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Effects of monetary policy on the wealth inequality

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ABSTRACT

This paper examines the effect of monetary policy on wealth inequality in the United States using quarterly data from the Distributional Financial Accounts. I construct a Gini coefficient across five wealth groups and analyze its response to high-frequency-identified monetary shocks. Results suggest contractionary policy modestly reduces wealth inequality via lower equity values, but this effect is statistically insignificant and offset by reallocation toward interest-bearing assets. Real assets, such as housing, play a limited role in shaping these distributional dynamics.

1. Introduction

This study contributes to the growing literature on the distributional effects of monetary policy by quantifying its impact on U.S. wealth inequality, focusing on the asset portfolio channel. This topic has gained relevance as large-scale asset purchases and sustained low interest rates after major crises coincided with a sharp rise in wealth inequality. Against this backdrop, I examine how monetary policy, beyond its aggregate effects, shapes the distribution of wealth across households.

Recent work highlights the distributional impact of monetary policy. Coibion et al. (2017) show that contractionary policy raises income and consumption inequality, while Andersen et al. (2023) find that expansionary policy increases inequality across income, consumption, and wealth. Focusing on wealth inequality, Mumtaz and Theophilopoulou (2020) and Feilich (2023) study heterogeneous effects across percentiles. This paper complements these studies by decomposing the impulse response of the wealth Gini coefficient, examining changes in both asset shares and inequality within each asset category.

Previous studies identify several channels through which monetary policy affects inequality, including inflation ((Doepke and Schneider, 2006), (Erosa and Ventura, 2002), (Gornemann et al., 2021)), interest rate exposure ((Auclert, 2019)), labor markets ((Gornemann et al., 2021), (Ma, 2023)), and limited stock market participation ((Melcangi and Sterk, 2024)). However, relatively little attention has been paid to the role of asset prices and portfolio reallocation – particularly between equities and bonds – in shaping distributional outcomes. This paper fills that gap by empirically examining how the asset portfolio channel mediates the effect of monetary policy on wealth inequality.

Using high-frequency monetary shocks and detailed wealth data, I find that a 100 basis point policy rate increase lowers the wealth Gini by about 0.02 after seven quarters, but the effect is statistically insignificant. This outcome is driven by falling equity values, which disproportionately affect wealthy households, but is partially offset by a reallocation toward interest-bearing assets.

2. Data

This study uses quarterly wealth data from the *Distributional Financial Accounts* (DFA), a dataset compiled by the Federal Reserve based on the *Survey of Consumer Finances* (SCF), covering the period from 1989 Q4 to 2023 Q4. In this paper, wealth is defined as disposable assets, calculated as total assets excluding pension-related financial assets. Disposable assets include real estate, consumer durables, and financial assets. The latter are categorized into interest-related assets (deposits, bonds, loans) and equity-related assets (equities, mutual funds, private businesses) to capture their distinct responses to policy. Specifically, this classification reflects the empirical observation that, in response to interest rate hikes, equity-related assets tend to decline in value while interest-related assets yield higher returns.

To measure wealth inequality, I construct a pseudo Gini coefficient based on five wealth brackets – the top 0.1%, 0.1%–1%, 1%–10%, 10%–50%, and the bottom 50% – using binned population and wealth share data. While this approach cannot capture within-group heterogeneity, it closely tracks the Gini coefficient from the SCF, which is available only triennially. The correlation between the two series is 0.96, suggesting that the pseudo Gini captures the relevant dynamics of wealth inequality. In addition, the use of grouped data simplifies

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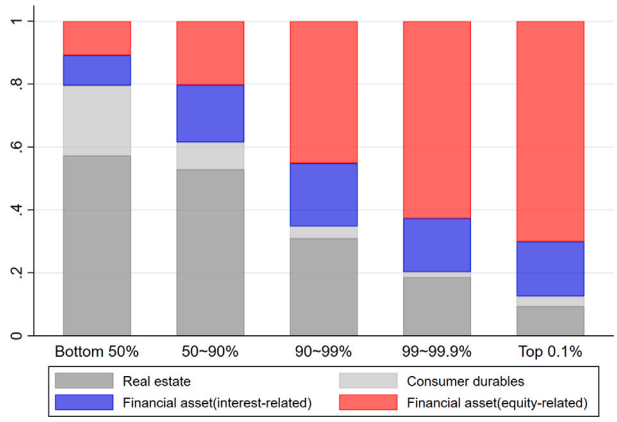

Fig. 1. Portfolio composition by asset class.
Note: Data are from 2023Q4. Asset categories follow the definitions in the main text.

Table 1
Wealth Gini decomposition by asset components.

Component	Share	Within Gini	Contribution
Real estate	0.34	0.53	0.18 (0.25)
Consumer durables	0.06	0.37	0.02 (0.03)
Financial asset (interest-related)	0.18	0.73	0.13 (0.18)
Financial asset (equity-related)	0.42	0.85	0.36 (0.54)
Total	1.00	0.69	0.69 (1.00)

Note: Data are from 2023Q4. Contributions are reported with normalized shares (in parentheses). Asset categories follow the definitions in the main text.

the decomposition of Gini changes, allowing the overall Gini to be cleanly attributed to changes in the component Gini coefficients of asset categories and their respective shares in total wealth.[1] For brevity, I refer to this measure as the Gini coefficient throughout the paper.

To further illustrate the link between asset composition and wealth inequality, I examine how different wealth groups allocate their portfolios across asset categories using a stacked bar chart. Fig. 1 reveals striking heterogeneity in portfolio composition across the wealth distribution. Among the top 10%, equity-related financial assets account for the largest share of wealth, reflecting their greater exposure to equity markets. In contrast, households in the bottom 90% hold a larger portion of their wealth in real assets, such as housing and consumer durables. Interest-bearing financial assets represent a moderate share across groups but are still somewhat skewed toward the upper brackets. This heterogeneity in portfolio structure underlies the differential transmission of monetary policy across wealth groups.

Table 1 presents the decomposition of the wealth Gini coefficient by asset category, showing both the share and the Gini of each component. The table illustrates that real assets – such as real estate and consumer durables – are more evenly distributed than total wealth, with Gini coefficients lower than the aggregate. Among them, consumer durables have both a small share and a negligible contribution to overall inequality. In contrast, financial assets are more concentrated, exhibiting Gini coefficients higher than the total. Notably, equity-related assets account for a substantial share of total wealth and contribute considerably to wealth inequality, reflecting their highly skewed distribution among wealthy households.

[1] See Online Appendix A for details.

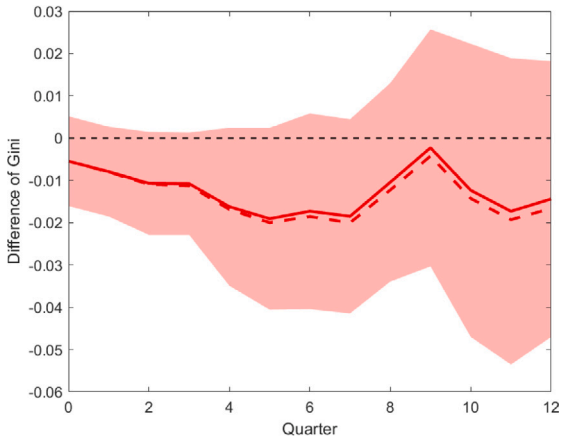

Fig. 2. Impulse responses of wealth Gini to monetary tightening.
Note: Responses of the wealth Gini coefficient to a 100 basis point rate increase (red line), with small-sample bias correction from Herbst and Johannsen (2024) (dashed). The shaded area denotes ±1 standard deviation confidence bands (Eicker–Huber–White).

3. Identification and empirical method

To estimate the dynamic effects of monetary policy on wealth inequality, I adopt a local projection instrumental variables (LP-IV) approach, following Stock and Watson (2018). Specifically, the response of the wealth Gini coefficient to monetary shocks is estimated using the one-year Treasury bill rate as the policy variable. The main regression takes the form:

$$y_{t+h} - y_{t-1} = \alpha^h + \beta^h r_t + X_t' \Gamma^h + \varepsilon_{h,t}, \qquad h = 0, \dots, H \tag{1}$$

where y_t denotes the wealth Gini coefficient, r_t is the one-year Treasury bill rate, X_t includes four lags of y_t and r_t,[2] capturing one year of dynamics at quarterly frequency. h is the horizon of the impulse responses.

The identification of exogenous monetary policy shocks follows Bauer and Swanson (2023), who extract high-frequency surprises from short-term interest rate futures market and construct orthogonalized monetary policy shock(mps_t) by removing components correlated with macroeconomic and financial variables. The auxiliary regression used to estimate r_t employs mps_t and is specified as follows:

$$r_t = \phi_0 + \phi_1 mps_t + X_t' \Phi + u_t. \tag{2}$$

The coefficient of interest, β^h, the Gini's dynamic response to a policy shock at horizon h. This sequence of coefficients is estimated using two-stage least squares (2SLS).[3] The confidence intervals are constructed using Eicker–Huber–White robust standard errors.[4]

[2] Following Gertler and Karadi (2015) I additionally control for real GDP, inflation (CPI), and the excess bond premium. Including these variables does not materially affect the estimated impulse responses. See Online Appendix B.1 for details.

[3] The instrument shows weak relevance at the quarterly frequency (first-stage F-statistic = 4.88) but strong relevance in monthly data (F = 25.08). To address this concern, I replicate the analysis using monthly binned Gini coefficients from the *Realtime Inequality* project.(Blanchet et al. (2022)) The results exhibit a negative sign, consistent with the main findings. Full results are reported in Online Appendix B.4.

[4] According to Montiel Olea and Plagborg-Møller (2021), it is inadvisable to estimate heteroskedasticity and autocorrelation consistent (HAC) standard errors for local projection (LP) impulse response functions (IRFs).

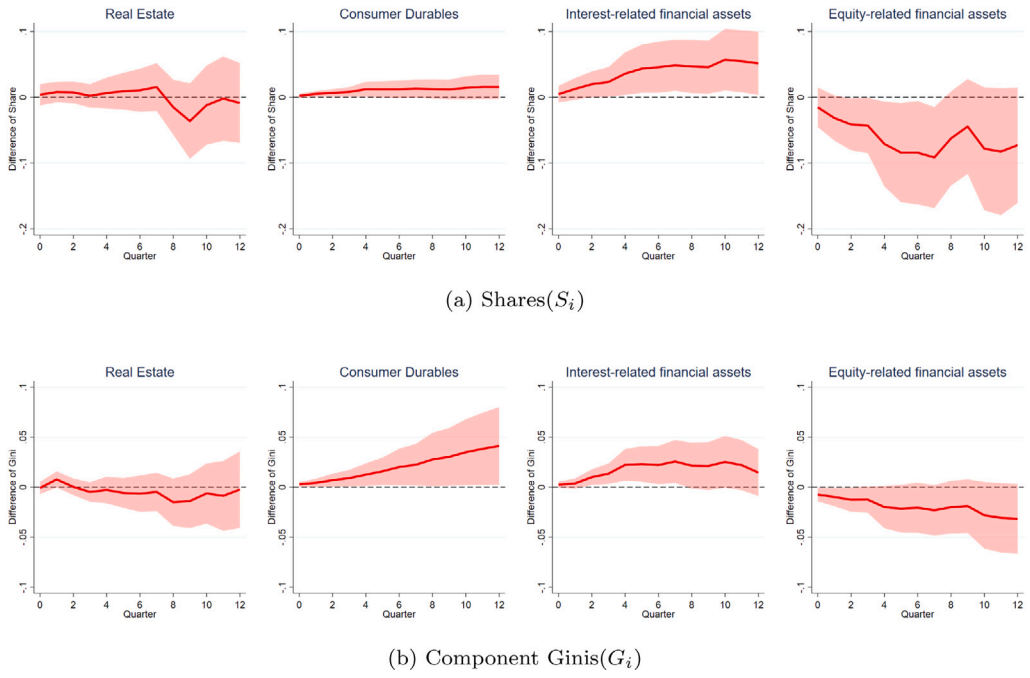

Fig. 3. Impulse responses of component Gini and shares to monetary tightening.
Note: Responses to a 100 basis point rate increase (red line) with ±1 standard deviation confidence bands (shaded, Eicker–Huber–White).

4. Results

Fig. 2 shows the impulse response of the wealth Gini coefficient to a monetary tightening shock corresponding to a 100 basis point increase in the one-year Treasury bill rate. The estimated responses are negative throughout, and the peak effect occurs at the seventh quarter with a decline of approximately −0.02, but the effect is not statistically significant at the 1-standard-deviation level. Given that the historical standard deviation of the wealth Gini coefficient is around 0.03, this corresponds to a quantitative effect of about two-thirds of one standard deviation.

To better understand the transmission of monetary policy to aggregate wealth inequality, I apply the decomposition of the Gini coefficient proposed by Lerman and Yitzhaki (1985). Specifically, the total wealth Gini can be expressed as a weighted sum of the within-Gini coefficients and shares of its components

$$G = \sum_{i=1}^{n} S_i R_i G_i \tag{3}$$

where S_i is the share of component i in total wealth, R_i is the rank correlation between asset i and that of total wealth, and G_i is the within-component Gini coefficient of asset type i. Since the per capita rankings of asset components are stable in the binned data – with the top 1% consistently holding the most – the rank correlation terms R_i are equal one. Thus, the R_i term in Eq. (3) can be omitted.

By differentiating this expression with respect to the policy rate r, I derive the impulse response of the aggregate Gini coefficient as a function of the component-wise responses.

$$\frac{\partial G}{\partial r} = \underbrace{\sum_{i=1}^{n} \frac{\partial S_i}{\partial r} R_i G_i}_{\text{share IRF}} + \underbrace{\sum_{i=1}^{n} S_i R_i \frac{\partial G_i}{\partial r}}_{\text{component Gini IRF}} + \Delta \tag{4}$$

where Δ represents residual term including interaction effects and potential misspecification in the estimation of the impulse response functions. This decomposition allows me to separate the total IRF into an asset share channel (through S_i) and a component Gini channel (through G_i).

Fig. 3 shows the impulse responses of asset shares (top row) and component Ginis (bottom row). Real assets, such as real estate and consumer durables, show limited responses, with real estate effects insignificant and consumer durables having a negligible share. In contrast, interest-related financial assets exhibit increases in both share and Gini, indicating that wealthier households expand their holdings of these assets following monetary tightening. Equity-related financial assets show the largest decline in share, underscoring that falling equity prices play the most significant role in driving the distributional effects of contractionary policy.

To understand the mechanisms behind the modest decline in wealth inequality, Table 2 decompose the impulse response of the total wealth Gini into share and component Gini contributions by asset class. Following the decomposition identity in Eq. (3), the IRF of the wealth Gini is separated into two components: the share IRF and the component Gini IRF. The table clearly shows that the majority of the overall response is driven by changes in asset shares, rather than changes in within-asset inequality.

The primary driver of the decline in the share IRF section is the contraction in equity-related financial assets, which are highly concentrated at the top 10% of the wealth distribution. At the peak response (quarter 7), the share component of equity-related assets alone contributes −0.0758 to the Gini. However, this downward effect is partially offset by an increase in the share of interest-related financial assets. Specifically, their share contribution reaches +0.0359. Taking into account other components and interaction terms, the overall decline in the wealth Gini is attenuated to −0.0185, illustrating that portfolio rebalancing by wealthy households dampens the inequality-reducing effect of monetary tightening.

5. Conclusion

This paper examines the distributional effects of monetary policy on U.S. wealth inequality using high-frequency shocks and Gini estimates from the *Distributional Financial Accounts*. The analysis shows that contractionary policy modestly reduces wealth inequality by lowering the value of equity-related assets heavily concentrated among the wealthy. However, this effect is partially offset by an increase in the share

Table 2
IRF decomposition.

	Horizon(quarter)				
	0	4	8	12	peak(7)
Total wealth Gini	−0.0055	−0.0162	−0.0104	−0.0144	−0.0185
	(0.0106)	(0.0187)	(0.0234)	(0.0326)	(0.0229)
(i) Share effects	−0.0064	−0.0244	−0.0202	−0.0207	−0.0271
Real estate	0.0019	0.0032	−0.0075	−0.0043	0.0077
	(0.0080)	(0.0117)	(0.0209)	(0.0302)	(0.0181)
Consumer durables	0.0008	0.0046	0.0047	0.0060	0.0050
	(0.0012)	(0.0043)	(0.0055)	(0.0069)	(0.0051)
Financial assets(interest-related)	0.0034	0.0265	0.0344	0.0379	0.0359
	(0.0092)	(0.0239)	(0.0299)	(0.0354)	(0.0286)
Financial assets(equity-related)	−0.0126	−0.0587	−0.0518	−0.0602	−0.0758
	(0.0249)	(0.0533)	(0.0592)	(0.0725)	(0.0635)
(ii) Component Gini effects	−0.0024	−0.0029	−0.0061	−0.0063	−0.0032
Real estate	−0.0003	−0.0010	−0.0052	−0.0008	−0.0017
	(0.0021)	(0.0046)	(0.0082)	(0.0132)	(0.0066)
Consumer durables	0.0002	0.0010	0.0022	0.0033	0.0018
	(0.0002)	(0.0009)	(0.0022)	(0.0032)	(0.0017)
Financial assets(interest-related)	0.0005	0.0045	0.0044	0.0029	0.0052
	(0.0006)	(0.0033)	(0.0047)	(0.0048)	(0.0045)
Financial assets(equity-related)	−0.0028	−0.0074	−0.0074	−0.0117	−0.0086
	(0.0026)	(0.0078)	(0.0098)	(0.0130)	(0.0094)
(iii) Residuals	0.0033	0.0111	0.0158	0.0126	0.0119

Note: "peak(7)" denotes the quarter in which the wealth Gini IRF reaches its maximum (in absolute value). The response is decomposed into three terms from Eq. (4): (i) *share effects* (changes in asset composition), (ii) *component Gini effects* (within-asset inequality), and (iii) the *residual*, capturing the unexplained portion. Parentheses report delta-method standard errors. See Online Appendix C for details on the calculation.

of interest-related assets. These findings suggest that while monetary policy affects inequality through asset price channels, its redistributive impact is constrained by portfolio adjustments among high-wealth households.

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Appendix A. Supplementary data

Supplementary material related to this article can be found online at https://doi.org/10.1016/j.econlet.2025.112573.

Data availability

Data will be made available on request.

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