

# Codebook

In cases where data is not clear from context (e.g., FRED series), a codebook is provided below.

## GovPX

The following is a codebook for the new-format GovPx data on Treasury yields.

| Field Name   | Col | Example Value   | Supported Value(s)       | Description             |
|--------------|-----|---|--------------------------|-------------------------|
| Timestamp    | A   | 2019-03-20T09:08:32.461-04:00   | yyyy-mm-ddThh:mm:ss.sss  | Date & Time of update   |
| Producer     | B   | US_GOVPX  | US_GOVPX                 | GovPX                   |
| Record       | C   | 10_YEAR 1_MONTH, 2_MONTH, 3_MONTH, 4_MONTH, 6_MONTH, 1_YEAR, 2_YEAR, 3_YEAR, 5_YEAR, 7_YEAR, 10_YEAR, 20_YEAR, 30_YEAR, 1_MONTH_WI, 2_MONTH_WI, 3_MONTH_WI, 4_MONTH_WI, 6_MONTH_WI, 1_YEAR_WI, 2_YEAR_WI, 3_YEAR_WI, 5_YEAR_WI, 7_YEAR_WI, 10_YEAR_WI, 20_YEAR_WI, 30_YEAR_WI, 1MO_ROLL, 2MO_ROLL, 3MO_ROLL, 4MO_ROLL, 6MO_ROLL, 12M_ROLL, 2_YR_ROLL, 3_YR_ROLL, 5_YR_ROLL, 7_YR_ROLL, 10_YR_ROLL, 20_YR_ROLL, 30_YR_ROLL | (CUSIPs for most issues) | Instrument name / tenor |
| Ask          | D   | 100.1641  | decimal                  | Ask price               |
| AskType      | E   | 17  | numeric                  | Instrument identifier   |
| AskYield     | F   | 3.03  | decimal                  | Ask yield (%)           |
| Bid          | G   | 100.1016  | decimal                  | Bid price               |
| BidType      | H   | 16  | numeric                  | Instrument identifier   |
| BidYield     | I   | 2.265   | decimal                  | Bid yield (%)           |
| BidYieldChg  | J   | 9128286B1   | int64                    | Security identifier     |
| CashAskPrice | K   | 100.1328  | decimal                  | Cash-settled ask price  |

| Field Name         | Col | Example Value | Supported Value(s) | Description                         |
|--------------------|-----|---------------|--------------------|-------------------------------------|
| CashBidPrice       | L   | -0.03125      | decimal            | Cash-settled bid price              |
| CashMidPrice       | M   | 100.0090779   | decimal            | Mid price (cash market)             |
| Change             | N   | 2.613         | decimal            | Price change                        |
| Coupon             | O   | 2.265         | decimal            | Stated coupon (%)                   |
| CUSIP              | P   | 9128286B1     | alphanumeric       | Security identifier                 |
| Description        | Q   | 1MO_04/30     | alphanumeric       | Issue description                   |
| DollarFlow         | R   | -1804         | numeric            | Net signed trade size (dollar-flow) |
| High               | S   | 0.011         | decimal            | Intraday high price                 |
| ICAPVOL            | T   | 24309         | int64              | Total on-broker volume              |
| IndicativeAskPrice | U   | 100.1640625   | decimal            | Indicative ask price                |
| IndicativeAskYield | V   | 2.403         | decimal            | Indicative ask yield                |
| IndicativeBidPrice | W   | 100.1015625   | decimal            | Indicative bid price                |
| IndicativeBidYield | X   | 2.4           | decimal            | Indicative bid yield                |
| IssueDate          | Y   | 20190215      | yyyymmdd           | Date of issuance                    |
| Last               | Z   | 99.76563      | decimal            | Last trade price                    |
| LastHitorTake      | AA  | H             | H;T                | Last trade aggressor side           |
| LastYield          | AB  | 2.36          | decimal            | Last trade yield                    |

| Field Name       | Col | Example Value | Supported Value(s)   | Description                    |
|------------------|-----|---------------|--|--------------------------------|
| Low              | AC  | 99.89063      | decimal  | Intraday low price             |
| MaturityDate     | AD  | 20290215      | yyyymmdd   | Date of maturity               |
| Mid              | AE  | 100.1328      | decimal  | Mid price                      |
| MidChg           | AF  | -0.03125      | decimal  | Mid-price change               |
| MidSnapChg       | AG  | 0.8817        | decimal  | Mid-price change vs. prior day |
| MidYield         | AH  | 2.6095        | decimal  | Mid yield (%)                  |
| MidYldSnapChg    | AI  | 0.011         | decimal  | Mid-yield change vs. prior day |
| Open             | AJ  | 100.1563      | decimal  | First price of day             |
| SettlementDate   | AK  | 20190320      | yyyymmdd   | Settlement date                |
| ShortDescription | AL  | 10Y           | 1M, 2M, 3M, 4M, 6M, 1Y, 2Y, 3Y, 5Y, 7Y, 10Y, 20Y, 30Y, 1MW, 2MW, 3MW, 4MW, 6MW, 1YW, 2YW, 3YW, 5YW, 7YW, 10YW, 20YW, 30YW, I, P, 5t, 10t, 20t, 30t | Human-readable tenor code      |
| TreasuryType     | AM  | 151           | 150 (off-the-run), 151 (active), 152 (OTR bills), 153 (active bills), 154 (WI), 157 (TIPS)   | Type of Treasury               |
| VoiceAskPrice    | AN  | 99.765625     | decimal  | Voice ask price (if available) |
| VoiceAskSize     | AO  | 5             | int64  | Voice ask size                 |
| VoiceAskYield    | AP  | 2.37          | decimal  | Voice ask yield                |
| VoiceBidPrice    | AQ  | 99.76171875   | decimal  | Voice bid price                |

| Field Name     | Col | Example Value | Supported Value(s) | Description                    |
|----------------|-----|---------------|--------------------|--------------------------------|
| VoiceBidSize   | AR  | 5             | int64              | Voice bid size                 |
| VoiceBidYield  | AS  | 2.4           | decimal            | Voice bid yield                |
| VoiceTradeSize | AT  | 5             | decimal            | Voice-executed trade size      |
| VWAP           | AU  | 99.76171875   | decimal            | VWAP (full day)                |
| VWAP*          | AV  | 99.76171875   | decimal            | VWAP for [time range]          |
| VWAY           | BE  | 99.76171875   | decimal            | VWAP calculated in yield space |
| VWAY*          | BF  | 99.76171875   | decimal            | VWAY for [time range]          |

# WRDS

## CRSP Stock/Security Files

| Variable Name | Type   | Format | Label   |
|---------------|--------|--------|---|
| PERMNO        | double | %8.0g  | PERMNO (firm identifier)                      |
| date          | long   | %td    | Names Date                                    |
| NAICS         | str8   | %8s    | North American Industry Classification System |
| CUSIP         | str8   | %8s    | CUSIP   |
| PRC           | double | %12.0g | Price or Bid/Ask Average                      |
| SHROUT        | double | %12.0g | Shares Outstanding                            |
| CFACPR        | double | %12.0g | Cumulative Factor to Adjust Prices            |
| CFACSHR       | double | %12.0g | Cumulative Factor to Adjust Shares/Vol        |

## TAQ/CRSP Old Crosswalk

- For context: There is not a one-to-one mapping between "permno" and security symbol. WRDS provides a "many-to-many" match in the crosswalk with variables measuring the "closeness" of

the match.

| Variable Name | Label   |
|---------------|---|
| permno        | Firm identifier in CRSP   |
| symbol        | Security/stock symbol   |
| fdate         | unused  |
| namedis       | Measure of distance between characters in "permno" name and "symbol" name   |
| cusip         | CUSIP (id)  |
| name          | unused  |
| comnam        | unused  |
| date          | End-of-month date   |
| cusip_full    | unused  |
| score         | Lower score is "higher match" according to following criteria. 0: BEST match: using (cusip, cusip dates and company names) or (exchange ticker, company names and 6-digit cusip). 1: Cusips and cusip dates match but company names do not match. 2: Cusips and company names match but cusip dates do not match. 3: Cusips match but cusip dates and company names do not match. 4: Exch tickers and 6-digit cusips match but company names do not match. 5: Exch tickers and company names match but 6-digit cusips do not match. 6: Exch tickers match but company names and 6-digit cusips do not match |

## TAQ/CRSP New Crosswalk

| Variable Name | Type   | Format | Label                  |
|---------------|--------|--------|------------------------|
| DATE          | long   | %td    | Date                   |
| SYM_ROOT      | str6   | %6s    | Security symbol root   |
| SYM_SUFFIX    | str10  | %10s   | Security symbol suffix |
| PERMNO        | double | %8.0g  | PERMNO                 |
| CUSIP         | str8   | %8s    | CUSIP                  |

## Compustat Quarterly Fundamentals, Compustat Revenue

| Variable Name | Type   | Format | Label   |
|---------------|--------|--------|---|
| GVKEY         | str6   | %6s    | Standard and Poor's Identifier                  |
| LIID          | str4   | %4s    | Security-level Identifier                       |
| LPERMNO       | double | %12.0g | Historical CRSP PERMNO Link to COMPUSTAT Record |

| Variable Name | Type   | Format | Label  |
|---------------|--------|--------|--|
| LPERMCO       | double | %12.0g | Historical CRSP PERMCO Link to COMPUSTAT Record      |
| datadate      | long   | %td    | Data Date  |
| fyearq        | double | %6.0g  | Fiscal Year  |
| fqtr          | double | %4.0g  | Fiscal Quarter                                       |
| fyr           | double | %4.0g  | Fiscal Year-end Month                                |
| indfmt        | str12  | %12s   | Industry Format                                      |
| consol        | str2   | %2s    | Level of Consolidation - Company Interim Descriptor  |
| popsrc        | str2   | %2s    | Population Source                                    |
| datafmt       | str12  | %12s   | Data Format  |
| curcdq        | str4   | %4s    | ISO Currency Code                                    |
| datacqtr      | str6   | %6s    | Calendar Data Year and Quarter                       |
| datafqtr      | str6   | %6s    | Fiscal Data Year and Quarter                         |
| actq          | double | %18.0g | Current Assets - Total                               |
| ancq          | double | %18.0g | Non-Current Assets - Total                           |
| atq           | double | %18.0g | Assets - Total                                       |
| ceqq          | double | %18.0g | Common/Ordinary Equity - Total                       |
| cheq          | double | %18.0g | Cash and Short-Term Investments                      |
| cogsq         | double | %18.0g | Cost of Goods Sold                                   |
| cshoq         | double | %18.0g | Common Shares Outstanding                            |
| dd1q          | double | %18.0g | Long-Term Debt Due in One Year                       |
| dlcq          | double | %18.0g | Debt in Current Liabilities                          |
| dlttq         | double | %18.0g | Long-Term Debt - Total                               |
| dpeq          | double | %18.0g | Depreciation and Amortization - Total                |
| lctq          | double | %18.0g | Current Liabilities - Total                          |
| lltq          | double | %18.0g | Long-Term Liabilities (Total)                        |
| ltq           | double | %18.0g | Liabilities - Total                                  |
| mibq          | double | %18.0g | Noncontrolling Interest - Redeemable - Balance Sheet |
| niq           | double | %18.0g | Net Income (Loss)                                    |
| oiadpq        | double | %18.0g | Operating Income After Depreciation - Quarterly      |

| Variable Name | Type   | Format | Label   |
|---------------|--------|--------|---|
| oibdpq        | double | %18.0g | Operating Income Before Depreciation - Quarterly          |
| piq           | double | %18.0g | Pretax Income   |
| ppegtq        | double | %18.0g | Property, Plant and Equipment - Total (Gross) - Quarterly |
| ppentq        | double | %18.0g | Property Plant and Equipment - Total (Net)                |
| pstkq         | double | %18.0g | Preferred/Preference Stock (Capital) - Total              |
| req           | double | %18.0g | Retained Earnings   |
| saleq         | double | %18.0g | Sales/Turnover (Net)                                      |
| teqq          | double | %18.0g | Stockholders Equity - Total                               |
| txtq          | double | %18.0g | Income Taxes - Total                                      |
| wcapq         | double | %18.0g | Working Capital (Balance Sheet)                           |
| xintq         | double | %18.0g | Interest and Related Expense- Total                       |
| xrdq          | double | %18.0g | Research and Development Expense                          |
| xsgaq         | double | %18.0g | Selling, General and Administrative Expenses              |
| aqcy          | double | %18.0g | Acquisitions  |
| capxy         | double | %18.0g | Capital Expenditures                                      |
| chechy        | double | %18.0g | Cash and Cash Equivalents - Increase (Decrease)           |
| dlcchy        | double | %18.0g | Changes in Current Debt                                   |
| dltisy        | double | %18.0g | Long-Term Debt - Issuance                                 |
| dltry         | double | %18.0g | Long-Term Debt - Reduction                                |
| dvy           | double | %18.0g | Cash Dividends  |
| exrey         | double | %18.0g | Exchange Rate Effect                                      |
| fiaoy         | double | %18.0g | Financing Activities - Other                              |
| fincfy        | double | %18.0g | Financing Activities - Net Cash Flow                      |
| ivncfy        | double | %18.0g | Investing Activities - Net Cash Flow                      |
| oancfy        | double | %18.0g | Operating Activities - Net Cash Flow                      |
| prstkccy      | double | %18.0g | Purchase of Common Stock (Cash Flow)                      |
| prstkcy       | double | %18.0g | Purchase of Common and Preferred Stock                    |
| prstkpccy     | double | %18.0g | Purchase of Preferred/Preference Stock (Cash Flow)        |
| scstkcy       | double | %18.0g | Sale of Common Stock (Cash Flow)                          |

| Variable Name | Type   | Format | Label   |
|---------------|--------|--------|---|
| spstkcy       | double | %18.0g | Sale of Preferred/Preference Stock (Cash Flow)            |
| sstky         | double | %18.0g | Sale of Common and Preferred Stock                        |
| txbcfy        | double | %18.0g | Excess Tax Benefit of Stock Options - Cash Flow Financing |
| xrdy          | double | %18.0g | Research and Development Expense                          |
| xsgay         | double | %18.0g | Selling, General and Administrative Expenses              |
| costat        | str2   | %2s    | Active/Inactive Status Marker                             |
| fic           | str4   | %4s    | Current ISO Country Code - Incorporation                  |
| cshtrq        | double | %18.0g | Common Shares Traded - Quarter                            |
| dvpsspq       | double | %18.0g | Dividends per Share - Pay Date - Quarter                  |
| dvpssxq       | double | %18.0g | Div per Share - Exdate - Quarter                          |
| mkvaltq       | double | %18.0g | Market Value - Total                                      |
| prccq         | double | %18.0g | Price Close - Quarter                                     |
| prchq         | double | %18.0g | Price High - Quarter                                      |
| prclq         | double | %18.0g | Price Low - Quarter                                       |
| adjex         | double | %18.0g | Cumulative Adjustment Factor by Ex-Date                   |
| conml         | str100 | %100s  | Company Legal Name  |
| loc           | str4   | %4s    | Current ISO Country Code - Headquarters                   |
| naics         | str6   | %6s    | North American Industry Classification Code               |
| sic           | str4   | %4s    | Standard Industry   |

## CRSP Beta Suite

- From a WRDS guide available at [https://wrds-www.wharton.upenn.edu/documents/1582/WRDS\\_Beta\\_Suite\\_Documentation\\_3T4EcS7.pdf](https://wrds-www.wharton.upenn.edu/documents/1582/WRDS_Beta_Suite_Documentation_3T4EcS7.pdf).

## Overview

WRDS Beta Suite is a web-based tool that lets researchers estimate securities' factor loadings (betas) quickly and flexibly, with rolling regressions at daily, weekly, or monthly frequency.

## Methodology

### Frequency of study

Choose one of three return frequencies:

- **Daily** (used)
- Weekly
- Monthly

## Risk models

| Model               | Specification (summary)  |
|---------------------|--|
| CAPM / Market model | $R_{i,t} - R_{f,t} = \alpha_i + \beta_i (R_{m,t} - R_{f,t}) + \varepsilon_{i,t}$ |

Where

- $R_{i,t}$  is firm  $i$ 's stock return in period  $t$
- $R_{f,t}$  is the risk-free rate in period  $t$
- $R_{m,t}$  is Fama-French Excess Return on the Market during period  $t$

## Estimation & minimum window

Users pick the **estimation window** length (e.g., 60 months at monthly frequency) and the **minimum window** of valid observations required for a regression to be kept (e.g., 36 months).

## References

- Sharpe, W. F. (1964), *Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk*, *J. Finance* 19, 425-442.

| Variable Name | Type   | Format | Label                                       |
|---------------|--------|--------|---|
| PERMNO        | double | %8.0g  | PERMNO                                      |
| DATE          | long   | %td    | Date of Observation                         |
| n             | double | %12.0g | Number of Observations used to compute Beta |
| RET           | double | %10.0g | Returns                                     |
| b_mkt         | double | %8.0g  | Est. beta (see above)                       |
| alpha         | double | %8.0g  | Est. alpha (not used)                       |
| ivol          | double | %10.0g | Idiosyncratic Risk (not used)               |
| tvol          | double | %10.0g | Total Volatility (not used)                 |
| R2            | double | %10.0g | R-Squared (not used)                        |
| exret         | double | %10.0g | Excess Return from Risk Model (not used)    |

| Variable Name | Type | Format | Label                    |
|---------------|------|--------|--------------------------|
| TICKER        | str8 | %8s    | Ticker Symbol (not used) |

## S&P Ratings (Old)

| Variable Name | Type    | Format | Label  |
|---------------|---------|--------|--|
| gvkey         | str6    | %6s    | Global Company Key                           |
| splticrm      | str10   | %10s   | S&P Domestic Long Term Issuer Credit Rating  |
| spsdrm        | str10   | %10s   | S&P Subordinated Debt Rating                 |
| spsticrm      | str10   | %10s   | S&P Domestic Short Term Issuer Credit Rating |
| datadate      | long    | %td    | Data Date                                    |
| add1          | str66   | %66s   | Address Line 1                               |
| add2          | str66   | %66s   | Address Line 2                               |
| add3          | str66   | %66s   | Address Line 3                               |
| add4          | str66   | %66s   | Address Line 4                               |
| addzip        | str20   | %20s   | Postal Code                                  |
| busdesc       | str2000 | %2000s | S&P Business Description                     |
| cik           | str10   | %10s   | CIK Number                                   |
| city          | str100  | %100s  | City   |
| conml         | str100  | %100s  | Company Legal Name                           |
| county        | str100  | %100s  | County Code                                  |
| drlsn         | str8    | %8s    | Research Co Reason for Deletion              |
| ein           | str10   | %10s   | Employer Identification Number               |
| fax           | str20   | %20s   | Fax Number                                   |
| fic           | str4    | %4s    | Current ISO Country Code - Incorporation     |
| fycr          | double  | %4.0g  | Current Fiscal Year End Month                |
| ggroup        | str4    | %4s    | GIC Groups                                   |
| gind          | str6    | %6s    | GIC Industries                               |
| gsector       | str2    | %2s    | GIC Sectors                                  |
| gsubind       | str8    | %8s    | GIC Sub-Industries                           |
| idbflag       | str2    | %2s    | International, Domestic, Both Indicator      |

| Variable Name | Type   | Format | Label  |
|---------------|--------|--------|--|
| incorp        | str8   | %8s    | Current State/Province of Incorporation Code |
| loc           | str4   | %4s    | Current ISO Country Code - Headquarters      |
| naics         | str6   | %6s    | North American Industry Classification Code  |
| phone         | str20  | %20s   | Phone Number                                 |
| prican        | str8   | %8s    | Current Primary Issue Tag - Canada           |
| prirow        | str8   | %8s    | Primary Issue Tag - Rest of World            |
| priusa        | str8   | %8s    | Current Primary Issue Tag - US               |
| sic           | str4   | %4s    | Standard Industry Classification Code        |
| spcindcd      | double | %6.0g  | S&P Industry Sector Code                     |
| spcseccd      | double | %6.0g  | S&P Economic Sector Code                     |
| spcsrc        | str4   | %4s    | S&P Quality Ranking - Current                |
| state         | str8   | %8s    | State/Province                               |
| stko          | double | %4.0g  | Stock Ownership Code                         |
| weburl        | str60  | %60s   | Web URL                                      |
| dldte         | long   | %td    | Research Company Deletion Date               |
| ipodate       | long   | %td    | Company Initial Public Offering Date         |
| conm          | str58  | %58s   | Company Name                                 |
| tic           | str8   | %8s    | Ticker Symbol                                |
| cusip         | str10  | %10s   | CUSIP  |

## S&P Ratings (New)

| Variable Name  | Type   | Format | Label                             |
|----------------|--------|--------|-----------------------------------|
| gvkey          | str6   | %-9s   | GVKEY                             |
| ratingdate     | long   | %td    | Rating Date (ratingdate)          |
| entity_id      | str6   | %-9s   | CIQ Ratings Entity ID (entity_id) |
| entname        | str111 | %-9s   | Entity Name (entname)             |
| ratingtypecode | str10  | %-9s   | Type of Rating (ratingtypecode)   |
| ratingsymbol   | str7   | %-9s   | Rating (ratingsymbol)             |

# Analysis Files

## (1) master\_fomc\_level\_24

| Variable Name   | Type   | Format | Label   |
|---|--------|--------|---|
| daten   | float  | %td..  | Date  |
| hour  | float  | %10.0g | Hour  |
| minute  | float  | %10.0g | Minute  |
| time_fomc   | float  | %9.0g  | FOMC meeting time   |
| unscheduled_meetings  | float  | %9.0g  | Unscheduled meeting indicator   |
| fomc_id   | float  | %9.0g  | FOMC # in dataset   |
| datetime  | double | %tc    | Stata datetime  |
| date  | strL   | %9s    | String date   |
| zcoupon_1y  | double | %10.0g | 1Y Zero-Coupon, FRB   |
| diff_zcoupon_1y   | float  | %9.0g  | Daily change in 1Y-Zero Coupon  |
| MP1   | double | %10.0g | MP1 (See Nakamura and Steinsson (2018), Appendix A)   |
| MP2   | double | %10.0g | MP2 (See Nakamura and Steinsson (2018), Appendix A)   |
| ED2   | double | %10.0g | ED2 (See Nakamura and Steinsson (2018), Appendix A)   |
| ED3   | double | %10.0g | ED3 (See Nakamura and Steinsson (2018), Appendix A)   |
| ED4   | double | %10.0g | ED4 (See Nakamura and Steinsson (2018), Appendix A)   |
| mp_shock_klms   | float  | %9.0g  | Unscaled PCA policy shock   |
| shock_[futures or Treasury][quarters ahead]_[window length] | float  | %90g   | Shock for ED/Treasury prices for the N-quarters ahead contract (if applicable) and length of window used to compute price change at each date |
| MPshockWL[futures][quarters ahead]_[window length]          | float  | %9.0g  | Length of window used to compute price change at each date  |
| indic_GKL   | float  | %9.0g  | Indicator for data coming from Gürkaynak et al. (2022)  |
| quarter   | float  | %9.0g  | Stata quarterly date  |
| date_daily  | float  | %9.0g  | Daily date  |
| datestr   | str10  | %-10s  | String date   |
| target  | float  | %9.0g  | Federal Funds Target Rate from DFEDTAR and DFEDTARL   |
| scaled_diff_~1y   | float  | %9.0g  | diff_zcoupon_1y x 10  |

| Variable Name   | Type  | Format | Label   |
|-----------------|-------|--------|---|
| mp_klms_U       | float | %9.0g  | Main policy shock variable; PCA performed on scheduled dates only                       |
| mp_klms_UPCA2   | float | %9.0g  | Scores for component 2 from above   |
| mp_klmslong30   | float | %9.0g  | Alternative, "longer" policy shock including all the Treasury shocks in the PCA as well |
| mp_klmslong30~2 | float | %9.0g  | Scores for component 2 from above   |
| mp_klms_U1h     | float | %9.0g  | Same as mp_klms_U, but uses 1-hour window   |
| mp_klms         | float | %9.0g  | Same as mp_klms_U, but using all dates (including unscheduled meetings)                 |
| year            | float | %9.0g  | year  |
| post            | float | %9.0g  | Indicator for year $\geq$ 2007  |
| postZLB         | float | %9.0g  | Indicator for ZLB years (see paper)   |
| postnonZLB      | float | %9.0g  | Indicator for nonZLB post-2007 years (see paper)  |

## (2) maintable\_data

| Variable Name | Type   | Format | Label  |
|---------------|--------|--------|--|
| daten         | double | %td..  | Date   |
| hour          | float  | %10.0g | Hour   |
| minute        | float  | %10.0g | Minute   |
| time_fomc     | float  | %9.0g  | FOMC time  |
| Unscheduled   | float  | %9.0g  | Unscheduled FOMC meeting indicator   |
| fomc_id       | float  | %9.0g  | FOMC # in dataset  |
| datetime      | double | %tc    | Stata datetime   |
| permno        | double | %8.0g  | PERMNO id  |
| prc           | double | %12.0g | Price or Bid/Ask Average   |
| shrount       | double | %12.0g | Shares Outstanding   |
| cfacpr        | double | %12.0g | Cumulative Factor to Adjust Prices   |
| cfacshr       | double | %12.0g | Cumulative Factor to Adjust Shares/Vol                                       |
| month         | float  | %9.0g  | Stata month  |
| cpi           | float  | %9.0g  | Consumer Price Index for All Urban Consumers: All Items in U.S. City Average |

| Variable Name                    | Type  | Format | Label  |
|----------------------------------|-------|--------|--|
| shock_hf_daily                   | float | %9.0g  | TAQ-derived one-day stock return   |
| window_shock_hf_daily~y          | float | %9.0g  | Length of one-day window used to compute shock_hf_daily, in minutes                      |
| shock_hf_30min                   | float | %9.0g  | TAQ-derived 30-min HF stock return   |
| window_shock_hf_30min            | float | %9.0g  | Length of window used to compute shock_hf_30min, in minutes                              |
| shock_hf_1hour                   | float | %9.0g  | TAQ-derived 1-hour HF stock return   |
| window_shock_hf_1hour            | float | %9.0g  | Length of window used to compute shock_hf_1hour, in minutes                              |
| MV                               | float | %9.0g  | Market value: prc*shroud/1000  |
| prev_MV                          | float | %9.0g  | Previous day's market value  |
| adj_MV                           | float | %9.0g  | MV/cpi   |
| adj_prev_MV                      | float | %9.0g  | prev_MV/cpi  |
| shock_hf_30min_dollar            | float | %9.0g  | shock_hf_30min in 2015 dollars   |
| unscheduled_meetings             | float | %9.0g  | Unscheduled FOMC date indicator  |
| date                             | strL  | %9s    | String date  |
| mp_shock_klms                    | float | %9.0g  | Unscaled PCA policy shock  |
| quarter                          | float | %9.0g  | Stata quarterly date   |
| shock_[maturity]_[window length] | float | %9.0g  | Shock for Treasury yields and length of window used to compute price change at each date |
| date_daily                       | float | %9.0g  | Daily date   |
| datestr                          | str10 | %-10s  | String date  |
| target                           | float | %9.0g  | Federal Funds Target Rate from DFEDTAR and DFEDTARL                                      |
| mp_klms_U                        | float | %9.0g  | Main policy shock variable; PCA performed on scheduled dates only, $\omega_t$            |
| mp_klms_UPCA2                    | float | %9.0g  | Scores for component 2 from above  |
| mp_klmslong30                    | float | %9.0g  | Alternative, "longer" policy shock including all the Treasury shocks in the PCA as well  |
| mp_klmslong30_PCA2               | float | %9.0g  | Scores for component 2 from above  |
| mp_klms_U1h                      | float | %9.0g  | Same as mp_klms_U, but uses 1-hour window  |
| mp_klms                          | float | %9.0g  | Same as mp_klms_U, but using all dates (including unscheduled meetings)                  |
| year                             | float | %9.0g  | Year   |
| ffi                              | float | %40.0g | ffi  |

| Variable Name       | Type  | Format | Label  |
|---------------------|-------|--------|--|
| duptag              | byte  | %8.0g  | tag(permno)  |
| rank                | float | %9.0g  | rank of (adj_MV) by daten  |
| count               | float | %9.0g  | count of (adj_MV) by daten   |
| ptile               | float | %9.0g  | $X_{it}$ (MV percentile)   |
| Fptile_TEMP         | float | %9.0g  | Intermediate for Fptile  |
| Fptile              | float | %9.0g  | Average FOMC-date ptile for a firm i; overwritten to equal ptile_consist, rank from 0-1 by this variable                           |
| Fdecile             | float | %9.0g  | Ventile by Fptile  |
| firmtag             | byte  | %8.0g  | tag(permno)  |
| rankF               | float | %9.0g  | rank of (Fptile)   |
| countF              | float | %9.0g  | count of (Fptile)  |
| ptile_consist       | float | %9.0g  | 0-1 percentile of Fptile; "normalizes" to uniform dist of $\bar{X}_i$ over firms   |
| Fdecile_consist     | float | %9.0g  | Ventile by ptile_consist   |
| indranks            | float | %9.0g  | rank of (adj_MV) by daten ffi  |
| indcount            | float | %9.0g  | count of (adj_MV) by daten ffi   |
| indptile            | float | %9.0g  | ptile by above   |
| indFptile_TEMP      | float | %9.0g  | placeholder in computation of indFptile  |
| indFptile           | float | %9.0g  | Within-industry percentile   |
| indFdecile          | float | %9.0g  | Ventile by within-industry percentile  |
| rank_indF           | float | %9.0g  | rank of (indFptile)  |
| count_indF          | float | %9.0g  | count of indFptile   |
| ptile_consist_ind   | float | %9.0g  | 0-1 percentile of indFptile (i.e., normalized to uniform)  |
| Fdecile_consist_ind | float | %9.0g  | Ventile by ptile_consist_ind   |
| Fwindowlen          | float | %9.0g  | Average firm window length   |
| WLxSHOCK            | float | %9.0g  | $\omega_t * \text{Window Length}_{it}$ ; i.e., surprise MP shock times Length of window used to compute shock_hf_30min, in minutes |
| mp_klms_ptile       | float | %9.0g  | $\omega_t * X_{it}$ interaction term (unused)  |
| mp_klmsFptile       | float | %9.0g  | $\omega_t * \bar{X}_i$ interaction term: shock times consistent (normalized) firm percentile                                       |
| post                | float | %9.0g  | post Year $\geq$ 2007 indicator  |

| Variable Name            | Type  | Format | Label   |
|--------------------------|-------|--------|---|
| postZLB                  | float | %9.0g  | post (ZLB) Post-ZLB indicator   |
| excluderZLB              | float | %9.0g  | Indicator for !missing(postZLB) for running ZLB, non-ZLB separately (unused)    |
| postnonZLB               | float | %9.0g  | post (non-ZLB) Post-nonZLB indicator  |
| excludernonZLB           | float | %9.0g  | Indicator for !missing(postnonZLB) for running ZLB, non-ZLB separately (unused) |
| tempzlbtest              | float | %9.0g  | ZLB+nonZLB indicators (should sum to 1)   |
| Fptilepost               | float | %9.0g  | $X_i * \text{post}$ interaction between consistent firm Ptile and post          |
| Fptile_postZLB           | float | %9.0g  | $X_i * \text{post (ZLB)}$ interaction   |
| Fptile_postno~B          | float | %9.0g  | $X_i * \text{post (non-ZLB)}$ interaction                                       |
| mp_klmspost              | float | %9.0g  | $\omega_t * \text{post}$ interaction  |
| mp_klmspostZLB           | float | %9.0g  | $\omega_t * \text{post (ZLB)}$ interaction                                      |
| mp_klmspostnonZLB        | float | %9.0g  | $\omega_t * \text{post (non-ZLB)}$ interaction                                  |
| mp_klmsFptilepost        | float | %9.0g  | $\omega_t * \bar{X}_i * \text{post}$ interaction                                |
| mp_klmsFptilepostZLB     | float | %9.0g  | $\omega_t * \bar{X}_i * \text{post (ZLB)}$ interaction                          |
| mp_klmsFptilepostnonZLB  | float | %9.0g  | $\omega_t * \bar{X}_i * \text{post (non-ZLB)}$ interaction                      |
| mp_klms_ptilepost        | float | %9.0g  | $\omega_t * X_{it} * \text{post}$ interaction                                   |
| mp_klms_ptile_postZLB    | float | %9.0g  | $\omega_t * X_{it} * \text{post (ZLB)}$ interaction                             |
| mp_klms_ptile_postnonZLB | float | %9.0g  | $\omega_t * X_{it} * \text{post (non-ZLB)}$ interaction                         |

### (3) estdata\_update\_ptilec

| Variable Name | Type   | Format | Label   |
|---------------|--------|--------|---|
| permno        | double | %8.0g  | PERMNO (identifier)   |
| quarter_d     | float  | %9.0g  | Quarterly date  |
| b_mkt         | double | %9.0g  | Last nonmissing (lastnm) b_mkt from WRDS Beta Suite (see above) |
| gvkey         | long   | %12.0g | GVKEY (identifier)  |
| liid          | byte   | %8.0g  | LIID (identifier)   |
| lpermco       | double | %12.0g | LPERMCO (identifier)  |
| year          | double | %8.0g  | Year  |
| quarter       | double | %8.0g  | Quarterly date  |

| Variable Name      | Type  | Format | Label   |
|--------------------|-------|--------|---|
| loc                | str4  | %4s    | Current ISO Country Code - Headquarters   |
| naics              | str6  | %6s    | North American Industry Classification Code   |
| cpi                | float | %9.0g  | Consumer Price Indices (CPIs, HICPs), COICOP 1999: Consumer Price Index: Tot..  |
| ffi                | float | %40.0g | ffi   |
| maxdate            | float | %9.0g  | Max date from quarterly data  |
| id                 | float | %9.0g  | group(gvkey)  |
| adj_MV             | float | %9.0g  | CRSP  |
| earnings           | float | %9.0g  | dpq+oiadpq; operating income + depreciation/amortization  |
| leader_mcap        | float | %9.0g  | 1st quarterly lag of indicator for top 5% by market value in industry   |
| follower_mcap      | float | %9.0g  | 1-leader_mcap   |
| top4_mcap          | float | %9.0g  | Top four firms by market value (first lag) in industry  |
| top10_mcap         | float | %9.0g  | Top ten firms by market value (first lag) in industry   |
| icr                | float | %9.0g  | icr (interest coverage ratio)   |
| icr_lag[n]         | float | %9.0g  | nth lag of icr  |
| icr_mean           | float | %9.0g  | (L1.icr+L2.icr+L3.icr)/3  |
| icr_median         | float | %9.0g  | median of lags 1-12 of icr  |
| borrowing_cost2    | float | %9.0g  | xintq/(dlcq+dlttq), i.e., Interest and Related Expense- Total / (Debt in Current Liabilities + Long-term debt, Total) |
| debt               | float | %9.0g  | dlcq+dlttq, i.e., Debt in Current Liabilities + Long-term debt, Total   |
| log_debt           | float | %9.0g  | log debt  |
| log_assets         | float | %9.0g  | log assets (atq)  |
| log_ppe            | float | %9.0g  | log PPE (ppentq)  |
| logrev             | float | %9.0g  | log revenue (revtq)   |
| Paqcq[h]/Pcapxq[h] | float | %9.0g  | Cum. sum of acquisitions from $t = 0$ to $t = h$ divided by $t - 1$ value of assets                                   |
| L[variable][q]     | float | %9.0g  | q-th lag of [variable], q can be 0  |
| F[variable][q]     | float | %9.0g  | q-th ahead value of [variable], q can be 0  |
| ceqq               | float | %9.0g  | Common/Ordinary Equity - Total  |
| prccq              | float | %9.0g  | Price Close - Quarter   |

| Variable Name                  | Type   | Format | Label   |
|--------------------------------|--------|--------|---|
| cshoq                          | float  | %9.0g  | Common Shares Outstanding   |
| BM                             | float  | %9.0g  | Book-market := 100*ceqq/market_value2   |
| PE                             | float  | %9.0g  | Price-earnings: market_value2/earnings  |
| shock*, MPshockWL*             | double | %9.0g  | quarterly sum of variables as defined in codebook for (2), maintable_data.dta   |
| mp_klms*                       | double | %9.0g  | quarterly sum of variables as defined in codebook for (2), maintable_data.dta   |
| diff_zcoupon_1y                | double | %9.0g  | quarterly sum of diff_zcoupon_1y as defined in codebook for (2), maintable_data.dta   |
| target                         | float  | %9.0g  | last nonmissing value (lastnm) of Fed Funds Target (from DFEDTAR/DFEDTARL) in the quarter   |
| post                           | float  | %9.0g  | last nonmissing post indicator (lastnm) as defined in codebook for (2), maintable_data.dta  |
| postZLB                        | float  | %9.0g  | (lastnm) postZLB as defined in codebook for (2), maintable_data.dta   |
| postnonZLB                     | float  | %9.0g  | (lastnm) postnonZLB as defined in codebook for (2), maintable_data.dta  |
| mp_*gk,<br>shock_[maturity]_gk | double | %10.0g | Weighted average of policy surprise PCA shocks, Treasury yield shocks according to Ottonello and Winberry (2020).   |
| pc[n]_10_fomc                  | double | %9.0g  | Scores from component [n] of PCA shock of all 10 Bauer and Swanson (2023) key variables, including intra-FOMC date summed: (1) unemployment surprises; (2) payroll surprises; (3) real GDP surprises; (4) core CPI surprises; (5) S&P 500 returns; (6) changes in slope of Treasury yield curve; (7) daily return on pcommodity (see ret_pcommodity below), and the FOMC-date values of lag_bbk (one-day lagged value of Blue-Butters-Kelley index), change_6_mo_corecpi := ((log CPIXt-2 - log CPIXt-8) - (log CPIXt-8 - log CPIXt-14)) * 200m, and core CPI expectations from MMS/Reuters |
| lrgdp_surprise                 | double | %9.0g  | 1-FOMC date lagged value of: as-released GDP (ALFRED) minus expectations (MMS, Reuters), summed over each quarter   |
| ret_sp500                      | double | %9.0g  | change in daily S&P 500 at each FOMC date, summed over the quarter  |
| ret_pcommodity                 | double | %9.0g  | daily difference in log(BCOM) + 0.4 * log(BCOMAG), summed over the quarter  |
| diff_slope_yield               | double | %9.0g  | daily difference in T10Y3M (slope of Treasury yield curve, FRED) summed over the quarter  |
| rgdp_surprise                  | double | %9.0g  | as-released GDP (fred) - expectations (MMS, Reuters), summed over each quarter  |
| corecpi_surprise               | double | %9.0g  | Actual as-released core CPI from ALFRED (archival FRED) minus expectations (MMS, Reuters) summed over the quarter   |
| unemp_surprise                 | double | %9.0g  | Actual as-released unemployment from ALFRED (archival FRED) minus expectations (MMS, Reuters) summed over the quarter   |

| Variable Name              | Type   | Format | Label   |
|----------------------------|--------|--------|---|
| payroll_surprise           | double | %9.0g  | (sum) Actual as-released payroll from ALFRED (archival FRED) minus expectations (MMS, Reuters) summed over the quarter  |
| lag_bbk                    | double | %9.0g  | one-day lagged value of Blue-Butters-Kelley index, summed over the quarter  |
| time_trend                 | float  | %9.0g  | Stata quarterly date minus 140  |
| double_[shock]_[_gk]       | float  | %9.0g  | Aggregated MP shock (e.g., mp_klms, mp_klms_U, mp_klms_U_gk, shock_2Y_30min) times leader (top 5% of industry by mkt cap). "_U" indicates that the shock uses only scheduled meetings; "_gk" means the shocks are aggregated at the quarterly level following the Ottonello and Winberry (2020) procedure rather than simple average  |
| triple_[shock]_[_gk]       | float  | %9.0g  | Triple interaction of aggregated MP shock (e.g., mp_klms, mp_klms_U, mp_klms_U_gk, shock_2Y_30min) times leader (top 5% of industry by mkt cap) times the quarterly lag of the Federal Funds target (DFEDTAR/DFEDTARL); "_U" indicates that the shock uses only scheduled meetings; "_gk" means the shocks are aggregated at the quarterly level following the Ottonello and Winberry (2020) procedure rather than simple average |
| triple_pZLB_[shock]_[_gk]  | float  | %9.0g  | Triple interaction of aggregated MP shock (e.g., mp_klms, mp_klms_U, mp_klms_U_gk, shock_2Y_30min) times leader (top 5% of industry by mkt cap) times the quarterly lag of indicator for post-ZLB; "_U" indicates that the shock uses only scheduled meetings; "_gk" means the shocks are aggregated at the quarterly level following the Ottonello and Winberry (2020) procedure rather than simple average                      |
| triple_pnZLB_[shock]_[_gk] | float  | %9.0g  | Triple interaction of aggregated MP shock (e.g., mp_klms, mp_klms_U, mp_klms_U_gk, shock_2Y_30min) times leader (top 5% of industry by mkt cap) times the quarterly lag of indicator for post-non-ZLB; "_U" indicates that the shock uses only scheduled meetings; "_gk" means the shocks are aggregated at the quarterly level following the Ottonello and Winberry (2020) procedure rather than simple average                  |
| tripletime_[shock]_[_gk]   | float  | %9.0g  | time_trend times leader (top 5% of industry by mkt cap) times shock   |
| tripletime_mp_klms_U       | float  | %9.0g  | Triple interaction of time_trend times leader (top 5% of industry by mkt cap) times the quarterly lag of FF target (DFEDTAR/DFEDTARL)   |
| Lileader                   | float  | %9.0g  | 1-quarter lag of FF target (DFEDTAR/DFEDTARL) times leader (top 5% of industry by mkt cap)  |
| LpostZLBleader             | float  | %9.0g  | lagged indicator of post-ZLB times leader (top 5% of industry by mkt cap)   |
| LpostnonZLBleader          | float  | %9.0g  | lagged indicator of post-non-ZLB times leader (top 5% of industry by mkt cap)   |
| tripletime_postZLB         | float  | %9.0g  | time_trend times lagged indicator of post-ZLB times leader (top 5% of industry by mkt cap)  |
| tripletime_postnonZLB      | float  | %9.0g  | time_trend times lagged indicator of post-non-ZLB times leader (top 5% of industry by mkt cap)  |

| Variable Name     | Type   | Format | Label   |
|-------------------|--------|--------|---|
| weight_currq      | float  | %9.0g  | Share of meetings that happened in current quarter of those that happened in last 90 days       |
| weight_lastq      | float  | %9.0g  | Share of meetings that happened in previous quarter of those that happened in last 90 days      |
| [LHS variable]_gk | float  | %9.0g  | Current-quarter [LHS variable] * weight currq + last-quarter [LHS variable] * weight_lastq      |
| L1_[LHS variable] | float  | %9.0g  | First quarterly lag [LHS variable]  |
| market_value      | float  | %9.0g  | prc*shrout/1000 (from CRSP, not Quarterly fundamentals data)                                    |
| treasury_rate     | float  | %9.0g  | FRED DGS1, 1Y Treasury  |
| leverage          | float  | %9.0g  | (dlcq+dlttq)/atq; i.e., debt in current liabilities plus total long-term debt over total assets |
| debt2             | float  | %9.0g  | Debt placeholder used for interpolation   |
| dd                | double | %10.0g | Distance to default calculated using Gilchrist and Zakrajšek (2012) procedure                   |
| dd_flag           | float  | %9.0g  | DD = "inf" flag   |
| rating            | str10  | %10s   | S&P Domestic Long Term Issuer Credit Rating (from pre-2017 database)                            |
| ratingsymbol      | str7   | %-9s   | S&P Rating (from post-2017 database)  |
| leadertime        | float  | %9.0g  | time_trend times leader (top 5% of industry by mkt cap)   |
| industrytime      | float  | %9.0g  | group(year quarter ffi) -- fixed effect   |
| valid             | float  | %9.0g  | Not missing adjusted MV (for percentile ranking variable)                                       |
| rank              | float  | %9.0g  | rank of (adj_MV) by quarter_d   |
| count             | float  | %9.0g  | count of (adj_MV) by quarter_d  |
| ptile             | float  | %9.0g  | percentile rank of firm by adj_MV within quarter  |
| Fptile            | float  | %9.0g  | firm-average percentile   |
| Fdecile           | float  | %9.0g  | Ventile by Fptile   |
| firmtag           | byte   | %8.0g  | tag(id) -- indicator for first instance of each firm id   |
| rankF             | float  | %9.0g  | rank of (Fptile)  |
| countF            | float  | %9.0g  | count of Fptile   |
| ptile_consist     | float  | %9.0g  | Percentile by Fptile; i.e., Fptile normalized to uniform distribution over firms                |
| Fdecile_consist   | float  | %9.0g  | Ventile by ptile_consist  |
| indranks          | float  | %9.0g  | rank of (adj_MV) by quarter_d ffi (i.e., within-industry rank by quarter)                       |
| indcounts         | float  | %9.0g  | count of (adj_MV) by quarter_d ffi  |

| Variable Name         | Type  | Format | Label   |
|-----------------------|-------|--------|---|
| indptile              | float | %9.0g  | within-industry percentile by adj_MV within quarter   |
| indFptile             | float | %9.0g  | average of a firm's within-industry percentile by adj_MV within quarter                                     |
| indFdecile            | float | %9.0g  | Ventile by indFptile  |
| rank_indF             | float | %9.0g  | rank of (indFptile)   |
| count_indF            | float | %9.0g  | count of (indFptile)  |
| ptile_consist_ind     | float | %9.0g  | rank by indFptile; i.e., indFptile normalized to uniform distribution over firms                            |
| Fdecile_consist_ind   | float | %9.0g  | Ventile by ptile_consist_ind  |
| neg_ptile_consist_ind | float | %9.0g  | -1 * ptile_consist_ind  |
| neg_leader            | float | %9.0g  | rank of (neg_ptile_consist_ind) by ffi  |
| top4temp              | float | %9.0g  | top four firms by ptile_consist_ind within an industry (intermediate variable, not filled in for all dates) |
| top4                  | float | %9.0g  | top four firms by ptile_consist_ind within an industry  |
| *SAL                  | float | %9.0g  | Using "saleq" (measure of sales), follows same pattern as above (e.g., ptile, indptile, Fptile, indFptile)  |
| *SIC                  | float | %9.0g  | rank of (adj_MV) by quarter_d sic   |
| sicindustrytime       | float | %9.0g  | group(year quarter sic)   |
| temptag               | byte  | %8.0g  | tag(id quarter_d) -- indicator for first instance of each firm id / quarter_d pair                          |

## (4) LP\_baseline\_coeffs

- Contains coefficients for  $h = 1, \dots, 11$  from estimation of  $\Delta y_{i,j,t+h-1} = \alpha_{j,t}^h + \beta_{ZLB}^h (\omega_t * L_{i,j,t-1}) + \beta_{\Delta}^h (\omega_t * L_{i,j,t-1} * FFR_{t-1}) + \delta_h' z_{i,j,t} + \sum_{\ell=1}^3 \Gamma_h' \theta_{i,j,t-\ell} + \epsilon_{i,j,t+h-1}$  for each dependent variable, using estdata\_update\_ptilec.dta.

## References

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