

# G Data

## G.1 Introduction

For my Forecasting Projects, I wanted a real-time machine learning ready dataset for use in macroeconomic projections. The natural choice here is the FRED-QD dataset by [McCracken and Ng \(2020\)](#). It comprises around 250 variables and contains quarterly data until 1959. However, its real-time construction so far only dates back to May 2018, which may be too short for proper out-of-sample analysis.

For this, I first replicate the FRED-QD dataset as a whole. This is done from two sources, ALFRED and the monthly counterpart of FRED-QD, FRED-MD ([McCracken & Ng, 2015](#)). I try to follow the construction of the original paper ([McCracken & Ng, 2020](#)). I download all relevant time series with the 1st of the next month as a vintage date with the ALFRED API in R. That means that the vintage date for the June 2017 dataset is the 1st of July 2017 to align with the publication schedule of the original authors. To help with many of the spliced series and the similarity of the two datasets, I also import variables wherever possible from FRED-MD, which dates back to 1999 in real-time. With that, I can date back the dataset to January 2001. When comparing my results and the descriptions to the original and updated appendix, I noticed some inconsistencies in the latter tables highlighted in red.

Moreover, I thought that the dataset could even be enlarged with some common time series, like the overall working population, inflation expectation, or more granular survey responses from the SLOOS Bank Officer Survey. In total, 15 variables are added over the full sample, see tables [10](#) until [26](#) where new variables are highlighted in blue.

However, due to the unavailability of series at earlier vintages, the number of variables varies over time, ranging from 190 in January 2001 to 263 in May 2018, when the standard FRED-QD starts. Sometimes, it is possible to replace a variable or recalculate it manually; otherwise, the series will be dropped. For details, see tables [27](#) and [28](#).

Furthermore, due to the quarterly structure, the data has significant lags, even for variables only available in monthly frequencies. These current-quarter observations can be used to nowcast the dataset alongside improved missing value imputation, all done with Mixed Frequency Dynamic Factor Models as shown below.

In figure [17](#), I document the trajectory of the number of variables and time series observations. The biggest cut of variables occurred in 2013 with the Introduction of more granular NIPA data by the BEA. Overall, there are usually more variables than time-series observations, although the dataset remains approximately square over the full sample.

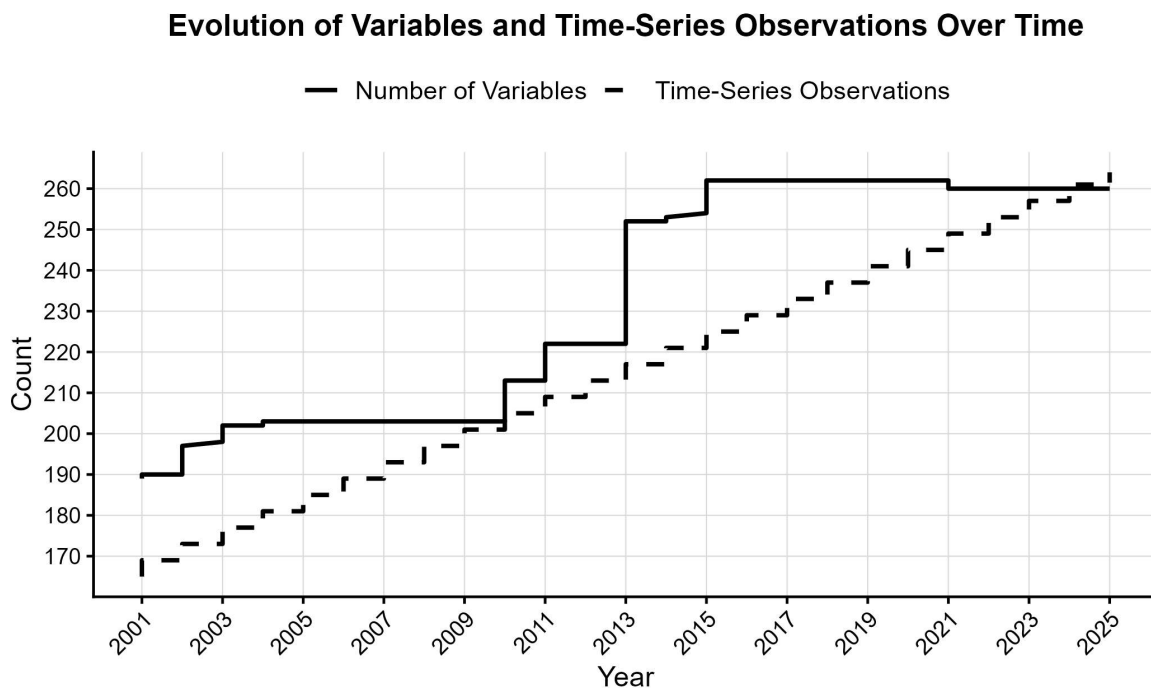


Figure 17: Evolution of Dataset Dimension

## G.2 Nowcasting and Missing-Value Imputation

### G.2.1 Motivation and real-time timing

The baseline quarterly panel exhibits a publication lag, while roughly two-thirds of the information set is observed at a monthly frequency. To reduce this lag in real time, I augment the quarterly dataset with nowcasts for the *second* and *third* month of each quarter, when sufficiently many current-quarter monthly releases are available. For the first month of a quarter (e.g., January, April, July, October), this is typically not feasible because only a little representative current-quarter information has been published.

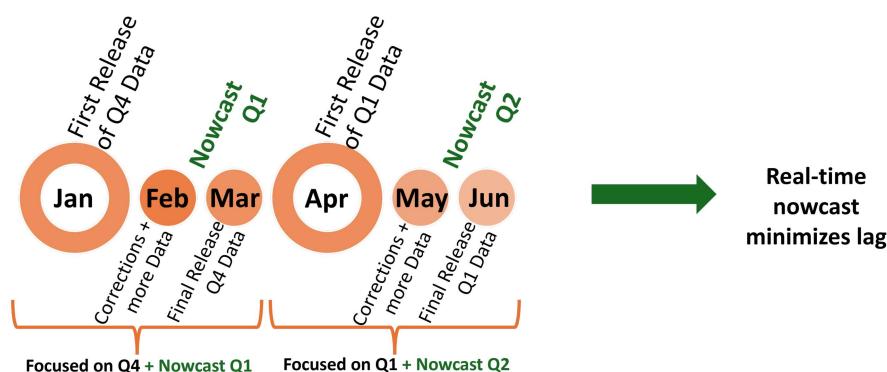


Figure 18: Nowcast timing within a quarter.

This nowcasting layer is implemented jointly with a missing-value imputation step to obtain a balanced real-time panel in the spirit of the Tall-Wide (Bai & Ng, 2021) / Tall-Project (Cahan, Bai, & Ng, 2023) approach.

## G.2.2 Mixed-frequency dynamic factor model on the monthly panel

Let  $x_{i,t}$  denote the level of series  $i = 1, \dots, N_M$  observed at monthly frequency for  $t = 1, \dots, T$ . Each series is transformed to approximate stationarity using the series-specific operator  $T_i(\cdot)$  (indexed by `tcode`, i.e., first differences, log-difference, levels, etc.):

$$y_{i,t} = T_i(x_{i,t}), \quad i = 1, \dots, N_M, \quad t = 1, \dots, T. \quad (21)$$

Stack  $y_t = (y_{1,t}, \dots, y_{N_M,t})'$  to obtain the  $N_M$ -dimensional monthly panel. Because the data are observed as real-time vintages (ALFRED / FRED-MD style), the panel is unbalanced and exhibits a ragged edge.

I assume that the transformed monthly panel is driven by a small number of dynamic common factors  $f_t$  and idiosyncratic components  $\varepsilon_t$ :

$$y_t = \Lambda f_t + \varepsilon_t, \quad \varepsilon_t \sim \mathcal{N}(0, R), \quad (22)$$

$$f_t = \Phi_1 f_{t-1} + \dots + \Phi_p f_{t-p} + u_t, \quad u_t \sim \mathcal{N}(0, Q), \quad (23)$$

where  $\Lambda$  is the  $N_M \times r$  loading matrix and  $p$  is the number of factor lags. The number of factors  $r$  and lags  $p$  is selected by information criteria in the spirit of [Bai and Ng \(2002\)](#); [Stock and Watson \(2002\)](#), using the Hannan–Quinn criterion ([Hannan & Quinn, 2018](#)).

The model (22)–(23) is estimated in a quasi–maximum likelihood framework using a two-step procedure: principal components provide initial estimates of  $f_t$  and  $\Lambda$ , which are then refined by an EM algorithm with Kalman filtering and smoothing ([Doz et al., 2011, 2012](#); [Kalman, 1960](#); [Kalman & Bucy, 1961](#)). This approach naturally accommodates missing observations in  $y_t$  and delivers imputations as model-implied conditional expectations.

Let  $\widehat{f}_t$  denote the estimated monthly factors and  $\widehat{y}_{i,t}$  the corresponding fitted values for the transformed series, including imputations for missing entries.

## G.2.3 Quarterly aggregation and bridge regressions

Let quarters be indexed by  $q = 1, \dots, T_Q$ , and let  $\mathcal{M}(q)$  denote the set of months belonging to quarter  $q$ . Quarterly factors are obtained by averaging the estimated monthly factors:

$$f_q = \frac{1}{|\mathcal{M}(q)|} \sum_{t \in \mathcal{M}(q)} \widehat{f}_t. \quad (24)$$

A fully-fledged mixed-frequency DFM that jointly treats all quarterly variables in the state vector is computationally infeasible in this setting due to the large number of quarterly series. Instead, I transfer the high-frequency information to quarterly variables via factor-augmented bridge regressions.

Let  $z_{\ell,q}$ ,  $\ell = 1, \dots, N_Q$ , denote quarterly variables in levels, and define transformed quarterly series

$$y_{\ell,q}^Q = T_\ell(z_{\ell,q}). \quad (25)$$

For each  $\ell$ , estimate an OLS bridge regression on the quarterly factors using only quarters with observed data:

$$y_{\ell,q}^Q = \alpha_\ell + \beta'_\ell f_q + e_{\ell,q}, \quad q \in \mathcal{Q}_\ell, \quad (26)$$

where  $\mathcal{Q}_\ell$  is the set of quarters for which  $y_{\ell,q}^Q$  is observed. For quarters where  $y_{\ell,q}^Q$  is missing but factors are available (including the nowcast quarter), form predicted transformed values

$$\widehat{y}_{\ell,q}^Q = \widehat{\alpha}_\ell + \widehat{\beta}'_\ell f_q. \quad (27)$$

These predictions fill gaps in transformed space and are back-transformed to levels via  $T_\ell^{-1}(\cdot)$ :

$$z_{\ell,q}^Q = \begin{cases} z_{\ell,q}, & \text{if } z_{\ell,q} \text{ is observed,} \\ \widehat{z}_{\ell,q}, & \text{if } z_{\ell,q} \text{ is missing,} \end{cases} \quad (28)$$

where  $\widehat{z}_{\ell,q} = T_\ell^{-1}(\widehat{y}_{\ell,q}^Q; \text{anchored in } z_{\ell,\cdot})$ . This yields a completed quarterly panel that incorporates information from monthly indicators through  $f_q$ , in the spirit of standard factor-based nowcasting frameworks (Banbura, Giannone, & Reichlin, 2011; Giannone et al., 2008).

#### G.2.4 Institutional nowcasts and override rule

To incorporate publicly available professional and institutional nowcasts for key variables, I additionally use nowcasts from the Survey of Professional Forecasters (SPF), the Cleveland Fed inflation nowcasting project, and the Atlanta Fed GDPNow. When multiple nowcasts are available for the same variable and vintage, institutional nowcasts are preferred over SPF. When such external nowcasts are available at the vintage date, they *override* the factor-implied nowcasts for the corresponding variable and quarter; otherwise, the DFM/bridge imputations are used.

## G.3 The Dataset

### G.3.1 Series adjusted by FRED-QD+

**Table 10:** Series adjusted by FRED-QD+

ID	Variable	Adjustment
60	Unemployment rate (< 27 weeks)	(UNEMPLOY - UEMP27OV)/CLF16OV
61	Unemployment rate (> 27 weeks)	UEMP27OV/CLF16OV
80	Help-wanted index	Splice LMJVTTUVUSM647S with Barnichon (2010) series
88	Real manu. and trade	(i) Adjust M0602BUSM144NNBR for inflation using PCEPI (ii) Seasonal adjust with ARIMA X12 (iii) Splice with NAICS series CMRMTSPL
89	Retail/food sales	Splice SIC series RETAIL with NAICS series RSAFS
90	New orders (durables)	Splice SIC series AMDMNO and NAICS series DGORDER
92	Unfilled orders (durables)	Splice SIC series AMDMUO and NAICS series AMDMUO
93	New orders (nondefense)	Splice SIC series ANDENO and NAICS series ANDENO
130	Crude oil	Splice OILPRICE with MCOILWTICO
153	30yr mortgage to 10yr Treasury	MRTG - GS10
154	6mth T-bill – 3mth T-bill	TB6MS - TB3MS
155	1yr Treasury – 3mth T-bill	GS1 - TB3MS
156	10yr Treasury – 3mth T-bill	GS10 - TB3MS
157	3mth commercial – 3mth T-bill	CPF3M - TB3MS
172	Household/nonprof liab to income	TLBSHNO/DSPI
174	Household/nonprof networth to income	TNWSHNO/DSPI
175	Assets net of Real Estate	(TABSHNO - HNOREMQ027S / 1000)/PCEPILFE
178	S&P 100 volatility: VXO	Splice Bloom (2009) series with VXOCLS
184	Switzerland/U.S. FX	Filled back to 1959 from Banking/Monetary statistics
185	Japan/U.S. FX	Filled back to 1959 from Banking/Monetary statistics
186	U.K./U.S. FX	Filled back to 1959 from Banking/Monetary statistics
187	Cdn/U.S. FX	Filled back to 1959 from Banking/Monetary statistics
188	Consumer sentiment	Splice UMSCENT1 with UMSCENT
220	Help wanted to unemployed	HWI/UNEMPLOY
221	Initial claims	Splice monthly series M08297USM548NNBR with weekly ICSA
222	Business inventories	Splice SIC series and NAICS series BUSINV
223	Inventory to sales	Splice SIC series and NAICS series ISRATIO
224	Consumer credit to P.I.	NONREVSL/PI
235	Business liabilities to income	TLBSNNCB/(CNCF - A054RC1Q027SBEA)
238	Business net worth to income	TNWMVBSNNCB/(CNCF - A054RC1Q027SBEA)
240	NonCorp busi. liabilities to income	TLBSNNB/(CNCF - A054RC1Q027SBEA)
243	NonCorp busi. net worth to income	TNWSNNB/(CNCF - A054RC1Q027SBEA)
244	Business income	(CNCF - A054RC1Q027SBEA)/IPDBS
249	Baa-Aaa Spread	BAA-AAA
250	Baa-FFM Spread	BAA-FEDFUNDS
251	10-Year-2-Year Treasury Yield Spread	GS10-GS2
252	1-Year Treasury Federal Funds Spread	GS1-FEDFUNDS
253	Aaa-10 Year Treasury Yield Spread	AAA-GS10
258	Output Gap	(GDPC1-GDPPOT)/GDPPOT
259	Barro Misery Index	$\Delta$ FEDFUNDS+ $\Delta$ UNRATE+ $\Delta$ CPIAUCSL-GAPx

## G.3.2 Variables used in FRED-QD+

Table 11: Group 1: NIPA

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
1	1	5	0	GDPC1	GDP	Real Gross Domestic Product, 3 Decimal (Billions of Chained 2017 Dollars)
2	2	5	0	PCECC96	Consumption	Real Personal Consumption Expenditures (Billions of Chained 2017 Dollars)
3	3	5	1	PCDGx	Cons:Dur	Real personal consumption expenditures: Durable goods (Billions of Chained 2017 Dollars), deflated using its own price index
4	4	5	1	PCESVx	Cons:Svc	Real Personal Consumption Expenditures: Services (Billions of 2017 Dollars), deflated using its own price index
5	5	5	1	PCNDx	Cons:NonDur	Real Personal Consumption Expenditures: Nondurable Goods (Billions of Chained 2017 Dollars), deflated using its own price index
6	6	5	0	GPDIC1	Investment	Real Gross Private Domestic Investment, 3 decimal (Billions of Chained 2017 Dollars)
7	7	5	0	FPIx	FixedInv	Real private fixed investment (Billions of Chained 2017 Dollars), deflated using its own price index
8	8	5	1	Y033RC1Q027SBEAx	Inv:Equip&Software	Real Gross Private Domestic Investment: Fixed Investment: Nonresidential: Equipment (Billions of Chained 2017 Dollars), deflated using its own price index
9	9	5	1	PNFIx	FixInv:NonRes	Real private fixed investment: Nonresidential (Billions of Chained 2017 Dollars), deflated using its own price index
10	10	5	1	PRFIx	FixedInv:Res	Real private fixed investment: Residential (Billions of Chained 2017 Dollars), deflated using its own price index
11	11	1	1	A014RE1Q156NBEA	Inv:Inventories	Shares of gross domestic product: Gross private domestic investment: Change in private inventories (Percent)
12	12	5	0	GCEC1	Gov.Spending	Real Government Consumption Expenditures & Gross Investment (Billions of Chained 2017 Dollars)
13	13	1	1	A823RL1Q225SBEA	Gov:Fed	Real Government Consumption Expenditures and Gross Investment: Federal (Percent Change from Preceding Period)
14	14	5	1	FGRECPtx	Real Gov Receipts	Real Federal Government Current Receipts (Billions of Chained 2017 Dollars), deflated using GDP Deflator
15	15	5	1	SLCEx	Gov:State&Local	Real government state and local consumption expenditures (Billions of Chained 2017 Dollars), deflated using its own price index
16	16	5	1	EXPGSC1	Exports	Real Exports of Goods & Services, 3 Decimal (Billions of Chained 2017 Dollars)
17	17	5	1	IMPGSC1	Imports	Real Imports of Goods & Services, 3 Decimal (Billions of Chained 2017 Dollars)
18	18	5	0	DPIC96	Disp-Income	Real Disposable Personal Income (Billions of Chained 2017 Dollars)
19	19	5	0	OUTNFB	Output:NFB	Nonfarm Business Sector: Real Output (Index 2017=100)
20	20	5	0	OUTBS	Output:Bus	Business Sector: Real Output (Index 2017=100)
21	21	5	0	OUTMS	Output:Manuf	Manufacturing Sector: Real Output (Index 2017=100)
192	n.a.	2	0	GFDEGDQ188S		Federal Debt: Total Public Debt as Percent of GDP (Percent)
193	n.a.	2	0	GFDEBNTx		Real Federal Debt: Total Public Debt (Millions of 2017 Dollars), deflated by PCE

Table 12: Group 2: Industrial Production

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
22	22	5	0	INDPRO	IP:Total index	Industrial Production Index (Index 2017=100)
23	23	5	0	IPFINAL	IP:Final products	Industrial Production: Final Products (Market Group) (Index 2017=100)
24	24	5	0	IPCONGD	IP:Consumer goods	Industrial Production: Consumer Goods (Index 2017=100)
25	25	5	0	IPMAT	IP:Materials	Industrial Production: Materials (Index 2017=100)
26	26	5	1	IPDMAT	IP:Dur gds materials	Industrial Production: Durable Materials (Index 2017=100)
27	27	5	1	IPNMAT	IP:Nondur gds materials	Industrial Production: Nondurable Materials (Index 2017=100)
28	28	5	1	IPDCONGD	IP:Dur Cons. Goods	Industrial Production: Durable Consumer Goods (Index 2017=100)
29	29	5	1	IPB51110SQ	IP:Auto	Industrial Production: Durable Goods: Automotive products (Index 2017=100)
30	30	5	1	IPNCONGD	IP:NonDur Cons Goods	Industrial Production: Nondurable Consumer Goods (Index 2017=100)
31	31	5	1	IPBUSEQ	IP:Bus Equip	Industrial Production: Business Equipment (Index 2017=100)
32	32	5	1	IPB51220SQ	IP:Energy Prds	Industrial Production: Consumer energy products (Index 2017=100)
33	33	1	1	TCU	Capu Tot	Capacity Utilization: Total Industry (Percent of Capacity)
34	34	1	1	CUMFNS	Capu Man.	Capacity Utilization: Manufacturing (SIC) (Percent of Capacity)
194	n.a.	5	0	IPMANSICS		Industrial Production: Manufacturing (SIC) (Index 2017=100)
195	n.a.	5	0	IPB51222S		Industrial Production: Residential Utilities (Index 2017=100)
196	n.a.	5	0	IPFUELS		Industrial Production: Fuels (Index 2017=100)

**Table 13: Group 3: Employment and Unemployment**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
35	35	5	0	PAYEMS	Emp:Nonfarm	All Employees: Total nonfarm (Thousands of Persons)
36	36	5	0	USPRIV	Emp:Private	All Employees: Total Private Industries (Thousands of Persons)
37	37	5	0	MANEMP	Emp:mfg	All Employees: Manufacturing (Thousands of Persons)
38	38	5	0	SRVPRD	Emp:Services	All Employees: Service-Providing Industries (Thousands of Persons)
39	39	5	0	USGOOD	Emp:Goods	All Employees: Goods-Producing Industries (Thousands of Persons)
40	40	5	1	DMANEMP	Emp:DurGoods	All Employees: Durable goods (Thousands of Persons)
41	41	5	0	NDMANEMP	Emp:Nondur Goods	All Employees: Nondurable goods (Thousands of Persons)
42	42	5	1	USCONS	Emp:Const	All Employees: Construction (Thousands of Persons)
43	43	5	1	USEHS	Emp:Edu&Health	All Employees: Education & Health Services (Thousands of Persons)
44	44	5	1	USFIRE	Emp:Finance	All Employees: Financial Activities (Thousands of Persons)
45	45	5	1	USINFO	Emp:Infor	All Employees: Information Services (Thousands of Persons)
46	46	5	1	USPBS	Emp:Bus Serv	All Employees: Professional & Business Services (Thousands of Persons)
47	47	5	1	USLAH	Emp:Leisure	All Employees: Leisure & Hospitality (Thousands of Persons)
48	48	5	1	USSERV	Emp:OtherSvcs	All Employees: Other Services (Thousands of Persons)
49	49	5	1	USMINE	Emp:Mining/NatRes	All Employees: Mining and logging (Thousands of Persons)
50	50	5	1	USTPU	Emp:Trade&Trans	All Employees: Trade, Transportation & Utilities (Thousands of Persons)
51	51	5	0	USGOVT	Emp:Gov	All Employees: Government (Thousands of Persons)
52	52	5	1	USTRADE	Emp:Retail	All Employees: Retail Trade (Thousands of Persons)
53	53	5	1	USWTRADE	Emp:Wholesal	All Employees: Wholesale Trade (Thousands of Persons)
54	54	5	1	CES909100001	Emp:Gov(Fed)	All Employees: Government: Federal (Thousands of Persons)
55	55	5	1	CES909200001	Emp:Gov (State)	All Employees: Government: State Government (Thousands of Persons)
56	56	5	1	CES909300001	Emp:Gov (Local)	All Employees: Government: Local Government (Thousands of Persons)
57	57	5	0	CE16OV	Emp:Total (HHSurve)	Civilian Employment (Thousands of Persons)
58	58	2	0	CIVPART	LF Part Rate	Civilian Labor Force Participation Rate (Percent)
59	59	2	0	UNRATE	Unemp Rate	Civilian Unemployment Rate (Percent)
60	60	2	0	UNRATESTx	Urate_ST	Unemployment Rate less than 27 weeks (Percent)
61	61	2	0	UNRATELTx	Urate_LT	Unemployment Rate for more than 27 weeks (Percent)
62	62	2	1	LNS14000012	Urate:Age16-19	Unemployment Rate - 16 to 19 years (Percent)
63	63	2	1	LNS14000025	Urate:Age>20 Men	Unemployment Rate - 20 years and over, Men (Percent)
64	64	2	1	LNS14000026	Urate:Age>20 Women	Unemployment Rate - 20 years and over, Women (Percent)
65	65	5	1	UEMPLT5	U:Dur<5wks	Number of Civilians Unemployed - Less Than 5 Weeks (Thousands of Persons)
66	66	5	1	UEMP5TO14	U:Dur5-14wks	Number of Civilians Unemployed for 5 to 14 Weeks (Thousands of Persons)
67	67	5	1	UEMP15T26	U:dur>15-26wks	Number of Civilians Unemployed for 15 to 26 Weeks (Thousands of Persons)
68	68	5	1	UEMP27OV	U:Dur>27wks	Number of Civilians Unemployed for 27 Weeks and Over (Thousands of Persons)
69	69	5	1	LNS13023621	U:Job losers	Unemployment Level - Job Losers (Thousands of Persons)
70	70	5	1	LNS13023557	U:LF Reenty	Unemployment Level - Reentrants to Labor Force (Thousands of Persons)
71	71	5	1	LNS13023705	U:Job Leavers	Unemployment Level - Job Leavers (Thousands of Persons)
72	72	5	1	LNS13023569	U:New Entrants	Unemployment Level - New Entrants (Thousands of Persons)

**Table 14: Group 3: Employment and Unemployment (continued)**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
73	73	5	1	LNS12032194	Emp:SlackWk	Employment Level - Part-Time for Economic Reasons, All Industries (Thousands of Persons)
74	74	5	0	HOABS	EmpHrs:Bus Sec	Business Sector: Hours of All Persons (Index 2017=100)
75	75	5	0	HOAMS	EmpHrs:mfg	Manufacturing Sector: Hours of All Persons (Index 2017=100)
76	76	5	0	HOANBS	EmpHrs:nfb	Nonfarm Business Sector: Hours of All Persons (Index 2017=100)
77	77	1	1	AWHMAN	AWH Man	Average Weekly Hours of Production and Nonsupervisory Employees: Manufacturing (Hours)
78	78	2	1	AWHNONAG	AWH Privat	Average Weekly Hours Of Production And Nonsupervisory Employees: Total private (Hours)
79	79	2	1	AWOTMAN	AWH Overtime	Average Weekly Overtime Hours of Production and Nonsupervisory Employees: Manufacturing (Hours)
80	80	1	0	HWIx	HelpWnted	Help-Wanted Index
197	n.a.	2	0	UEMPMEAN		Average (Mean) Duration of Unemployment (Weeks)
198	n.a.	2	0	CES060000007		Average Weekly Hours of Production and Nonsupervisory Employees: Goods-Producing
220	n.a.	2	0	HWIURATIOx		Ratio of Help Wanted/No. Unemployed
221	n.a.	5	0	CLAIMSx		Initial Claims
261	n.a.	5	0	CNP16OV		Civilian Noninstitutional Population, >16 Years

**Table 15: Group 4: Housing**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
81	81	5	0	HOUST	Hstarts	Housing Starts: Total: New Privately Owned Housing Units Started (Thousands of Units)
82	82	5	0	HOUST5F	Hstarts >5units	Privately Owned Housing Starts: 5-Unit Structures or More (Thousands of Units)
83	83	5	1	PERMIT	Hpermits	New Private Housing Units Authorized by Building Permits (Thousands of Units)
84	84	5	1	HOUSTMW	Hstarts:MW	Housing Starts in Midwest Census Region (Thousands of Units)
85	85	5	1	HOUSTNE	Hstarts:NE	Housing Starts in Northeast Census Region (Thousands of Units)
86	86	5	1	HOUSTS	Hstarts:S	Housing Starts in South Census Region (Thousands of Units)
87	87	5	1	HOUSTW	Hstarts:W	Housing Starts in West Census Region (Thousands of Units)
179	190	5	1	USSTHPI	Real Hprice:OFHEO	Real All-Transactions House Price Index for the United States (Index 1980 Q1=100), deflated by Core PCE
180	191	5	1	SPCS10RSA	Real CS_10	S&P/Case-Shiller 10-City Composite Home Price Index (Index January 2000 = 100), deflated by Core PCE
181	192	5	1	SPCS20RSA	Real CS_20	S&P/Case-Shiller 20-City Composite Home Price Index (Index January 2000 = 100), deflated by Core PCE
227	n.a.	5	0	PERMITNE		New Private Housing Units Authorized by Building Permits in the Northeast Census Region (Thousands, SAAR)
228	n.a.	5	0	PERMITMW		New Private Housing Units Authorized by Building Permits in the Midwest Census Region (Thousands, SAAR)
229	n.a.	5	0	PERMITS		New Private Housing Units Authorized by Building Permits in the South Census Region (Thousands, SAAR)
230	n.a.	5	0	PERMITW		New Private Housing Units Authorized by Building Permits in the West Census Region (Thousands, SAAR)

**Table 16: Group 5: Inventories, Orders, and Sales**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
88	89	5	0	CMRMTSPLx	MT Sales	Real Manufacturing and Trade Industries Sales (Millions of Chained 2017 Dollars)
89	90	5	1	RSAFSx	Ret. Sale	Real Retail and Food Services Sales (Millions of Chained 2017 Dollars), deflated by Core PCE
90	91	5	1	AMDMNOx	Orders (DurMfg)	Real Manufacturers' New Orders: Durable Goods (Millions of 2017 Dollars), deflated by Core PCE
91	92	5	1	ACOGNOx	Orders(ConsumerGoods/Mat.)	Real Value of Manufacturers' New Orders for Consumer Goods Industries (Million of 2017 Dollars), deflated by Core PCE
92	93	5	1	AMDMUOx	UnfOrders(DurGds)	Real Value of Manufacturers' Unfilled Orders for Durable Goods Industries (Million of 2017 Dollars), deflated by Core PCE
93	94	5	1	ANDENOx	Orders(NonDefCap)	Real Value of Manufacturers' New Orders for Capital Goods: Nondefense Capital Goods Industries (Million of 2017 Dollars), deflated by Core PCE
94	96	5	1	INVCQRMTSPL	MT Invent	Real Manufacturing and Trade Inventories (Millions of 2017 Dollars)
222	n.a.	5	0	BUSINVx		Total Business Inventories (Millions of Dollars)
223	n.a.	2	0	ISRATIOx		Total Business: Inventories to Sales Ratio

Table 17: Group 6: Prices

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
95	97	6	0	PCECTPI	PCED	Personal Consumption Expenditures: Chain-type Price Index (Index 2017=100)
96	98	6	0	PCEPILFE	PCED_LFE	Personal Consumption Expenditures Excluding Food and Energy (Chain-Type Price Index) (Index 2017=100)
97	99	6	0	GDPCTPI	GDP Defl	Gross Domestic Product: Chain-type Price Index (Index 2017=100)
98	100	6	1	GPDICTPI	GPDI Defl	Gross Private Domestic Investment: Chain-type Price Index (Index 2017=100)
99	101	6	1	IPDBS	BusSec Defl	Business Sector: Implicit Price Deflator (Index 2017=100)
100	102	6	0	DGDSRG3Q086SBEA	PCED_Goods	Personal consumption expenditures: Goods (chain-type price index)
101	103	6	0	DDURRG3Q086SBEA	PCED_DurGoods	Personal consumption expenditures: Durable goods (chain-type price index)
102	104	6	0	DSERRG3Q086SBEA	PCED_Serv	Personal consumption expenditures: Services (chain-type price index)
103	105	6	0	DNDGRG3Q086SBEA	PCED_NDurGoods	Personal consumption expenditures: Nondurable goods (chain-type price index)
104	106	6	0	DHCERG3Q086SBEA	PCED_HouseholdServ.	Personal consumption expenditures: Services: Household consumption expenditures (chain-type price index)
105	107	6	1	DMOTRG3Q086SBEA	PCED_MotorVec	Personal consumption expenditures: Durable goods: Motor vehicles and parts (chain-type price index)
106	108	6	1	DFDHRG3Q086SBEA	PCED_DurHousehold	Personal consumption expenditures: Durable goods: Furnishings and durable household equipment (chain-type price index)
107	109	6	1	DREQRG3Q086SBEA	PCED_Recreation	Personal consumption expenditures: Durable goods: Recreational goods and vehicles (chain-type price index)
108	110	6	1	DODGRG3Q086SBEA	PCED_OthDurGds	Personal consumption expenditures: Durable goods: Other durable goods (chain-type price index)
109	111	6	1	DFXARG3Q086SBEA	PCED_Food_Bev	Personal consumption expenditures: Nondurable goods: Food and beverages purchased for off-premises consumption (chain-type price index)
110	112	6	1	DCLORG3Q086SBEA	PCED_Clothing	Personal consumption expenditures: Nondurable goods: Clothing and footwear (chain-type price index)
111	113	6	1	DGOERG3Q086SBEA	PCED_Gas_Energy	Personal consumption expenditures: Nondurable goods: Gasoline and other energy goods (chain-type price index)
112	114	6	1	DONGRG3Q086SBEA	PCED_OthNDurGds	Personal consumption expenditures: Nondurable goods: Other nondurable goods (chain-type price index)
113	115	6	1	DHUTRG3Q086SBEA	PCED_Housing-Utilities	Personal consumption expenditures: Services: Housing and utilities (chain-type price index)
114	116	6	1	DHLCRG3Q086SBEA	PCED_HealthCare	Personal consumption expenditures: Services: Health care (chain-type price index)
115	117	6	1	DTRSRG3Q086SBEA	PCED_TransSvg	Personal consumption expenditures: Transportation services (chain-type price index)
116	118	6	1	DRCARG3Q086SBEA	PCED_RecServices	Personal consumption expenditures: Recreation services (chain-type price index)
117	119	6	1	DFSARG3Q086SBEA	PCED_FoodServ_Acc.	Personal consumption expenditures: Services: Food services and accommodations (chain-type price index)
118	120	6	1	DIFSRG3Q086SBEA	PCED_FIRE	Personal consumption expenditures: Financial services and insurance (chain-type price index)
119	121	6	1	DOTSRG3Q086SBEA	PCED_OtherServices	Personal consumption expenditures: Other services (chain-type price index)
120	122	6	0	CPIAUCSL	CPI	Consumer Price Index for All Urban Consumers: All Items (Index 1982-84=100)
121	123	6	0	CPILFESL	CPI_LFE	Consumer Price Index for All Urban Consumers: All Items Less Food & Energy (Index 1982-84=100)
122	124	6	0	WPSFD49207	PPI:FinGds	Producer Price Index by Commodity for Finished Goods (Index 1982=100)
123	125	6	0	PPIACO	PPI	Producer Price Index for All Commodities (Index 1982=100)
124	126	6	1	WPSFD49502	PPI:FinConsGds	Producer Price Index: Finished Consumer Goods (Index 1982=100)
125	127	6	1	WPSFD4111	PPI:FinConsGds(Food)	Producer Price Index: Finished Consumer Foods (Index 1982=100)
126	128	6	1	PPIIDC	PPI:IndCom	Producer Price Index: Industrial Commodities (Index 1982=100)
127	129	6	1	WPSID61	PPI:IntMat	Producer Price Index: Intermediate Materials, Supplies & Components (Index 1982=100)
128	133	5	1	WPU0531	Real Price:NatGas	Producer Price Index: Natural Gas (Index 1982=100), deflated by Core PCE
129	134	5	1	WPU0561	Real Price:Oil	Producer Price Index: Crude Petroleum (Domestic Production) (Index 1982=100), deflated by Core PCE
130	135	5	0	OILPRICE	Real Crudeoil Price	Real Crude Oil Prices: WTI (2017 Dollars per Barrel), deflated by Core PCE
205	n.a.	6	0	WPSID62		Producer Price Index: Crude Materials for Further Processing (Index 1982=100)
206	n.a.	6	0	PPICMM		Producer Price Index: Metals and primary nonferrous metals (Index 1982=100)
207	n.a.	6	0	CPIAPPSL		Consumer Price Index: Apparel (Index 1982-84=100)
208	n.a.	6	0	CPITRNSL		Consumer Price Index: Transportation (Index 1982-84=100)
209	n.a.	6	0	CPIMEDSL		Consumer Price Index: Medical Care (Index 1982-84=100)
210	n.a.	6	0	CUSR0000SAC		Consumer Price Index: Commodities (Index 1982-84=100)
260	n.a.	5	0	MICH		Median expected price change next 12 months, Survey of Consumers, University of Michigan

**Table 18: Group 6: Prices (continued)**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
211	n.a.	6	0	CUSR0000SAD		Consumer Price Index for All Urban Consumers: Durables (Index 1982–84=100)
212	n.a.	6	0	CUSR0000SAS		Consumer Price Index for All Urban Consumers: Services (Index 1982–84=100)
213	n.a.	6	0	CPIULFSL		Consumer Price Index for All Urban Consumers: All Items Less Food (Index 1982–84=100)
214	n.a.	6	0	CUSR0000SA0L2		Consumer Price Index for All Urban Consumers: All items less shelter (Index 1982–84=100)
215	n.a.	6	0	CUSR0000SA0L5		Consumer Price Index for All Urban Consumers: All items less medical care (Index 1982–84=100)
233	n.a.	6	0	CUSR0000SEHC		CPI for All Urban Consumers: Owners' equivalent rent of residences (Index Dec 1982=100)

**Table 19: Group 7: Earnings and Productivity**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
131	136	5	0	AHETPlx	Real AHE:PrivInd	Real Avg Hourly Earnings: Production & Nonsupervisory Employees, Total Private (2017 Dollars), deflated by Core PCE
132	137	5	0	CES2000000008x	Real AHE:Const	Real Avg Hourly Earnings: Construction (2017 Dollars), deflated by Core PCE
133	138	5	0	CES3000000008x	Real AHE:MFG	Real Avg Hourly Earnings: Manufacturing (2017 Dollars), deflated by Core PCE
134	139	5	1	COMPRMS	CPH:Mfg	Manufacturing Sector: Real Compensation Per Hour (Index 2017=100)
135	140	5	1	COMPRNFB	CPH:NFB	Nonfarm Business Sector: Real Compensation Per Hour (Index 2017=100)
136	141	5	1	RCPHBS	CPH:Bus	Business Sector: Real Compensation Per Hour (Index 2017=100)
137	142	5	1	OPHMFG	OPH:mfg	Manufacturing Sector: Real Output Per Hour of All Persons (Index 2017=100)
138	143	5	1	OPHNFB	OPH:nfb	Nonfarm Business Sector: Real Output Per Hour of All Persons (Index 2017=100)
139	144	5	0	OPHPBS	OPH:Bus	Business Sector: Real Output Per Hour of All Persons (Index 2017=100)
140	145	5	0	ULCBS	ULC:Bus	Business Sector: Unit Labor Cost (Index 2017=100)
141	146	5	1	ULCMFG	ULC:Mfg	Manufacturing Sector: Unit Labor Cost (Index 2017=100)
142	147	5	1	ULCNFB	ULC:NFB	Nonfarm Business Sector: Unit Labor Cost (Index 2017=100)
143	148	5	1	UNLPNBS	UNLPay:nfb	Nonfarm Business Sector: Unit Nonlabor Payments (Index 2017=100)
216	n.a.	6	0	CES0600000008		Avg Hourly Earnings of Production & Nonsupervisory Employees: Goods-Producing (Dollars per Hour)

**Table 20: Group 8: Interest Rates**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
144	149	2	1	FEDFUNDS	FedFunds	Effective Federal Funds Rate (Percent)
145	150	2	1	TB3MS	TB-3Mth	3-Month Treasury Bill: Secondary Market Rate (Percent)
146	151	2	0	TB6MS	TM-6MTH	6-Month Treasury Bill: Secondary Market Rate (Percent)
147	153	2	0	GS1	TB-1YR	1-Year Treasury Constant Maturity Rate (Percent)
148	154	2	0	GS10	TB-10YR	10-Year Treasury Constant Maturity Rate (Percent)
149	155	2	0	MORTGAGE30US	Mort-30Yr	30-Year Conventional Mortgage Rate <sup>©</sup> (Percent)
150	156	2	0	AAA	AAA Bond	Moody's Seasoned Aaa Corporate Bond Yield <sup>©</sup> (Percent)
151	157	2	0	BAA	BAA Bond	Moody's Seasoned Baa Corporate Bond Yield <sup>©</sup> (Percent)
152	158	1	1	BAA10YM	BAA_GS10	Baa Corporate Bond Yield Relative to 10-Year Treasury (Percent)
153	159	1	1	MORTG10YRx	MRTG_GS10	30-Year Mortgage Rate Relative to 10-Year Treasury (Percent)
154	160	1	1	TB6M3Mx	tb6m_tb3m	6-Month Treasury Bill Minus 3-Month Treasury Bill (Percent)
155	161	1	1	GS1TB3Mx	GS1_tb3m	1-Year Treasury Minus 3-Month Treasury Bill (Percent)
156	162	1	1	GS10TB3Mx	GS10_tb3m	10-Year Treasury Minus 3-Month Treasury Bill (Percent)
157	163	1	1	CPF3MTB3Mx	CP_Tbill Spread	3-Month Commercial Paper Minus 3-Month T-bill (Percent)
201	n.a.	2	0	GS5		5-Year Treasury Constant Maturity Rate (Percent)
202	n.a.	1	0	TB3SMFFM		3-Month Treasury Constant Maturity Minus Federal Funds Rate (Percent)
203	n.a.	1	0	T5YFFM		5-Year Treasury Constant Maturity Minus Federal Funds Rate (Percent)
204	n.a.	1	0	AAAFFM		Aaa Corporate Bond Yield Minus Federal Funds Rate (Percent)
225	n.a.	2	0	CP3M		3-Month AA Financial Commercial Paper Rate (Percent)
226	n.a.	1	0	COMPAPFF		3-Month Commercial Paper Minus Federal Funds Rate (Percent)
249	n.a.	1	0	BAAAAAx		Moody's Seasoned Baa Corporate Bond Yield minus Moody's Seasoned Aaa Corporate Bond Yield
250	n.a.	1	0	BAAFFM		Moody's Seasoned Baa Corporate Bond Minus Federal Funds Rate
251	n.a.	1	0	T10Y2Yx		10-Year Treasury Constant Maturity Minus 2-Year Treasury Constant Maturity
252	n.a.	1	0	T1YFFM		1-Year Treasury Constant Maturity Minus Federal Funds Rate
253	n.a.	1	0	AAA10YMx		Moody's Seasoned Aaa Corporate Bond Minus 10-Year Treasury Constant Maturity

**Table 21: Group 9: Money and Credit**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
158	167	5	0	BOGMBASERREALx	Real Mbase	St. Louis Adjusted Monetary Base (Billions of 1982–84 Dollars), deflated by CPI
160	169	5	0	MIREAL	Real m1	Real M1 Money Stock (Billions of 1982–84 Dollars), deflated by CPI
161	170	5	0	M2REAL	Real m2	Real M2 Money Stock (Billions of 1982–84 Dollars), deflated by CPI
163	172	5	1	BUSLOANSx	Real C&Lloand	Real Commercial & Industrial Loans, All Commercial Banks (Billions of 2017 Dollars), deflated by Core PCE
164	173	5	1	CONSUMERx	Real ConsLoans	Real Consumer Loans at All Commercial Banks (Billions of 2017 Dollars), deflated by Core PCE
165	174	5	1	NONREVSLx	Real NonRevCredit	Total Real Nonrevolving Credit Outstanding (Billions of Dollars), deflated by Core PCE
166	175	5	1	REALLNx	Real LoansRealEst	Real Estate Loans, All Commercial Banks (Billions of 2017 Dollars), deflated by Core PCE
167	176	5	1	REVOLSLx	Real RevolvCredit	Real Revolving Credit Outstanding (Billions of 2017 Dollars), deflated by Core PCE
168	177	5	0	TOTALSLx	Real ConsuCred	Total Consumer Credit Outstanding, deflated by Core PCE
169	178	1	1	DRIWCIL	FRBSLO_Consumers	FRB Senior Loan Officer Survey: Net % Reporting Increased Willingness to Make Consumer Installment Loans
199	n.a.	6	0	TOTRESNS		Total Reserves of Depository Institutions (Billions of Dollars)
200	n.a.	7	0	NONBORRES		Nonborrowed Reserves of Depository Institutions (Millions of Dollars)
217	n.a.	6	0	DTCOLNVHFNM		Consumer Motor Vehicle Loans Owned by Finance Companies (Millions of Dollars)
218	n.a.	6	0	DTCTHFNM		Total Consumer Loans & Leases Owned and Securitized by Finance Companies (Millions of Dollars)
219	n.a.	6	0	INVEST		Securities in Bank Credit at All Commercial Banks (Billions of Dollars)
254	n.a.	2	0	DRTSCILM		Net Percentage of Domestic Banks Tightening Standards for Commercial and Industrial Loans to Large and Middle-Market Firms
255	n.a.	2	0	DRTSCIS		Net Percentage of Domestic Banks Tightening Standards for Commercial and Industrial Loans to Small Firms
256	n.a.	2	0	DRTSCFLM		Net Percentage of Domestic Banks Increasing Spreads of Loan Rates Over Banks' Cost of Funds to Large and Middle-Market Firms

**Table 22: Group 10: Household Balance Sheets**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
170	179	5	0	TABSHNOx	Real HHW:TASA	Real Total Assets of Households & Nonprofit Organizations (Billions of 2017 Dollars), deflated by Core PCE
171	181	5	1	TLBSHNOx	Real HHW:LiabSA	Real Total Liabilities of Households & Nonprofit Organizations (Billions of 2017 Dollars), deflated by Core PCE
172	182	5	0	LIABPIx	liab_PDISA	Liabilities of Households & Nonprofit Orgs Relative to Disposable Personal Income (Percent)
173	183	5	1	TNWBSHNOx	Real HHW:WSA	Real Net Worth of Households & Nonprofit Organizations (Billions of 2017 Dollars), deflated by Core PCE
174	184	1	0	NWPIx	W_PDISA	Net Worth of Households & Nonprofit Organizations Relative to Disposable Personal Income (Percent)
175	185	5	1	TARESAx	Real HHW:TA_RESA	Real Assets of Households & Nonprofit Orgs excl. Real Estate Assets (Billions of 2017 Dollars), deflated by Core PCE
176	186	5	1	HNOREMQ027Sx	Real HHW:RESA	Real Real Estate Assets of Households & Nonprofit Organizations (Billions of 2017 Dollars), deflated by Core PCE
177	188	5	1	TFAABSHNOx	Real HHW:FinSA	Real Total Financial Assets of Households & Nonprofit Organizations (Billions of 2017 Dollars), deflated by Core PCE
224	n.a.	2	0	CONSPIx		Nonrevolving Consumer Credit Relative to Personal Income
262	n.a.	2	0	W875RX1		Real personal income excluding current transfer receipts (Billions of 2017 Dollars)

**Table 23: Group 11: Exchange Rates**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
182	193	5	1	TWEXAFEGSMTHx	Ex rate:major	Trade Weighted U.S. Dollar Index: Major Currencies (Index Mar 1973=100)
183	194	5	1	EXUSEU	Ex rate:Euro	U.S. / Euro Foreign Exchange Rate (USD per Euro)
184	195	5	1	EXSZUSx	Ex rate:Switz	Switzerland / U.S. Foreign Exchange Rate
185	196	5	1	EXJPUSx	Ex rate:Japan	Japan / U.S. Foreign Exchange Rate
186	197	5	1	EXUSUKx	Ex rate:UK	U.S. / U.K. Foreign Exchange Rate
187	198	5	1	EXCAUSx	Ex rate:Canada	Canada / U.S. Foreign Exchange Rate

**Table 24: Group 12: Other**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
188	199	1	1	UMCSENTx	Cons. Expectations	University of Michigan: Consumer Sentiment (Index 1966 Q1=100)
189	200	2	1	USEPUINDXM	PolicyUncertainty	Economic Policy Uncertainty Index for the United States
257	n.a.	1	0	SAHMREALTIME		Indicator signals the start of a recession when the three-month moving average of UNRATE rises by 0.50 percentage points or more relative to the minimum of the three-month averages from the previous 12 months.
<b>258</b>	n.a.	1	0	GAPx		Output Gap between Real GDP and Real Potential GDP
<b>259</b>	n.a.	1	0	MISERYx		Barro Misery Index (1999) adding up the 1-year change in GAPx, CPI inflation, UNRATE, and FEDFUNDS

**Table 25: Group 13: Stock Markets**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
178	189	1	1	VIXCLSx	VIX	CBOE Volatility Index: VIX
231	n.a.	5	0	NIKKEI225		Nikkei Stock Average
232	n.a.	5	0	NASDAQCOM		NASDAQ Composite (Index Feb 5, 1971=100)
245	180	5	0	S&P 500		S&P's Common Stock Price Index: Composite
247	n.a.	2	0	S&P div yield		S&P Composite Common Stock: Dividend Yield
248	n.a.	5	0	S&P PE ratio		S&P Composite Common Stock: Price-Earnings Ratio

**Table 26: Group 14: Non-Household Balance Sheets**

ID	SW ID	TCODE	SW Factors	FRED MNEMONIC	SW MNEMONIC	DESCRIPTION
192	n.a.	2	0	GFDEGDQ188S		Federal Debt: Total Public Debt as % of GDP
193	n.a.	2	0	GFDEBTNx		Real Federal Debt: Total Public Debt (Millions of 2017 Dollars), deflated by PCE
234	n.a.	5	0	TLBSNNCBx		Real Nonfinancial Corporate Business Liabilities (Billions of 2017 Dollars), deflated by IPDBS
235	n.a.	1	0	TLBSNNCBBDIx		Nonfinancial Corporate Business Liabilities to Disposable Business Income (%)
236	n.a.	5	0	TTAABSNNCBx		Real Nonfinancial Corporate Business Assets (Billions of 2017 Dollars), deflated by IPDBS
237	n.a.	5	0	TNWMVBSNNCBx		Real Nonfinancial Corporate Business Net Worth (Billions of 2017 Dollars), deflated by IPDBS
238	n.a.	2	0	TNWMVBSNNCBBDIx		Nonfinancial Corporate Business Net Worth to Disposable Business Income (%)
239	n.a.	5	0	TLBSNNBx		Real Nonfinancial Noncorporate Business Liabilities (Billions of 2017 Dollars), deflated by IPDBS
240	n.a.	1	0	TLBSNNBBDIx		Nonfinancial Noncorporate Business Liabilities to Disposable Business Income (%)
241	n.a.	5	0	TABSNNBx		Real Nonfinancial Noncorporate Business Assets (Billions of 2017 Dollars), deflated by IPDBS
242	n.a.	5	0	TNWBSNNBx		Real Nonfinancial Noncorporate Business Net Worth (Billions of 2017 Dollars), deflated by IPDBS
243	n.a.	2	0	TNWBSNNBBDIx		Nonfinancial Noncorporate Business Net Worth to Disposable Business Income (%)
244	n.a.	5	0	CNCFx		Real Disposable Business Income (Corporate cash flow w/ IVA minus taxes), 2017 Dollars, deflated by IPDBS
<b>263</b>	n.a.	5	0	CPROFITx		Corporate Profits with Inventory Valuation Adjustment (IVA) and Capital Consumption Adjustment (CCAAdj), 2017 Dollars, deflated by IPDBS

### G.3.3 Series dropped and changed during the vintage extension

**Table 27:** Series Dropping Out or Changed due to no Vintages available

ID	Code	Time	Action	Adjustment
3	PCDGx	Prior to Jan 2013	Deflator changed	Deflated using PCEPI instead
4	PCESVx	Prior to Jan 2013	Deflator changed	Deflated using PCEPI instead
5	PCNDx	Prior to Jan 2013	Deflator changed	Deflated using PCEPI instead
7	FPIx	Prior to Jan 2013	Deflator changed	Deflated using PCEPI instead
8	Y033RC1Q027SBEAx	Prior to Sep 2014	Dropped	-
9	PNFIx	Prior to Jan 2013	Deflator changed	Deflated using PCEPI instead
10	PRFIx	Prior to Jan 2013	Deflator changed	Deflated using PCEPI instead
11	A014RE1Q156NBEA	Prior to Feb 2013	Calculation by hand	CBI/GDP
13	A823RL1Q225SBEA	Prior to Sep 2014	Similar Calculation by hand	$\Delta \log((FNDEFX+FDEFX)/GDPCTPI)$
15	SLCEX	Prior to Feb 2013	Deflator changed	Deflated using GDPCTPI instead
26	IPDMAT	Prior to Dec 2007	Dropped	-
27	IPNMAT	Prior to Dec 2007	Dropped	-
28	IPDCONGD	Prior to Dec 2007	Dropped	-
29	IPB51110SQ	Prior to Feb 2015	Dropped	-
30	IPNCONGD	Prior to Dec 2007	Dropped	-
31	IPBUSEQ	Prior to Dec 2007	Dropped	-
32	IPB51220SQ	Prior to Feb 2015	Dropped	-
43	USEHS	Prior to Jun 2003	Dropped	-
45	USINFO	Prior to Jun 2003	Dropped	-
46	USPBS	Prior to Jun 2003	Dropped	-
47	USLAH	Prior to Jun 2003	Dropped	-
63	LNS14000012	Prior to May 2011	Dropped	-
64	LNS14000025	Prior to May 2011	Dropped	-
65	LNS14000026	Prior to May 2011	Dropped	-
69	LNS13023621	Prior to May 2011	Dropped	-
70	LNS13023557	Prior to May 2011	Dropped	-
71	LNS13023705	Prior to May 2011	Dropped	-
72	LNS13023569	Prior to May 2011	Dropped	-
73	LNS12032194	Prior to May 2011	Dropped	-
80	HWIx	Prior to 2015	Dropped	-
82	HOUST5F	Prior to Nov 2009	Replaced	Replaced by HOUST2F
94	A823RL1Q225SBEA	Prior to Sep 2014	Similar Calculation by hand	BUSINV/PCEPI
100	DGDSRG3Q086SBEA	Prior to Jan 2013	Dropped	-
101	DDURRG3Q086SBEA	Prior to Jan 2013	Dropped	-
102	DSERRG3Q086SBEA	Prior to Jan 2013	Dropped	-
103	DNDGRG3Q086SBEA	Prior to Jan 2013	Dropped	-
104	DHCERG3Q086SBEA	Prior to Jan 2013	Dropped	-
105	DMOTRG3Q086SBEA	Prior to Jan 2013	Dropped	-
106	DFDHRG3Q086SBEA	Prior to Jan 2013	Dropped	-
107	DREQRG3Q086SBEA	Prior to Jan 2013	Dropped	-
108	DODGRG3Q086SBEA	Prior to Jan 2013	Dropped	-
109	DFXARG3Q086SBEA	Prior to Jan 2013	Dropped	-

**Table 28:** Series Dropping Out or Changed due to no Vintages available, continued

ID	Code	Time	Action	Adjustment
110	DCLORG3Q086SBEA	Prior to Jan 2013	Dropped	-
111	DGOERG3Q086SBEA	Prior to Jan 2013	Dropped	-
112	DONGRG3Q086SBEA	Prior to Jan 2013	Dropped	-
113	DHUTRG3Q086SBEA	Prior to Jan 2013	Dropped	-
114	DHLCRG3Q086SBEA	Prior to Jan 2013	Dropped	-
115	DTRSRG3Q086SBEA	Prior to Jan 2013	Dropped	-
116	DRCARG3Q086SBEA	Prior to Jan 2013	Dropped	-
117	DFSARG3Q086SBEA	Prior to Jan 2013	Dropped	-
118	DIFSRG3Q086SBEA	Prior to Jan 2013	Dropped	-
119	DOTSRG3Q086SBEA	Prior to Jan 2013	Dropped	-
122	WPSFD49207	Prior to Mar 2015	Dropped	-
124	WPSFD49502	Prior to Mar 2015	Dropped	-
125	WPSFD4111	Prior to Mar 2015	Dropped	-
127	WPSID61	Prior to Mar 2015	Dropped	-
170	TABSHNOx	Prior to June 2010	Dropped	-
171	TLBSHNOx	Prior to June 2010	Dropped	-
172	LIABPIx	Prior to June 2010	Dropped	-
173	TNWBSHNOx	Prior to June 2010	Dropped	-
174	NWPIx	Prior to June 2010	Dropped	-
175	TARESAx	Prior to June 2010	Dropped	-
176	HNOREMQ027Sx	Prior to June 2013	Dropped	-
177	TFAABSHNOx	Prior to June 2010	Dropped	-
181	SPCS20RSA	Prior to 2003 <sup>1</sup>	Dropped	-
183	EXUSEU	Prior to 2003 <sup>1</sup>	Dropped	-
189	USEPUINDXMx	Prior to June 2013	Dropped	-
190	B020RE1Q156NBEA	Prior to Feb 2013	Calculation by hand	EXPGS/GDP
191	B021RE1Q156NBEA	Prior to Feb 2013	Calculation by hand	IMPGS/GDP
192	GFDEGDQ188S	Prior to Oct 2012	Calculation by hand	GFDEBTN/GDP
195	IPB51222S	Prior to Feb 2015	Dropped	-
196	IPFUELS	Prior to Feb 2015	Dropped	-
205	WPSID62	Prior to Mar 2015	Dropped	-
220	HWIURATIOx	Prior to 2015	Dropped	-
233	CUSR0000SEHC	Prior to April 2011	Dropped	-
234	TLBSNNCBx	Prior to June 2010	Dropped	-
235	TLBSNNCBBDIx	Prior to June 2010	Dropped	-
236	TTAABSNNCBx	Prior to June 2010	Dropped	-
237	TNWMVBSNNCBx	Prior to June 2010	Dropped	-
238	TNWMVBSNNCBBDIx	Prior to June 2010	Dropped	-
239	TLBSNNBx	Prior to June 2010	Dropped	-
240	TLBSNNBBDIx	Prior to June 2010	Dropped	-
241	TABSNNBx	Prior to June 2010	Dropped	-
242	TABSNNBBDIx	Prior to June 2010	Dropped	-
243	TNWBSNNBBDIx	Prior to June 2010	Dropped	-
244	CNCFx	Prior to June 2010	Dropped	-

<sup>1</sup>Dropped due to not enough observations.