) < p(z^-)$. The tax liability enters the household budget constraint as $-T_g(z, z^-)$.

The transition rule for the lagged business-productivity state is

$$z^-_{t+1} = \begin{cases} z_t, & \text{if the household does not sell in period } t, \\ z_0, & \text{if the household sells in period } t. \end{cases} \tag{37}$$

4.2 Discussion: Practical Implementation

Policy proposals for accrual-based taxation recognize that annually valuing privately held businesses is difficult. The Biden administration's FY 2025 minimum-tax proposal, for example, would not require annual market valuations of non-tradable assets and would instead impute appreciation between valuations using a benchmark rate equal to the five-year Treasury rate plus two percentage points. It would also allow minimum-tax liabilities to be paid in installments to mitigate liquidity constraints (U.S. Department of the Treasury, 2024). In addition, taxpayers classified as illiquid could elect to exclude unrealized gains on non-tradable assets from the current minimum-tax calculation and instead face a deferral charge upon realization. Minimum-tax payments would be treated as prepayments against future capital gains liabilities, while refunds following losses would be limited by available uncredited prepayments.

For tractability, I abstract from these institutional details and model annual accrual taxation at market value with full contemporaneous loss refunds, as in (36). These simplifications can affect the results in opposing ways. Full contemporaneous loss refunds may overstate the insurance that accrual taxation provides to unsuccessful entrepreneurs, as emphasized by Azevedo et al. (2025). At the same time, annual taxation based on current market values may amplify both sides of the entry–lock-in trade-off relative to a system based on imputed valuations or a deferral election: it can reduce the incentive to retain existing businesses more strongly, but it can also discourage

entrepreneurial entry more strongly. The reform studied here should therefore be interpreted as a simplified benchmark.

5 Economy-Wide Accrual-Based Capital Gains Taxation

In this section, I analyze an economy-wide tax reform that replaces realization-based capital gains taxation with accrual-based taxation. Under the reform, changes in the market value of privately held businesses are taxed as they accrue, whether or not the business is sold. I compare the stationary equilibrium under the reform with the calibrated realization-based benchmark economy. The experiment examines how replacing realization-based taxation with accrual-based taxation affects the two entrepreneurial margins in the model: business sales and entrepreneurial entry. These responses determine both the number of operating private businesses and their allocation between entrepreneurs and acquiring firms, and therefore shape private-business production, aggregate output, inequality, and welfare.

To make the comparison between the two tax systems transparent, I hold the capital gains tax rate fixed at its calibrated benchmark value and leave all other tax rates unchanged. The experiment therefore changes the tax base and the timing of capital gains taxation rather than the tax rate. Government purchases adjust residually to satisfy the government budget constraint.

5.1 Aggregate Outcomes

Table 4 reports the aggregate effects of replacing realization-based capital gains taxation with economy-wide accrual-based taxation. All changes are measured relative to the calibrated realization-based benchmark. For comparison, the table also reports two reference counterfactuals: an economy with no capital gains tax and a realization-based economy without step-up in basis at death.

The results show that switching to accrual-based taxation reduces aggregate output, Y, by 4.6 percent and aggregate consumption, C, by 3.9 percent. The decline in output is accounted for primarily by reductions in entrepreneurial intermediate inputs and capital. The CES aggregate of entrepreneurial intermediate goods, Q, falls by 8.3 percent, while capital employed in final good production, K_c, falls by 8.6 percent. Labor employed in final good production, L_c, rises by only 0.8 percent, so this modest increase is insufficient to offset the declines in entrepreneurial

Table 4: Tax Reform: Changes in Macroeconomic Outcomes Relative to the Realization-Based Benchmark

	Quantities (% change)						Prices (change)	
Policy	Q	K_c	L_c	Y	C	G	r (pp)	w (%)
A. Economy-wide reform								
Accrual-based taxation	-8.29	-8.59	0.79	-4.60	-3.88	-7.62	0.46	-5.25
B. Reference counterfactuals								
No capital gains tax	7.39	3.89	0.09	4.02	2.68	2.11	0.05	4.01
No step-up in basis at death	-0.07	-0.55	0.00	-0.07	-0.14	0.00	0.00	-0.11

Notes. Changes are measured relative to the calibrated benchmark economy under realization-based capital gains taxation. Quantities and the wage, w, are reported as percentage changes, while the interest rate, r, is reported as a percentage-point change. Government purchases, G, equal total tax revenue net of aggregate pension transfers. In the no-step-up counterfactual, inherited businesses do not receive a basis reset at death, so an immediate sale by the heir is subject to capital gains taxation. In the realization-based benchmark, step-up in basis eliminates the taxable gain on an immediate sale.

intermediate inputs and capital. The equilibrium wage falls by 5.3 percent, while the interest rate rises by 0.5 percentage points. The entrepreneurial responses underlying these aggregate outcomes are examined in the mechanism analysis below.

The reform also affects public finances. Total tax revenue falls in levels relative to the realization-based benchmark. The decline is driven primarily by lower income-tax revenue, while revenues from consumption and capital gains taxation also fall. Revenue from the corporate-profit tax rises modestly, partially offsetting these declines. As documented in the mechanism analysis below, this increase reflects the expansion of businesses sold to and subsequently operated by acquiring firms, whose profits are subject to the corporate-profit tax.

Aggregate pension transfers also rise slightly. Although the pension benefit paid to each retiree is held fixed across tax regimes, aggregate pension payments vary with the endogenous number of retirees. Government purchases, G, which equal total tax revenue net of aggregate pension transfers, therefore decline by 7.6 percent. Appendix B.1 provides a detailed fiscal decomposition. As a share of GDP, however, total tax revenue changes little because tax revenue and GDP fall by similar proportions.

Table 5 reports the effects of the reforms on inequality and average welfare. Accrual-based taxation lowers the Gini coefficients of wealth, financial assets, and consumption. The decline in the Gini coefficients, however, does not imply lower concentration at every point in the distribution.

As shown in Appendix B.2, the top 1 percent shares of wealth and financial assets rise, whereas the corresponding top 5 and top 10 percent shares fall.

Table 5: Tax Reform: Inequality and Average Welfare Effects

	Gini coefficients			Average welfare
Tax system	Wealth	Financial assets	Consumption	Consumption-equivalent change (%)
A. Benchmark and economy-wide reform				
Realization-based taxation	0.828	0.818	0.351	0.00
Accrual-based taxation	0.814	0.802	0.344	−2.91
B. Reference counterfactuals				
No capital gains tax	0.816	0.810	0.350	2.68
No step-up in basis at death	0.829	0.819	0.351	−0.12

Notes. Gini coefficients are reported in levels. Wealth is defined as $a + p(z)$, where a denotes financial assets and $p(z)$ denotes unrealized capital gains from business ownership. The financial-assets Gini coefficient is computed using a alone. Average welfare is calculated by integrating household value functions over each regime's stationary distribution and is expressed in consumption-equivalent terms relative to the realization-based benchmark.

One mechanism behind the decline in the Gini coefficients is weaker intergenerational transmission of business wealth. Because accrual-based taxation decouples capital gains tax liability from the decision to sell, it weakens the incentive to retain an appreciated business until death. Consistent with this mechanism, the ratio of business-value bequests to household business wealth declines, and wealth inequality among newborn households falls. By contrast, the ratio of financial-asset bequests to aggregate financial assets changes little.

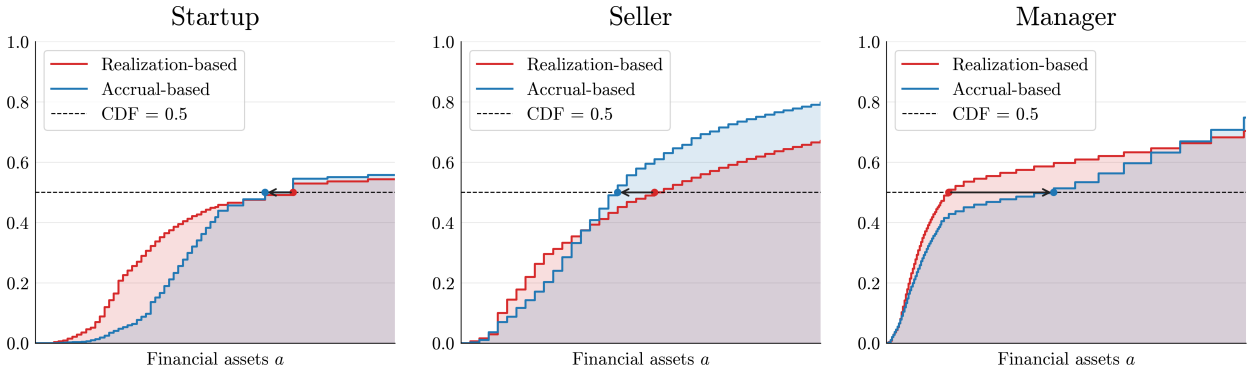
A second mechanism is that business sales become less selective with respect to owners' financial assets. Under realization-based taxation, selling an appreciated business triggers a capital gains tax and reduces the owner's net sale proceeds. This reduction is more consequential for owners with fewer financial assets, making them less likely to sell. Under accrual-based taxation, by contrast, tax liabilities arise whether or not the business is sold, eliminating the sale-contingent tax disadvantage. Consistent with this mechanism, mean financial assets among sellers fall, and the share of sellers belonging to the top 1 percent of the wealth distribution declines substantially, from 53.0 percent to 28.2 percent (Appendix B.2).

Working in the opposite direction, accrual-based taxation makes entrepreneurial entry and continued operation more selective. Under accrual-based taxation, young entrepreneurs have slightly higher average labor productivity and entrepreneurial idea talent. Managers who continue

operating their businesses are also less likely to be collateral constrained, and the share of managers belonging to the top 1 percent of the wealth distribution rises from 13.8 percent to 20.3 percent (Appendix B.2). These patterns are consistent with stronger selection of wealthy entrepreneurs into continued business management, which may contribute to greater wealth concentration at the very top.

Figure 2 illustrates these selection effects by comparing the cumulative distributions of financial assets among startup entrepreneurs, sellers, and managers under realization-based and accrual-based taxation. In the lower part of the distributions, roughly below the 40th percentile, the accrual-based CDF lies to the right of the realization-based CDF for all three occupations. This pattern is consistent with the entry-deterrence effect, which makes entrepreneurship less attractive to households with relatively few financial assets. Because entry into entrepreneurship also affects the composition of subsequent business owners, this selection effect can be reflected in the financial-asset distributions of sellers and managers.

Figure 2: CDFs of Financial Assets by Entrepreneurial Occupation



Beyond the lower tail, however, the distributions differ across occupations, reflecting the additional effects of business-sale and continuation decisions. Among sellers, the CDFs cross, and median financial assets are lower under accrual-based taxation, consistent with business sales becoming less selective with respect to financial assets. By contrast, median financial assets among managers increase, consistent with financially stronger entrepreneurs being more likely to continue operating their businesses. Among startup entrepreneurs, the CDFs also cross near the median, which is slightly lower under accrual-based taxation despite the rightward shift in the lower part of the distribution.

Overall, the inequality-reducing effects of weaker intergenerational transmission and less wealth-selective business sales appear to dominate in terms of the Gini coefficients, despite stronger selection into continued business operation and greater wealth concentration at the very top of the distribution.

Finally, despite the decline in consumption inequality, accrual-based taxation generates an average consumption-equivalent welfare loss of 2.91 percent relative to realization-based taxation. The sizable decline in aggregate consumption is a key factor behind this welfare loss.

5.2 Entrepreneurial Entry, Business Sales, and Intermediate Goods Production

I first examine how the two mechanisms central to the policy debate—reduced lock-in and entrepreneurial-entry deterrence—affect business turnover and entrepreneurial participation. I then examine how these extensive-margin responses reshape the composition and average characteristics of operating businesses, including their productivity and use of capital and labor. Table 6 reports the effects of the reforms on the number of operating private businesses and entrepreneurial participation.

Table 6: Tax Reform: Business Numbers and Entrepreneurial Participation

	Operating private businesses			Entrepreneurial participation
Tax system	Manager-operated	Acquirer-operated	Total	Total entrepreneurs
A. Economy-wide reform				
Accrual-based taxation	−30.91	24.33	−17.57	−28.21
B. Reference counterfactuals				
No capital gains tax	−3.62	70.49	14.29	0.02
No step-up in basis at death	−1.24	1.09	−0.68	−1.13

Notes. Changes are measured in percentage terms relative to the calibrated realization-based benchmark. Manager-operated businesses are owned and operated by entrepreneurs. Acquirer-operated businesses are purchased from entrepreneurs and subsequently operated by acquiring firms. Total operating private businesses are the sum of manager-operated and acquirer-operated businesses. Total entrepreneurs comprise startup entrepreneurs, managers, and sellers.

Switching to accrual-based taxation weakens the lock-in effect because capital gains tax liability no longer depends on whether a business is sold. This encourages entrepreneurs to sell rather than retain their existing businesses, thereby promoting business turnover. Consistent with this mechanism, the results show that the number of manager-operated businesses falls by 30.9 percent,

while the number of acquirer-operated businesses rises by 24.3 percent relative to the realization-based benchmark.

At the same time, accrual-based taxation discourages entrepreneurial entry. Following successful business creation, an entrepreneur becomes liable for tax on accrued gains even if the business is retained, reducing the expected after-tax return to entry. The results show that the total number of entrepreneurs falls by 28.2 percent. Overall, although weaker lock-in increases the number of acquirer-operated businesses, reduced entrepreneurial entry limits the creation of new businesses. The decline in manager-operated businesses more than offsets the increase in acquirer-operated businesses, resulting in a 17.6 percent reduction in the total number of operating private businesses.

The no capital gains tax counterfactual provides a useful reference for interpreting these results. When the capital gains tax is eliminated, the tax-induced lock-in effect is absent. Relative to the realization-based benchmark, the number of manager-operated businesses falls by 3.6 percent, while the number of acquirer-operated businesses rises by 70.5 percent. Total entrepreneurial participation remains approximately unchanged, and the total number of operating private businesses rises by 14.3 percent. This comparison shows that increased business turnover can expand the number of operating businesses when it is not accompanied by the entry-deterrence effect generated by accrual-based taxation. By contrast, eliminating step-up in basis at death has only small effects on business numbers and entrepreneurial participation.

Next, I investigate how the entry, continuation, and sale decisions documented above reshape the composition of operating businesses, including which businesses remain under entrepreneur management and which are transferred to acquiring firms. Table 7 reports the resulting average capital, labor, productivity, and output across all operating businesses and separately by ownership type.

Across all operating businesses, average capital rises by 11.6 percent, average labor by 22.1 percent, and average output by 13.0 percent, while average business productivity increases modestly.

These aggregate averages mask substantial differences by ownership type. Although average productivity across all operating businesses increases slightly, it declines for both manager-operated and acquirer-operated businesses. This divergence reflects a change in the composition of operating businesses across ownership types. These changes are consistent with the selection mechanisms illustrated by the simplified model: accrual-based taxation raises the threshold for entrepreneurial

Table 7: Tax Reform: Characteristics of Operating Private Businesses

	Inputs (% change)		Business outcomes (% change)		Financing
Business group	Capital k	Labor ℓ	Productivity z	Output x	Collateral-constrained share (pp)
All operating businesses	11.63	22.13	0.09	12.98	–
Manager-operated businesses	8.35	15.76	−6.64	11.21	−3.82
Acquirer-operated businesses	−22.87	−14.87	−5.80	−23.50	–

Notes. Changes are measured relative to the calibrated realization-based benchmark. Capital, labor, productivity, and output are reported as percentage changes. The collateral-constrained share is reported as a percentage-point change. All operating businesses include both manager-operated and acquirer-operated businesses, with averages weighted by business counts. Managers include both young and old households. Output, x, denotes intermediate output before CES aggregation. Acquiring firms are unconstrained, so the collateral-constrained share is reported only for manager-operated businesses.

entry while lowering the threshold at which managers choose to sell their businesses. Among acquirer-operated businesses, the decline in average productivity is accompanied by reductions in average capital, labor, and output. By contrast, the average manager-operated business uses more capital and labor despite lower average productivity. This difference reflects the role of collateral constraints. Because acquiring firms are financially unconstrained, entrepreneurs with fewer financial assets have stronger incentives to sell their businesses under accrual-based taxation, allowing these businesses to operate without the sellers' financing constraints. Consequently, entrepreneurs who continue managing their businesses tend to have greater financial assets and are less likely to face binding collateral constraints. Consistent with this interpretation, the share of managers facing binding collateral constraints declines under accrual-based taxation.

Despite the increase in average output per business, aggregate intermediate-goods production declines. The 13.0 percent increase in average output is insufficient to offset the 17.6 percent reduction in the number of operating businesses. Moreover, CES aggregation makes the reduction in business numbers particularly costly because final good production benefits from a greater variety of differentiated intermediate inputs. As a result, aggregate intermediate-goods production falls by 8.3 percent, as reported in Table 4.

5.3 Heterogeneous Welfare Effects

Table 8 reports consumption-equivalent welfare changes relative to the realization-based benchmark by life stage and, among young households, by labor productivity and entrepreneurial idea talent.

Because demographic and productivity transitions are exogenous, the population distributions of these characteristics remain unchanged across tax regimes.

Table 8: Tax Reform: Consumption-Equivalent Welfare by Household Characteristics

	Economy-wide reform	*Reference counterfactuals*	
Household group	Accrual-based taxation	No capital gains tax	No step-up at death
A. Age			
Young	−3.46	3.03	−0.13
Old	−1.35	1.73	−0.10
B. Labor productivity, y			
y_1	−9.21	2.86	−0.33
y_2	−5.40	2.71	−0.16
y_3	−2.20	3.17	−0.11
y_4	−1.89	3.32	−0.08
y_5	−2.22	2.34	−0.08
C. Entrepreneurial-idea talent, θ			
θ_1	−3.39	3.02	−0.13
θ_2	−3.43	3.02	−0.13
θ_3	−3.49	3.04	−0.13
θ_4	−3.56	3.07	−0.13

Notes. Consumption-equivalent welfare changes are expressed as percentages relative to the calibrated realization-based benchmark. Panel A reports welfare changes by age. Panels B and C report welfare changes among young households, grouped by labor productivity and entrepreneurial-idea talent, respectively. Labor-productivity and entrepreneurial-idea-talent states are ordered from lowest to highest.

Switching to accrual-based taxation generates larger welfare losses for young households than for old households. This difference reflects the greater exposure of young households to the entrepreneurial-entry margin. By reducing the expected after-tax return to successful business creation, accrual-based taxation discourages some young households who would otherwise enter entrepreneurship under realization-based taxation.

Among young households, welfare losses vary substantially with labor productivity. Households with lower labor productivity experience larger welfare losses, particularly those in the lowest productivity state. These households have a lower opportunity cost of entrepreneurship because their earnings from paid employment are relatively low. They are therefore more likely to enter entrepreneurship and are more exposed to the entry-deterrence effect of accrual-based taxation.

By contrast, welfare losses vary relatively little with entrepreneurial idea talent. Households

with higher entrepreneurial idea talent experience slightly larger welfare losses than those with lower talent. These households are more likely to enter entrepreneurship and, conditional on successful entry, create higher-productivity businesses, making them more exposed to the taxation of accrued business gains.

6 Hybrid Regime of Accrual-Based Taxation for the Wealthy

This section examines a hybrid tax regime in which accrual-based taxation applies only to wealthy households, while the rest of the population remains subject to realization-based taxation. Under this regime, households with net worth at or above a specified cutoff are subject to accrual-based taxation on changes in the value of their businesses. I consider five wealth cutoffs corresponding to the net-worth thresholds for the top 1, 2, 3, 4, and 5 percent of households under the calibrated realization-based benchmark. In addition, the hybrid regime eliminates step-up in basis at death.[14] This treatment is motivated by recent policy proposals that combine realization- and accrual-based taxation and treat death as a realization event (U.S. Department of the Treasury, 2024).[15]

The choice of the wealth cutoff matters because it determines which households are subject to accrual-based taxation. Since households differ in their entrepreneurial ability and wealth, the cutoff shapes the reform's effects on entrepreneurial decisions, intermediate-goods production, and, consequently, aggregate output. I first focus on two main channels: the direct effect on households with wealth at or above the cutoff and the indirect effect on those below the cutoff arising from general equilibrium price changes induced by the responses of wealthy households. I then turn to the implications for aggregate production, inequality, and welfare.

Throughout the analysis, I hold government purchases fixed at their level in the calibrated realization-based benchmark. Changes in tax revenue net of pension transfers are offset by lump-sum taxes or transfers to households to balance the government budget. Since government purchases do not enter household utility in the model, this fiscal closure allows changes in net tax revenue to be reflected directly in household resources.

[14] Under accrual-based taxation, the step-up in basis at death is eliminated by construction. This assumption therefore removes the step-up provision for households that remain subject to realization-based taxation.

[15] Appendix B.5 also compares the hybrid regime with a realization-based system without step-up in basis at death. The main findings remain unchanged.

6.1 Entrepreneurial Responses and Intermediate Goods Production

Table 9 reports changes in the number of households in each entrepreneurial occupation, separately for those with wealth at or above the cutoff and those below it, together with the associated equilibrium price changes. For households with wealth at or above the cutoff, occupational responses are broadly similar to those under economy-wide accrual-based taxation. Applying accrual-based taxation to wealthy households creates an entry-deterrence effect while weakening the lock-in effect. The results show that the number of managers falls and the number of sellers rises across all wealth cutoffs, while the number of startup entrepreneurs declines under most cutoffs.

Table 9: Tax Reform: Occupational Responses and Equilibrium Prices under Hybrid Taxation

Measure	Top 1%	Top 2%	Top 3%	Top 4%	Top 5%
A. Households with wealth at or above the cutoff					
Startup entrepreneurs	0.87	−22.42	−29.39	−4.62	−18.32
Managers	−50.28	−47.72	−28.05	−13.92	−30.17
Sellers	5.83	9.91	15.19	14.69	44.05
B. Households with wealth below the cutoff					
Startup entrepreneurs	3.17	10.29	27.72	20.60	0.33
Managers	15.92	33.38	38.37	45.07	−14.68
Sellers	−18.83	−31.56	−44.55	−46.76	−47.70
C. Equilibrium price changes					
r (pp)	0.07	0.11	0.16	0.18	0.44
w (%)	−0.23	−0.51	−0.18	−0.45	−3.14

Notes. Each column reports the effects of hybrid taxation with the indicated wealth cutoff relative to the calibrated realization-based benchmark. Panels A and B report percentage changes in the population of each occupation among households with wealth at or above and below the cutoff, respectively. Panel C reports changes in equilibrium prices. Changes in the interest rate are measured in percentage points (pp), while changes in other prices are measured in percent. The wealth cutoffs are fixed at their levels in the realization-based benchmark, but households are classified according to their wealth in each stationary equilibrium. Changes in occupational populations therefore reflect both occupational responses and changes in the composition of wealth groups.

For households with wealth below the cutoff, entrepreneurship is affected indirectly through general equilibrium price changes. By reducing capital accumulation among wealthy households, the hybrid regime lowers aggregate capital supply (Appendix B.4), thereby raising the equilibrium interest rate and lowering the equilibrium wage. These price changes affect households below the cutoff even though they remain subject to realization-based taxation. A lower wage reduces the opportunity cost of entrepreneurship, making entrepreneurial entry more attractive, as discussed in

Brüggemann (2021). This effect is particularly strong for households with lower labor productivity, y, whose earnings opportunities as workers are relatively limited. Appendix B.4 shows that entrepreneurship rates among these households increase under most wealth cutoffs. Accordingly, the number of startup entrepreneurs rises.

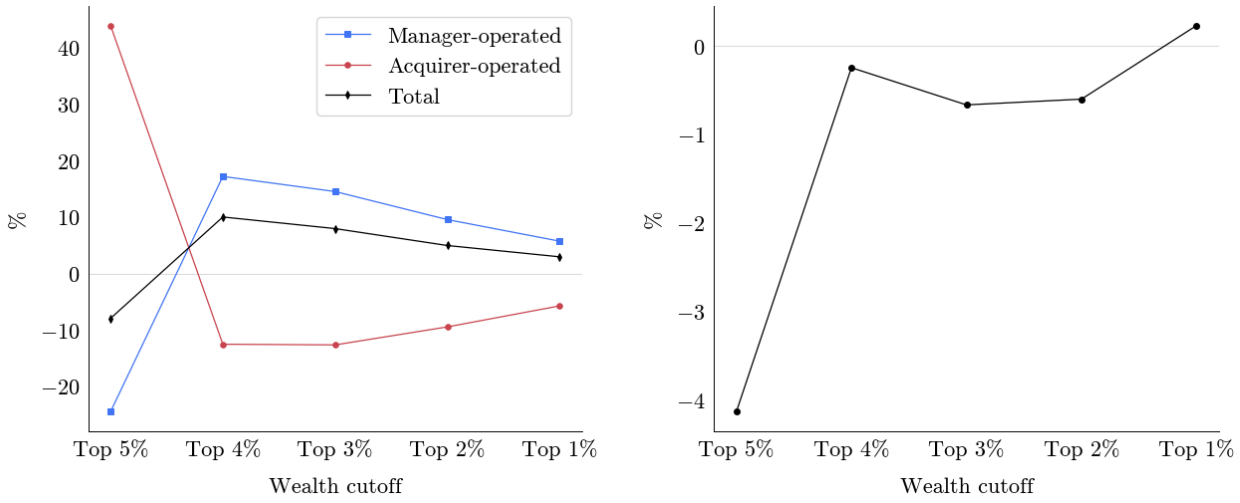
The decision to retain or sell an existing business is also affected by equilibrium price changes. Because households below the cutoff remain subject to realization-based taxation, selling a business continues to trigger a capital gains tax liability. Moreover, a higher interest rate may reduce the benefits of selling to financially unconstrained acquiring firms by increasing the cost of capital expansion. These factors may make continued operation relatively more attractive than selling. The results show that the number of sellers declines across all wealth cutoffs, while the number of managers increases under most cutoffs. Appendix B.4 provides further evidence on this pattern: relative to the realization-based benchmark, the distribution of financial assets among sellers shifts toward higher asset holdings, whereas that among managers shifts toward lower asset holdings under most hybrid tax regimes. These changes are consistent with relatively low-asset entrepreneurs being more inclined to retain their businesses rather than sell them.

Figure 3 reports the effects of hybrid taxation on the number of operating private businesses and aggregate intermediate goods production across different wealth cutoffs, relative to the realization-based benchmark. The aggregate outcomes depend on the balance between the direct effects on households subject to accrual-based taxation and the indirect effects on those below the cutoff through general equilibrium price changes.

When accrual-based taxation is restricted to the top 1–4 percent of the wealth distribution, the reform directly affects a relatively small group of wealthy households that hold a substantial share of aggregate wealth. Their responses generate general equilibrium price changes that affect entrepreneurial decisions among the much larger population below the cutoff. In these cases, the indirect effects appear to dominate the changes in business numbers: the number of manager-operated businesses increases, while the number of acquirer-operated businesses declines, resulting in an increase in the total number of operating businesses.

However, the increase in business numbers does not necessarily translate into higher intermediate goods production. The reduction in aggregate capital supply raises the equilibrium interest rate, increasing the cost of capital for operating businesses and limiting their production. Under the

Figure 3: Business Numbers and Intermediate Goods Production under Hybrid Taxation



(a) Business numbers

(b) Intermediate goods production Q

top 2–4 percent cutoffs, aggregate intermediate goods production declines by less than 1 percent. This modest decline suggests that the positive indirect effects on entrepreneurial entry, particularly among households with low labor productivity, help mitigate the production losses associated with higher capital costs. Under the top 1 percent cutoff, the increase in the cost of capital is smaller, and intermediate goods production rises slightly, by approximately 0.2 percent.

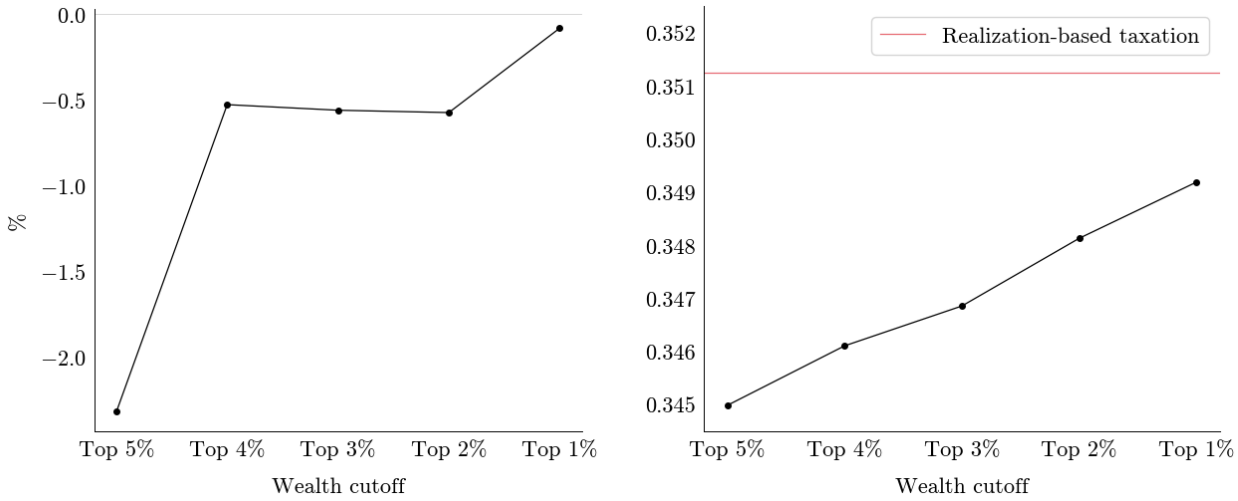
By contrast, when accrual-based taxation is extended to the top 5 percent of households, the direct effects become more pronounced as the reform applies to a broader population. The number of manager-operated businesses declines, while the number of acquirer-operated businesses increases, resembling the responses under economy-wide accrual-based taxation. In this case, the reduction in entrepreneurial entry outweighs the benefits of weaker lock-in, resulting in a decline in the total number of operating businesses. Together with the larger increase in the cost of capital, this contributes to a substantially greater contraction in intermediate goods production of approximately 4.1 percent relative to the realization-based benchmark.

6.2 Final Good Production and Inequality

Figure 4 reports the effects of hybrid taxation on final good production and the consumption Gini coefficient across different wealth cutoffs. Final good production exhibits a pattern similar to that of aggregate intermediate goods production but remains below its realization-based benchmark level

under all cutoffs. This reflects the reduction in aggregate capital supply induced by accrual-based taxation applied to wealthy households, which reduces capital available for final good production. Consequently, even when intermediate goods production increases slightly under the top 1 percent cutoff, final good production remains below the benchmark.

Figure 4: Final Good Production and Consumption Inequality under Hybrid Taxation



(a) Final good production Y

(b) Consumption Gini coefficient

By contrast, consumption inequality declines relative to the realization-based benchmark, with larger reductions as accrual-based taxation is extended to a broader population. Taxing unrealized business gains limits wealth accumulation among wealthy households, contributing to lower inequality. However, the mechanisms differ across wealth cutoffs.

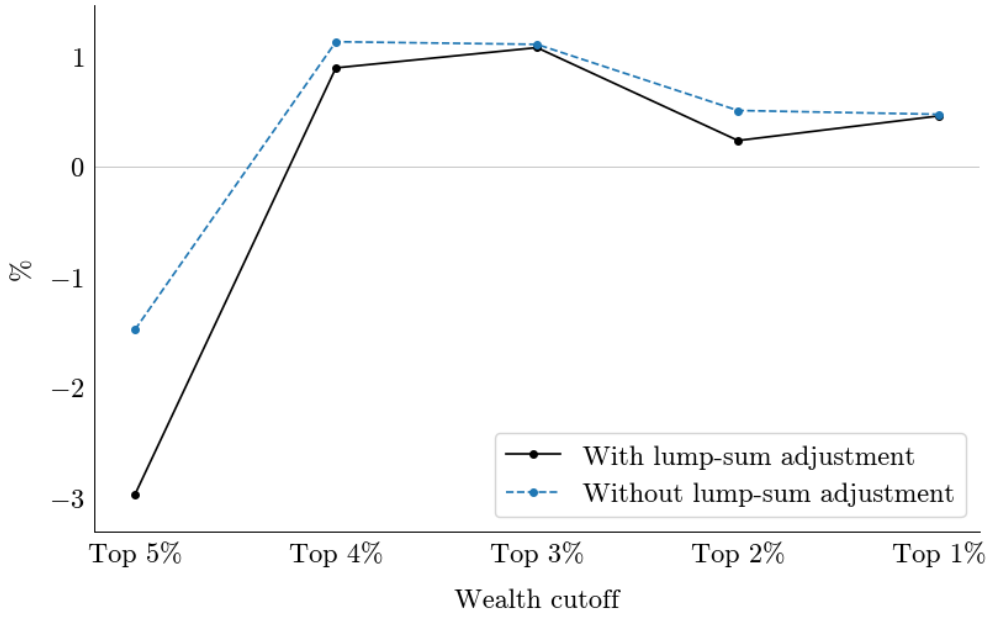
When accrual-based taxation is restricted to the top 1–4 percent of the wealth distribution, the indirect general equilibrium effects encourage entrepreneurial entry among households with low labor productivity. Moreover, the distribution of financial assets among managers shifts toward lower asset holdings (Appendix B.4). These responses suggest that the indirect effects may also contribute to reducing inequality by expanding entrepreneurial opportunities among less wealthy households. By contrast, when accrual-based taxation is extended to the top 5 percent, the direct effects on wealthy households become more pronounced, and the reduction in inequality more closely resembles that under economy-wide accrual-based taxation, as discussed in Section 5.

6.3 Welfare

Figure 5 reports changes in consumption-equivalent welfare under hybrid taxation relative to the realization-based benchmark. When the indirect general equilibrium effects are sufficiently strong to limit the production losses associated with entrepreneurial-entry deterrence, the reduction in inequality can generate welfare gains despite lower aggregate output. Welfare increases under the top 1–4 percent cutoffs, with the largest gain of approximately 1.1 percent occurring at the top 3 percent cutoff. By contrast, extending accrual-based taxation to the top 5 percent results in a substantial welfare loss as the negative effects on entrepreneurial entry and aggregate production become more pronounced.

The figure also reports welfare under the hybrid regime when government purchases adjust instead of lump-sum taxes or transfers. In the main hybrid experiment, tax revenue net of pension transfers falls relative to the realization-based benchmark, so holding government purchases fixed requires additional lump-sum taxes on households. Thus, the welfare gains from the hybrid regime occur despite the revenue shortfall, rather than arising from an increase in tax revenue.

Figure 5: Effects of Tax Reforms on Consumption Equivalent Welfare



Notes: Values are consumption-equivalent welfare changes (percent) relative to the realization-based benchmark.

7 Conclusion

This paper studies the macroeconomic and distributional consequences of replacing realization-based capital gains taxation with an accrual-based alternative, focusing on capital gains from privately held businesses. The quantitative analysis shows that an economy-wide shift to accrual-based taxation can reduce aggregate production because the negative effects of deterring entrepreneurial entry outweigh the benefits of reducing lock-in. By contrast, a targeted reform that applies accrual-based taxation only to very wealthy households can limit entry deterrence while reducing inequality, thereby generating welfare gains. These gains are highly sensitive to the choice of the wealth cutoff.

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Appendix

A Simple Model

This section presents a simplified version of the quantitative model to clarify the mechanisms through which capital gains tax reforms affect entrepreneurial activity. It combines (i) the business-transfer mechanism and occupational-choice structure in Chari et al. (2005) and (ii) differentiated

intermediate inputs produced by private businesses as in Guvenen et al. (2023) and Rotberg and Steinberg (2024). I first characterize an economy without capital gains taxation and then examine the effects of realization-based and accrual-based capital gains taxation.

Environment

The economy consists of a unit mass of infinitely lived households, a large number of risk-neutral acquiring firms, and a competitive final good producer. Households are heterogeneous and choose an occupation: they either supply labor as workers or operate private businesses as entrepreneurs. The final good producer purchases differentiated intermediate inputs from operating private businesses. Acquiring firms compete to purchase businesses from entrepreneurs and operate them thereafter, also supplying intermediate inputs.

The interest rate r and the wage rate w are taken as given. When comparing tax regimes, I also hold the inverse demand schedule for intermediate goods fixed to isolate the direct effects of capital gains taxation on occupational choice.

Households. Households are heterogeneous in business-idea talent $\theta \in [0,1]$, which governs the probability of generating a viable startup opportunity. Ability is time-invariant and distributed according to a probability measure H with density h. I assume that H has full support on $[0,1]$. Households do not save, so they consume their current income each period. Preferences are linear:

$$u(c_t) = c_t.$$

For simplicity, I assume that the exogenous interest rate and the discount factor satisfy

$$r = \frac{1-\beta}{\beta}.$$

At the beginning of life, each household chooses among three lifetime occupations: (i) worker; (ii) entrepreneur who starts a business and then sells it (*start-and-sell*); or (iii) entrepreneur who starts a business and then manages it (*start-and-manage*). The household's optimal lifetime value is given by

$$\max\left\{V^w,\ V^s(z=0,\theta),\ V^m(z=0,\theta)\right\}. \tag{38}$$

Workers. V^w denotes the value function of a worker. A worker earns wage income w each period and consumes it. The value function satisfies

$$V^w = w + \beta V^w \qquad \Rightarrow \qquad V^w = \frac{w}{1-\beta}. \tag{39}$$

Entrepreneurs who start and sell. $V^s(z,\theta)$ denotes the value function of a *start-and-sell* entrepreneur. A household choosing this occupation devotes one period to starting a business. In the following period, the household becomes a business owner with probability θ. For simplicity, I assume a single positive business-quality level, so $z \in \{0, \bar{z}\}$, where $z = 0$ denotes the non-ownership state and $\bar{z}$ denotes the quality of an operating business. Upon successful creation, the household sells the business at price $p(\bar{z})$ and returns to the non-ownership state in the subsequent period. The value functions satisfy

$$\begin{cases} V^s(0,\theta) = \beta\left[(1-\theta)V^s(0,\theta) + \theta V^s(\bar{z},\theta)\right], \\ V^s(\bar{z},\theta) = p(\bar{z}) + \beta V^s(0,\theta). \end{cases} \tag{40}$$

Entrepreneurs who start and manage. $V^m(z,\theta)$ denotes the value function of the *start-and-manage* entrepreneur. The startup stage is identical to that of the start-and-sell entrepreneur. Conditional on success, the household continues to operate the business and earns operating profit. Business output is linear in capital:

$$x = \bar{z}k,$$

where k is rented at rate r. A managed business survives into the next period with probability $\nu \in (0,1)$. The value functions satisfy

$$\begin{cases} V^m(0,\theta) = \beta\left[(1-\theta)V^m(0,\theta) + \theta V^m(\bar{z},\theta)\right], \\ V^m(\bar{z},\theta) = \max_{k\geq 0}\ \pi_m(k) + \beta\left[(1-\nu)V^m(0,\theta) + \nu V^m(\bar{z},\theta)\right], \end{cases} \tag{41}$$

where operating profit is

$$\pi_m(k) = \xi(x)\, x - rk \tag{42}$$

and $\xi(\cdot)$ denotes the inverse demand schedule for a differentiated intermediate input (derived below from final good production). Let $\pi_m^* \equiv \max_{k \geq 0} \pi_m(k)$ denote optimal operating profit.

Final good production. The final good producer uses labor L and a CES aggregate Q of differentiated intermediate inputs to produce the final good:

$$Y = AL^{1-\alpha}Q^{\alpha}, \qquad \alpha \in (0,1). \tag{43}$$

The intermediate goods aggregate is defined as

$$Q = \left(\int x_i^{\mu} \, di \right)^{1/\mu}, \qquad \mu \in (0,1), \tag{44}$$

where i indexes operating businesses, each supplying a differentiated variety. This aggregator implies an elasticity of substitution $1/(1-\mu) > 1$ across varieties.

Price of a private business. Acquiring firms purchase businesses from entrepreneurs but operate them less efficiently than the original owners, as in the calibrated quantitative model ($\lambda \in (0,1)$).[16] If an acquired business is operated by an acquiring firm, output is

$$x = \lambda \bar{z} k,$$

with capital rented at rate r.

Given the CES structure, the final good producer's demand for any variety i implies the inverse demand schedule

$$\xi(x_i) = \alpha A L^{1-\alpha} Q^{\alpha-\mu} x_i^{\mu-1}. \tag{45}$$

Accordingly, an entrepreneur-managed business chooses k to maximize (42), while an acquiring firm chooses k to maximize

$$\pi_b(k) = \xi(x)\, x - rk, \qquad \text{with } x = \lambda \bar{z} k. \tag{46}$$

[16] This assumption is consistent with Chari et al. (2005) and can be interpreted as reflecting entrepreneur-specific human or organizational capital that cannot be transferred to acquiring firms.

The resulting optimal profit is $\pi_b^* \equiv \max_{k \geq 0} \pi_b(k)$.

Because acquiring firms compete to purchase private businesses, the purchase price $p(\bar{z})$ equals the expected present value of operating profits over the business's remaining lifetime:

$$p(\bar{z}) \;=\; \pi_b^* \;+\; \beta\nu\, p(\bar{z}) \qquad \Longleftrightarrow \qquad p(\bar{z}) = \frac{\pi_b^*}{1-\beta\nu}. \tag{47}$$

A.1 Equilibrium without Capital Gains Tax

This subsection characterizes occupational choice in the economy without capital gains taxation, taking factor prices (w, r), the business purchase price $p(\bar{z})$, and optimal operating profit π_m^* as given.

Occupational cutoffs. Cutoff values of θ are pinned down by comparing value functions evaluated at $z = 0$.

First, in a two-way comparison between worker and start-and-sell, the indifference cutoff is

$$\theta^{sw} = \frac{w}{\beta\big(p(\bar{z}) - w\big)}. \tag{48}$$

Second, in a two-way comparison between worker and start-and-manage, the indifference cutoff is

$$\theta^{mw} = \frac{(1-\beta\nu)\, w}{\beta\big(\pi_m^* - w\big)}. \tag{49}$$

Third, the cutoff between start-and-sell and start-and-manage is

$$\theta^{sm} = \frac{(1-\beta\nu)\, p(\bar{z}) - \pi_m^*}{\beta\big(\pi_m^* - p(\bar{z})\big)}. \tag{50}$$

When all three occupations are active, the equilibrium mapping is

$$\theta < \theta^{mw} \Rightarrow \text{worker}, \qquad \theta^{mw} \leq \theta < \theta^{sm} \Rightarrow \text{start-and-manage}, \qquad \theta^{sm} \leq \theta \Rightarrow \text{start-and-sell}.$$

Using (47) and the homogeneity of profits under (45), one can express θ^{sm} as a function of the

efficiency wedge λ. In particular, $\pi_b^*/\pi_m^* = \lambda^{\frac{\mu}{1-\mu}}$, and substituting into (50) yields

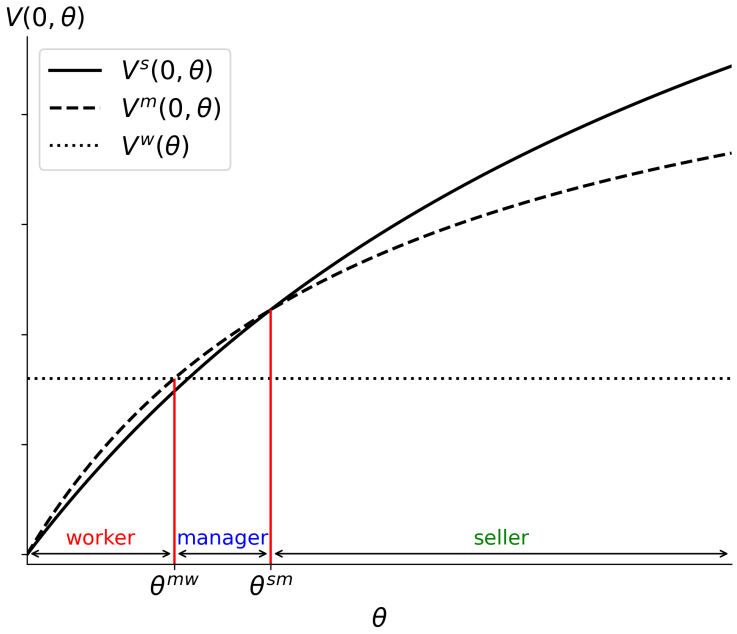
$$\theta^{sm} = \frac{(1-\beta\nu)\left(\lambda^{\frac{\mu}{1-\mu}}-1\right)}{\beta\left(1-\beta\nu-\lambda^{\frac{\mu}{1-\mu}}\right)}. \tag{51}$$

I focus on the case in which all three occupations are active. The following proposition provides sufficient conditions for this configuration.

Proposition 1. If $\frac{(1+\beta)(1-\beta\nu)}{1-\beta\nu+\beta} < \lambda^{\frac{\mu}{1-\mu}} < 1 - \frac{\beta\nu\, w}{\pi_m^*}$, then all three occupations are active. Households with $\theta < \theta^{mw}$ become workers; those with $\theta^{mw} \leq \theta < \theta^{sm}$ become start-and-manage entrepreneurs; and those with $\theta \geq \theta^{sm}$ become start-and-sell entrepreneurs.

Figure 6 illustrates the value functions and the associated cutoff levels.

Figure 6: Occupational Cutoffs in the Economy without Capital Gains Taxation



Stationary measures and labor supply. Let f_m denote the stationary measure of *operating* entrepreneur-managed businesses. For a type-θ start-and-manage entrepreneur, the stationary probability of being in the operating state is $\theta/(1-\nu+\theta)$. Hence

$$f_m = \int_{\theta^{mw}}^{\theta^{sm}} \frac{\theta}{1-\nu+\theta}\, h(\theta)\, d\theta. \tag{52}$$

Let f_b denote the stationary measure of businesses operated by acquiring firms. For a type-θ start-and-sell entrepreneur, the stationary probability of being in the pre-sale ownership state is $\theta/(1+\theta)$, so the flow of sales to acquiring firms is $\theta/(1+\theta)$ per period. Since acquirer-operated businesses survive with probability ν, the stationary stock equals the flow divided by the exit rate $1-\nu$:

$$f_b = \frac{1}{1-\nu} \int_{\theta^{sm}}^{1} \frac{\theta}{1+\theta}\, h(\theta)\, d\theta. \tag{53}$$

Because only workers supply labor to final good production, aggregate labor input is

$$L = H(\theta^{mw}). \tag{54}$$

A.2 Introduction of a Realization-Based Capital Gains Tax

Suppose realized capital gains are taxed at rate τ. Under realization-based taxation, only start-and-sell entrepreneurs pay the tax upon sale. The start-and-sell value function becomes

$$\begin{cases} V^s(0,\theta) = \beta\left[(1-\theta)V^s(0,\theta) + \theta V^s(\bar{z},\theta)\right], \\ V^s(\bar{z},\theta) = (1-\tau)\, p(\bar{z}) + \beta V^s(0,\theta). \end{cases} \tag{55}$$

Thus, the effective sale price is reduced to $(1-\tau)p(\bar{z})$, and the seller–manager cutoff shifts to

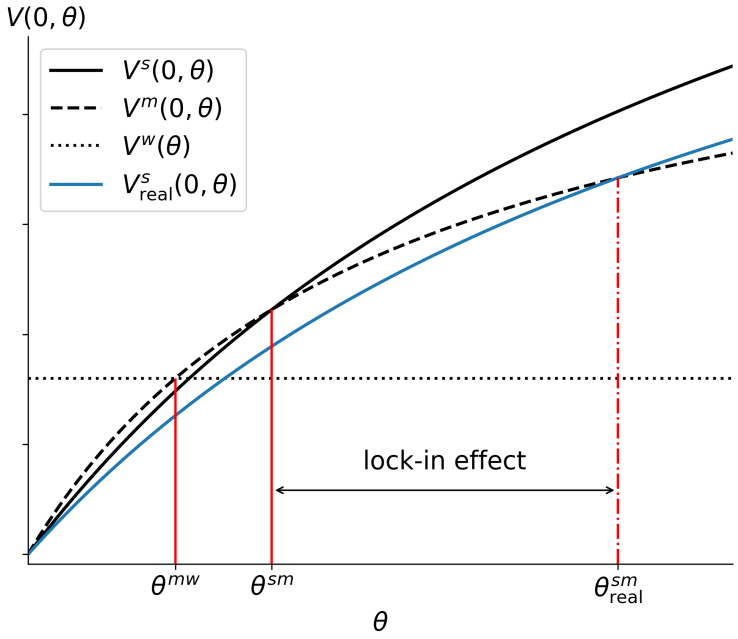
$$\theta^{sm}_{\text{real}} = \frac{(1-\beta\nu)\,(1-\tau)p(\bar{z}) - \pi^*_m}{\beta\big(\pi^*_m - (1-\tau)p(\bar{z})\big)}. \tag{56}$$

Proposition 2. If $\tau > 0$ is sufficiently small that all three occupations remain active, then

$$\theta^{sm}_{\text{real}} > \theta^{sm}.$$

A realization-based capital gains tax therefore raises the threshold for choosing the start-and-sell occupation: the measure of sellers falls while the measure of managers rises. Intuitively, some high-ability households (high θ) that would have sold their businesses in the no-tax economy instead choose to retain and operate them when capital gains are taxed upon realization. Following Chari et al. (2005), I refer to this reallocation as a *lock-in* effect. Figure 7 illustrates this mechanism.

Figure 7: Occupational Cutoffs under a Realization-Based Capital Gains Tax



A.3 Introduction of an Accrual-Based Capital Gains Tax

Suppose instead that capital gains are taxed upon accrual at rate τ. In this stylized environment, business quality is constant during operation, so accrual taxation is equivalent to taxing the increase in business value from zero to $p(\bar{z})$ when the household successfully creates a business (i.e., when it transitions from $z = 0$ to $z = \bar{z}$). If the business subsequently exits (a capital-loss event), previously paid taxes are rebated. Many policy proposals implement loss offsets through carry-forward provisions; for tractability, I abstract from carry-forward constraints and assume that losses are fully rebated contemporaneously.

Under accrual-based taxation, both the seller's and manager's value functions are modified.

Seller.

$$\begin{cases} V^s(0,\theta) = \beta\left[(1-\theta)V^s(0,\theta) + \theta\Big(V^s(\bar{z},\theta) - \tau p(\bar{z})\Big)\right], \\ V^s(\bar{z},\theta) = p(\bar{z}) + \beta V^s(0,\theta). \end{cases} \tag{57}$$

Manager.

$$\begin{cases} V^m(0,\theta) = \beta\left[(1-\theta)V^m(0,\theta) + \theta\Big(V^m(\bar{z},\theta) - \tau p(\bar{z})\Big)\right], \\ V^m(\bar{z},\theta) = \pi_m^* + \beta\left[(1-\nu)\Big(V^m(0,\theta) + \tau p(\bar{z})\Big) + \nu V^m(\bar{z},\theta)\right]. \end{cases} \tag{58}$$

Because the tax is levied upon accrual, households pay $\tau p(\bar{z})$ upon successful business creation. If the business exits, the associated "capital loss" triggers a rebate of the same amount under the full-refund assumption.

These modifications shift the occupational cutoffs. The worker–manager cutoff becomes

$$\theta^{mw}_{\text{accrual}} = \frac{w(1-\beta\nu)}{\beta\left(\pi_m^* - w - (1-\beta)\tau p(\bar{z})\right)}, \tag{59}$$

and the seller–manager cutoff becomes

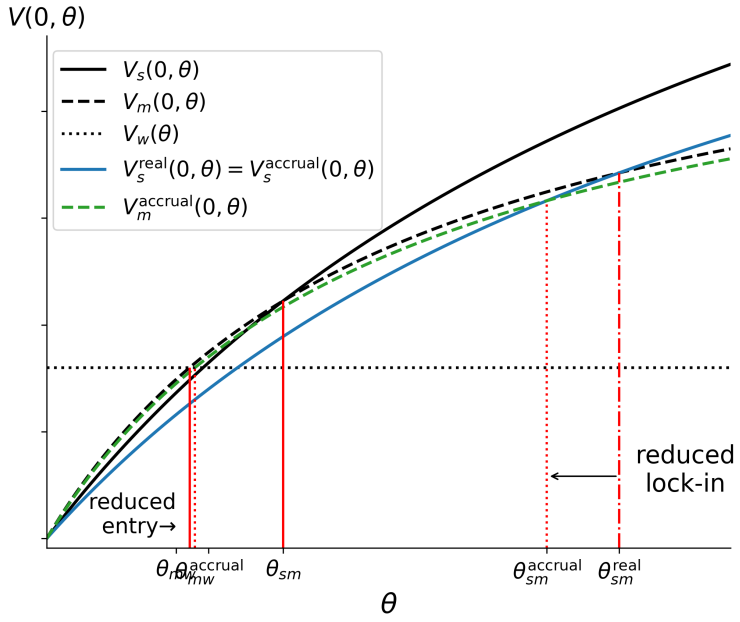
$$\theta^{sm}_{\text{accrual}} = \frac{\left(\pi_m^* + \beta\tau p(\bar{z})\right) - \left(1 - \beta\nu(1-\tau)\right) p(\bar{z})}{\beta\left[p(\bar{z}) - \left(\pi_m^* + \beta\tau p(\bar{z})\right)\right]}. \tag{60}$$

Proposition 3. If $\tau > 0$ is sufficiently small that all three occupations remain active, then

$$\theta^{sm}_{\text{real}} > \theta^{sm}_{\text{accrual}} > \theta^{sm} \qquad \text{and} \qquad \theta^{mw}_{\text{accrual}} > \theta^{mw} = \theta^{mw}_{\text{real}}.$$

Thus, relative to realization-based taxation, accrual-based taxation mitigates the lock-in effect by lowering the seller–manager cutoff, but it discourages entrepreneurial entry by raising the worker–manager cutoff. Figure 8 illustrates these effects.

Figure 8: Occupational Cutoffs under an Accrual-Based Capital Gains Tax



A.4 Production Trade-off between Managing and Selling

To illustrate the production implications of business sales, consider how aggregate intermediate goods production changes with the seller–manager cutoff θ^{sm}. The sign of $\frac{\partial Q}{\partial \theta^{sm}}$ is determined by

$$\underbrace{\frac{1}{1-\nu+\theta^{sm}}}_{\text{marginal manager contribution}} - \underbrace{\frac{\lambda^{\frac{\mu}{1-\mu}}}{(1-\nu)(1+\theta^{sm})}}_{\text{marginal seller contribution}} . \tag{61}$$

This expression highlights the underlying trade-off: raising θ^{sm} increases the mass of managers and reduces the mass of sellers, and the net effect on Q depends on their relative contributions.

Managers and sellers differ along two dimensions. First, managers can start a new business only after their existing business exits, whereas sellers can restart immediately after selling. This makes the start-and-sell occupation relatively more effective at generating new businesses. Second, businesses operated by acquiring firms are less productive than those managed by their original owners, as reflected in the multiplicative penalty $\lambda^{\frac{\mu}{1-\mu}}$ in the seller term.

A.5 Proofs of Propositions 1–3

Proof of Proposition 1. In the economy without capital gains taxation, the relevant value functions at $z = 0$ admit closed-form expressions.

Step 1: Closed-form value functions. The worker value is

$$V^w = \frac{w}{1-\beta}.$$

For a *start-and-sell* entrepreneur, the Bellman system implies

$$V^s(0,\theta) = \frac{\beta\theta\, p(\bar{z})}{(1-\beta)(1+\beta\theta)}.$$

For a *start-and-manage* entrepreneur, letting π_m^* denote optimal per-period operating profit, the Bellman system implies

$$V^m(0,\theta) = \frac{\beta\theta\, \pi_m^*}{(1-\beta)\big(1-\beta\nu+\beta\theta\big)}.$$

Step 2: Occupational cutoffs. Under the sufficient conditions established below, $p(\bar{z}) > \pi_m^* > w$, ensuring that the following inequalities yield the stated occupational cutoffs.

Comparing $V^s(0,\theta)$ and V^w yields the worker–seller cutoff:

$$\begin{aligned} V^s(0,\theta) > V^w &\iff \frac{\beta\theta\, p(\bar{z})}{(1-\beta)(1+\beta\theta)} > \frac{w}{1-\beta} \iff \frac{\beta\theta\, p(\bar{z})}{1+\beta\theta} > w \\ &\iff \beta\theta\big(p(\bar{z})-w\big) > w \iff \theta > \theta^{sw} \equiv \frac{w}{\beta\big(p(\bar{z})-w\big)}. \end{aligned}$$

Comparing $V^m(0,\theta)$ and V^w yields the worker–manager cutoff:

$$\begin{aligned} V^m(0,\theta) > V^w &\iff \frac{\beta\theta\, \pi_m^*}{(1-\beta)(1-\beta\nu+\beta\theta)} > \frac{w}{1-\beta} \iff \frac{\beta\theta\, \pi_m^*}{1-\beta\nu+\beta\theta} > w \\ &\iff \beta\theta\big(\pi_m^*-w\big) > (1-\beta\nu)w \iff \theta > \theta^{mw} \equiv \frac{(1-\beta\nu)\, w}{\beta\big(\pi_m^*-w\big)}. \end{aligned}$$

Finally, comparing $V^s(0,\theta)$ and $V^m(0,\theta)$ yields the seller–manager cutoff:

$$\begin{aligned} V^s(0,\theta) > V^m(0,\theta) &\iff \frac{p(\bar{z})}{1+\beta\theta} > \frac{\pi_m^*}{1-\beta\nu+\beta\theta} \\ &\iff \beta\theta\big(p(\bar{z})-\pi_m^*\big) > \pi_m^* - (1-\beta\nu)p(\bar{z}) \\ &\iff \theta > \theta^{sm} \equiv \frac{(1-\beta\nu)\,p(\bar{z}) - \pi_m^*}{\beta\big(\pi_m^* - p(\bar{z})\big)}. \end{aligned}$$

Step 3: Sufficient conditions for all three occupations to be active. To obtain the ordering

$$\theta < \theta^{mw} \;\Rightarrow\; \text{worker}, \qquad \theta^{mw} \le \theta < \theta^{sm} \;\Rightarrow\; \text{manager}, \qquad \theta \ge \theta^{sm} \;\Rightarrow\; \text{seller},$$

it suffices that (i) $\theta^{mw}, \theta^{sm} \in (0,1)$ and (ii) $\theta^{mw} < \theta^{sm}$.

First, $\theta^{mw} < 1$ is equivalent to

$$\frac{(1-\beta\nu)\,w}{\beta(\pi_m^* - w)} < 1 \quad\Longleftrightarrow\quad w < \frac{\beta}{1-\beta\nu+\beta}\,\pi_m^*,$$

and we also require $\pi_m^* > w$ so that the denominator is positive.

Second, to express θ^{sm} in terms of primitives, note that the business purchase price satisfies

$$p(\bar{z}) = \frac{\pi_b^*}{1-\beta\nu}, \qquad \pi_b^* = \lambda^{\frac{\mu}{1-\mu}}\pi_m^*,$$

so that $(1-\beta\nu)p(\bar{z}) = \lambda^{\frac{\mu}{1-\mu}}\pi_m^*$. Substituting into θ^{sm} yields

$$\theta^{sm} = \frac{(1-\beta\nu)\left(\lambda^{\frac{\mu}{1-\mu}} - 1\right)}{\beta\left(1-\beta\nu-\lambda^{\frac{\mu}{1-\mu}}\right)}.$$

Under the condition $\theta^{sm} > 0$, imposing $\theta^{sm} < 1$ is equivalent to the lower bound

$$\lambda^{\frac{\mu}{1-\mu}} \;>\; \frac{(1+\beta)(1-\beta\nu)}{1-\beta\nu+\beta}.$$

Third, the existence of a nonempty manager region requires $\theta^{mw} < \theta^{sm}$, which is equivalent to

$$\theta^{mw} < \theta^{sm} \quad \Longleftrightarrow \quad \beta\nu\, w < \pi_m^* \left(1 - \lambda^{\frac{\mu}{1-\mu}}\right) \quad \Longleftrightarrow \quad \lambda^{\frac{\mu}{1-\mu}} \;<\; 1 - \frac{\beta\nu\, w}{\pi_m^*}.$$

The lower bound also implies $\lambda^{\frac{\mu}{1-\mu}} > 1 - \beta\nu$, ensuring that $\theta^{sm} > 0$. Moreover, combining the lower and upper bounds yields

$$\frac{w}{\pi_m^*} < \frac{\beta}{1 - \beta\nu + \beta} < 1,$$

which ensures $\pi_m^* > w$ and $\theta^{mw} < 1$.

Combining these inequalities delivers the sufficient conditions stated in Proposition 1. □

Proof of Proposition 2. Under a realization-based capital gains tax at rate τ, the seller receives the after-tax sale price $(1-\tau)p(\bar{z})$, so the seller–manager cutoff becomes

$$\theta^{sm}_{\text{real}} = \frac{(1-\beta\nu)(1-\tau)p(\bar{z}) - \pi_m^*}{\beta\big(\pi_m^* - (1-\tau)p(\bar{z})\big)}.$$

Using $(1-\beta\nu)p(\bar{z}) = \lambda^{\frac{\mu}{1-\mu}}\pi_m^*$, define $\kappa \equiv \lambda^{\frac{\mu}{1-\mu}}$ and rewrite

$$\theta^{sm}_{\text{real}} = \frac{(1-\beta\nu)\big((1-\tau)\kappa - 1\big)}{\beta\big((1-\beta\nu) - (1-\tau)\kappa\big)}, \qquad \theta^{sm} = \frac{(1-\beta\nu)(\kappa - 1)}{\beta\big((1-\beta\nu) - \kappa\big)}.$$

A direct comparison yields

$$\theta^{sm}_{\text{real}} - \theta^{sm} = \frac{(1-\beta\nu)\,\kappa\,\nu\,\tau}{\big((1-\beta\nu) - (1-\tau)\kappa\big)\big((1-\beta\nu) - \kappa\big)}.$$

Under the maintained assumption that τ is small enough that all three occupations remain active, we have $\kappa > 1 - \beta\nu$ and $(1-\tau)\kappa > 1 - \beta\nu$, implying

$$(1-\beta\nu) - \kappa < 0 \quad \text{and} \quad (1-\beta\nu) - (1-\tau)\kappa < 0.$$

Hence the denominator is positive, while the numerator is strictly positive for $\tau > 0$. Therefore,

$$\theta^{sm}_{\text{real}} - \theta^{sm} > 0,$$

which proves Proposition 2. □

Proof of Proposition 3. As in the proof of Proposition 2, let $\kappa \equiv \lambda^{\frac{\mu}{1-\mu}}$ and use $(1-\beta\nu)p(\bar{z}) = \kappa\,\pi_m^*$. Under accrual taxation at rate τ, the seller–manager cutoff can be written as

$$\theta^{sm}_{\text{accrual}} = \frac{\kappa\big((1-\beta\nu) - \beta\tau(1-\nu)\big) - (1-\beta\nu)}{\beta\big((1-\beta\nu) - (1-\beta\tau)\kappa\big)}.$$

Step 1: $\theta^{sm}_{\text{accrual}} > \theta^{sm}$. A direct comparison yields

$$\theta^{sm}_{\text{accrual}} - \theta^{sm} = \frac{\nu\,\tau\,\kappa\Big[(1-\beta\nu) - (1-\beta)\kappa\Big]}{\big((1-\beta\nu) - (1-\beta\tau)\kappa\big)\big((1-\beta\nu) - \kappa\big)}.$$

Under the parameter restrictions for the three-occupation case, $\kappa > 1-\beta\nu$, so both denominator terms are negative for sufficiently small τ, and their product is positive. Moreover, since $\kappa < 1$ and $\nu < 1$, we have

$$(1-\beta\nu) - (1-\beta)\kappa > \beta(1-\nu) > 0.$$

Thus, the numerator is positive for $\tau > 0$, implying

$$\theta^{sm}_{\text{accrual}} - \theta^{sm} > 0.$$

Step 2: $\theta^{sm}_{\text{accrual}} < \theta^{sm}_{\text{real}}$. Comparing the accrual and realization cutoffs yields

$$\theta^{sm}_{\text{accrual}} - \theta^{sm}_{\text{real}} = -\frac{\nu\,\tau\,(1-\tau)\,(1-\beta)\,\kappa^2}{\big((1-\beta\nu) - (1-\beta\tau)\kappa\big)\big((1-\beta\nu) - (1-\tau)\kappa\big)} \;<\; 0,$$

again using that the denominator is positive for sufficiently small τ in the region where all three occupations remain active.

Combining Steps 1 and 2 delivers

$$\theta^{sm}_{\text{real}} > \theta^{sm}_{\text{accrual}} > \theta^{sm}.$$

Step 3: $\theta^{mw}_{\text{accrual}} > \theta^{mw}$. Using the worker–manager cutoffs derived above,

$$\theta^{mw} = \frac{(1-\beta\nu)\,w}{\beta(\pi^*_m - w)}, \qquad \theta^{mw}_{\text{accrual}} = \frac{(1-\beta\nu)\,w}{\beta\big(\pi^*_m - w - (1-\beta)\tau p(\bar{z})\big)}.$$

Since $(1-\beta)\tau p(\bar{z}) > 0$, the denominator of $\theta^{mw}_{\text{accrual}}$ is strictly smaller than that of θ^{mw} (and is positive for sufficiently small τ), implying

$$\theta^{mw}_{\text{accrual}} > \theta^{mw}.$$

Finally, under realization-based taxation the worker–manager cutoff is unchanged, so $\theta^{mw}_{\text{real}} = \theta^{mw}$, completing the proof. □

B Additional Quantitative Results

B.1 Tax Revenue

Table 10: Fiscal Effects of Capital Gains Tax Reforms

	Tax revenue					Government spending	
Tax system	Consumption	Income	Corporate profits	Capital gains	Total	Pension transfers	Government purchases
A. Changes from the realization-based benchmark (%)							
Accrual-based taxation	−3.88	−5.89	0.29	−3.38	−5.04	0.90	−7.62
No capital gains tax	2.68	5.39	9.91	−100.00	1.54	0.22	2.11
No step-up in basis at death	−0.14	−0.10	0.15	2.90	0.02	0.07	0.00
B. Shares of GDP (%)							
Realization-based taxation	4.05	18.54	1.83	0.90	25.33	7.69	17.64
Accrual-based taxation	4.08	18.29	1.93	0.91	25.21	8.13	17.08
No capital gains tax	4.00	18.79	1.94	0.00	24.72	7.41	17.32
No step-up in basis at death	4.05	18.54	1.84	0.93	25.35	7.70	17.66

Notes. Panel A reports percentage changes in fiscal aggregates relative to the calibrated realization-based benchmark. Panel B reports each fiscal aggregate as a percentage of GDP in the corresponding equilibrium. The four columns under "Tax revenue" report revenue from consumption, income, corporate-profit, and capital gains taxation, respectively. Total tax revenue is the sum of these four components. The pension benefit per retiree, b, is held fixed across tax regimes, but aggregate pension transfers may change because the mass of retirees is endogenous. Government purchases equal total tax revenue net of aggregate pension transfers.

B.2 Wealth and Financial Asset Concentration

Table 11: Tax Reform: Wealth Concentration and Distributional Mechanisms

Measure	Tax regimes		Reference counterfactuals	
	Realization-based	Accrual-based	No capital-gains tax	No step-up at death
A. Wealth concentration				
Wealth shares (%)				
Top 1%	19.47	22.25	19.85	19.65
Top 5%	58.70	55.42	57.51	58.96
Top 10%	70.99	66.86	68.64	71.12
Financial-asset shares (%)				
Top 1%	19.88	22.29	20.39	20.13
Top 5%	57.16	52.26	56.27	57.33
Top 10%	68.24	63.90	66.90	68.35
B. Intergenerational transmission				
Financial-asset bequests / financial assets (%)	1.33	1.32	1.31	1.33
Business-value bequests / business wealth (%)	0.79	0.72	0.72	0.77
Wealth Gini among newborn households	0.89	0.88	0.89	0.90
C. Entrepreneurial selection and financing				
Mean financial assets among sellers	6.67	4.62	4.39	6.55
Mean y among young entrepreneurs	0.66	0.71	0.64	0.66
Mean θ among young entrepreneurs	1.11	1.12	1.12	1.11
Collateral-constrained managers (%)	29.02	25.20	22.34	28.86
D. Wealth positions within occupations				
Managers in the economy-wide top 1% (%)	13.76	20.30	14.30	14.97
Sellers in the economy-wide top 1% (%)	53.00	28.22	27.86	51.79

Notes. Wealth is defined as financial assets, a, plus unrealized capital gains from business ownership, $p(z)$. Top groups are ranked separately within each equilibrium using the relevant holdings measure. Bequests are transfers per model period and are measured before newborn households make current choices or pay taxes. Financial-asset and business-value bequests are divided by the corresponding aggregate household asset stocks; acquirer-operated businesses are excluded from household business wealth. The newborn Gini measures inequality in inherited wealth. Entrepreneurs comprise startup entrepreneurs, managers, and sellers. Means of y and θ refer to young households only; seller assets and the incidence of collateral constraints among managers include both age groups. Seller assets are measured before sale proceeds enter next-period financial assets. Panel D reports $P(\text{top 1\% } | \text{ occupation})$, rather than each occupation's share among top-1% households. All means are population weighted. Results describe stationary distributions rather than matched household transitions. Values are rounded to two decimal places.

B.3 Entrepreneurial Business Characteristics

Table 12: No Capital Gains Tax: Characteristics of Operating Private Businesses

	Inputs (% change)		Business outcomes (% change)		Financing
Business group	Capital k	Labor ℓ	Productivity z	Output x	Collateral-constrained share (pp)
All operating businesses	−8.37	−12.26	0.19	−11.79	–
Manager-operated businesses	−12.83	−18.40	−6.27	−15.30	−6.67
Acquirer-operated businesses	−35.84	−38.02	−5.59	−39.50	–

Notes. Changes are measured relative to the calibrated realization-based benchmark. Capital, labor, productivity, and output are reported as percentage changes. The collateral-constrained share is reported as a percentage-point change. All operating businesses include both manager-operated and acquirer-operated businesses, with averages weighted by business counts. Managers include both young and old households. Output, x, denotes intermediate output before CES aggregation. Acquiring firms are unconstrained, so the collateral-constrained share applies only to manager-operated businesses.

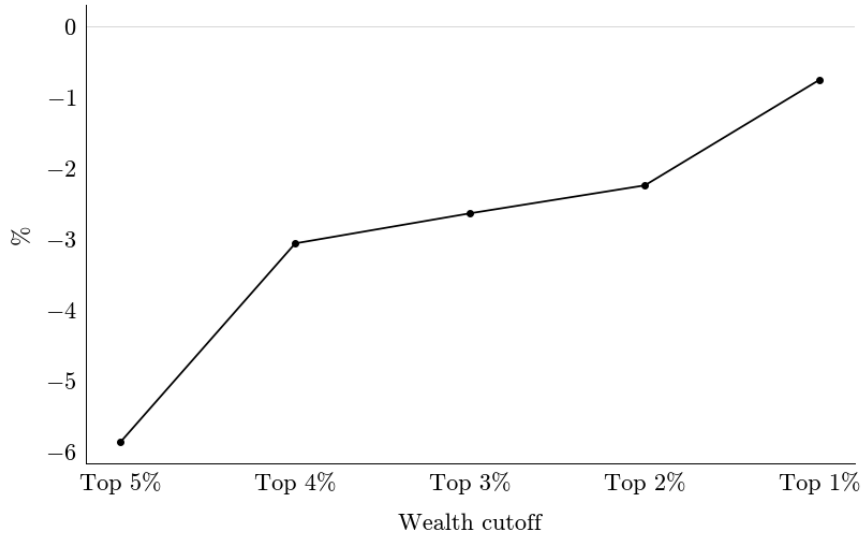
Table 13: Selection into Business Sales and Entrepreneurship

	Change from realization-based benchmark (%)	
Measure	Accrual-based taxation	No capital-gains tax
A. Seller-to-manager ratios		
Mean financial assets, a	−39.08	−37.23
Mean business productivity, z	−10.69	−10.44
Mean entrepreneurial-idea talent, θ	1.34	1.62
Mean labor productivity, y	−23.10	−17.84
B. Young-entrepreneur-to-worker ratios		
Mean financial assets, a	9.38	−6.69
Mean entrepreneurial-idea talent, θ	0.69	1.12
Mean labor productivity, y	8.04	−4.15

Notes. Changes are measured in percentage terms relative to the calibrated realization-based benchmark. Panel A reports percentage changes in ratios of seller means to manager means. Financial assets and business productivity are measured for both young and old households, while y and θ refer to young households only. Panel B reports percentage changes in ratios of means for young entrepreneurs relative to workers. Young entrepreneurs comprise startup entrepreneurs, managers, and sellers. All means are population weighted.

B.4 Hybrid Tax Regime: Indirect Effect

Figure 9: Effects of Tax Reforms on Aggregate Capital Supply



Notes: Entries are percentage changes relative to the realization-based tax regime.

Figure 10: Entrepreneurship Rate by Labor Productivity

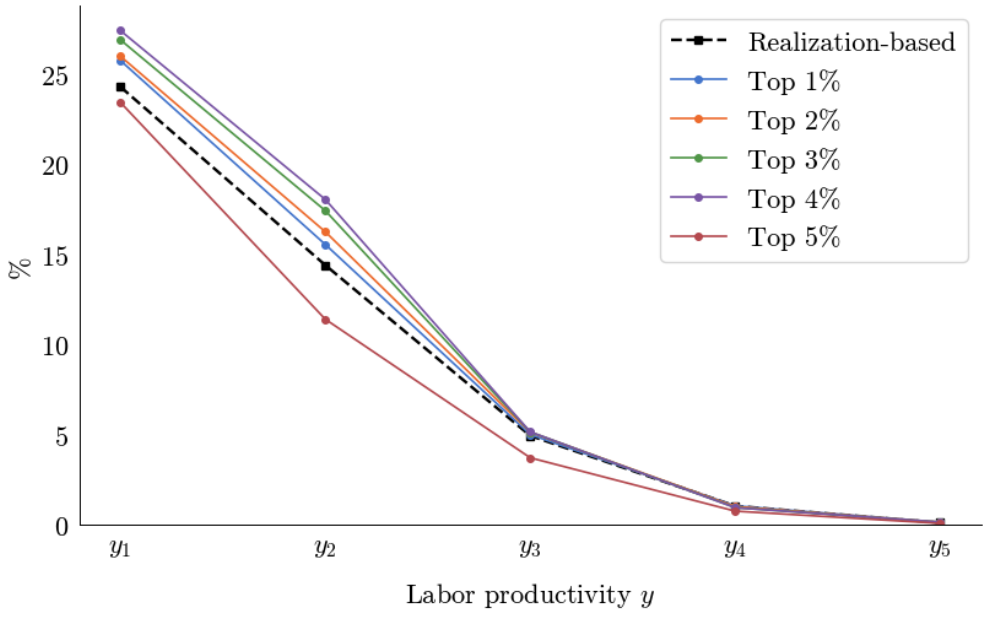
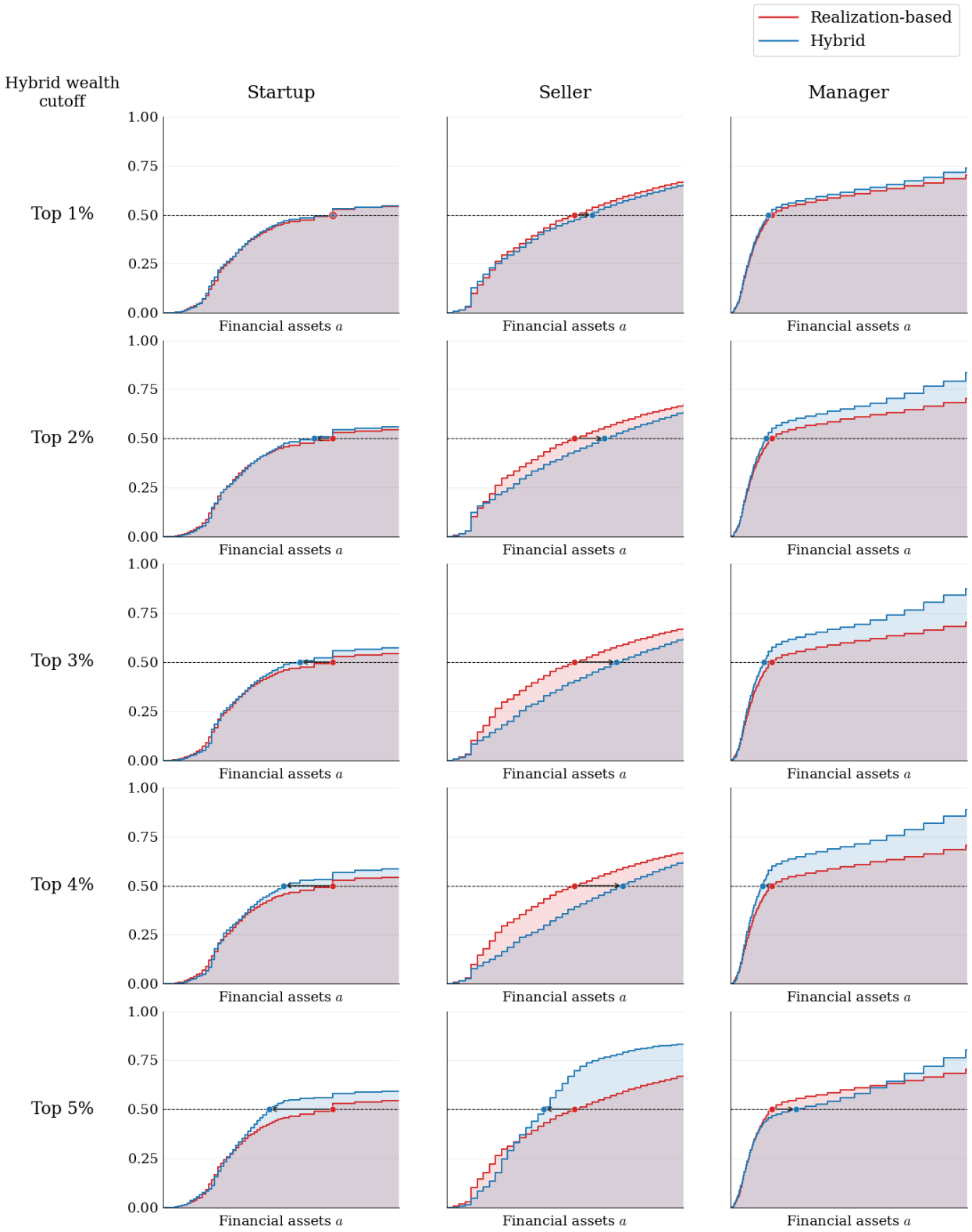


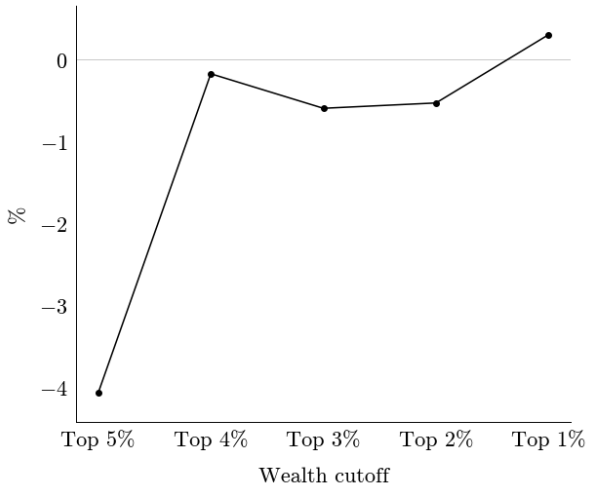
Figure 11: CDFs of Financial Assets by Entrepreneurial Occupation



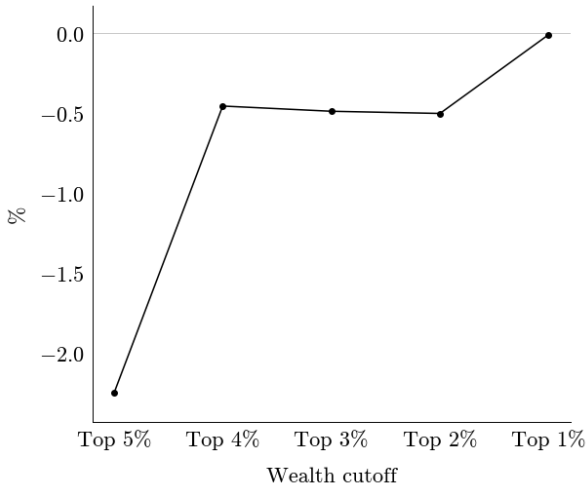
Notes: The dotted horizontal line marks the 50th percentile (median). The blue curve represents the hybrid tax regime with the wealth cutoff indicated by the corresponding row label.

B.5 Hybrid Tax Regime vs Realization-based Tax without Step-up in Basis

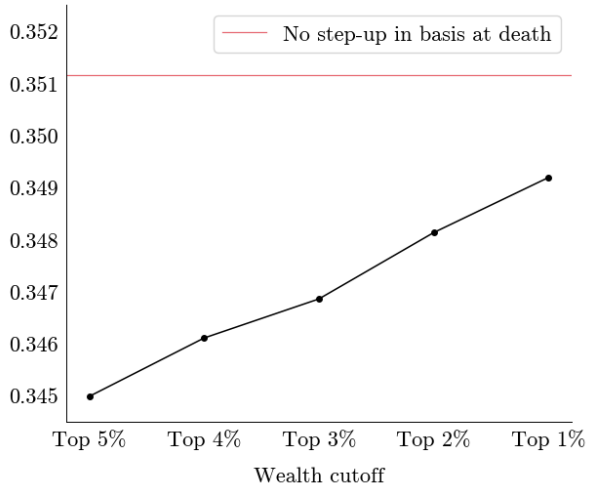
Figure 12: Hybrid Taxation Relative to Realization-Based Taxation without Step-Up in Basis



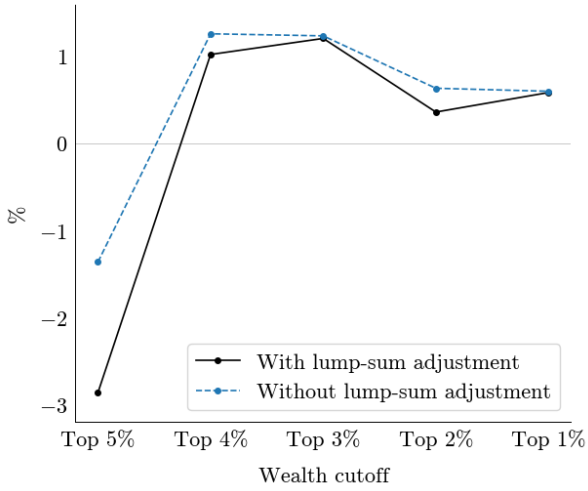
(a) Intermediate goods production Q



(b) Final good production Y



(c) Consumption Gini coefficient



(d) Consumption-equivalent welfare