|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Economy | Start | End | Number of months | No of forecasters | | | Total observations |
| Minimum | Maximum | Average |
| Argentina | Apr.01 | Apr.16 | 181 | 7 | 25 | 15.1 | 2734 |
| Bulgaria | May.07 | Jun.16 | 110 | 8 | 16 | 11.9 | 1309 |
| Brazil | Apr.01 | Jun.16 | 183 | 13 | 27 | 18.0 | 3303 |
| Canada | Jan.90 | Jun.16 | 318 | 11 | 20 | 15.2 | 4847 |
| Switzerland | Jun.98 | Jul.16 | 218 | 6 | 17 | 13.3 | 2891 |
| Chile | Apr.01 | Jul.16 | 184 | 11 | 23 | 17.0 | 3122 |
| China | Dec.94 | Jun.16 | 259 | 11 | 24 | 17.9 | 4624 |
| Colombia | Apr.01 | Jul.16 | 184 | 7 | 16 | 12.2 | 2251 |
| Czech Republic | May.07 | Jun.16 | 110 | 13 | 22 | 17.0 | 1869 |
| Germany | Jan.90 | Jul.16 | 319 | 12 | 32 | 26.5 | 8457 |
| Estonia | May.07 | Jul.16 | 111 | 6 | 12 | 9.2 | 1023 |
| Spain | Jan.95 | Jul.16 | 259 | 7 | 19 | 13.9 | 3607 |
| France | Jan.90 | Jul.16 | 319 | 6 | 26 | 17.8 | 5692 |
| UK (CPI) | Jan.05 | Jun.16 | 138 | 19 | 29 | 24.5 | 3382 |
| UK (RPI) | Jan.90 | Dec.04 | 180 | 18 | 39 | 29.5 | 5308 |
| Hong Kong SAR | Dec.94 | Jun.16 | 259 | 9 | 21 | 15.4 | 3984 |
| Croatia | May.07 | Jun.16 | 110 | 7 | 17 | 11.3 | 1238 |
| Hungary | May.07 | Jun.16 | 110 | 12 | 25 | 16.5 | 1810 |
| Indonesia | Dec.94 | Jul.16 | 260 | 7 | 20 | 13.9 | 3601 |
| Italy | Jan.90 | Jul.16 | 319 | 6 | 21 | 13.8 | 4406 |
| Japan | Jan.90 | Jun.16 | 318 | 5 | 25 | 17.2 | 5481 |
| Korea | Dec.94 | Jul.16 | 260 | 9 | 22 | 15.2 | 3949 |
| Lithuania | May.07 | Jun.16 | 110 | 6 | 12 | 8.0 | 883 |
| Latvia | May.07 | Jun.16 | 110 | 7 | 14 | 9.5 | 1043 |
| Mexico | Apr.01 | Jul.16 | 184 | 9 | 27 | 19.3 | 3549 |
| Malaysia | Dec.94 | Jun.16 | 259 | 10 | 23 | 15.1 | 3916 |
| Netherlands | Jan.95 | Jul.16 | 259 | 7 | 14 | 9.4 | 2430 |
| Norway | Jun.98 | Jun.16 | 217 | 5 | 12 | 9.2 | 2007 |
| Peru | Apr.01 | Jul.16 | 184 | 7 | 17 | 11.8 | 2177 |
| Philippines1 | Dec.94 | Jul.16 | 260 | 12 | 21 | 15.4 | 1526 |
| Poland | May.07 | Jun.16 | 110 | 12 | 25 | 17.3 | 1901 |
| Romania | May.07 | Jul.16 | 111 | 7 | 19 | 12.4 | 1374 |
| Russia | May.07 | Jul.16 | 111 | 10 | 24 | 16.3 | 1807 |
| Sweden | Jan.95 | Jun.16 | 258 | 6 | 18 | 13.4 | 3470 |
| Singapore | Dec.94 | Jun.16 | 259 | 8 | 19 | 14.7 | 3800 |
| Slovenia | May.07 | Jul.16 | 111 | 7 | 16 | 10.6 | 1179 |
| Slovakia | May.07 | Jun.16 | 110 | 8 | 15 | 11.4 | 1249 |
| Thailand | Dec.94 | Jul.16 | 260 | 8 | 22 | 13.9 | 3623 |
| Turkey | May.07 | Jul.16 | 111 | 9 | 21 | 15.2 | 1683 |
| Chinese Taipei | Dec.94 | Jul.16 | 260 | 9 | 22 | 14.3 | 3720 |
| Ukraine | May.07 | Jul.16 | 111 | 8 | 19 | 14.4 | 1599 |
| United States | Jan.90 | Jun.16 | 318 | 16 | 33 | 25.8 | 8203 |
| Venezuela | Apr.01 | Dec.15 | 177 | 7 | 19 | 13.6 | 2402 |

Online Annex Table A1: Data coverage

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Economy | Start | End | Length (months) | Minimum current year forecast | Minimum next year forecast | Minimum inflation outcome |
| Argentina | Jun.01 | Feb.02 | 9 | –1.6 | –0.9 | –1.7 |
| Chile | Aug.09 | Mar.10 | 8 | –1.3 | 2.7 | –2.3 |
| Bulgaria | Aug.13 | Apr.15 | 21 | –1.3 | 1.1 | –2.6 |
| Estonia | May.09 | Apr.10 | 12 | –0.8 | –0.2 | –2.2 |
| Estonia | Jun.14 | Jul.16 | 26 | –0.4 | 1.3 | –1.3 |
| Croatia | Feb.14 | Jun.16 | 29 | –0.7 | 1.0 | –1.9 |
| Hungary | Sep.14 | Jun.15 | 10 | –0.1 | 1.5 | –1.4 |
| Lithuania | Dec.14 | Feb.16 | 15 | –0.7 | 1.4 | –1.8 |
| Latvia | Oct.09 | Oct.10 | 13 | –3.0 | –3.1 | –4.2 |
| Latvia | Jan.16 | Jun.16 | 6 | –0.1 | 1.7 | –0.8 |
| Poland | Aug.14 | Jun.16 | 23 | –0.9 | 0.7 | –1.3 |
| Romania | Jun.15 | Jul.16 | 14 | –1.2 | –0.2 | –3.5 |
| Slovenia | Jan.15 | Jul.16 | 19 | –0.5 | 0.8 | –0.8 |
| Slovakia | Feb.14 | Jun.16 | 29 | –0.3 | 0.9 | –0.8 |
| Ukraine | Nov.12 | Dec.13 | 14 | –0.3 | 3.3 | –0.8 |
| Switzerland | Mar.09 | Dec.09 | 10 | –0.5 | 0.6 | –1.2 |
| Switzerland | Oct.11 | Dec.13 | 27 | –0.6 | –0.1 | –1.1 |
| Switzerland | Sep.14 | Jul.16 | 23 | –1.3 | –0.3 | –1.4 |
| Spain | Mar.09 | Dec.09 | 10 | –0.3 | 1.3 | –1.4 |
| Spain | Jul.14 | Jul.16 | 25 | –1.1 | 0.5 | –1.3 |
| France | May.09 | Dec.09 | 8 | 0.1 | 1.1 | –0.7 |
| Italy | Feb.16 | Jul.16 | 6 | –0.1 | 0.9 | –0.5 |
| Japan | Oct.95 | May.96 | 8 | 0.0 | 0.2 | –0.7 |
| Japan | Feb.99 | Oct.04 | 69 | –1.0 | –0.9 | –1.6 |
| Japan | Jun.05 | Jun.06 | 13 | –0.2 | 0.1 | –1.0 |
| Japan | Feb.09 | Aug.11 | 31 | –1.3 | –1.0 | –2.5 |
| Japan | Jun.12 | Jul.13 | 14 | –0.2 | –0.1 | –0.9 |
| Sweden | Sep.96 | Jun.97 | 10 | 0.8 | 1.3 | –0.4 |
| Sweden | Jun.98 | Apr.99 | 11 | 0.3 | 0.6 | –1.2 |
| Sweden | Apr.09 | Jan.10 | 10 | –0.4 | 0.8 | –1.9 |
| Sweden | Aug.14 | Oct.15 | 15 | –0.2 | 0.7 | –0.4 |
| United States | Mar.09 | Dec.09 | 10 | –1.0 | 1.6 | –2.1 |
| China | Apr.98 | Jun.00 | 27 | –1.3 | 1.2 | –2.2 |
| China | Mar.02 | Feb.03 | 12 | –0.8 | 0.3 | –1.3 |
| China | Feb.09 | Dec.09 | 11 | –0.7 | 1.4 | –1.8 |
| Hong Kong SAR | Nov.98 | Aug.04 | 70 | –3.6 | –1.5 | –6.1 |
| Malaysia | Jun.09 | Jan.10 | 8 | 0.6 | 2.0 | –2.5 |
| Singapore | Jun.98 | Jun.99 | 13 | –0.6 | –0.5 | –1.5 |
| Singapore | Nov.01 | Dec.02 | 14 | –0.4 | 1.1 | –1.1 |
| Singapore | Jun.09 | Feb.10 | 9 | –0.2 | 1.4 | –0.9 |
| Singapore | Nov.14 | Jun.16 | 20 | –0.5 | 0.5 | –1.6 |
| Thailand | May.99 | Dec.99 | 8 | 0.3 | 2.2 | –1.2 |
| Thailand | Jan.09 | Nov.09 | 11 | –1.0 | 2.1 | –4.4 |
| Thailand | Jan.15 | Jun.16 | 18 | –0.8 | 1.4 | –1.3 |

Online Annex Table A2: Deflation episodes

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Economy | Start | End | Length (months) | Minimum current year forecast | Minimum next year forecast | Minimum inflation outcome |
| Chinese Taipei | Jun.03 | Feb.04 | 9 | –0.3 | 0.5 | –1.0 |
| Chinese Taipei | Feb.09 | Feb.10 | 13 | –1.2 | 0.7 | –2.3 |
| Chinese Taipei | Jan.15 | Oct.15 | 10 | –0.4 | 1.1 | –0.9 |
| Online Annex Table A2 (continued): Deflation episodes  *Notes:* See the definition of deflation episodes in Graph 1. The length of deflation episodes in this table includes the two consecutive months of positive inflation rates that potentially follow deflation. The minimum forecast refers to the lowest median forecast across forecasters, observed over the deflation episode. | | | | | | |

|  |  |  |
| --- | --- | --- |
| Variable | Source | Data transformations |
| CPI inflation | National data |  |
| Inflation expectations | Consensus Economics |  |
| GDP growth expectations | Consensus Economics |  |
| Nominal effective exchange rate | National data |  |
| Inflation gap |  | For countries that specify target ranges, the gap refers to the distance of inflation from the mid-point of the range. For economies that do not pursue IT, and for current inflation targeters prior to the adoption of IT, we use the deviation of inflation outcomes from a Hodrick-Prescott filtered trend, with a smoothing parameter of 14,400. The classification of countries into IT and non-IT regimes follows the working paper version of Mehrotra and Yetman (2018). |
| Output gap | IMF, *World Economic Outlook*; national data; authors’ calculations | The output gap is calculated as the difference between actual and potential GDP, with the potential GDP estimated using a Hodrick-Prescott-Filter and a smoothing parameter of 1,600 for quarterly data. The data are then converted to monthly frequency by linear interpolation. |
| Taylor-rule benchmark | Hofmann and Bogdanova (2012), Footnote to Graph 1 | Calculated as:  . The long-run real interest rate is set equal to the economy’s trend growth rate (y-o-y). Trend growth is obtained from applying the HP filter to quarterly real GDP data and using a linear interpolation to convert the data to monthly frequency. |
| Recession dummy variable |  | Takes a value of one during quarters of negative quarter-on-quarter real GDP growth, and zero otherwise. |
| Policy interest rate | Datastream; national data | Where policy rates are not available, money market interest rates are used. |
| Shadow interest rate | Krippner (2016) |  |

Online Annex Table A3: Data sources and definitions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | (1) | (2) | (3) | (4) | (5) |
|  | 0.284\*\* | 0.300\*\* | 0.287\*\* | 0.557\*\* | 0.536\*\* |
| (0.125) | (0.128) | (0.125) | (0.225) | (0.221) |
|  | 0.0200 | -0.0805 | -0.116 | -0.0676 | -0.0989 |
| (0.173) | (0.138) | (0.128) | (0.247) | (0.244) |
|  | 0.476\*\* | 0.410\*\* |  | 0.753\*\* |  |
| (0.210) | (0.178) |  | (0.299) |  |
|  | -0.480\* | -0.440\* | -0.443\* | -0.750\* | -0.756\* |
| (0.269) | (0.240) | (0.247) | (0.412) | (0.426) |
|  |  | 0.0288 | 0.0365 | 0.0179 | 0.0343 |
|  | (0.0230) | (0.0243) | (0.0372) | (0.0387) |
|  |  | -0.185\*\* | -0.208\*\* | -0.295\*\* | -0.341\*\* |
|  | (0.0724) | (0.0817) | (0.120) | (0.137) |
|  |  | -0.00774\*\* | -0.00879\*\* | -0.0118\* | -0.0141\* |
|  | (0.00361) | (0.00402) | (0.00614) | (0.00700) |
|  | -0.0624\*\*\* | -0.0702\*\*\* | -0.0717\*\*\* | -0.142\*\*\* | -0.144\*\*\* |
| (0.0226) | (0.0220) | (0.0227) | (0.0409) | (0.0419) |
|  | 0.126\* | 0.0828\* | 0.0759 | 0.0659 | 0.0502 |
| (0.0703) | (0.0464) | (0.0460) | (0.0735) | (0.0746) |
|  | -0.0132 | -0.00988 | -0.00875 | 0.0187 | 0.0224 |
| (0.0147) | (0.0109) | (0.0104) | (0.0260) | (0.0256) |
|  | 4.016\*\* | 3.311 | 3.571\* | 10.42\*\*\* | 10.90\*\*\* |
| (1.735) | (1.990) | (1.821) | (2.395) | (2.494) |
|  | 0.0417\* | 0.0448\*\* | 0.0467\* | 0.0926\* | 0.0960\* |
| (0.0218) | (0.0218) | (0.0233) | (0.0461) | (0.0486) |
|  | 7.01e-06\*\* | 5.21e-06\*\* | 5.71e-06\*\* | 1.08e-05\*\* | 1.19e-05\*\* |
| (2.61e-06) | (2.13e-06) | (2.30e-06) | (4.17e-06) | (4.52e-06) |
|  | -0.00227 | -0.00511 | -0.00896 | -0.0121 | -0.0176 |
| (0.0295) | (0.0273) | (0.0287) | (0.0567) | (0.0590) |
|  | 0.0340 | -0.0769 | -0.0686 | -0.137 | -0.127 |
| (0.0313) | (0.0563) | (0.0522) | (0.110) | (0.105) |
|  |  |  | 0.319\*\* |  | 0.635\*\* |
|  |  | (0.140) |  | (0.270) |
| Obs | 7,225 | 7,225 | 7,225 | 7,221 | 7,221 |
| R-squared | 0.548 | 0.574 | 0.563 | 0.660 | 0.650 |
| Online Annex Table A4: Forecast disagreement, excluding the Great Financial Crisis  *Notes:* Dependent variable is the interquartile range of expected inflation over the next 12 months (Columns (1) to (3)) or the interdecile range (Columns (4) and (5)). Excludes the period of the Great Financial Crisis (September 2008–December 2009). Robust standard errors clustered by country and time in parentheses. \*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1% level, respectively. Columns (1), (2) and (4) show results with deflation dummies that comprise all deflations; Columns (3) and (5) include only persistent deflations. All models include country and time fixed effects. | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | (1) | (2) | (3) | (4) |
|  | 0.286\*\* | 0.276\*\* | 0.294\*\* | 0.285\*\* |
| (0.132) | (0.130) | (0.128) | (0.126) |
|  | -0.00463 | -0.0432 | 0.0637 | 0.0400 |
| (0.156) | (0.141) | (0.163) | (0.140) |
|  | 0.382\*\* |  | 0.393\*\* |  |
| (0.166) |  | (0.177) |  |
|  | -0.445\* | -0.447\* | -0.424\* | -0.426\* |
| (0.250) | (0.257) | (0.238) | (0.245) |
|  | 0.0306 | 0.0394 | 0.0253 | 0.0342 |
| (0.0248) | (0.0263) | (0.0237) | (0.0249) |
|  | -0.159\*\* | -0.184\*\* | -0.163\*\* | -0.188\*\* |
| (0.0702) | (0.0795) | (0.0661) | (0.0757) |
|  | -0.00636\* | -0.00745\* | -0.00645\* | -0.00757\*\* |
| (0.00342) | (0.00382) | (0.00327) | (0.00367) |
|  | -0.0139 | -0.0122 |  |  |
| (0.00902) | (0.00969) |  |  |
|  | 0.0980\* | 0.0980\* | 0.0820\* | 0.0812\* |
| (0.0531) | (0.0540) | (0.0464) | (0.0475) |
|  | -0.00705 | -0.00661 | -0.00822 | -0.00783 |
| (0.0103) | (0.0101) | (0.0106) | (0.0103) |
|  | 3.936\*\* | 4.161\*\* | 3.739\*\* | 3.977\*\* |
| (1.674) | (1.550) | (1.795) | (1.655) |
|  | 0.0351 | 0.0368 |  |  |
| (0.0236) | (0.0250) |  |  |
|  | 5.88e-06\*\* | 6.40e-06\*\* |  |  |
| (2.64e-06) | (2.86e-06) |  |  |
|  | -0.00549 | -0.00309 | -0.00103 | -6.15e-05 |
| (0.0232) | (0.0244) | (0.0275) | (0.0282) |
|  | 0.00557 | 0.0115 |  |  |
| (0.0398) | (0.0374) |  |  |
|  |  | 0.320\*\* |  | 0.353\*\* |
|  | (0.141) |  | (0.156) |
|  |  |  | -0.0578\*\*\* | -0.0596\*\*\* |
|  |  | (0.0204) | (0.0211) |
|  |  |  | 0.0343 | 0.0339 |
|  |  | (0.0211) | (0.0221) |
|  |  |  | 5.68e-06\*\* | 6.15e-06\*\* |
|  |  | (2.37e-06) | (2.54e-06) |
|  |  |  | -0.0521 | -0.0477 |
|  |  | (0.0532) | (0.0496) |
| Obs | 7,860 | 7,860 | 7,860 | 7,860 |
| R-squared | 0.547 | 0.537 | 0.559 | 0.550 |

Online Annex Table A5: Forecast disagreement, alternative control variables

*Notes:* Dependent variable is the interquartile range of expected inflation over the next 12 months. denotes a one-sided output gap and is a shadow policy rate from Krippner (2016). Robust standard errors clustered by country and time in parentheses. \*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1% level, respectively. All models include country and time fixed effects.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
| Variable | IT | Non-IT | IT | Non-IT | Excl ZLB | Excl ZLB |
|  | 0.940\*\*\* | 0.871\*\*\* | 0.939\*\*\* | 0.875\*\*\* | 0.888\*\*\* | 0.890\*\*\* |
| (0.0106) | (0.0392) | (0.0107) | (0.0387) | (0.0306) | (0.0291) |
|  | 1.319\*\*\* | 0.881\*\*\* | 1.282\*\*\* | 0.879\*\*\* | 0.940\*\*\* | 0.940\*\*\* |
| (0.155) | (0.0576) | (0.139) | (0.0520) | (0.0535) | (0.0372) |
|  | 1.62e-05 | -0.167\*\*\* |  |  | -0.186\*\*\* |  |
| (0.0352) | (0.0527) |  |  | (0.0620) |  |
|  | 0.0103 | 0.216\*\* | 0.0119 | 0.216\*\* | 0.107\*\*\* | 0.110\*\* |
| (0.0121) | (0.0835) | (0.0113) | (0.0871) | (0.0391) | (0.0408) |
|  | 0.0126 | -0.0310\* | 0.0114 | -0.0334\* | -0.00741 | -0.0112 |
| (0.00892) | (0.0167) | (0.00810) | (0.0165) | (0.00737) | (0.00746) |
|  | 0.0194\* | 0.0770\*\*\* | 0.0185\* | 0.0919\*\*\* | 0.0414\*\*\* | 0.0526\*\*\* |
| (0.0105) | (0.0230) | (0.00986) | (0.0243) | (0.0115) | (0.0130) |
|  | -0.00356\* | 0.00302\*\* | -0.00327\* | 0.00366\*\*\* | 0.00130\* | 0.00179\*\* |
| (0.00173) | (0.00121) | (0.00159) | (0.00127) | (0.000647) | (0.000710) |
|  | 0.00728 | 0.0253\*\*\* | 0.00767 | 0.0262\*\*\* | 0.0189\*\*\* | 0.0200\*\*\* |
| (0.00487) | (0.00674) | (0.00489) | (0.00675) | (0.00564) | (0.00612) |
|  | -0.0182\* | -0.0238 | -0.0183\*\* | -0.0207 | -0.0126 | -0.0116 |
| (0.00899) | (0.0226) | (0.00881) | (0.0227) | (0.0152) | (0.0162) |
|  | 0.00220 | -0.00175 | 0.00224 | -0.00205 | -0.00296 | -0.00309 |
| (0.00208) | (0.00349) | (0.00206) | (0.00338) | (0.00368) | (0.00360) |
|  | -0.631\*\* | -2.235\*\* | -0.633\*\* | -2.336\*\* | -2.308\*\*\* | -2.362\*\*\* |
| (0.283) | (0.869) | (0.282) | (0.875) | (0.703) | (0.760) |
|  | 0.00586 | -0.0223\*\* | 0.00586 | -0.0228\*\* | 0.0104\* | 0.00959 |
| (0.00420) | (0.00968) | (0.00422) | (0.0102) | (0.00606) | (0.00583) |
|  | -0.00814\* | -3.80e-06\*\*\* | -0.00799\* | -4.00e-06\*\*\* | -0.00161\*\*\* | -0.00162\*\*\* |
| (0.00416) | (8.07e-07) | (0.00409) | (8.51e-07) | (0.000265) | (0.000264) |
|  | 0.00594 | -0.0174 | 0.00619 | -0.0182 | -0.0112 | -0.0130 |
| (0.0116) | (0.0115) | (0.0112) | (0.0117) | (0.0103) | (0.0102) |
|  | 0.00501 | -0.00942 | 0.00782 | -0.00731 | -0.0327\*\* | -0.0290\*\* |
| (0.0136) | (0.0183) | (0.0140) | (0.0167) | (0.0143) | (0.0135) |
|  |  |  | -0.0372 | -0.158\*\*\* |  | -0.238\*\*\* |
|  |  | (0.0430) | (0.0568) |  | (0.0737) |
| Obs | 3,195 | 4,653 | 3,195 | 4,653 | 6,532 | 6,532 |
| R-squared | 0.996 | 0.992 | 0.996 | 0.992 | 0.993 | 0.993 |

Online Annex Table A6: Left tail of forecast distribution and monetary policy

*Notes:* Dependent variable is the 25th percentile of the forecast distribution of inflation over the next 12 months. Robust standard errors clustered by country and time in parentheses. \*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1% level, respectively. Columns (1), (2) and (5) show results from estimations where the deflation dummy includes all deflations; Columns (3), (4) and (6) include only persistent deflations. All models include country and time fixed effects.

|  |  |  |
| --- | --- | --- |
| ***Lower tail of inflation expectations*** | ***Median infl. expectation for next year*** | ***GDP forecast disagreement*** |
|  |  |  |
| ***Output gap*** | ***Inflation*** | ***Policy rate*** |
|  |  |  |

|  |
| --- |
| Online Annex Graph A1: Responses to shock in left-hand tail, alternative ordering  Notes: The titles of the panels show the name of the response variable. The underlying shock is a negative one standard deviation shock to the 25th percentile of inflation expectations. The numbers on the x-axis denote the number of months that have passed from the shock. The order of the variables is: the output gap, inflation and the policy rate, left-hand tail of inflation expectations, median inflation expectations, GDP growth forecast disagreement. |