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Figure 4.1 Inflation predictions: Hot/Cold models, out-of-sample, 2020-3Q 2022

Line chart, 1Q 2019 to 3Q 2022. Units are percent change from the same month one year ago. The five series are Actual inflation, as measured by the Personal Consumption Expenditures price index excluding food and energy, u-gap (u-u*) models from both the stable inflation period (1985 to 2019) and pre-pandemic period (1962 to 2019), and v/u-gap (v/u-v/u*) models from both the stable inflation period (1985 to 2019) and pre-pandemic period (1962 to 2019). Actual inflation begins between 1.5% and 2%, falls to 1% in late 2Q 2020, and climbs over the next two years to a peak of just over 5% in late 1Q 2022. It remains near this value for the rest of the series. The four other series track closely near 1.5% until 1Q 2021 when the pre-pandemic period series begin to increase more rapidly. The pre-pandemic v/u-gap series accelerates a little faster and ends at a maximum of just below 4%, while the pre-pandemic u-gap series ends closer to 3%. Both stable inflation period models remain nearly identical and increase to approximately 2.5%.

Source: Author's calculations based on Phillips curve models estimated over the pre-pandemic period (1962-2019) and the stable inflation period (1985-2019) reported in Tables 4.1 and 4.2.

Figure 2: Select components of core PCE inflation

Percent

Period	Goods ex. food and energy	Services ex. housing and energy	Housing services
Jan-14	-1.131307868	2.38897632	2.589188655
Feb-14	-1.099672908	2.266430793	2.591639301
Mar-14	-0.94227675	2.345851034	2.673544119
Apr-14	-0.799379826	2.473209818	2.715341088
May-14	-0.704615788	2.5505041	2.732219009
Jun-14	-0.655136268	2.438858159	2.745220811
Jul-14	-0.638175604	2.496510072	2.852565355
Aug-14	-0.790134918	2.443950795	2.796208069
Sep-14	-0.706813684	2.41166406	2.845500783
Oct-14	-0.602160098	2.138922736	2.866708719
Nov-14	-0.817749924	2.108347845	2.891773886
Dec-14	-0.769776157	2.040286407	2.801590979
Jan-15	-0.943577893	1.912308047	2.854252962
Feb-15	-0.727401846	1.86342836	2.932779652
Mar-15	-0.631452849	1.752701256	2.946195736
Apr-15	-0.584575726	1.682348694	2.981177551
May-15	-0.581702266	1.583959665	2.994503397

Period	Goods ex. food and energy	Services ex. housing and energy	Housing services
Jun-15	-0.828886229	1.666003514	3.108931632
Jul-15	-0.95072852	1.543963862	3.14767676
Aug-15	-0.895091238	1.574157915	3.174136803
Sep-15	-0.799300358	1.523466145	3.230107324
Oct-15	-0.976814629	1.468752304	3.236822989
Nov-15	-0.789841115	1.398295457	3.186864885
Dec-15	-0.789017046	1.334515586	3.235167064
Jan-16	-0.622083981	1.616798878	3.248012138
Feb-16	-0.631559584	1.728131906	3.219962272
Mar-16	-0.750911821	1.774061349	3.185970925
Apr-16	-0.651306185	1.868853143	3.203217148
May-16	-0.842429874	1.975559779	3.302140276
Jun-16	-0.861389886	1.994312444	3.277462252
Jul-16	-0.862537006	2.13628563	3.272620122
Aug-16	-0.576800706	2.200237058	3.310735086
Sep-16	-0.579190159	2.158651345	3.378186515
Oct-16	-0.517347567	2.342488221	3.459745956
Nov-16	-0.883446675	2.365234917	3.578104626
Dec-16	-0.837474408	2.442345875	3.635917075
Jan-17	-0.502429783	2.433503957	3.609364937
Feb-17	-0.505990641	2.501914181	3.618926988
Mar-17	-0.537335557	2.182411552	3.601148035
Apr-17	-0.854920416	2.320265729	3.524054643
May-17	-0.885630136	2.249609898	3.431574793
Jun-17	-0.709959033	2.217033042	3.414882773
Jul-17	-0.584849706	1.97784636	3.393608674
Aug-17	-0.847510116	1.9585636	3.461613701
Sep-17	-1.166159715	2.149896343	3.372349569
Oct-17	-0.965784803	2.262385863	3.36789853
Nov-17	-0.830172253	2.271783862	3.306599995
Dec-17	-0.852847494	2.295700666	3.357383611
Jan-18	-0.759519868	2.338019205	3.380318683
Feb-18	-0.831067881	2.419998427	3.301318432
Mar-18	-0.667536016	2.815073619	3.371432554
Apr-18	-0.38139853	2.546506773	3.460595629
May-18	-0.129875527	2.601905855	3.481616372
Jun-18	-0.386618028	2.657697888	3.434411559
Jul-18	-0.506179127	2.826433039	3.463322927
Aug-18	-0.732943957	2.766908679	3.407674788
Sep-18	-0.538318693	2.829151891	3.372048172
Oct-18	-0.570952282	2.632385037	3.337634262
Nov-18	-0.346971835	2.706276573	3.393354751
Dec-18	-0.458345978	2.806095953	3.284842
Jan-19	-0.351385732	2.421542161	3.25200498
Feb-19	-0.625397388	2.251985527	3.353872421
Mar-19	-0.764750623	2.12590466	3.383674089
Apr-19	-0.916572166	2.351392652	3.422982885
May-19	-0.89054421	2.209102892	3.407214983
Jun-19	-0.469498263	2.17364057	3.495924765
Jul-19	-0.490994944	2.208337682	3.459916315

Period	Goods ex. food and energy	Services ex. housing and energy	Housing services
Aug-19	-0.079708853	2.178453846	3.422539894
Sep-19	-0.250687029	1.974624534	3.499199828
Oct-19	-0.322742895	2.038665369	3.411750114
Nov-19	-0.5107338	1.859791058	3.356988024
Dec-19	-0.441533593	1.934804477	3.383461738
Jan-20	-0.753382373	2.224015113	3.455516277
Feb-20	-0.385991042	2.278248447	3.398784746
Mar-20	-0.579557982	2.055529476	3.324284887
Apr-20	-1.232701233	1.132479679	3.170773318
May-20	-1.498976539	1.30152614	3.163669662
Jun-20	-1.581810749	1.430575672	2.934405971
Jul-20	-0.925945367	1.495797891	2.883383686
Aug-20	-0.3484796	1.641686383	2.768446937
Sep-20	-0.277605443	1.896863726	2.561308775
Oct-20	-0.454144065	1.800022322	2.553154061
Nov-20	-0.185524846	1.749480303	2.334890991
Dec-20	0.043293243	1.893307723	2.209391105
Jan-21	0.312074982	1.999271315	2.028001966
Feb-21	0.013688389	2.144541256	2.012892
Mar-21	0.513237515	2.815665534	1.961325749
Apr-21	2.36647389	3.87574752	1.979589908
May-21	3.575348743	3.979339131	2.030556537
Jun-21	4.231637696	4.091852102	2.233992467
Jul-21	3.97893443	4.298103521	2.299849652
Aug-21	3.86669335	4.323491542	2.449895608
Sep-21	4.095534349	4.165619515	2.783245844
Oct-21	5.07012208	4.311447959	3.024467073
Nov-21	5.452529306	4.925533631	3.412296423
Dec-21	6.121759689	4.918946446	3.677420359
Jan-22	6.768616322	4.800634905	4.003356852
Feb-22	7.560220669	4.706510681	4.26577764
Mar-22	7.380829805	4.610361468	4.50954448
Apr-22	6.290372832	4.470459475	4.79113582
May-22	5.691826488	4.40571292	5.123566094
Jun-22	5.7315989	4.533843998	5.555427633
Jul-22	5.511225249	3.930976284	5.951424132
Aug-22	5.588682689	4.172158655	6.406851072
Sep-22	5.689887458	4.476191348	6.817197273
Oct-22	4.60534912	4.667573371	7.048201433
Nov-22	3.767538281	4.320563257	7.328817186
Dec-22	2.996697963	4.115536999	7.741669168

Note: Percent change in select categories of the personal consumption expenditures price index from 12 months ago. The gray shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research. The shaded recession period extends from February 2020 through April 2020.

Source: U.S. Bureau of Economic Analysis, Personal Consumption Expenditures Price Index.

Figure 3: Expected price change next 5 to 10 years

Line chart, January 1990 to February 2023. Units are percent change from the same month one year ago. The series is expected annual price change over the next five to ten years. The series begins near 4% and quickly reaches a maximum of 4.7% near the end of 1990. It then decreases rapidly to near 3% in 1998 where it will hover near until 2014. It then slowly falls to around 2.5% in 2017 and remains near that value until 2021 when the series begins to climb back to 3%. The series remains near 3% for the remainder of the figure.

Note: Three-month rolling average of median consumer expectations for inflation over the next 5 to 10 years.

Source: University of Michigan Surveys of Consumers.

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