

Portfolio Strategy April 2024

Market Valuation: A Deal Breaker?

Higher Real Rates: Implications for Stock Selection

Valuing the S&P 500: Do the Assumptions Make Sense?

- We did work modeling the valuation of the S&P 500 and concluded that today it's correctly valued, using our base-case assumptions. The two most important considerations in the exercise are the payout rate of earnings and the level of real long-term interest rates. Payouts have been climbing for decades, as buybacks became the norm. The market produces a 19% ROE and in the last ten years around 75% of it has been returned to shareholders via dividends and buybacks. By comparison, four decades ago the overall payout rate was about half that level. That increase has meant that over time stocks have become more of a bird-in-the-hand proposition, and that's boosted the market's multiple. There's been a wall of worry to climb, and stock selection strategies based on a total yield calculation have long been successful, generating +3 to +4 points of alpha a year. The outlook for free cash flow generation remains constructive, and we're assuming that a 70% total payout ratio will be the norm. If 60% is the right number, the market is 13% overvalued, and if it's 80%, it's undervalued by 10%.
- Real interest rates are a second, and even more critical part of the equation, and unfortunately they're the hardest variable to fathom. Real ten-year Treasury bond yields are currently +250 basis points, one of the highest levels since Spring of 2006, before that, 2002, and equal to the average over the last four decades. In the 2010s they were just +60 basis points. There's a long list of factors that influence them, and lately it's been topped by the U.S.' structural budget deficit and government debt burden. Real long rates are up by +100 basis points this year, driven primarily by the strength of the economy, and our presumption is that pop will prove temporary. Our base case assumption is +150 basis points, although if +200 is the right number the market is 14% overvalued, while if it's +100, it's undervalued by an equivalent amount.
- Other, somewhat less important inputs to the modeling process are the growth rate of earnings and the equity risk premium, here measured relative to the total return of 10 ten-year Treasury bonds. We're assuming that earnings increases will outpace the nominal growth rate of the U.S. economy by +150 to +250 basis points per annum, with the terminal premium varying from zero to +50 basis points. In the last 10- and 30-year spans that differential has topped +4 percentage points, but we're being conservative, because at some point the laws of gravity will take hold. A ± 50 basis point swing in earnings growth changes the fair value of the market by $\pm 5\%$. Finally, the equity risk premium has been in the 4% to 6% range over the very long run and in recent decades as well, and we're assuming 4.75%. A ± 25 basis point move in the risk premium alters the market's fair value by $\pm 6\%$.
- The assumptions that one needs to make to justify the market's current forward multiple of 21 times don't seem crazy, but there's little room for error. In the short run, real interest rates are the biggest unknown, and we've already seen a large spike in them this year. This exercise leads us to think that the market's valuation is in the neutral range, and that's also the tale being told by our Regime Indicator and valuation spreads. Given all of that, we want to have a broadly diversified portfolio and not make any sudden moves. We continue to barbell big cash flow-generating growth stocks against lower-multiple financial and cyclical issues.

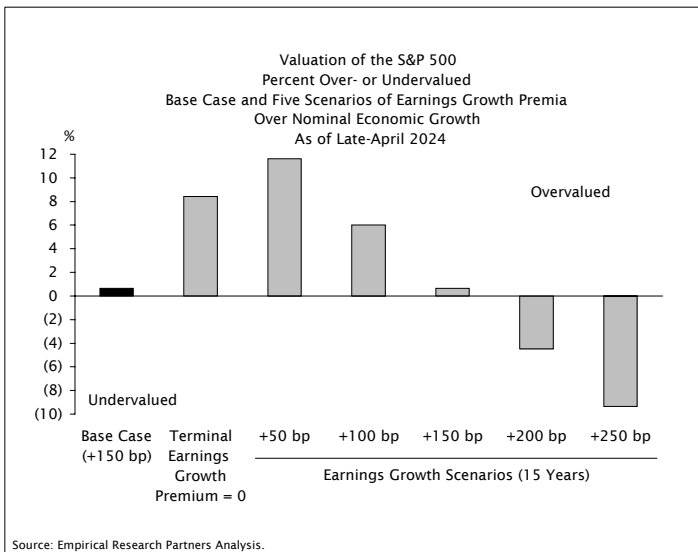
Higher Real Interest Rates: Implications for Stock Selection

- We examined how the level of real interest rates has impacted the rules for stock selection, drawing on more than 70 years of data. We found that when the discount rate is up, the here and now counts more. Our Valuation and Capital Deployment Super Factors perform better when real rates are higher. Growth stocks without current earnings struggle in that setting, and our Failure Model enjoys a tailwind. Appendix 1 presents large-cap issues that rank in the top quintiles of both our Capital Deployment Super Factor and our Core Model.

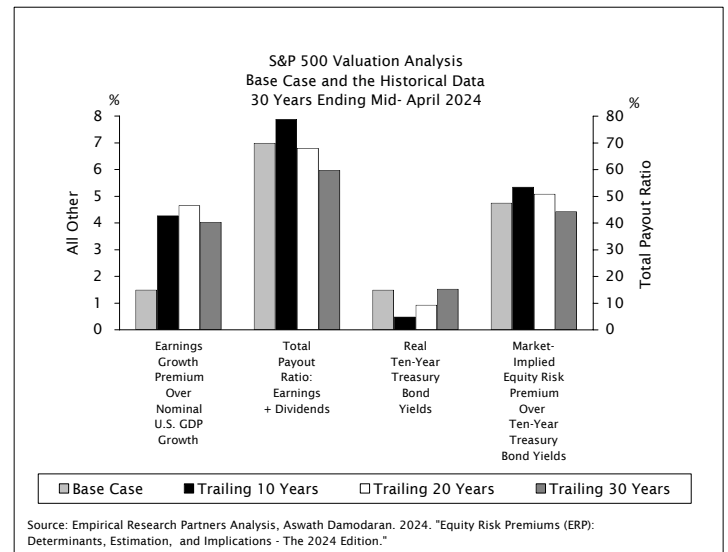
Nicole Price (212) 803-7935 Sungsoo Yang (212) 803-7925 Yi Liu (212) 803-7942 Yu Bai (212) 803-7919 Sean Duncan (212) 803-7965 Janai Haynes (212) 803-8005

Conclusions in Brief

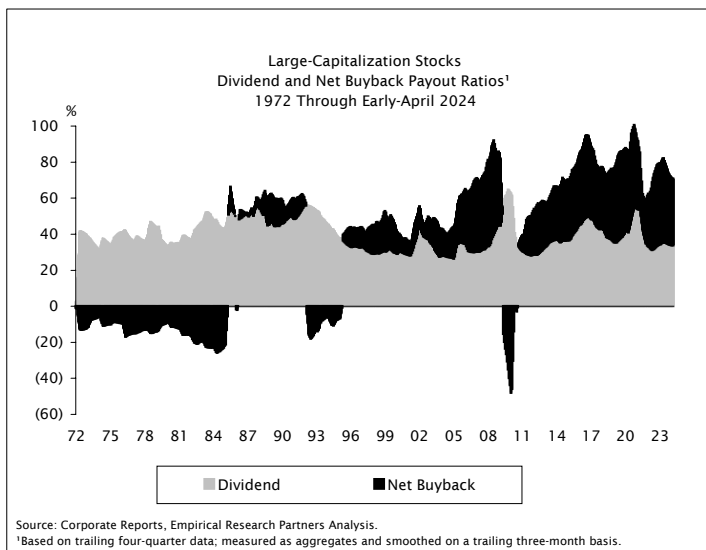
- The market appears to be correctly valued...



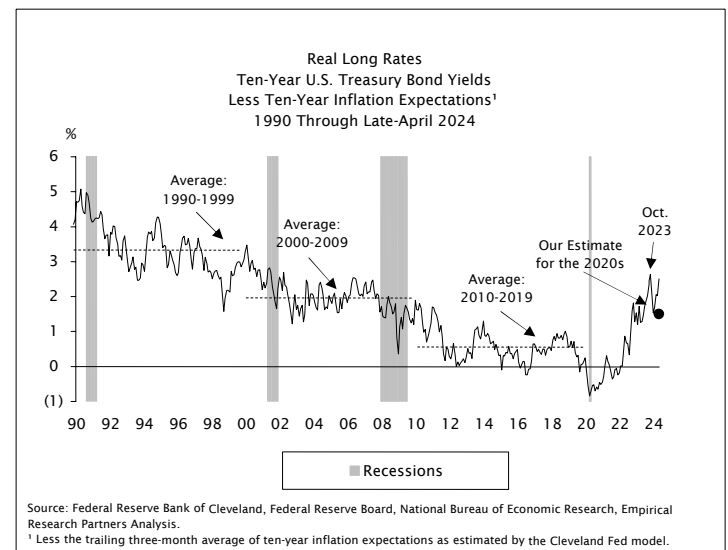
- ...Based on a somewhat conservative set of assumptions:



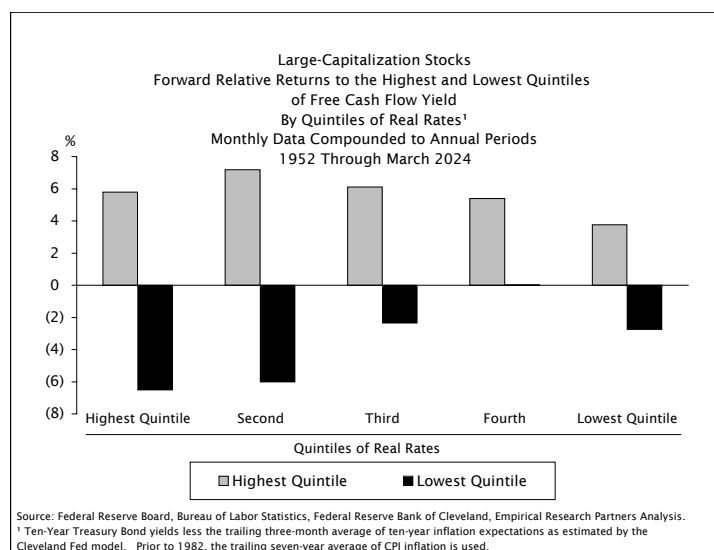
- The combined payout rate...



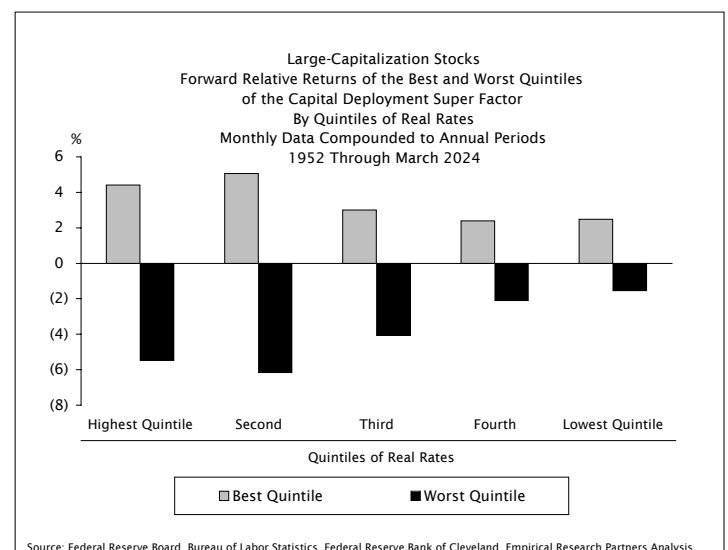
- ...And real interest rates are the most important swing factors when estimating fair value:



- Higher real rates mean that valuation...



- ...And capital deployment count more:



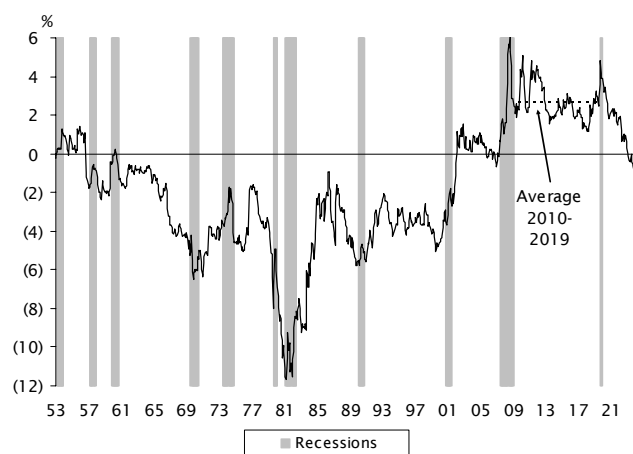
Market Valuation: A Deal Breaker?

Sizing Up the Data

Strategists have a longstanding reputation as market timers, making big calls advising entry and exit points. Some of them have worked out, but on the whole they've turned out to be destructive, to both returns and careers. We've never played that game because it has poor odds of success, is already overpopulated, and it's very hard to have an edge. Stock picking, that involves making many more bets, is a better use of resources. Occasionally though, it's sensible to survey the landscape to see if the assumptions implicit in the market's valuation make sense. We're doing that now because this year its multiple has held up in the face of rising nominal and real interest rates.

We can see the effect of the higher rates in Exhibit 1, that compares the trailing free cash flow yield of the large-cap market to that offered by ten-year Treasury bonds. At present the yield of stocks is more than (90) basis points less than that of the Bond, the widest spread since June of 2002. The deficit was however much wider throughout the entirety of the previous four decades. The S&P 500 is currently selling at about 21 times this year's estimated earnings, that are expected to be up by about +10%, a reasonable forecast (see Exhibit 2). That's one of the higher forward multiples of the last 46 years, and the same is true of the trailing version (see Exhibit 3).

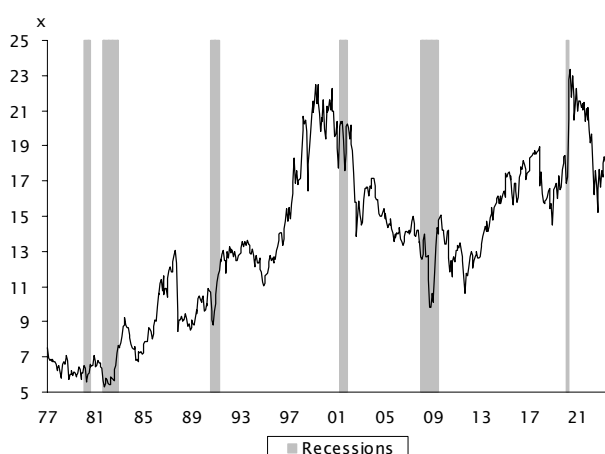
**Exhibit 1: The Large-Cap Equity Market
Free Cash Flow Yields Compared to
That of Ten-Year Treasury Bonds¹
1953 Through Late-April 2024**



Source: Federal Reserve Board, Corporate Reports, National Bureau of Economic Research, Empirical Research Partners Analysis.

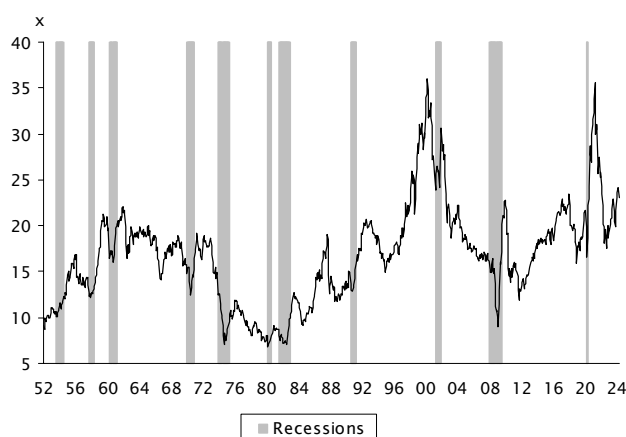
¹Excludes financial and utilities; capitalization-weighted composite.

**Exhibit 2: The S&P 500
Forward-P/E Ratios
1977 Through Late-April 2024**



Source: Corporate Reports, National Bureau of Economic Research, Empirical Research Partners Analysis.

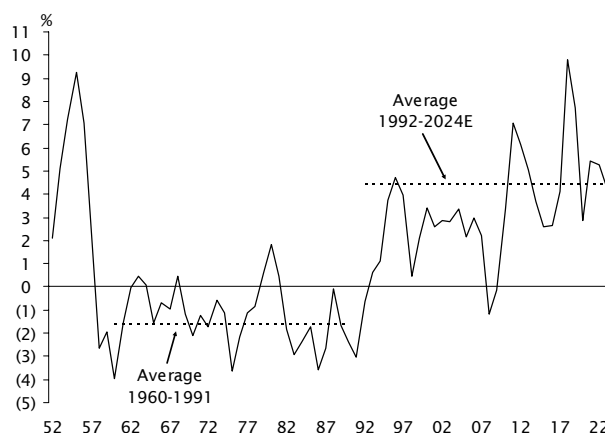
**Exhibit 3: Large-Capitalization Stocks
Trailing-P/E Ratios¹
1952 Through Mid-April 2024**



Source: Corporate Reports, National Bureau of Economic Research, Empirical Research Partners Analysis.

¹Capitalization-weighted data.

**Exhibit 4: The Growth Rate of S&P 500 Earnings
Less That of U.S. Nominal GDP
Expressed as a Ten-Year Moving Average
1952 Through 2024E**

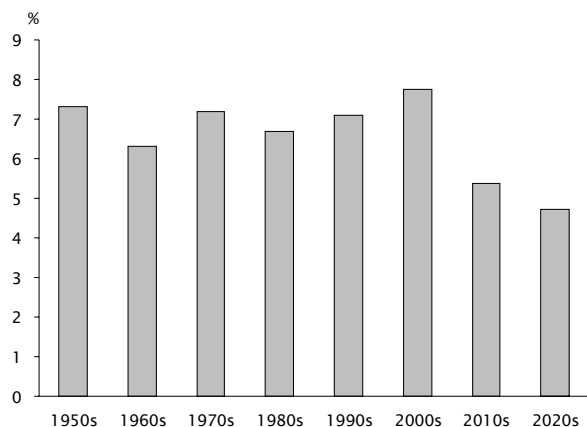


Source: Bureau of Economic Analysis, Robert Shiller, Empirical Research Partners Analysis.

Valuing the Market: What Do We Need to Believe?

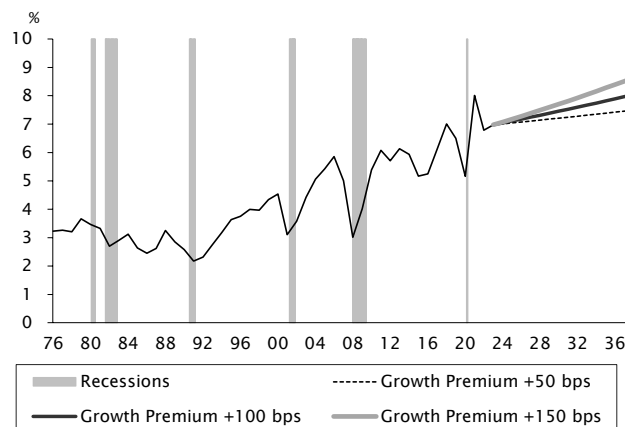
We used a dividend discount model to ferret out the assumptions underlying the current valuation of the market. In this research we'll describe the inputs to the process, with the first being the growth rate of earnings. Exhibit 4 (overleaf) compares it to that of the U.S. economy, on a ten-year moving average basis. Earnings have grown +4.5 points a year faster than the economy since 1992, while in the prior 30 years the opposite was true and there was a (1.5) point deficit. In the last ten years the premium was +4.25 points per annum. As we've often pointed out, falling interest and tax rates have been among the forces that pushed margins higher, and we see that in the gap between EBIT and net margins (see Exhibit 5). It narrowed in the 2010s, largely the consequence of the tax cut of 2017.

Exhibit 5: Large-Capitalization Stocks
Differential of EBIT and Net Margins by Decade
1952 Through 2023



Source: Corporate Reports, Empirical Research Partners Analysis.

Exhibit 6: S&P 500 Stocks
Earnings as a Share of Nominal U.S. GDP¹
Estimated Trajectories With Various Growth Premia
1976 Through 2038E

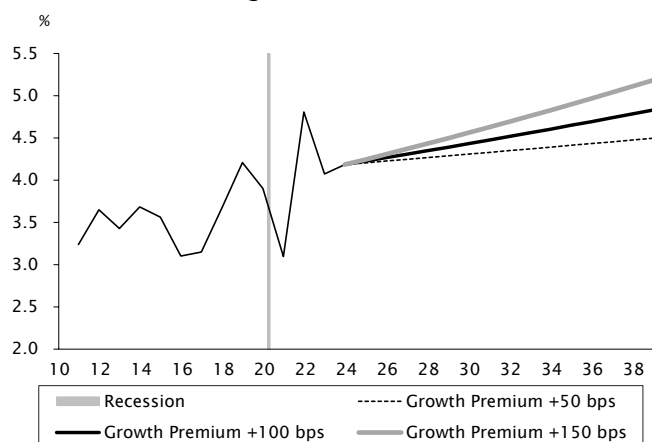


Source: Corporate Reports, Bureau of Economic Analysis, National Bureau of Economic Research, Empirical Research Partners Analysis.

¹Adjusted for special items.

We modeled a number of scenarios where S&P 500 earnings grow by anywhere from +50 to +250 basis points per annum faster than the economy over our explicit forecast horizon of 15 years earnings. In the terminal period thereafter we tried two alternatives: +50 basis points, our base case, and parity. Of course, trees don't grow to the sky, and Exhibit 6 depicts the ratio of market earnings-to-GDP under the various scenarios. In 2004 the ratio was 4.5%, and now it's more than 7.5%. The share of earnings that's sourced outside the U.S. is around 40%, and when we adjust for that fact, the ratio rises to around 5% (see Exhibit 7). That forecast seems plausible.

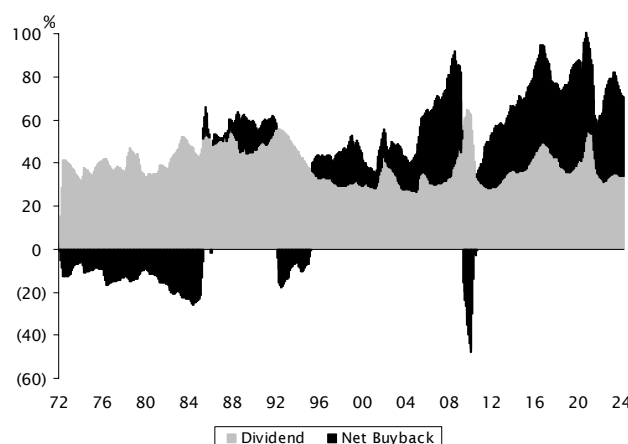
Exhibit 7: S&P 500 Stocks
Domestic Earnings as a Share of Nominal U.S. GDP¹
Estimated Trajectories With Various Growth Premia
2010 Through 2038E



Source: Corporate Reports, Bureau of Economic Analysis, National Bureau of Economic Research, Empirical Research Partners Analysis.

¹Adjusted for special items.

Exhibit 8: Large-Capitalization Stocks
Dividend and Net Buyback Payout Ratios¹
1972 Through Early-April 2024



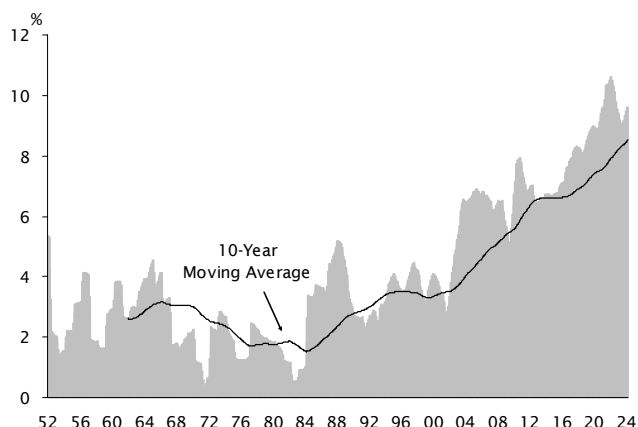
Source: Corporate Reports, Empirical Research Partners Analysis.

¹Based on trailing four-quarter data; measured as aggregates and smoothed on a trailing three-month basis.

A second, and even more critical input to the calculation is the share of earnings that can be paid out to shareholders. Exhibit 8 (overleaf) presents the history of that ratio since 1972, accounting for both dividends and net buybacks. The dividend payout ratio today is about 35%, no different from what it was 30 years ago. What's changed is the impact from buybacks, that add another 35 to 40 points to the combined ratio. The current ratio, that's more than 70%, is nearly double the average from 1977 through 2003. Buybacks have been central to the capital return equation for more than 30 years.

What's enabled the payout is the market's enormous free cash flow generation, and those margins have been trending higher for decades (see Exhibit 9). Their persistent rise has been a function of increasing profitability accompanied by declining capital intensity (see Exhibit 10). The ascent of the hyper-profitable tech sector, that now sources 40% of the market's output of free cash flow, has been a big part of the story (see Exhibit 11).

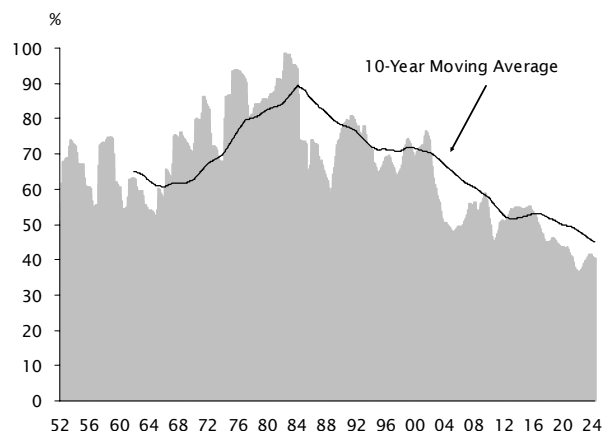
Exhibit 9: Large-Capitalization Stocks¹
Free Cash Flow Margins
1952 Through March 2024



Source: Corporate Reports, Empirical Research Partners Analysis.

¹Based on trailing four-quarter data; measured as aggregates and smoothed on a trailing three-month basis. Excludes financials and REITs.

Exhibit 10: Large-Capitalization Stocks¹
Capital Expenditures as a Share of Gross Cash Flow
1952 Through Early-April 2024

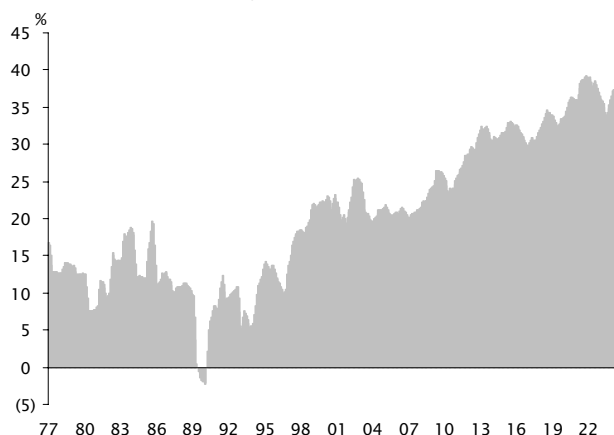


Source: Corporate Reports, Empirical Research Partners Analysis.

¹Excludes financials and REITs, based on trailing four-quarter data and smoothed on a trailing three-month basis.

The return on, and of capital, makes the S&P 500 a formidable competitor to other asset classes. It now generates 19% ROE, that's +5 percentage points above the long-term average (see Exhibit 12). At present 13 points of it is being returned to shareholders, making equities more of a bird-in-the-hand proposition than in the past (see Exhibit 13). That linchpin of the market's valuation seems sustainable, and we modeled payout ratios varying from 60% to 80%.

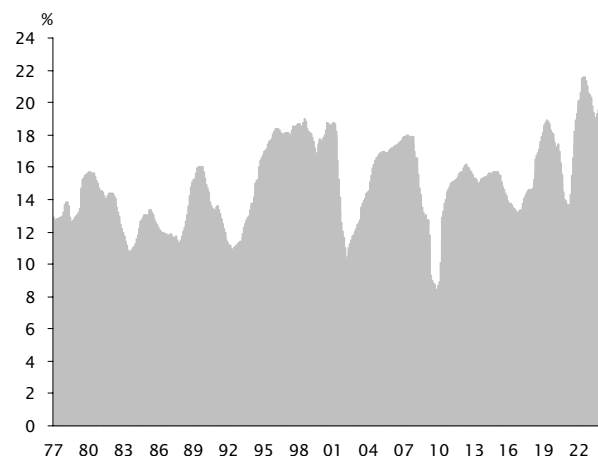
Exhibit 11: S&P 500 Stocks¹
Share of Free Cash Flow
From the Technology and Interactive Media Sector
1977 Through Early-April 2024



Source: Corporate Reports, Empirical Research Partners Analysis.

¹Based on trailing four-quarter data; measured as aggregates and smoothed on a trailing three-month basis. Excludes financials and REITs.

Exhibit 12: S&P 500 Stocks¹
ROEs
1977 Through Early-April 2024



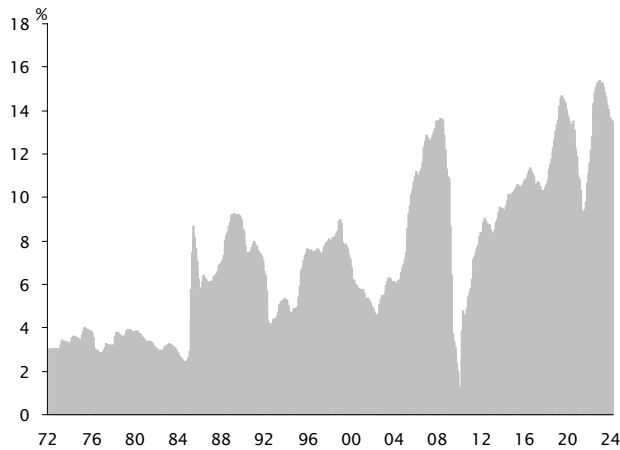
Source: Corporate Reports, Empirical Research Partners Analysis.

¹Based on trailing four-quarter data; measured as aggregates and smoothed on a trailing three-month basis.

Turning to the Discount Rate

In estimating the discount rate to be applied to future earnings we began with the ten-year year inflation expectations derived from the Cleveland Fed Model, that draws upon both market data and surveys. The latest estimate is +2.3%, and that seems like a reasonable guess (see Exhibit 14). Figuring out the appropriate real long-term interest rate is a dicier matter, and that's an issue we've addressed repeatedly in our research.¹ Our base case is that the normal level is +150 basis points. The current reading though is about +250 basis points, a level that was topped last October, and before that in the Spring of 2006 (see Exhibit 15). The volatility of the bond market conveys considerable uncertainty about where normal lies (see Exhibit 16). The country's debt burden is a major consideration in the real rate guessing game, but there are a slew of other issues that matter as well, including demographics, the supply of "safe assets" and the mis-measurement of inflation. Precision is a pipedream, and we modeled scenarios where real rates vary from +100 to +250 basis points.

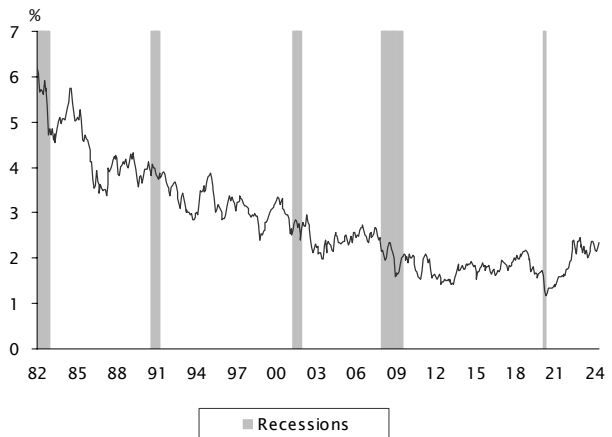
**Exhibit 13: Large-Capitalization Stocks
Return of Capital to Shareholders
As a Share of the Equity Base'
1972 Through Early-April 2024**



Source: Corporate Reports, Empirical Research Partners Analysis.

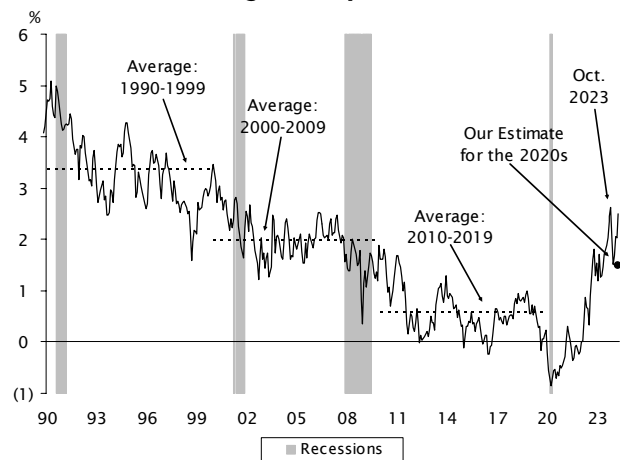
¹Based on trailing four-quarter data; measured as aggregates and smoothed on a trailing three-month basis.

**Exhibit 14: Ten-Year Inflation Expectations
1982 Through April 2024**



Source: Federal Reserve Bank of Cleveland, National Bureau of Economic Research, Empirical Research Partners Analysis.

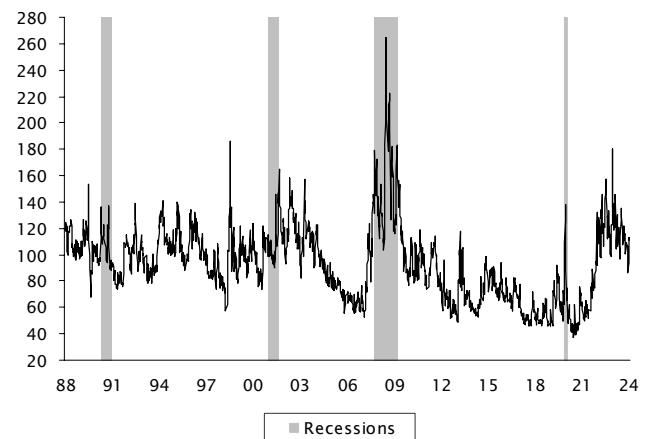
**Exhibit 15: Real Long Rates
Ten-Year U.S. Treasury Bond Yields
Less Ten-Year Inflation Expectations'
1990 Through Late-April 2024**



Source: Federal Reserve Bank of Cleveland, Federal Reserve Board, National Bureau of Economic Research, Empirical Research Partners Analysis.

¹Less the trailing three-month average of ten-year inflation expectations as estimated by the Cleveland Fed model.

**Exhibit 16: Bond Market Volatility Index
1988 Through March 2024**

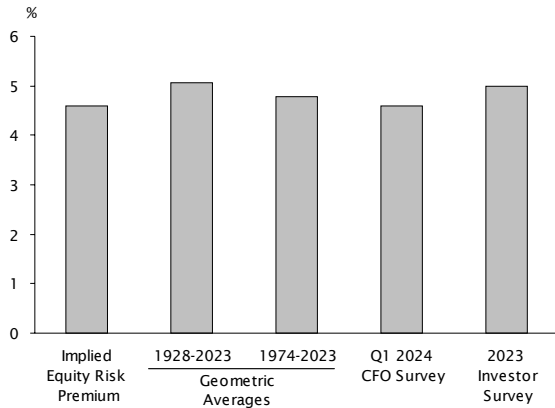


Source: National Bureau of Economic Research, Bank of America Merrill Lynch.

¹Portfolio Strategy May 2023. "Real Rates: Higher or Lower Ahead?" Portfolio Strategy October 2023. "Equity Market: Fatter Tails;" Portfolio Strategy December 2023. "Grasping at Economic Reality: Technology, AI and Interest Rates;" Portfolio Strategy January 2024 "Real Rates Redux: Is a Deficit Debacle on the Horizon?"

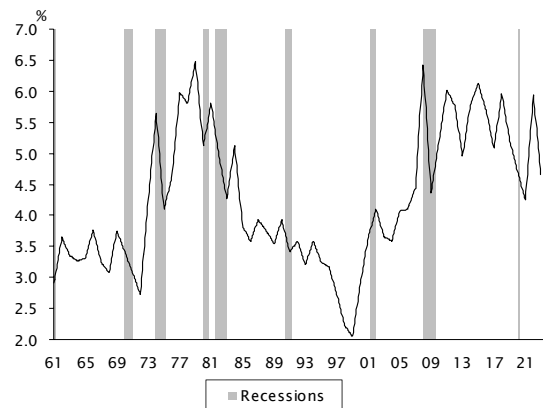
Finally, there's the matter of the equity risk premium, that in this case is calculated relative to the total return of ten-year Treasuries. Over the long run it's averaged between +4% and +5%, and that's what CFOs, academics and investors are currently forecasting (see Exhibit 17). Since the Financial Crisis the implied risk premium built into the market's valuation has varied from between +4.5% and +6% (see Exhibit 18). We created five scenarios using premia of +4% to +5.5%.

Exhibit 17: Estimates of the Equity Risk Premium Over Ten-Year Treasury Bond Returns As of April 2024



Source: Aswath Damodaran, 2024. "Equity Risk Premiums (ERP): Determinants, Estimation, and Implications - The 2024 Edition," Stern School of Business, The CFO Survey: Duke University and the Federal Reserve Banks of Richmond and Atlanta, Fernandez, P.F., De la Garza, D.G. and Lucia Fernandez Acin, 2024. "Survey: Market Risk Premium and Risk-Free Rate Used for 96 Countries in 2024," IESE Business School.

Exhibit 18: The Implied Equity Risk Premium 1961 Through 2023

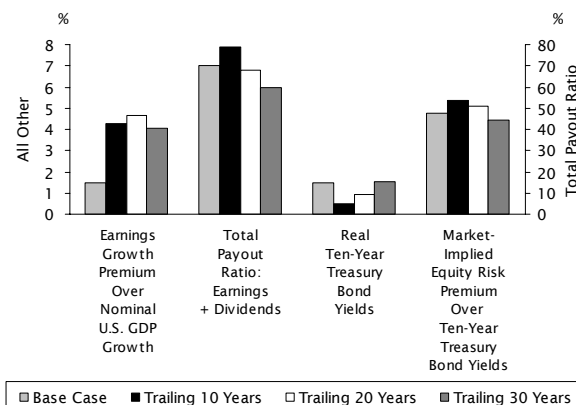


Source: Aswath Damodaran, 2024. "Equity Risk Premiums (ERP): Determinants, Estimation, and Implications - The 2024 Edition," Stern School of Business, National Bureau of Economic Research.

The Results of the Modeling Process

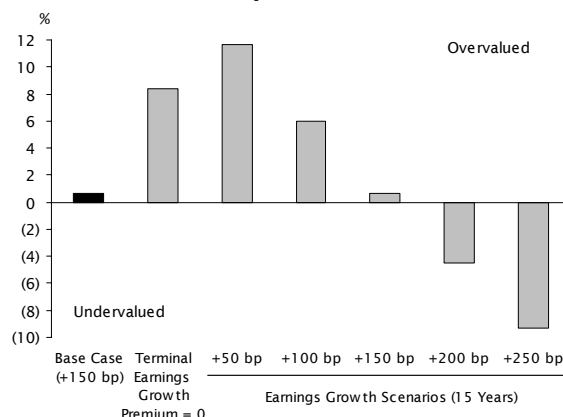
When modeling the valuation of the S&P 500 our base case relied upon the following assumptions: earnings will grow +150 basis points faster than the U.S. economy for the next 15 years and +50 basis points faster thereafter. The all-in payout ratio (i.e., dividends + net buybacks) will average 70% over that span, real ten-year Treasury bond rates will be +150 basis points, and the equity risk premium will come in at 4.75%. Exhibit 19 compares those assumptions to the averages of the past 10-, 20- and 30-year spans. While what we're assuming appears to be conservative, we're nonetheless extrapolating the exceptional fundamentals of the last several decades. Our forecasts of the earnings growth premium and the payout ratio depend on the continued dominance of the tech sector. While exercises of this sort are inevitably based on backward-looking observations, that could be proven all wrong, they do at least provide us with a framework for thinking about the assumptions that underpin the market's valuation.

Exhibit 19: S&P 500 Valuation Analysis Base Case and the Historical Data 30 Years Ending Mid-April 2024



Source: Empirical Research Partners Analysis, Aswath Damodaran, 2024. "Equity Risk Premiums (ERP): Determinants, Estimation, and Implications - The 2024 Edition."

Exhibit 20: Valuation of the S&P 500 Percent Over- or Under-valued Base Case and Five Scenarios of Earnings Growth Premia Over Nominal Economic Growth As of Late-April 2024



Source: Empirical Research Partners Analysis.

Exhibits 20 through 23 present our results expressed as the differential between the current level of the S&P 500 (i.e., 5,100) and our estimate of fair value. A positive number means the market is overvalued, a negative one that it's undervalued. The market today looks to be about correctly valued when we use our base case assumption. Exhibit 20 (overleaf) presents a sensitivity analysis based on the forecast earnings growth premium versus the economy. If the earnings growth premium turns out to be +50 basis points rather than +150 basis points, or is zero in the terminal period, the market is around 10% overvalued. If, on the other hand, the growth premium turns out to be +250 basis points, it's approximately 10% undervalued. A premium of +250 basis points in the forecast period and zero in the terminal one leaves us with a fairly valued market.

The modeling results are sensitive to the level of the combined payout ratio, and reversal of the longstanding run of free cash flow margin expansion could produce some serious pressure on multiples (see Exhibit 21). We've assumed the payout levels of the last 20 years will persist. The level of real interest rates also figures large in the equation, and is a wildcard (see Exhibit 22). The equity risk premium could turn out to be a swing factor too, although that seems less likely (see Exhibit 23).

Exhibit 21: Valuation of the S&P 500
Percent Over- or Undervalued
Base Case and Four Scenarios for the Combined
(Dividends + Net Buybacks) Payout Ratio
As of Late-April 2024

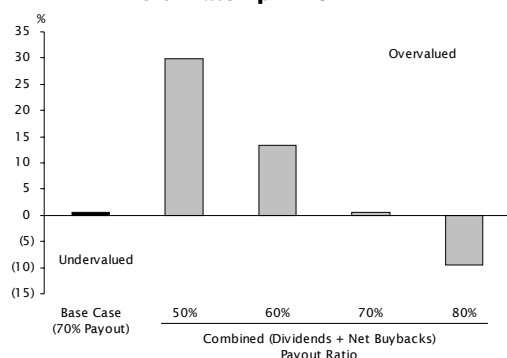
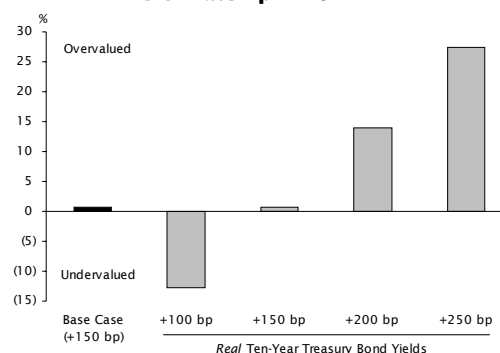


Exhibit 22: Valuation of the S&P 500
Percent Over- or Undervalued
Base Case and Four Scenarios for
Real Ten-Year Treasury Bond Yields
As of Late-April 2024



Source: Empirical Research Partners Analysis.

Source: Empirical Research Partners Analysis.

Conclusion: Like Much Else, Neutral

The conclusion we reach from this work is that at the moment the market looks to be appropriately valued, based on a reasonably conservative set of assumptions. If the trend of rising multiples is to be turned on its head, the most likely culprits would be a marked decline in free cash flow generation, or a sustained rise in real interest rates. The latter is harder to fathom and seems likelier, and today politics and the budget deficit figure large in the outlook. Most of our indicators, including that which forecasts market regime, are in the neutral zone, and our conclusions about market valuation fall in there too (see Exhibit 24). Given all of that, we want to have a broadly-diversified portfolio construction.

Exhibit 23: Valuation of the S&P 500
Percent Over- or Undervalued
Base Case and Scenarios for the Equity Risk Premium
As of Late-April 2024

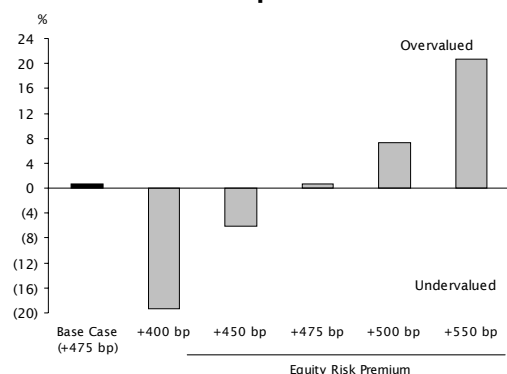
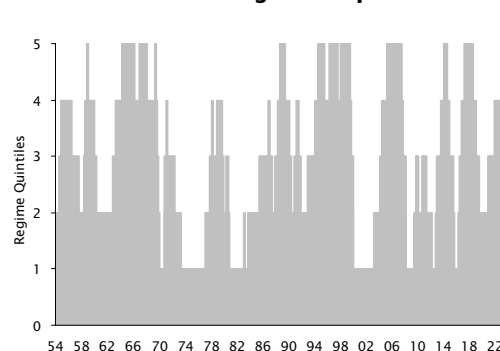


Exhibit 24: The U.S. Regime Indicator
(5=Growth-Driven Dynamic;
1=Valuation-Driven Dynamic)
1954 Through Late-April 2024



Source: Empirical Research Partners Analysis.

Source: Empirical Research Partners Analysis.

Higher Real Interest Rates: Implications for Stock Selection

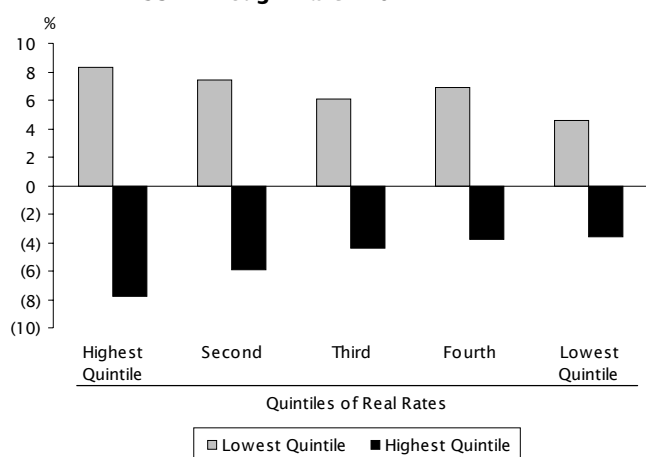
The Rules of the Road Have Been Lodged

The real interest rate on ten-year Treasury bonds is currently 2.5%, and over the last year it's averaged 2% (see Exhibit 15 on page 6). In the prior decade it was barely positive, and that compares to an average of 2.5% over the last 70 years. We've estimated that for the remainder of the 2020s real rates might average 1.5% to 1.6%, but there's tremendous uncertainty surrounding that forecast. The expansion of the country's budget deficit and government debt burden is today the deterministic element in the equation.

As we described earlier, real rates, along with free cash flow production, are the critical swing factors in the market's valuation equation. It's logical that they should influence the rules for stock picking as well, and a higher discount rate should mean that the here and now counts more. We examined the evidence, going back to the early-1950s, and found that was indeed the case.

Our Valuation Super Factor has performed best when real rates were high, and worst when they were low (see Exhibit 25). Their current level ranks in the middle quintile of the distribution seen since 1952. We see the same pattern in the return data for free cash flow yields (see Exhibit 26). The market's focus on the deployment of capital is influenced by the discount rate as well, and investors are more critical of big spenders when it's elevated (see Exhibit 27). Conversely, higher real rates have boosted the performance of buyback strategies (see Exhibit 28).

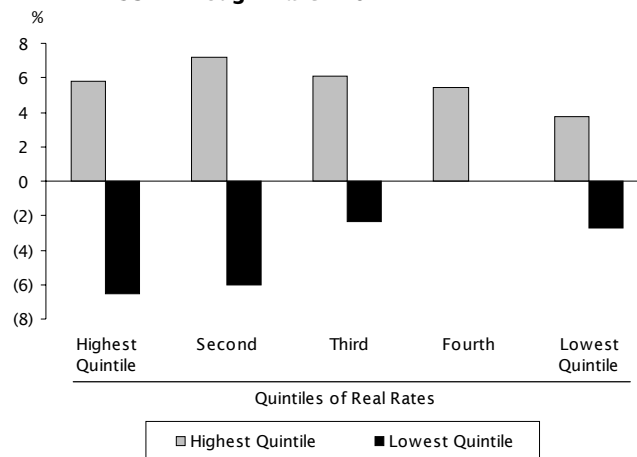
Exhibit 25: Large-Capitalization Stocks
Forward Relative Returns of the Lowest and Highest Quintiles of the Valuation Super Factor By Quintiles of Real Rates¹
Monthly Data Compounded to Annual Periods
1952 Through March 2024



Source: Federal Reserve Board, Bureau of Labor Statistics, Federal Reserve Bank of Cleveland, Empirical Research Partners Analysis.

¹Ten-year Treasury Bond yields less the trailing three-month average of ten-year inflation expectations as estimated by the Cleveland Fed model. Prior to 1982, the trailing seven-year average of CPI inflation is used.

Exhibit 26: Large-Capitalization Stocks
Forward Relative Returns of the Highest and Lowest Quintiles of Free Cash Flow Yield By Quintiles of Real Rates¹
Monthly Data Compounded to Annual Periods
1952 Through March 2024



Source: Federal Reserve Board, Bureau of Labor Statistics, Federal Reserve Bank of Cleveland, Empirical Research Partners Analysis.

¹Ten-year Treasury Bond yields less the trailing three-month average of ten-year inflation expectations as estimated by the Cleveland Fed model. Prior to 1982, the trailing seven-year average of CPI inflation is used.

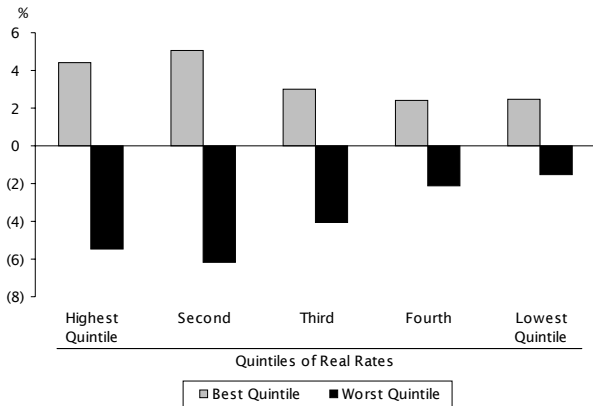
At the other end of the spectrum, growth stocks without current earnings have struggled in settings of higher real rates, as investors are less patient in such settings (see Exhibit 29). Our Failure Model, that looks to that the pool for ideas, has done well in those periods (see Exhibit 30).

Stock Selection: Balance is Best

If real rates are to be materially higher in this decade than the last one, more than just top-line growth will be important when picking stocks. The price of admission, capital deployment and production of free cash flow will be relevant considerations as well. Our Core Stock Selection Model dynamically balances a diverse set of perspectives in creating expected returns (see Exhibit 31). It's done well when real rates were in the top-half of the distribution, and that's been true lately (see Exhibit 32).

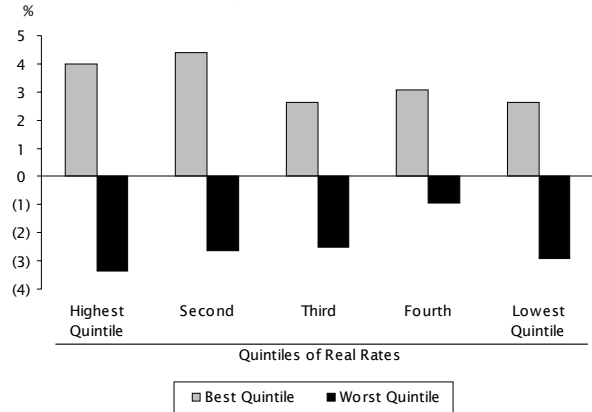
Appendix 1 on page 11 presents large-cap stocks that rank in the top quintiles of both our Capital Deployment Super Factor and the Core Model, usually a winning combination.

Exhibit 27: Large-Capitalization Stocks
Forward Relative Returns of the Best and Worst
Quintiles of the Capital Deployment Super Factor
By Quintiles of Real Rates
Monthly Data Compounded to Annual Periods
1952 Through March 2024



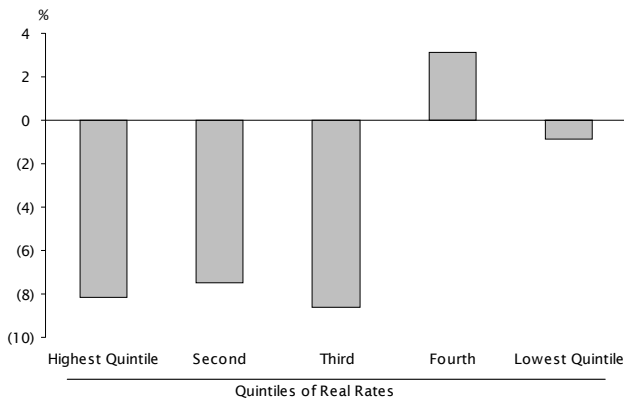
Source: Federal Reserve Board, Bureau of Labor Statistics, Federal Reserve Bank of Cleveland, Empirical Research Partners Analysis.

Exhibit 28: Large-Capitalization Stocks
Forward Relative Returns of the Best and Worst
Quintiles of Change in Shares Outstanding
By Quintiles of Real Rates
Monthly Data Compounded to Annual Periods
1952 Through March 2024



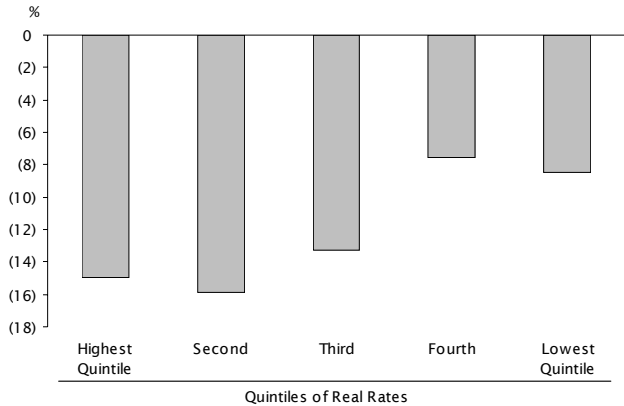
Source: Federal Reserve Board, Bureau of Labor Statistics, Federal Reserve Bank of Cleveland, Empirical Research Partners Analysis.

Exhibit 29: Large-Capitalization Money-Losing Growth Stocks
Forward Relative Returns By Quintiles of Real Rates
Monthly Data Compounded to Annual Periods
1981 Through March 2024



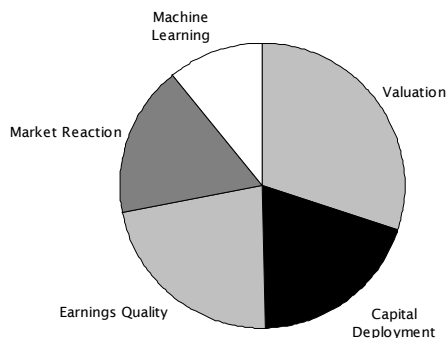
Source: Federal Reserve Board, Bureau of Labor Statistics, Federal Reserve Bank of Cleveland, Empirical Research Partners Analysis.

Exhibit 30: Top 1,000 Stocks
Forward Relative Returns of the Failure Candidates
By Quintiles of Real Rates
Monthly Data Compounded to Annual Periods
1954 Through March 2024



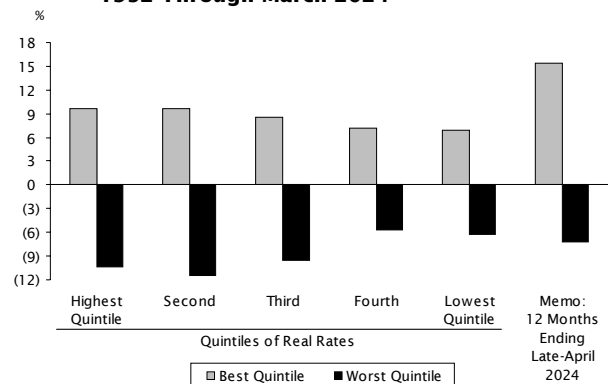
Source: Federal Reserve Board, Bureau of Labor Statistics, Federal Reserve Bank of Cleveland, Empirical Research Partners Analysis.

Exhibit 31: The Core Model
Super Factor Weightings
1952 Through Late-April 2024



Source: Empirical Research Partners Analysis.

Exhibit 32: Large-Capitalization Stocks
Forward Relative Returns of the Best and Worst
Quintiles of the Core Model
By Quintiles of Real Rates
Monthly Data Compounded to Annual Periods
1952 Through March 2024



Memo:
12 Months
Ending
Late-April
2024

Source: Federal Reserve Board, Bureau of Labor Statistics, Federal Reserve Bank of Cleveland, Empirical Research Partners Analysis.

Appendix 1: Large-Capitalization Stocks
Top Quintiles of Capital Deployment and the Core Model
Sorted by Capitalization
As of Late-April 2024

Symbol	Company	Price	Quintile Ranks (1=Best; 5=Worst)							Memo:			Market Capitalization (\$ Billion)
			Super Factors				Earnings						
			Capital Deployment	Valuation	Quality and Trend	Market Reaction	Machine Learning Algorithm	Core Model Rank	Free Cash Flow Yield	Forward P/E-Ratio			
V	VISA INC	\$275.02	1	3	1	1	2	1	3	26.4	x	\$552.8	
HD	HOME DEPOT INC	333.01	1	3	2	1	1	1	2	21.7		330.3	
MRK	MERCK & CO	127.00	1	3	2	1	1	1	4	14.9		321.6	
ABBV	ABBVIE INC	167.80	1	3	1	1	1	1	1	15.2		297.1	
ADBE	ADOBE INC	477.12	1	3	1	4	1	1	4	26.0		216.1	
NVS	NOVARTIS AG	98.35	1	2	1	3	1	1	2	13.5		213.6	
BABA	ALIBABA GROUP HLDG	74.63	1	1	2	5	2	1	1	9.1		191.5	
BKNG	BOOKING HOLDINGS INC	3,517.52	1	2	1	2	1	1	2	19.9		121.0	
LMT	LOCKHEED MARTIN CORP	459.14	1	2	1	3	1	1	2	17.3		110.2	
VRTX	VERTEX PHARMACEUTICALS INC	400.76	1	3	1	2	2	1	3	24.1		103.5	
BMJ	BRISTOL-MYERS SQUIBB CO	48.86	1	1	2	4	1	1	1	82.0		99.0	
EQNR	EQUINOR ASA	27.10	1	1	2	4	1	1	1	9.0		81.3	
MPC	MARATHON PETROLEUM CORP	199.14	1	1	3	1	1	1	1	10.6		73.3	
HMC	HONDA MOTOR CO LTD	34.41	1	1	4	1	1	1	2	7.3		61.0	
VLO	VALERO ENERGY CORP	167.00	1	1	3	2	1	1	1	9.7		55.7	
CRH	CRH PLC	77.63	1	2	1	1	1	1	2	14.7		53.7	
DHI	D R HORTON INC	146.12	1	1	2	2	3	1	2	10.1		48.2	
ADSK	AUTODESK INC	215.00	1	3	1	3	4	1	4	26.9		46.0	
CNC	CENTENE CORP	76.19	1	1	3	3	1	1	1	11.3		40.8	
LYB	LYONDELLBASELL INDUSTRIES NV	100.78	1	1	3	2	1	1	1	12.3		32.8	
GRMN	GARMIN LTD	142.79	1	3	1	1	1	1	3	26.7		27.4	
PHM	PULTEGROUP INC	112.26	1	1	1	2	2	1	1	8.9		23.6	
NTAP	NETAPP INC	100.06	1	2	2	2	1	1	2	15.1		20.7	
LPLA	LPL FINANCIAL HOLDINGS INC	264.54	1	3	1	3	2	1	na	16.6		19.7	
WSM	WILLIAMS-SONOMA INC	285.51	1	1	1	1	1	1	1	18.6		18.3	
CHKP	CHECK POINT SOFTWARE TECHNOLOGIES	161.00	1	2	1	1	1	1	2	17.8		18.2	
CSL	CARLISLE COS INC	375.30	1	3	2	1	1	1	2	20.2		17.9	
GDDY	GODADDY INC	123.83	1	2	2	1	1	1	2	26.3		17.6	
AVY	AVERY DENNISON CORP	212.42	1	3	2	1	4	1	3	21.9		17.1	
CRBG	COREBRIDGE FINANCIAL INC	27.16	1	1	2	1	2	1	na	5.6		16.9	
EXPD	EXPEDITORS INTERNATIONAL WAS	112.87	1	2	1	4	1	1	2	23.8		16.2	
PKG	PACKAGING CORP OF AMERICA	173.92	1	3	1	1	2	1	2	20.1		15.6	
MAS	MASCO CORP	69.74	1	2	1	2	1	1	1	16.4		15.4	
OC	OWENS CORNING	165.22	1	1	1	3	1	1	1	11.2		14.4	
RPM	RPM INTERNATIONAL INC	107.93	1	3	1	1	4	1	1	20.3		13.9	
AOS	SMITH (A.O.)	87.00	1	3	1	3	2	1	2	21.3		12.8	
TOL	TOLL BROTHERS INC	118.70	1	1	2	1	1	1	1	8.6		12.4	
BLD	TOPBUILD CORP	388.27	1	3	1	2	2	1	2	18.4		12.4	
INCY	INCYTE CORP	51.74	1	1	3	4	2	1	3	11.8		11.6	
ACI	ALBERTSONS COS INC	20.06	1	1	5	2	1	1	2	8.0		11.6	
DINO	HF SINCLAIR CORP	57.43	1	1	4	2	1	1	1	8.4		11.5	
XP	XP INC	20.64	1	1	4	4	3	1	na	12.3		11.3	
RL	RALPH LAUREN CORP	168.21	1	1	2	2	2	1	1	15.3		10.8	

Source: Empirical Research Partners Analysis.