Online Appendix

Appendix A Additional Figures and Tables

NPV for Capital Expenditures

Input form

Year	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	[...]
Units		50,000	50,000	50,000	47,500	45,125	42,869	40,725	38,689	[...]
Avg. unit price		550	567	583	601	619	638	657	676	[...]
Sales		27,500,000	28,325,000	29,174,750	28,547,493	27,933,722	27,333,147	26,745,484	26,170,456	[...]
[...]										
Avg. unit cost		510	525	541	557	574	591	609	627	[...]
Cost		25,500,000	26,265,000	27,052,950	26,471,312	25,902,178	25,345,282	24,800,358	24,267,150	[...]
EBITDA		2,000,000	2,060,000	2,121,800	2,076,181	2,031,543	1,987,865	1,945,126	1,903,306	[...]
Depreciation		300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	[...]
EBIT		1,700,000	1,760,000	1,821,800	1,776,181	1,731,543	1,687,865	1,645,126	1,603,306	[...]
Taxes		340,000	352,000	364,360	355,236	346,309	337,573	329,025	320,661	[...]
Net operating income after taxes		1,360,000	1,408,000	1,457,440	1,420,945	1,385,235	1,350,292	1,316,101	1,282,645	[...]
[...]										
Capex	6,000,000									
Working capital		550,000	566,500	583,495	570,950	558,674	546,663	534,910	523,409	[...]
Change in working capital		550,000	16,500	16,995	-12,545	-12,275	-12,012	-11,753	-11,501	[...]

NPV

FCF	-6,000,000	1,110,000	1,691,500	1,740,445	1,733,490	1,697,510	1,662,304	1,627,854	1,594,145	[...]
Discount rate	14%									
IRR > discount rate	YES									
NPV	POSITIVE									

Figure A1: Capital Budgeting Spreadsheet

The figure shows a typical capital budgeting spreadsheet used by firms to evaluate potential investment projects. The spreadsheet is based on classic teaching material (Fruhan Jr. 1992, Piper 2000) and a simplified, anonymized version of a sheet provided to us by an S&P 500 firm. Several detailed cash flow positions and additional years appearing on the original spreadsheet are omitted for the sake of clarity.

The free cash flows (FCF) of the project, discounted using the given discount rate, determine the net present value (NPV) of the project. Division and project managers fill in the cells in yellow on the "input form" with their cash flow forecasts for the project. The FCF directly depend on the expected inflation rates that determine the average unit price and the unit cost in different years. The FCF are automatically calculated by the spreadsheet as: after-tax EBIT minus capex plus depreciation minus the change in working capital. Sales equals units multiplied by average unit price. Cost is units multiplied by unit cost. Earnings before interest and taxes (EBIT) is sales minus cost minus depreciation.

The discount rate is determined by the chief executives of the firm, and not influenced by the expected cash flows entered by the division and project managers. Hence, unlike the cash flow forecasts, the discount rate does not automatically change with the underlying assumptions used for the cash flow forecasts. The spreadsheet reports whether the expected IRR of the project exceeds the discount rate and whether the NPV of the project is positive or negative.

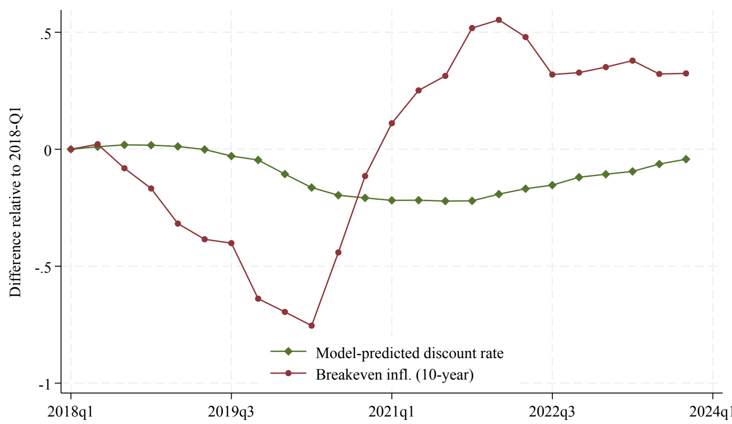

Figure A2: Discount Rates 2018-23 Implied by the Model

The figure plots variation in breakeven inflation between 2018-Q1 and 2023-Q4 (as in Figure 1) as well as a model-implied series for the average discount rate. We calculate the model-implied series by assuming that discount rates are set following Proposition 2 where the average firm faces a Calvo friction in discount rate setting consistent with the average adjustment frequency observed in the data. We feed in the historical evolution of the financial cost of capital to determine the model-implied average discount rate in every quarter. We find a slight decline between 2020 and 2023 in the model-implied discount rate series, consistent with the series based on observed discount rates reported by firms in Panel B of Figure 1.

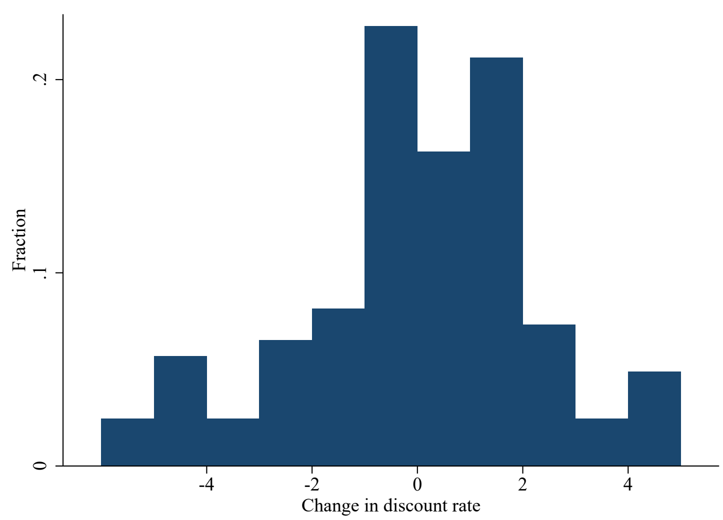

Figure A3: Non-Zero Changes in Discount Rates

The figure plots a histogram of the distribution of changes in a firm's discount rate, measured as the difference between a firm's discount rate and the most recently observed value of the same firm. The sample includes only changes that are non-zero and where the two observations making up the change are observed in the same year. The sample runs from 2002 to 2024.

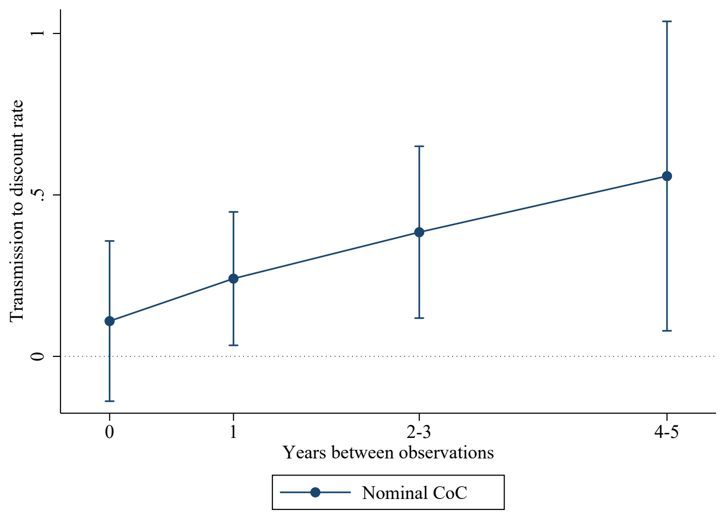

Figure A4: The Horizon-Dependent Incorporation of the Nominal Cost of Capital Into Discount Rates

The figure shows that firms do not incorporate changes in the nominal cost of capital into discount rates in the short run. We analyze a dataset of firm-level changes in discount rates (as measured in Section 2.1) and the nominal financial cost of capital (as measured in Section 2.4). We regress the firm-level change in the discount rate on the change in the nominal cost of capital over the same period. We interact the main regressor with indicators measuring the difference in years between the two observations of discount rates for the same firm. The bin at 0.5 is for differences up to 0.5 years, the bin at 1 for differences greater than 0.5 and up to 1.5 years, the bin at 2-3 for differences greater than 1.5 and up to 3.5 years, and the bin at 4-5 for differences greater than 3.5 and up to 5.5 years. The controls include fixed effects for: quarter-by-year and the difference between observations in quarters. Standard errors are clustered by firm and quarter-by-year-by-country. The vertical bars denote 90% confidence intervals.

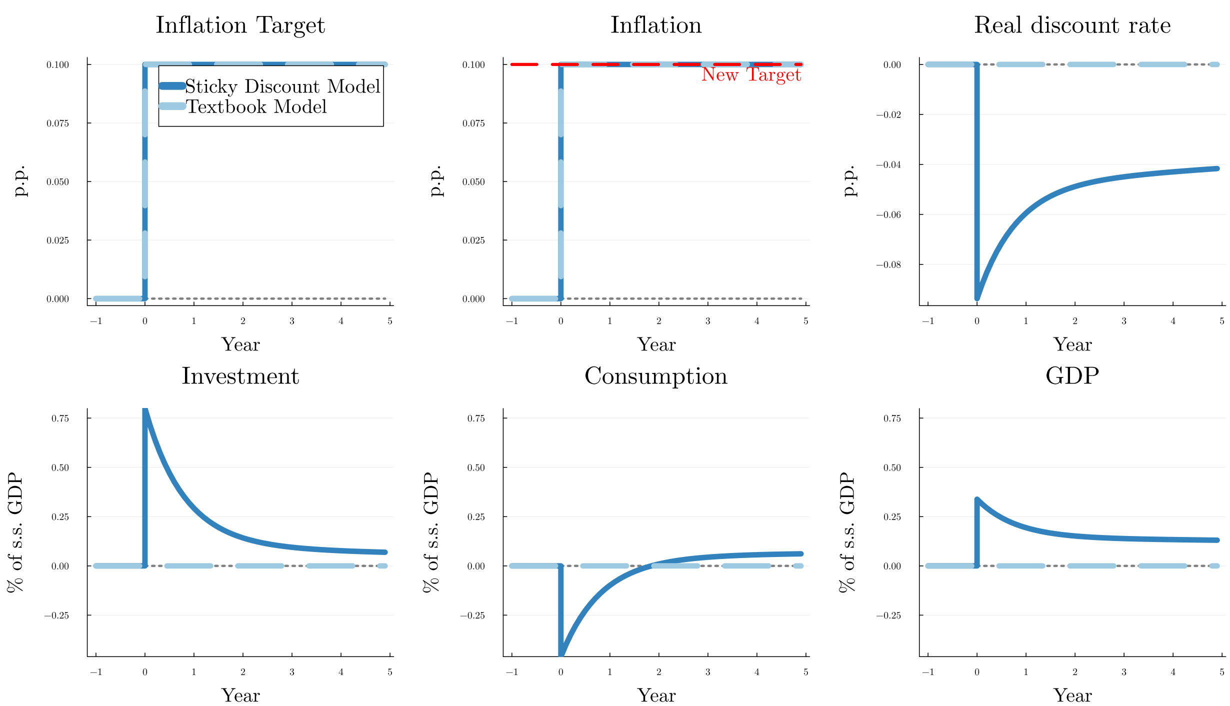

Figure A5: GE Response to an Inflation Target Shock under Fully Flexible Prices

The figure plots aggregate impulse responses to a unit increase in the long-run inflation target under fully flexible prices ($\theta_p = \infty$).

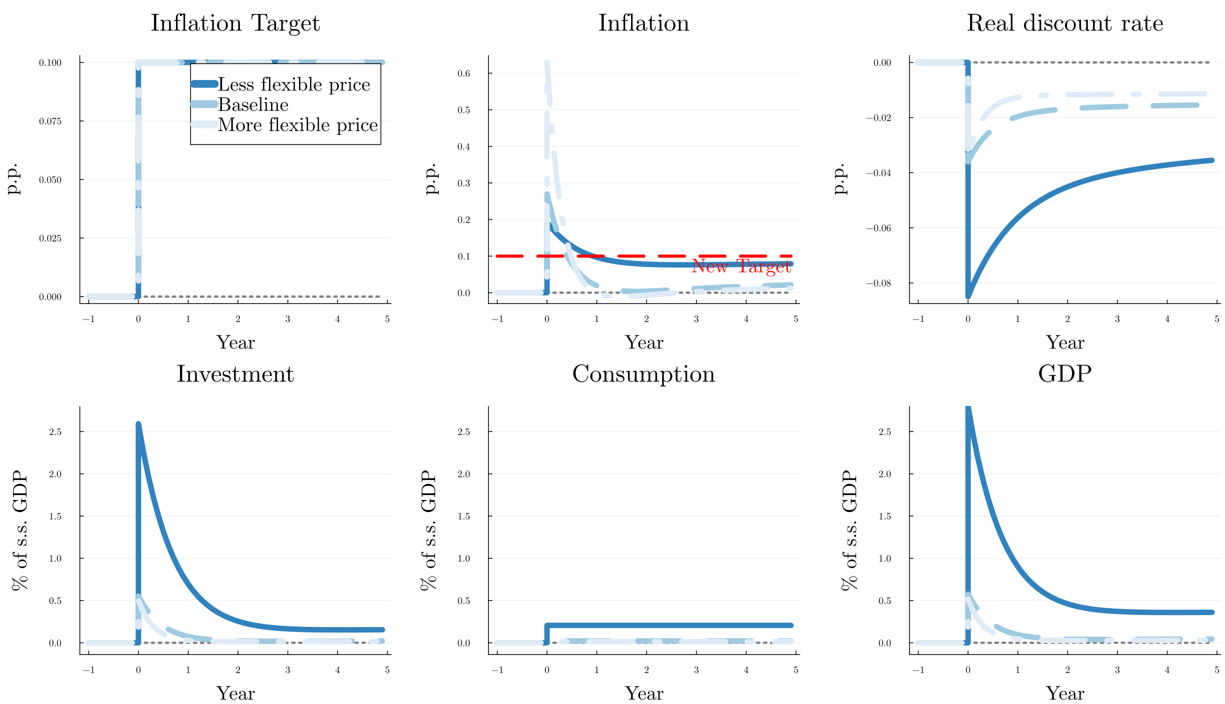

Figure A6: GE Response to an Inflation Target Shock for Different Price Flexibility

The figure plots aggregate impulse responses to a unit increase in inflation target for three different parameters for the price stickiness, $\theta_p \in \{0.1, 0.5, 1.0\}$, where $\theta_p = 0.5$ corresponds to our baseline calibration.

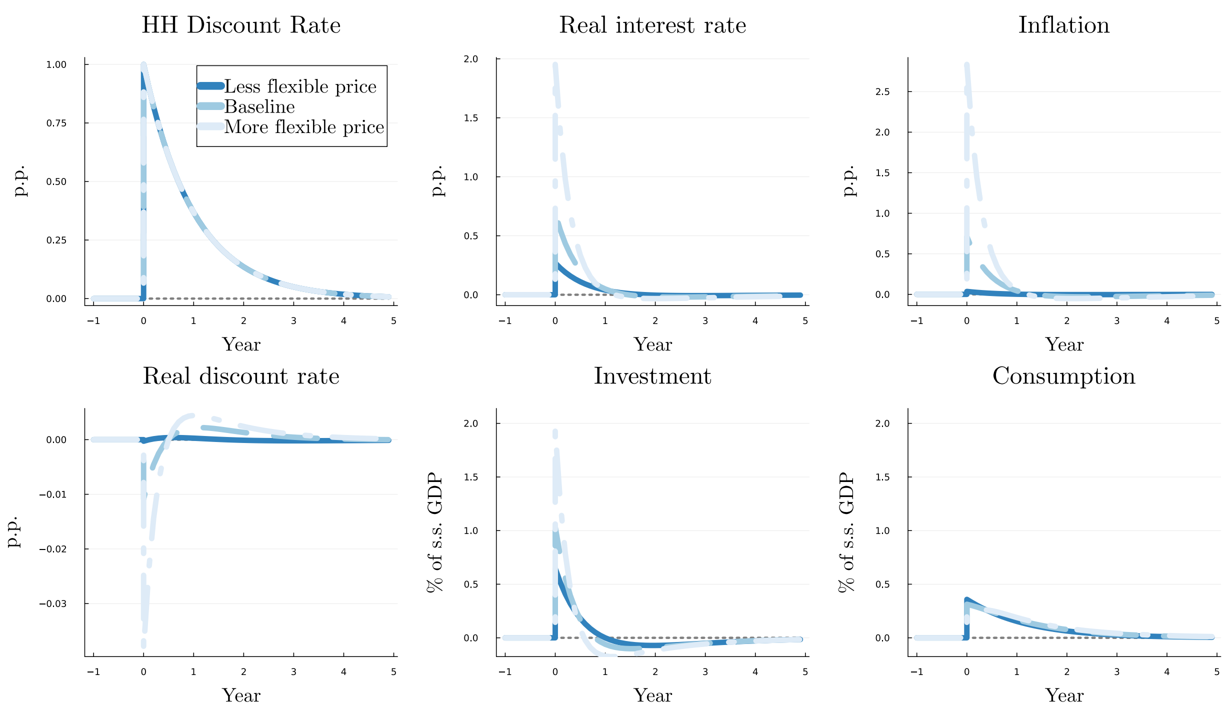

Figure A7: GE Response to a Household Discount Rate Shock for Different Price Flexibility

The figure plots aggregate impulse responses to a unit increase in the household discount rate for three different parameters for the price stickiness, $\theta_p \in \{0.1, 0.5, 1.0\}$, where $\theta_p = 0.5$ corresponds to our baseline calibration.

	(1)	(2)	(3)	(4)
	Firm with obs. disc. rate		Firm with obs. perc. CoC	
Log assets	1.82***	1.82***	1.99***	1.99***
	(0.21)	(0.21)	(0.22)	(0.22)
Net investment rate	-0.0066		-0.052	
	(0.073)		(0.068)	
Asset growth		-0.073		-0.14
		(0.23)		(0.15)
Leverage	0.0021	0.0020	0.0042	0.0042
	(0.0032)	(0.0031)	(0.0055)	(0.0054)
Tobin's Q	-0.0094	-0.0093	-0.0027	-0.0027
	(0.016)	(0.016)	(0.025)	(0.026)
Return on equity	0.00043	0.00043	0.0015	0.0015
	(0.0020)	(0.0021)	(0.0029)	(0.0029)
Sales / assets	-0.00033	-0.00032	-0.00049	-0.00048
	(0.00062)	(0.00061)	(0.00076)	(0.00075)
Observations	38,216	38,216	38,216	38,216
Country FE	Yes	Yes	Yes	Yes
Within R^2	0.063	0.063	0.073	0.073

Table A1: Characteristics of Firms With Observed Discount Rates and Perc. CoC

The outcome in columns 1 and 2 is 100 if the firm reports at least one discount rate on a conference call between 2001 and 2024 and 0 otherwise. The outcome in columns 3 and 4 is 100 if the firm reports at least one perceived cost of capital on a conference call between 2001 and 2024 and 0 otherwise. The regressors are firm characteristics averaged over the period 2001 to 2024. The dataset is at the firm level and includes all firms in Compustat between 2001 and 2024 where the firm characteristics are observed. The net investment rate is capital expenditures minus depreciation, divided by lagged property, plant, and equipment. Asset growth is total assets divided by lagged total assets and multiplied by 100. Tobin's Q is the market-to-book value of debt and equity. Leverage is book debt over assets. The return on book equity is income before extraordinary items over book equity. Sales / assets is sales divided by lagged assets. All specifications include country fixed effects. Standard errors are clustered by country. Statistical significance is denoted by *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)
	Discount rate observed		Perc. CoC observed	
Net investment rate	0.010		-0.023	
	(0.010)		(0.014)	
Asset growth		0.015		0.014
		(0.016)		(0.0095)
Leverage	9.7e-06	0.000012	0.000016	0.000021
	(0.000016)	(0.000018)	(0.000029)	(0.000032)
Tobin's Q	0.000047	0.000056	-0.00016	-0.00020
	(0.00037)	(0.00037)	(0.0011)	(0.0011)
Return on equity	0.000043	0.000040	-9.3e-06	-0.000015
	(0.000042)	(0.000040)	(0.000076)	(0.000076)
Sales / assets	-8.8e-06	-0.000012	-0.000014	-0.000020
	(8.9e-06)	(0.000013)	(0.000022)	(0.000026)
Observations	363,637	363,637	363,637	363,637
Country*Year FE and Firm FE	Yes	Yes	Yes	Yes
Within R^2	1.2e-06	1.7e-06	5.7e-06	1.3e-06

Table A2: Within-Firm Timing of Reporting Discount Rates and Perc. CoC

The outcome in columns 1 and 2 is 100 if the firm reports a discount rate in a given year and 0 otherwise. The outcome in columns 3 and 4 is 100 if the firm reports a perceived cost of capital in a given year and 0 otherwise. All specifications include country-by-year and firm fixed effects, so the coefficients capture within-firm variation in reporting at different points in time. The dataset is at the firm-year level and includes all firm-year observations in Compustat between 2001 and 2024 where the firm characteristics are observed. The net investment rate is capital expenditures minus depreciation, divided by lagged property, plant, and equipment. Asset growth is total assets divided by lagged total assets and multiplied by 100. Tobin's Q is the market-to-book value of debt and equity. Leverage is book debt over assets. The return on book equity is income before extraordinary items over book equity. Sales / assets is sales divided by lagged assets. Standard errors are clustered by country. Statistical significance is denoted by *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)
		Discount rate observed		
Net inv. rate (contemporaneous) in firm's top 20%	0.0042			
	(0.018)			
Net inv. rate (over future 3 years) in firm's top 20%		-0.055		
		(0.034)		
Net inv. rate (over past 3 years) in firm's top 20%			-0.045	
			(0.038)	
Asset growth (contemporaneous) in firm's top 20%				-0.017
				(0.020)
Observations	363,637	298,142	328,143	363,637
Firm FE	Yes	Yes	Yes	Yes
Within R^2	5.1e-08	8.0e-06	5.6e-06	8.2e-07

Table A3: Within-Firm Timing of Reporting Discount Rates and High Investment Years

The outcome is 100 if the firm reports a discount rate in a given year and 0 otherwise. All specifications include firm fixed effects, so the coefficients capture within-firm variation in reporting at different points in time. The dataset is at the firm-year level and includes all firm-year observations in Compustat between 2001 and 2024 where the firm characteristics analyzed in Table A2 are observed. The net investment rate is capital expenditures minus depreciation, divided by lagged property, plant, and equipment. The regressor in column 1 is an indicator for whether the firm's net investment rate in the contemporaneous year was in the top 20% for the firm between 2001 and 2024. The regressor in column 2 is an indicator for whether the net investment rate over the subsequent 3 years (net investment in the contemporaneous year plus the next year plus the year after the next, divided by lagged property, plant, and equipment) was in the top 20% for the firm between 2001 and 2024. The regressor in column 3 is an indicator for whether the net investment rate over the previous 3 years (net investment in the contemporaneous year plus the previous year plus the year before the previous, divided by lagged property, plant, and equipment 3 years back) was in the top 20% for the firm between 2001 and 2024. The regressor in column 4 is an indicator for whether the firm's total asset growth was in the top 20% for the firm between 2001 and 2024. Asset growth is total assets divided by lagged total assets and multiplied by 100. Standard errors are clustered by country. Statistical significance is denoted by *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)
		Discount rate change	
Breakeven change	-0.028	0.31	0.43*
	(0.14)	(0.20)	(0.26)
Breakeven change * year diff. ≥ 1.5	0.46**		
	(0.23)		
Breakeven change * year diff.		0.14**	
		(0.070)	
Breakeven change * log year diff.			0.40*
			(0.22)
Real CoC change	0.22	0.59**	0.71**
	(0.20)	(0.26)	(0.32)
Real CoC change * year diff. ≥ 1.5	0.47*		
	(0.25)		
Real CoC change * year diff.		0.15*	
		(0.079)	
Real CoC change * log year diff.			0.44*
			(0.25)
Observations	6,562	6,562	6,562
Controls	Yes	Yes	Yes
Within R^2	0.022	0.034	0.030

Table A4: The Horizon-Dependent Transmission Excluding 2020-21

The table replicates Table 2 but excluding the years 2020 and 2021.

	(1)	(2)
	Discount rate change	
Breakeven change	0.012	-0.049
	(0.10)	(0.11)
Breakeven change * $\lvert$change$\rvert$ $>$ 0.6	-0.12	
	(0.12)	
Breakeven change * $\lvert$change$\rvert$ $>$ 0.45		-0.0021
		(0.13)
Real CoC change	0.064	0.043
	(0.14)	(0.16)
Real CoC change * $\lvert$change$\rvert$ $>$ 0.6	0.058	
	(0.17)	
Real CoC change * $\lvert$change$\rvert$ $>$ 0.45		0.091
		(0.17)
Observations	2,283	2,283
Controls	Yes	Yes
Within R^2	0.0040	0.0033

Table A5: The Incorporation of Large Changes Over Horizons Below 1.5 Years

The table shows that firms do not incorporate changes in breakeven inflation into discount rates to a larger extent when the absolute change in breakeven inflation is large. The specifications are based on column 1 of Table 2 but only include observations where the difference in years between the two observations of discount rates is less than 1.5 years apart. We regress the firm-level change in the discount rate on two main regressors: the change in breakeven inflation (ten-year horizon) over the same period and the change in the real cost of capital over the same period. In column 1, we interact the main regressors with an indicator for whether the absolute change in the respective main regressor is greater than 0.6 percentage points. This 0.6 cutoff represents roughly the top 10% of observations (for both breakeven and the real cost of capital) in the sample where the difference in years is less than 1.5. In column 2, we interact the main regressors with an indicator for whether the absolute change in the respective main regressor is greater than 0.45 percentage points. This 0.45 cutoff represents roughly the top 20% of observations (for both breakeven and the real cost of capital) in the sample where the difference in years is less than 1.5.

	(1)	(2)	(3)	(4)
	Discount rate change			
Breakeven change	0.027	0.0012	0.067	-0.027
	(0.10)	(0.11)	(0.12)	(0.097)
Breakeven change	-0.20			
* net inv. rate (contemporaneous) in firm's top 20%	(0.20)			
Breakeven change		-0.21		
* net inv. rate (over future 3 years) in firm's top 20%		(0.16)		
Breakeven change			-0.25	
* net inv. rate (over past 3 years) in firm's top 20%			(0.19)	
Breakeven change				0.23
* asset growth (contemporaneous) in firm's top 20%				(0.18)
Real CoC change	0.19	0.21*	0.25*	0.14
	(0.11)	(0.12)	(0.15)	(0.11)
Real CoC change	-0.34			
* net inv. rate (contemporaneous) in firm's top 20%	(0.33)			
Real CoC change		-0.55		
* net inv. rate (over future 3 years) in firm's top 20%		(0.40)		
Real CoC change			-0.37	
* net inv. rate (over past 3 years) in firm's top 20%			(0.27)	
Real CoC change				0.052
* asset growth (contemporaneous) in firm's top 20%				(0.24)
Observations	2,046	1,831	2,012	2,046
Controls	Yes	Yes	Yes	Yes
Within R^2	0.0050	0.0084	0.0071	0.0050

Table A6: The Incorporation in High-Investment Periods and Over Horizons Below 1.5 Years

The table shows that firms do not incorporate changes in breakeven inflation into discount rates to a larger extent when their investment rates are high. The specifications are based on column 1 of Table 2 but only include observations where the difference in years between the two observations of discount rates is less than 1.5 years apart, since the match between the investment rate and the discount rate change is cleaner when focusing on a short horizon. We regress the firm-level change in the discount rate on two main regressors: the change in breakeven inflation (ten-year horizon) over the same period and the change in the real cost of capital over the same period. We interact the main regressors with a different indicator in each column. In column 1, the indicator is for whether the firm's net investment rate in the contemporaneous year was in the top 20% for the firm between 2001 and 2024. In column 2, the indicator is for whether the net investment rate over the subsequent 3 years (net investment in the contemporaneous year plus the next year plus the year after the next, divided by lagged property, plant, and equipment) was in the top 20% for the firm between 2001 and 2024. In column 3, the indicator is for whether the net investment rate over the previous 3 years (net investment in the contemporaneous year plus the previous year plus the year before the previous, divided by lagged property, plant, and equipment 3 years back) was in the top 20% for the firm between 2001 and 2024. In column 4, the indicator is for whether the firm's total asset growth was in the top 20% for the firm between 2001 and 2024. Asset growth is total assets divided by lagged total assets and multiplied by 100.

	(1)	(2)	(3)	(4)	(5)
			Net investment rate		
Breakeven infl. * sticky firm	4.05**	4.27**	3.69**	3.91**	
	(1.91)	(1.87)	(1.67)	(1.69)	
Breakeven infl. * sticky firm					3.78**
* discount rate unchanged					(1.65)
Breakeven infl. * sticky firm					-1.50
* discount rate changed					(6.37)
Observations	7,556	7,556	7,556	7,556	7,556
Breakeven infl.	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	Yes
Firm controls	No	No	Yes	Yes	Yes
Country controls	No	No	No	Yes	Yes
Breakeven infl. * discount rate changed	No	No	No	No	Yes
R^2	0.61	0.62	0.65	0.66	0.66

Table A7: Breakeven Inflation and Investment of Sticky Firms Excluding 2020-21
The table replicates Table 5 but excluding the years 2020 and 2021.

	(1)	(2)	(3)	(4)	(5)
			Asset growth		
Breakeven infl. * sticky firm	4.17**	3.96*	4.07**	3.89*	
	(1.97)	(2.15)	(2.01)	(2.25)	
Breakeven infl. * sticky firm					3.86*
* discount rate unchanged					(2.23)
Breakeven infl. * sticky firm					-3.28
* discount rate changed					(8.70)
Observations	8,251	8,251	8,251	8,251	8,251
Breakeven infl.	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes	Yes
Firm controls	No	No	Yes	Yes	Yes
Country controls	No	No	No	Yes	Yes
Breakeven infl. * discount rate changed	No	No	No	No	Yes
R^2	0.12	0.17	0.33	0.35	0.35

Table A8: Breakeven Inflation and the Asset Growth of Sticky Firms
The table replicates Table 5 using asset growth as the outcome variable. Asset growth is total assets divided by lagged total assets and multiplied by 100.

	(1) Sticky firm
Multi-division firm	0.26**
	(0.12)
High competition (above median)	-0.062**
	(0.028)
High assets (above median)	-0.16***
	(0.045)
Observations	5,709
Year FE	Yes
R^2	0.032

Table A9: Characteristics of Sticky Firms

The table reports regressions of an indicator for sticky firms, defined as in Table 3, on firm characteristics. Multi-segment firm is an indicator for whether the firm reports multiple segments (including business, operational, or geographical segments) in the Compustat Historical Segments data. High competition is an indicator for whether the firm faces above-median competitiveness according to a measure by Hassan et al. (2025). The measure counts the number of sentences on firms' conference calls that mention words related to competition (declinations and conjugations of "compete" and "competition"), normalized by the total number of sentences on the conference call. High assets is an indicator for whether the firm has above-median total assets. The dataset is at the firm-year level. The regressions control for year fixed effects. Standard errors are clustered by firm and country-by-year. Statistical significance is denoted by *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Appendix B Potential Frictions Underlying Sticky Discount Rates

While a detailed analysis of the drivers of sticky discount rates is beyond the scope of this paper, some readers may be interested in understanding the context in which firms set discount rates. We therefore briefly discuss which frictions may contribute to the three key empirical findings: (1) firms' discount rates are sticky, (2) firms' price expectations used in cash flow forecasts are more flexible, and (3) breakeven inflation is more strongly associated with the investment rates of sticky firms.

We discuss four (non-exhaustive) types of potential frictions: first, since the cost of capital is difficult to calculate with confidence, firms may not adjust their discount rate every time their estimated perceived cost of capital changes; second, information about the cost of capital may be slow to arrive or firms may have a preference for simplicity; third, firms use discount rates as a disciplining device for divisions; and fourth, firms use sticky discount rates as a commitment device to prevent managerial empire-building.

The first thing to note is that firms do not know with certainty how their cost of capital changes. The cost of capital depends on unobserved risk premia, which in turn are driven by the unobserved risk perceptions of financial investors. There exists no agreed-upon method to estimate the cost of capital. Existing methods involve subjective choices and statistical uncertainty (e.g., Fama and French 1997, Frank and Shen 2016, Gormsen and Huber 2026). Firms seem to roughly understand changes in the expected inflation rate, which they use to inform their price and cash flow estimates. However, even if firms knew how the expected inflation rate changed, they would not know how they should adjust their cost of capital because risk premia change at the same time in unobserved ways. (In our analyses, we use a country-level cost of capital throughout, which suffers from less measurement error than firm-level estimates. The country-level measure is sufficient for our statistical analysis because it reveals average firm behavior, but does not help firms to set their individual cost of capital.)

Given all this uncertainty, it may be costly for firms to re-estimate their cost of capital regularly with proper care and attention. Even though many firms regularly re-estimate their cost of capital, they may not be confident in every new estimate to immediately adopt it for their investment decisions. Reliable information may be slow to arrive (Mankiw and Reis 2002). Instead, firms may prefer to maintain stable discount rates for extended periods of time and adjust them only once they have estimated an updated perceived cost of capital they are confident in.

A related friction could be that firms prefer simple and stable rules, rather than facing the complex challenge of regularly updating the discount rate (Gabaix 2025). This type of friction could also account for sticky discount rates.

Firms may also use sticky discount rates as a "lesser evil" management tool to overcome organizational frictions, for example, due to divisional discipline and managerial empire-building. Regarding divisional discipline, the statements on conference calls consistently indicate that divisions develop and evaluate investment projects based on discount rates set by executives. Survey responses and corporate reports paint a similar picture (Jagannathan et al. 2016, Edwards et al. 2021, Graham 2022). Some firms even have specific discount rates for individual divisions. If discount rates changed frequently, different divisions might be tempted to engage in rent-seeking and power struggles to tilt internal capital allocation in their favor (as in, e.g., Scharfstein and Stein 2000, Rajan et al. 2000). If discount rates remain stable, however, the divisions may instead focus on developing high-return projects that meet the existing discount rate.

Finally, there could be a principal-agent problem at a higher level, between CEO and firm owners. The owners may prefer that the CEO moves discount rates with the cost of capital. The CEO, however, may have a tendency to keep lowering discount rates to build corporate "empires" (Jensen 1986). In competitive output markets, excessively low discount rates quickly lead to book losses. Competitive markets can therefore force firms to move discount rates with the cost of capital. In contrast, firms facing little competition can more easily afford to use low discount rates because their book profits can remain positive even when they do not optimize (e.g., Holmes and Schmitz Jr. 2010) and because their demand curves are less elastic. To alleviate owners' concerns about empire building, CEOs in less competitive markets may therefore commit to changing discount rates only rarely.

If organizational frictions motivate firms to maintain sticky discount rates, the reduction in firm value due to sticky discount rates should be smaller than the reduction in firm value if the firm did not address the organizational frictions. Using our model in Section 4.5, we calculate that expected firm value is roughly 5% lower for a firm with sticky discount rates, relative to a firm with fully flexible discount rates (in a model without other frictions). This implies that the impact of organizational frictions would need to exceed 5% of firm value in order to justify the use of sticky discount rates. Empirical evidence suggests that organizational frictions can indeed lower firm value by this order of magnitude. For instance, Rajan et al. (2000) find that a 2 standard deviation increase in the likelihood of divisional power struggles lowers firm value by roughly 10%.

We briefly explore the empirical relevance of these explanations using cross-firm variation in Table A9. We find that sticky firms are significantly more likely to have multiple divisions, consistent with the view that complex organizations use sticky discount rates as a disciplining device. In addition, sticky firms are less likely to face high competition (Hassan et al. 2025), consistent with sticky discount rates serving as a commitment device when competitive pressures are weak. Finally, sticky firms are smaller, consistent with small firms being less able to accurately calculate their cost of capital or preferring simple decision rules.

Appendix C Comparing Different Investment Rules

The aim of this section is to explain why investment rules based on the stochastic discount factor and on a discount rate lead to similar investment decisions, as long as the discount rate is chosen in a certain way. Moreover, the section clarifies why textbooks recommend that firms should set their discount rate equal to the cost of capital. The discussion here is based on Gormsen and Huber (2025).

Setup. In models with uncertainty, firms can generally maximize market value by using the stochastic discount factor to discount future cash flows. Textbooks aimed at managers nonetheless tend to present simpler rules based on a discount rate. We illustrate that the two methods lead to similar investment outcomes using the example of a simple project with uncertain returns. This project generates expected revenue $\mathbb{E}_t[\text{Revenue}_{t+j}]$ in period $t+j$ and costs Cost_t in period t.

Using the Stochastic Discount Factor. The first decision rule states that the firm accepts the project if the net present value, discounted using the stochastic discount factor M_{t+j}, is positive:

$$\mathbb{E}_t\left[\text{M}_{t+j}\text{Revenue}_{t+j}\right] - \text{Cost}_t > 0. \tag{A1}$$

Using the definition of covariance, we can rewrite equation (A1) as:

$$\mathbb{E}_t\left[\text{Return}_{t,t+j}\right] > R^f_{t,t+j} - \text{Cov}_t\left[\text{M}_{t+j}, \text{Return}_{t,t+j}\right] R^f_{t,t+j}, \tag{A2}$$

where $R^f_{t,t+j} = \mathbb{E}_t\left[\text{M}_{t+j}\right]^{-1}$ is the risk-free interest rate between t and $t+j$ and $\text{Return}_{t,t+j} = \frac{\text{Revenue}_{t+j}}{\text{Cost}_t}$ is the return on the project.

Using a Discount Rate. The second rule states that the firm accepts the project if the net present value of the project, discounted using a discount rate δ_t, is positive:

$$\sum_{s=0}^{\infty}(1+\delta_t)^{-s}\,\mathbb{E}_t[\text{Revenue}_{t+s} - \text{Cost}_{t+s}] = (1+\delta_t)^{-j}\,\mathbb{E}_t[\text{Revenue}_{t+j}] - \text{Cost}_t > 0. \tag{A3}$$

This rule can also be rewritten as saying that the firm should invest if the return on the project exceeds a "hurdle" rate, such that:

$$\mathbb{E}_t \left[\text{Return}_{t,t+j}\right] > (1+\delta_t)^j. \tag{A4}$$

The two rules in equations (A1) and (A4) are equivalent, as long as the firm sets the discount rate such that:

$$(1+\delta_t)^j = R^f_{t,t+j} - \text{Cov}_t \left[\text{M}_{t+j}, \text{Return}_{t,t+j}\right] R^f_{t,t+j}. \tag{A5}$$

Hence, for a given project, the rules based on the stochastic discount factor and the discount rate lead to the same investment outcome if the discount rate satisfies (A5).

Choosing the Discount Rate and the Cost of Capital. To determine the discount rate given by equation (A5), the firm can use financial prices. Assume that the firm issues just one financial asset (e.g., only equity). By definition, the expected return on the financial asset of firm i over one period is equal to 1 plus the firm's "financial cost of capital," given by r^{fin}_{it}. The basic asset pricing equation implies that the expected return on the financial asset over the lifetime of the project is:

$$(1+r^{\text{fin}}_{it})^j = \mathbb{E}_t \left[R^i_{t,t+j}\right] = R^f_{t,t+j} - \text{Cov}_t \left[\text{M}_{t+j}, R^i_{t,t+j}\right] R^f_{t,t+j}. \tag{A6}$$

If the covariance between the stochastic discount factor and the project return is identical to the covariance between the stochastic discount factor and the financial asset return (i.e., $\text{Cov}_t \left[\text{M}_{t+j}, R^i_{t,t+j}\right] = \text{Cov}_t \left[\text{M}_{t+j}, \text{Return}_{t,t+j}\right]$), then the rules in equations (A1) and (A4) are equivalent for a firm that sets the discount rate equal to its financial cost of capital. Intuitively, if the project under consideration exhibits the same risk profile as the firm's existing investments, then the financial cost of capital tells the firm how financial markets price the risk of the project.

Generalizations. The above results generalize to firms with multiple liabilities (e.g., debt and equity). In such cases, r^{fin}_{it} is the weighted average cost of capital, where the expected return is separately estimated for each asset type and weights are calculated using the value of outstanding assets of that type relative to firm total assets, accounting for differential tax treatments of different assets.

The results can also be extended to investments with more complex cash flows. For instance, consider an investment consisting of multiple sub-projects, indexed by s, where each project requires a cost in period t and pays uncertain revenue in one period $t+j$. In that case, the firm could still apply a decision rule as in equations (A1) and (A4), by summing over the individual sub-projects s.

If $\mathrm{Cov}_t\left[\mathrm{M}_{t+j}, R^i_{t,t+j}\right] \neq \mathrm{Cov}_t\left[\mathrm{M}_{t+j}, \mathrm{Return}_{t,t+j}\right]$, firms cannot infer the riskiness of an individual project using expected returns on the firm's existing financial assets. Instead, firms should then adjust the discount factor by a project-specific risk premium.

Appendix D Firm Reporting of Discount Rates

Even though almost all large firms report using a discount rate in their investment decisions in surveys (e.g., Trahan and Gitman 1995, Poterba and Summers 1995, Graham 2022), we do not observe discount rates every quarter for every firm. One reason is that sometimes firms discuss a discount rate on a conference call, but the information is not explicit enough to meet our high bar for the data collection, which requires a precise statement in the context of an investment discussion. We also miss discount rates that are either not expressed in terms of a percentage or do not appear in the context of a capital budgeting keyword in the same paragraph.

Some firms do not discuss discount rates at all on conference calls, even though they use discount rates internally. Instead, these firms often communicate their investment strategies by describing projects they plan to undertake or by reporting how new investments will change balance sheet returns. This type of communication by managers is often just as informative as a discount rate to analysts and investors familiar with the firm. In some cases, one could even deduce the discount rate from this information. However, we are conservative in our approach, so we only record explicit discount rates reported by firms, since they provide unambiguous information and can be directly linked to the required returns in models.

Appendix E Sample Characteristics and Investment

We analyze to what extent firms with reported discount rates are representative of other firms listed in the same country. We regress an indicator (scaled by 100) for whether the firm reported at least one discount rate on a conference call in any year on characteristics of the firm (averaged over the sample period), controlling for country fixed effects. Firms with reported discount rates are disproportionately larger, as shown in columns 1 and 2 of Table A1. Doubling the size of the firm raises the probability of reporting a discount rate by roughly 2 percentage points. Of the 100 largest U.S. firms (by average book assets), 40 report a discount rate at least once. The bias toward large firms comes in part from the fact that large firms are more likely to regularly hold conference calls.

Apart from size, we do not find that other characteristics, such as firm growth, leverage, market valuation, profitability, and cash flows, are associated with the propensity to report a discount rate. The coefficients on the average net investment rate, leverage, Tobin's Q, the return on equity, and sales-to-assets are economically small and statistically insignificant. The coefficient on the net investment rate in column 1 of Table A1 implies, for example, that raising the net investment rate by 1, which is equal to a 1.5 standard deviation increase, is associated with a 0.007 percentage point decrease in the probability of reporting a discount rate. We find similar patterns for firms reporting the perceived cost of capital in columns 3 and 4.

We also find that firms do not report discount rates when they are affected by unusual shocks. We regress an indicator (scaled by 100) for whether the firm reported a discount rate in a given year on a set of firm characteristics in columns 1 and 2 of Table A2. We control for firm fixed effects and country-by-year fixed effects, so the reported coefficients capture whether firms were more likely to report a discount rate when a characteristic was unusually high compared to other firms in the same year. All coefficients are small and insignificant. The findings imply that firms with unusual characteristics or exposed to unusual shocks are not more likely to report discount rates.

The vast majority of discount rates are reported when firms discuss their investment plans on the conference calls. The firms in our sample are relatively large, so they invest regularly. For example, in the sample of firms that report a discount rate at least once, 99% of firm-year gross investment observations are greater than zero. It could be that firms are especially likely to report discount rates when they are undertaking large investments. However, in Table A3, we do not find that a firm is more likely to report a discount rate when its investment rate in the current year, over the upcoming three years, or in the past three years is in the top 20% of the same firm's investment rates (between 2001 and 2024). This pattern arises because firms do not just report their discount rates when discussing projects to be undertaken, but also when justifying why they are not investing in certain projects and when describing the general approach of the firm to routine investments. A detailed analysis of the textual context of reported discount rates is in Gormsen and Huber (2025).

Appendix F Measurement of Firms' Price Expectations

We measure firms' expectations of their output and input prices using the roughly 500,000 transcripts of conference calls available on the database Refinitiv. First, we identify potentially relevant paragraphs based on keywords. The keywords include the names of common goods and their units, as well as different declensions and conjugations of the words price, expect, and use. We select all paragraphs that contain a number within five words around a keyword.

Second, we identify potential price expectations using ChatGPT. We submit the selected paragraphs to ChatGPT's API interface using the GPT-4o mini model from July 18, 2024. We instruct ChatGPT to identify all mentions of future expected product prices in the paragraphs. To improve accuracy, we use numerous few-shot examples of correct output to iteratively tune the prompt. We define a price expectation for ChatGPT as a forward-looking projection representing the price that a firm anticipates for a good. Price expectations must not be: current or past prices; aspirational, hypothetical, or purely speculative; or discussed by an outsider, such as a financial analyst or investor.

We aim to record expected prices reported by firms and the horizon for each expected price. We assemble data for a wide range of goods, so we also collect detailed information on the good: the category (71 categories in total, e.g., oil, gold, cheese blocks, corn), the specific good subtype (e.g., Brent or WTI for oil), unit (e.g., kilogram, ton, barrel, cubic feet), and currency.

Third, we manually go through the cases identified by ChatGPT and clean the data. We ensure that the horizons are consistently recorded, since ChatGPT reports different formats for the future date (e.g., "2030-Q4", "2030," "in five years," or "long term"). We interpret "long-term" as Q4 of the year five years ahead and "short-term" as the fourth quarter one year ahead. We find that these choices do not affect our conclusions because the results in Table 4 are similar using alternative definitions, such as three years ahead and ten years ahead. The results are robust because changes in breakeven inflation over different future horizons at a given point in time are correlated. We also manually standardize the good, good subtype, unit, and currency fields. For non-U.S. prices, we convert them to USD using the exchange rates from the day of the earnings call from Bloomberg and FRED. We remove all instances where ChatGPT recorded speculative or imprecise statements as price expectations.

To calculate the price change expected by the firm, relative to the price at the time of the conference call, we additionally collect data on spot prices for the day of the call. We use commodity price series from Bloomberg and FRED as well as hand-collected data reported on conference calls and in news reports.

In total, our sample contains 2,883 price expectations from 776 unique firms. Around 57% of firms with an observed price expectation also report a discount rate or a perceived cost of capital at least once, so there is some overlap between the samples.

About 51% of the recorded price expectations are for the output price of the firm and 49% for the price of an input. The price expectations are typically reported when firms describe the assumptions underlying their financial models of expected future cash flows. These models are often used to make investment decisions, so they fit well with our analysis of discount rates. The following quotes give examples of firms' price expectations.

CEC Entertainment Inc., 2010-Q1: *"We mentioned there is going to be some pressure there on cheese prices. Our best guess is prices will be USD 1.55 to USD 1.65 compared to USD 1.28."*

Freeport-McMoRan Oil & Gas, 2015-Q2: *"2017 at a USD 74 Brent oil price is the assumption. (...) It would be 2018 at USD 74."*

Hanesbrands Inc., 2007-Q2: *"Built into our thinking is that sort of long-term average cotton price of around USD 0.55."*

Nutrien Ltd., 2019-Q2: *"Now in every plan, there are assumptions. (...) For example, by 2023, corn prices are between USD 4 and USD 4.50 a bushel, similar to where they are today."*

OceanaGold Corp., 2020-Q3: *"Our base case utilizes a USD 1,500 per ounce long-term gold price."*

Appendix G Discount Rates in Survey Data

Seminal surveys show that the practical behavior of firms diverges from standard models, including Poterba and Summers (1995) and the Duke CFO Survey (Graham 2022). Graham (2022) argues that firm decision-making is sticky and Poterba and Summers (1995), Rognlie (2019), Sharpe and Suarez (2021), and Graham (2022) discuss whether discount rates fully incorporate financial prices.

Existing survey data neither reject nor confirm the standard assumption that discount rates comove with the cost of capital.[A1] In Figure A8.A, we plot the average discount rate obtained in different surveys since 1985. It is challenging to learn about stickiness from these averages because of three issues: different types of discount rates, sample composition, and unclear patterns in the data. The conclusions from conference call data rely on within-firm comparisons, making them immune to these particular issues.

Different Types of Discount Rates. Different surveys ask about different types of discount rates. Survey averages can vary mechanically because they capture to different extents discount rates accounting for firm-level costs, only division-level costs, and only tax allowances.

Some firms report discount rates that only account for the division-level costs of a project, not the total project costs including overhead accruing at the headquarters. Hence, division-level discount rates are higher than the true overall returns of projects and cannot be directly compared to discount rates accounting for all costs, as detailed in Section III.D of Gormsen and Huber (2025). The magnitude of overhead adjustments is large, around 4 percentage points on average, so it is important to account for this issue when making comparisons over time. The issue of overhead can also explain why the discount rates reported by firms are often above the firm-level return on invested capital.

The 1985 survey asks 95 firms about their discount rate for depreciation tax allowances, which should be lower than the discount rate for investments (Summers 1986). The 1991 survey asks 228 firms about their division-level discount rate (Poterba and Summers 1995), which does not subtract overhead. The 2003 to 2019 surveys do not specify the type of discount rate, so some discount rates in these samples may subtract overhead. As a result, the figure may overstate how much discount rates have declined since 1991. [A2] More generally, the differences in the treatment of overhead invalidate comparisons

[A1] Much of the survey-based literature has produced important insights by focusing on variation in discount rates across firms (e.g., Jagannathan et al. 2016, Barry et al. 2023).

[A2] The 2003 survey asks 86 firms "what is the hurdle your company has used for a typical project?" (Jagannathan et al. 2016). The 2007, 2011, 2012, 2017, and 2019 surveys ask "what is your firm's hurdle rate across surveys.

Varying Sample Composition. Each survey contains a different sample of firms, so differences in sample averages could be driven by varying sample composition. Some surveys also report an average cost of capital for firms in the survey, which may be a more relevant comparison for the average discount rate of firms in the same survey. The average cost of capital tends to move with the average discount rate, as shown in Figure A8.B, which could be explained by varying sample composition across surveys or by a strong long-run relation between discount rates and the cost of capital.

Unclear Patterns. As pointed out by Sharpe and Suarez (2021) and Graham (2022), the average discount rate from surveys appears more stable than interest rates, for example, the long-run Treasury yield plotted in Figure A8.A. However, the standard textbook assumption is that the discount rate moves one-to-one with the cost of capital, not an interest rate.

The cost of capital has decreased less than interest rates since 1985 because leverage and tax rates have fallen strongly, while equity risk premia may have increased. We plot two measures of the average cost of capital in the U.S., defined as:

$$\omega_t \times (1-\tau) \times i_t^{\text{debt}} + (1-\omega_t) \times i_t^{\text{equity}}, \tag{A7}$$

where ω_t is the aggregate market leverage, τ is the corporate tax rate, i_t^{debt} is the Treasury yield plus a 2 percentage point (ppt.) debt risk premium, and i_t^{equity} is the cost of equity. "CoC constant ERP" assumes that the equity risk premium was constant at 6 ppt. throughout the sample. "CoC increasing ERP" assumes that the equity risk premium was constant from 1985 to 2000 and increased by 2 ppt. from 2000 to 2019, in line with the recent literature (Campbell and Thompson 2008).

There is no consistent pattern: the average discount rate changes by more than the cost of capital over some short-run horizons and not others, which may be explained by variation in discount rate types and sample composition.

Related survey questions have also produced very mixed evidence. In Bruner et al. (1998), 89% of firms use the cost of capital as discount rate, although the horizon of incorporation is not specified. In Meier and Tarhan (2007), 48% of firms changed their discount rate between 2000 and 2003. In Sharpe and Suarez (2021), higher (lower) borrowing costs affect investment plans for 63% (32%) of firms, but borrowing costs only weakly affect

(the rate of return that an investment must beat in order to be adopted)?" (Graham 2022).

the cost of capital in their sample period. In Graham (2022), 41% of firms respond "zero" when asked: "Over the past 10 years, how many times has your firm changed its hurdle rate by 1% or more?". This result suggests that few firms make large changes to their discount rate in one instance, which is consistent with the standard assumption that firms continuously update their discount rates by small amounts when the cost of capital changes.

Our results based on conference call data can explain the mixed survey evidence because the relation between the cost of capital and discount rates is not uniform, but depends on the time horizon and on the type of firm.

Appendix H Details of Ramsey Optimal Monetary Policy Problem

We provide more details on the Ramsey optimal monetary policy problem described in Section 6.3.

We consider the problem in which a central bank with full commitment maximizes the utility of the household (22) subject to equilibrium conditions. We show in Supplement A.7 that the linear-quadratic approximation of the optimal monetary policy problem is to minimize the following quadratic loss function subject to linearized equilibrium conditions:

$$\int_0^\infty e^{-\rho t}\frac{1}{2}\mathbb{L}_t dt, \tag{A8}$$

where

$$\begin{aligned}\mathbb{L}_t \equiv \Bigg[&\varpi_{KL}(\hat{L}_t - \hat{K}_t)^2 + \varpi_{IK}\iota_t^2 + \varpi_C\hat{C}_t^2 + \varpi_L\hat{L}_t^2 + \varpi_\pi\hat{\pi}_t^2 + \mathbb{E}_f[\varpi_{\delta,f}(\partial_t\delta_{ft})^2] + \varpi_V\mathrm{Var}_f[\delta_{ft}]\\ &-2\int_0^t \rho_s ds(\frac{C}{Y}\hat{C}_t - (1-\alpha)\hat{L}_t) - 2\hat{A}_t(\alpha\hat{K}_t + (1-\alpha)\hat{L}_t)\Bigg]\end{aligned} \tag{A9}$$

with

$$\varpi_{KL} = \alpha(1-\alpha), \quad \varpi_{IK} = \phi\frac{K}{Y}, \quad \varpi_C = \sigma\frac{C}{Y}, \quad \varpi_L = \nu(1-\alpha), \tag{A10}$$

$$\varpi_\pi = \varepsilon\frac{1}{(\rho+\theta^p)\theta^p}, \quad \varpi_{\delta,f} = \frac{K}{Y}\frac{1}{\phi r^2}\frac{1}{(\rho+\theta_f^\delta)\theta_f^\delta}, \quad \varpi_V = \frac{K}{Y}\frac{1}{\phi r^2} \tag{A11}$$

and $\mathbb{E}_f[x_f] = \sum_f \ell_f x_f$ and $\mathrm{Var}_f[x_f] \equiv \sum_f \ell_f[x_f - \mathbb{E}_f[x_f]]^2$ are expectation and variance operators for a group-specific variable x_f.[A3]

The objective function (A9) contains several terms that also appear in the textbook model. The textbook aims of the central bank are: stabilizing the labor-capital ratio, investment rate, consumption, and labor because of the curvature in utility and production functions (in the first line of A9); stabilizing inflation to reduce price dispersion and misallocation (also in the first line); and reacting to patience and technology shocks (in the second line). The final two terms in the first line of (A9) are new compared to the textbook. These terms capture that the central bank would like to minimize discount rate changes and the cross-sectional dispersion in discount rates because both induce capital misallocation across firms.

The solution to the optimal monetary policy problem with sticky discount rates qualitatively differs from that with flexible discount rates. In particular, we show formally in Supplement A.8 that it is not generically optimal for the central bank to maintain a zero long-run inflation target. The central bank actively changes the inflation target in response to temporary shocks, so that

$$\lim_{t\to\infty} \pi_t \neq 0. \tag{A12}$$

This finding stands in stark contrast to standard New Keynesian models where a zero long-run inflation target is optimal. Intuitively, under sticky discount rates, moving the short-term interest rate in response to shocks is no longer optimal because it widens discount rate wedges. Instead, the central bank employs the long-run inflation target as an additional tool to directly tackle discount rate wedges.

As an example, we illustrate the optimal monetary policy response to a household patience shock in Figure A9. In response to greater consumption demand following the shock, the natural real rate rises. The central bank would like to raise the real interest rate to keep track of the natural real rate. In the textbook model with flexible discount rates, the central bank simply raises the short-term nominal interest rate to achieve this goal. As a result, the central bank achieves the first-best outcome by keeping inflation at zero and "divine coincidence" holds.

Under sticky discount rates, just raising the nominal interest rate is not optimal. A higher nominal rate widens discount rate wedges because firms' nominal discount rates do not move one-to-one with the nominal interest rate. The central bank therefore applies an additional tool to lower discount rate wedges: the inflation target. By lowering the

[A3] The parameter ε is the elasticity of substitution across different varieties of goods, which only matters for the optimal monetary policy analysis. In the numerical experiment below, we set $\varepsilon = 5$, a standard value in the literature.

inflation target, the central bank lowers inflation expectations and thereby keeps discount rate wedges relatively low. Changing the long-run inflation target is still costly because it generates long-run price dispersion and thus misallocation. However, this cost is second-order around a zero inflation steady state and overwhelmed by the first-order gain from narrowing discount rate wedges.

Taken together, the analysis in this section suggests that optimal policy trade-offs change in models with sticky discount rates. In particular, changing long-run inflation expectations (through the inflation target) becomes a useful policy tool. Similarly to other optimal policy analyses in the New Keynesian model, the finding should be interpreted with caution because changes in the inflation target may lead to structural changes in firm behavior. A natural next step would be to explore optimal policy in models where discount rates are sticky due to state-dependent frictions.

We emphasize that our finding does not imply that the central bank should keep changing its inflation target, since the central bank may face political pressure or threats to its credibility when it changes its target at high frequency. Instead, the finding suggests a novel mechanism through which deviations from the typically low inflation targets pursued by central banks can be useful. For instance, the finding may be relevant in light of recent debates about whether central banks should adjust their inflation target when inflation has been persistently below or above the original target (e.g., during the zero lower bound).[A4] Similarly, the finding can inform debates about whether the central bank should occasionally overshoot or undershoot the existing target in response to shocks.[A5]

[A4] Indeed, Ireland (2007) argues that the U.S. Federal Reserve has adjusted its inflation target multiple times since the 1950s.

[A5] In this spirit but not motivated by sticky discount rates, the U.S. Federal Reserve suggested that it would tolerate inflation above target "for some time" in its 2020 Review of Monetary Policy.

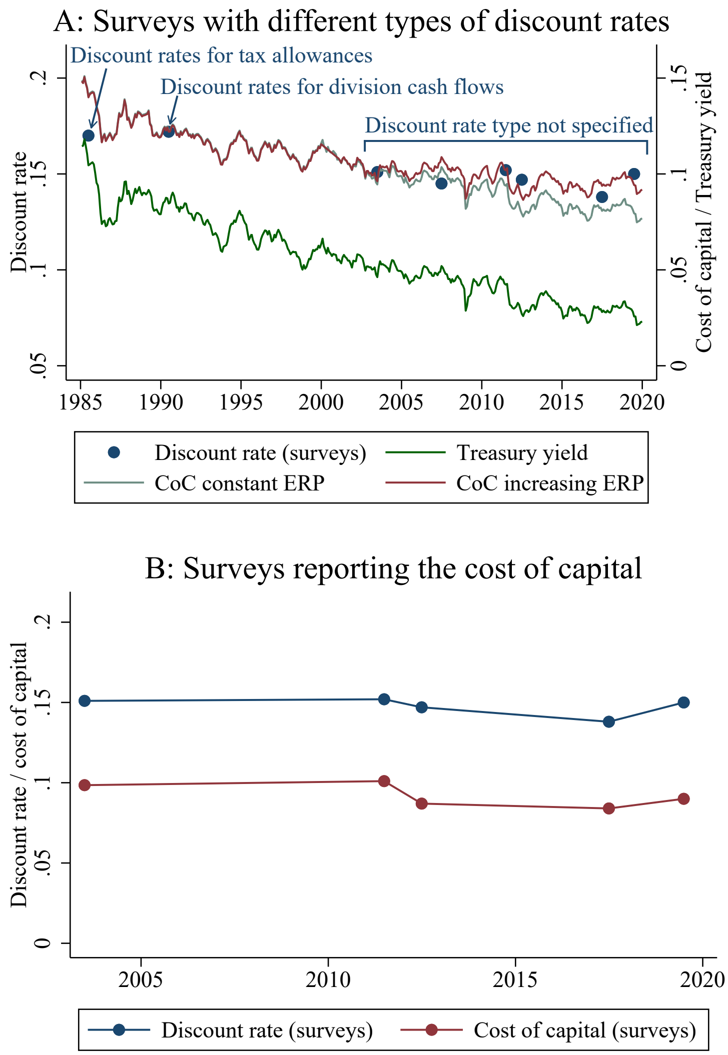

Figure A8: Average Discount Rates from Different Surveys

The figure shows that existing survey data neither reject nor confirm that discount rates comove with the cost of capital. In Panel A, the navy markers report the average discount rate from different surveys. Each survey is based on a different sample of firms and the surveys elicit different types of discount rates. The 1985 average is for 95 firms asked about their discount rate for depreciation tax allowances, which should be lower than discount rates for investments (Summers 1986). The 1991 average is for 228 firms asked about their division-level discount rate (Poterba and Summers 1995), which does not account for overhead costs. The 2003 to 2019 surveys do not specify which type of discount rate the firm should report, so some discount rates in these samples may account for overhead costs and others may not. The 2003 average is for 86 firms (Jagannathan et al. 2016). The remaining averages are from the Duke CFO Survey (Graham 2022). We plot two measures of the average cost of capital in the U.S., defined as: $\omega_t \times (1-\tau) \times i_t^{\text{debt}} + (1-\omega_t) \times i_t^{\text{equity}}$, where ω_t is the aggregate market leverage, τ is the corporate tax rate, i_t^{debt} is the Treasury yield plus a 2 percentage point (ppt.) debt risk premium, and i_t^{equity} is the market cost of equity. "CoC constant ERP" assumes that the equity risk premium was constant at 6 ppt. throughout the sample. "CoC increasing ERP" assumes that the equity risk premium was constant from 1985 to 2000 and increased by 2 ppt. from 2000 to 2019, which is consistent with the recent literature (Campbell and Thompson 2008). "Treasury yield" is the long-run interest rate on Treasury bonds. Panel B includes only surveys that report both an average discount rate and cost of capital for firms in the sample.

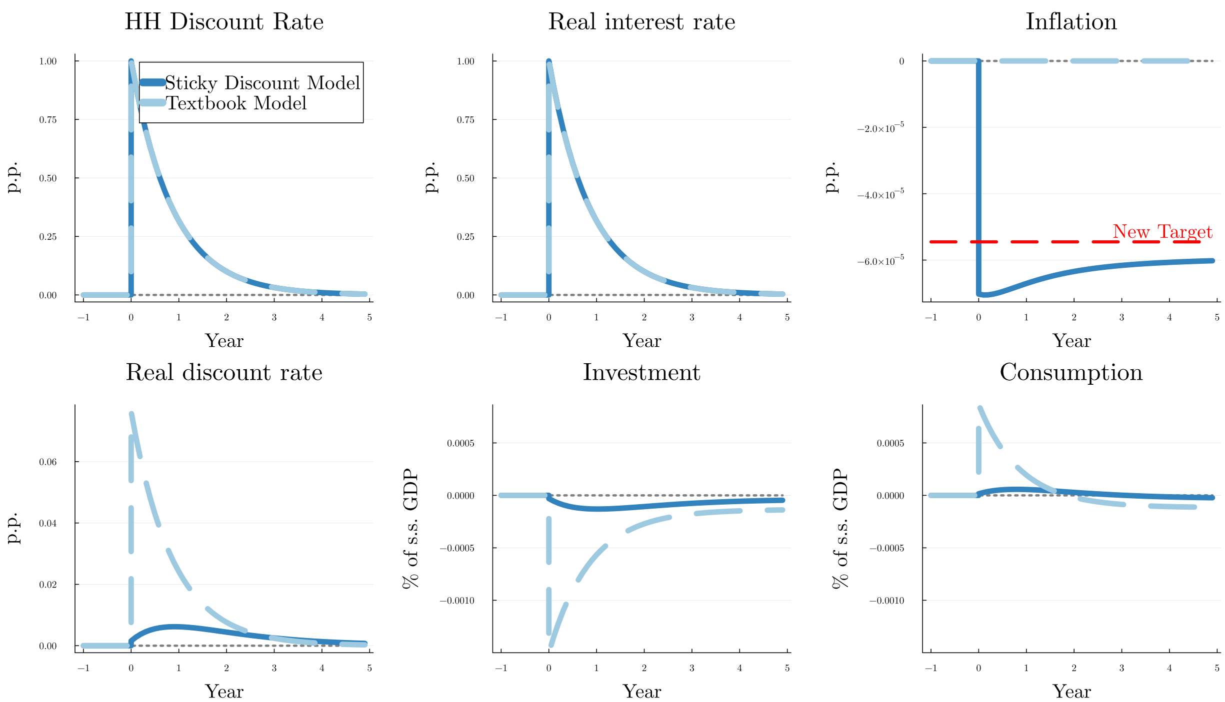

Figure A9: Optimal Monetary Policy Response to a Household Demand Shock

The figure plots the optimal policy responses in the real interest rate and the inflation target following a unit decrease in household patience (an increase in the household discount rate).

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