

Data Appendix for:

Inflation in Emerging and Developing Economies

Evolution, Drivers, and Policies

Editors

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APPENDIX

Cross-Country Database of Inflation and Country Characteristics

The database contains a wide range of inflation measures and key country characteristics, including macroeconomic and structural variables, for up to 175 countries for 1970-2018. This appendix describes the data sources and definitions of the variables and their construction in detail.

Measures of inflation

Measures. Data are available for six measures of inflation: headline, food, energy, and core consumer price index (CPI) inflation; producer price index (PPI) inflation; and gross domestic product (GDP) deflator changes. The database also includes headline CPI inflation expectations. Data sources include Haver Analytics, ILOSTAT, the International Monetary Fund's (IMF's) International Financial Statistics and World Economic Outlook database, OECDstat, UNdata, and the World Bank's Development Prospects Group internal databases.¹

Country coverage. Headline inflation data are available for 175 countries, including 34 advanced economies and 141 emerging market and developing economies (EMDEs), including 31 low-income countries (LICs). A complete (balanced) data set of annual data for all six inflation measures is available for 25 countries for 1970-2017, including 20 advanced economies and 5 non-LIC EMDEs. One- or two-year data gaps are completed through interpolation. Quarterly data for headline CPI inflation are available for up to 34 advanced economies and 78 EMDEs, including 5 LICs for 1971:1-2018:2 (of which all but 7 non-LIC EMDEs have updated data to 2018). A balanced sample with quarterly data available for 1971:1-2018:2 includes 24 advanced economies and 22 non-LIC EMDEs. Table A.1 provides a breakdown of the number of countries with data available for every year of the period indicated in the column title.

Headline inflation. Data are drawn primarily from three databases: Haver Analytics, OECDstat, and the IMF's World Economic Outlook. The IMF Consumer Price Index database has data for its member countries for long time periods, but with gaps. The ILOSTAT database has coverage of most countries through 2011, but with some gaps.

¹ ILOSTAT is a database maintained by the International Labour Organization. OECDstat includes data and metadata for countries in the Organisation for Economic Co-operation and Development and select nonmember economies. UNdata is a database provided by the United Nations.

Food inflation. Data are drawn from four data sets. The ILOSTAT database on CPI components is the main source as it has the most comprehensive coverage. Data for some years are missing and coverage ends in 2011. The IMF Consumer Price Index database is used to fill data gaps. Haver Analytics provides coverage for some remaining data gaps. OECDstat covers data for Organisation for Economic Co-operation and Development (OECD) members and some nonmembers starting in 1970.

Energy, core, and PPI inflation. Data are primarily drawn from Haver Analytics (energy, core, and PPI inflation), ILOSTAT (energy), UNdata (energy), and OECDstat (energy, core, and PPI inflation). Data from these sources are merged only if there are no large discrepancies in values between the databases. Official core inflation data are available for 70 countries, including 36 non-LIC EMDEs and 2 LICs. For the other countries, missing core inflation series are constructed using CPI weights and inflation in CPI components (Table A.2).

Calculation of core inflation. For the countries for which official measures of core inflation are unavailable, core inflation series are obtained by subtracting the contribution of volatile components of CPI (food and energy) from headline inflation.

For most EMDEs and LICs, monthly energy inflation series are not available. For these countries, the calculation of core inflation uses the housing, water, electricity, gas, and other fuels category of the CPI as a proxy for energy inflation. The following formula is used to calculate core inflation in each period:

$$\text{Core inflation} = \frac{[\pi - \omega_F \pi_F - \omega_E \pi_E]}{1 - \omega_F - \omega_E}$$

where π , π_F , and π_E are the monthly inflation rates for headline, food, and energy, respectively, and ω_F and ω_E are the weights for food and energy, respectively. The weights of the sub-indexes in the total index are obtained from the IMF Consumer Price Index database as well as OECDstat and Haver Analytics. The information for the following categories is obtained for 66 countries: food and non-alcoholic beverages; alcoholic beverages, tobacco, and narcotics; clothing and footwear; housing, water, electricity, gas, and other fuels; furnishings, household equipment, and routine household maintenance; health; transport; communication; recreation and culture; education; restaurants and hotels; and miscellaneous goods and services.

Cyclical and trend inflation. Cyclical and trend inflation series are produced using the methodology in Stock and Watson (2016). Trend inflation is defined

as the part of inflation that follows a permanent stochastic trend. Cyclical inflation is a serially uncorrelated transitory component of inflation.

GDP deflator. For 1970-2017, data are drawn from Haver Analytics, OECDstat, and the World Economic Outlook database. Quarterly data, defined as quarter-on-quarter percent change, seasonally adjusted, are available for 95 countries. Annual data are available for 175 countries.

Inflation expectations. Inflation expectations are from two sources. First, the survey of professional forecasters on medium- to long-term expectations is conducted by Consensus Economics multiple times each year. It provides forecasts for annual average CPI inflation over the next 5-10 years for 46 countries (including in the Euro Area) since 1989. The exceptions are the Russian Federation and Latin American countries. Their inflation forecasts are surveyed on an end-of-period (December-to-December) basis. Historical long-

TABLE A.1 Number of countries with available inflation data

	Number of countries with data available				
	Any year during 1970-2017	1970	1980	Every year since 1990	2000
Headline inflation					
Annual	175	153	154	161	175
Quarterly	172	45	51	64	81
Monthly	163	33	51	63	92
Food inflation					
Annual	171	101	105	124	139
Quarterly	163	21	25	31	52
Monthly	164	19	25	30	67
Energy inflation					
Annual	167	47	55	70	101
Quarterly	92	18	24	28	51
Monthly	157	13	23	27	61
PPI inflation					
Annual	103	45	49	54	74
Quarterly	104	8	35	46	70
Monthly	66	7	14	20	41
Core inflation					
Annual	146	44	54	68	96
Quarterly	142	20	28	29	60
Monthly	144	8	24	26	58
GDP deflator					
Annual	175	135	137	142	172
Quarterly	96	8	15	24	67
Monthly

Note: ... = data are not available for the full sample period; GDP = gross domestic product; PPI = producer price index.

TABLE A.2 Number of countries with estimates of core inflation

	Advanced		EMDEs		LICs		All countries	
	A	M	A	M	A	M	A	M
Frequency								
From 1970	25	8	16	0	3	0	44	8
From 1980	26	20	23	2	3	0	52	22
From 1990	28	22	34	3	4	0	66	25
From 2000	32	30	52	23	10	5	94	58
From 2010	33	31	77	58	14	12	124	101

Note: Each entry refers to the number of countries in the respective group for which core inflation data are available for every year in the period indicated. In addition to countries in the table, official core inflation data are available for 52 countries, including 29 countries from OECDstat and 23 countries from Haver Analytics. The former includes Australia, Belgium, Colombia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Latvia, Mexico, New Zealand, Norway, Poland, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. The latter includes Belarus, Brazil, Canada, Chile, China, Costa Rica, the Dominican Republic, El Salvador, Indonesia, Jordan, Kazakhstan, the Republic of Korea, Malaysia, Nicaragua, Paraguay, Peru, the Russian Federation, Singapore, South Africa, Tanzania, Thailand, Trinidad and Tobago, and Uganda. A = annual data; EMDEs = emerging market and developing economies; LICs = low-income countries; M = monthly data.

term consensus forecasts are available from October 1989 for the Group of Seven and six Western European economies. The data set contains long-term consensus forecasts for 7 Latin American countries since 1993, and for 12 East Asia and Pacific countries (excluding Japan) and 14 Eastern European countries since 1998. Second, the IMF World Economic Outlook database provides five-year-ahead annual average headline CPI inflation forecasts on a biannual basis for 47 countries for 1990-2017.

Global commodity price indexes. Global commodity prices and indexes are available from 1960 from the World Bank's Pink Sheet of commodity price data. The following global price indexes are available at monthly, quarterly, and annual frequencies: agricultural commodity; energy commodity; non-energy commodity; and food commodity. All indexes are in nominal U.S. dollars, scaled to 2010 equal to 100.

Measures of country characteristics

This section describes measures of country characteristics available in the database: macroeconomic variables; monetary policy-related variables; variables related to global integration; exchange rate variables; and structural variables. The section also describes the classification of countries. Table A.3 provides detailed information on each variable, including those related to inflation discussed in the previous section.

Macroeconomic variables

Gross domestic product (GDP). Annual and quarterly data (quarter-on-quarter, seasonally adjusted percent change) are available from Haver Analytics and OECDstat.

Industrial production. Unadjusted and seasonally adjusted series of industrial production are available from Haver Analytics and OECDstat for 63 countries at monthly frequency for 1970-2018. Country-specific indexes are rebased to 2010 equal to 100.

Savings. Gross national savings (as a percent of GDP) are computed as gross disposable income less final consumption expenditures after taking into account an adjustment for pension funds, when possible. These series are available from the IMF's World Economic Outlook database for around 170 countries for 1980-2017.

Investment. Investment is expressed as a percent of GDP. Investment or gross capital formation is measured by the total value of gross fixed capital formation and changes in inventories and acquisitions less disposals of valuables. It is available from the IMF's World Economic Outlook database for 173 countries for 1980-2017.

Gross public debt. This measure is defined as gross public debt as a percentage of GDP. It uses four data sources for constructing debt-to-GDP ratios. Mauro et al. (2015) provide a historical data set of government debt for 55 countries for 1800-2011. Abbas et al. (2011) provide a comprehensive database of gross central government debt-to-GDP ratios, covering 174 countries for 1700-2012. Data are updated to 2017 using the IMF Historical Public Debt Database and World Economic Outlook database.

Fiscal rules. A fiscal rule imposes a long-lasting constraint on fiscal policy through numerical limits on budgetary aggregates. The IMF Fiscal Rules Dataset 1985-2015 (Schaechter et al. 2012) provides systematic information on the use and design of fiscal rules covering national and supranational fiscal rules in 96 countries from 1985 to 2015. The data set covers four types of rules: budget balance rules, debt rules, expenditure rules, and revenue rules, applying to the central or general government or the public sector. It also presents details on various characteristics of rules, such as their legal basis, coverage, escape clauses, as well as enforcement procedures, and takes stock of key supporting features that are in place, including independent monitoring bodies and fiscal responsibility laws.

Monetary policy–related variables

Monetary policy framework. This variable classifies the monetary policy regimes into those with exchange rate anchors, monetary aggregate targets, inflation targeting frameworks, and other (hybrid) regimes. It is available for 197 countries from 1990. The main sources are the IMF Quarterly Report on Exchange Arrangements and the IMF *Annual Report on Exchange Arrangements*

and *Exchange Restrictions* (AREAER). The database includes the following categories:

- Monetary aggregate targeting
- Inflation targeting regimes
- Free floating without inflation targeting regimes (including all Euro Area countries)
- Exchange rate anchor, U.S. dollar (including the Eastern Caribbean Currency Union)
- Exchange rate anchor, euro (including the West African Economic and Monetary Union and Central African Economic and Monetary Community)
- Exchange rate anchor, composite
- Exchange rate anchor, other currency.

Inflation targeting framework. The IMF's AREAER provides country-specific information on inflation targeting frameworks starting from 2010. It describes the de jure monetary policy regime as declared by the national monetary authorities. An electronic version of the data is provided by Caceres, Carrière-Swallow, and Gruss (2016). For countries with inflation targets, the data set provides the month and year of adoption of the inflation targeting framework. Because AREAER (and its online version) only provides information on inflation targeting frameworks since 2010, information from Carare and Stone (2006) is used to determine the exact year each country adopted inflation targeting. This variable is available for up to 170 countries for 1990-2017 on a monthly, quarterly, and annual basis.

Inflation targets. Information on "inflation target" ranges is available on a monthly basis for 37 countries from 1990. The data include three variables: the midpoint as well as the upper and lower bounds of inflation target ranges. For ease of analysis, for those countries that target a midpoint and do not have an official upper and lower bound, a range adding ± 1 is calculated as the target range. Similarly, for those countries that do not have a midpoint for their inflation target, and instead target only a range, the midpoint was assumed to be the average of the lower and upper bounds of the announced target range. The data sources include national central banks, the Central Bank News website, AREAER database, and other sources.

Central bank independence. The measure of central bank independence relies on two sources. Garriga (2016) includes annual data on de jure central bank

independence for 182 countries for 1970-2012. The data set identifies statutory reforms affecting central bank independence and their impact. Dincer and Eichengreen (2014) measure transparency and independence for about 120 central banks spanning 1998-2014. The index ranges from 0 to 15. The Dincer-Eichengreen index is selected as the main measure of central bank independence because it is available over a long timeframe (1998-2014). To expand the sample, the index is extrapolated to 2015-17 using 2014 data and extrapolated to 1970-97 using 1998 data. For countries not included in the Dincer and Eichengreen (2014) data set, the fitted values from an ordinary least squares regression of the Dincer-Eichengreen index on the Garriga index are used.

Central bank head turnover. Central bank head turnover data are available from Dreher, Sturm, and de Haan (2010). This data set contains information on the term in office and month and year at which a central bank governor is replaced. It also provides the official term in office according to the central bank law for 159 countries covering 1970-2014. The turnover rate (number of changes in central bank heads before the end of his or her legal term in office) using a four-year rolling average preceding a central bank governor change is calculated (similar to Klomp and de Haan [2010]). The four-year window matches the average turnover rate of central bank governors.

Variables related to global integration

De jure financial openness. Three sources are used to measure financial openness. Quinn and Toyoda (2008) have a capital controls index database of de jure measures of capital account and financial current account openness for 94 countries over 1980-2014. Fernandez et al. (2016) have a capital control measures data set of restrictions on capital account inflows and outflows for 10 categories of assets for 100 countries between 1995 and 2013. Chinn and Ito (2006) provide a de jure measure of capital account openness for 182 countries between 1970 and 2016. The annual and quarterly data sets contain all three measures of financial openness. To obtain the widest possible coverage, the primary source of financial openness is the Chinn-Ito index.

De facto financial openness. International financial integration provides a proxy for de facto financial openness. It is measured as the sum of foreign assets and liabilities as a percentage of GDP in current U.S. dollars. The External Wealth of Nations Mark II database (Lane and Milesi-Ferretti 2007) is the main source of financial integration data through 2014. Data from the IMF's Balance of Payments and International Investment Position Statistics are used to expand cross-country coverage. Data are available for 128 countries for the period since 1976.

Participation in global value chains (GVCs). Three measures of GVC participation are provided: backward and forward participation and the

intermediate trade share of GDP. Backward participation in GVCs measures the foreign value added embodied in a country's exports, as a percentage of total gross exports. Forward participation in GVCs measures a country's value added embodied in foreign exports, as a percentage of total gross exports. Both data series are available from the OECD–World Trade Organization Trade in Value Added database for 58 countries for 1995, 2000, 2005, and 2008–11. The series of intermediate trade share of GDP are defined as the sum of intermediate imports and exports, as a percentage of GDP. Data are available for up to 166 countries, but with uneven year coverage. For 1988–2016, the series are available for 137 countries. Data are taken from the World Bank's World Integrated Trade Solution (WITS) and World Development Indicators. These three data series are used to construct a dummy variable indicating high participation in GVCs. A country is classified as highly integrated into GVCs (the dummy is assigned the value 1) if one of two conditions is met: the sum of backward and forward participation in GVCs is greater than the median of the sample in a particular year, or the intermediate trade ratio is greater than the median of the sample in a particular year.

Trade openness. The indicator for trade openness is defined as the sum of exports and imports of goods and services as a percentage of GDP. Data are available for 170 countries for 1970–2017, taken from the World Bank World Development Indicators. Data gaps are filled with data on exports, imports, and GDP obtained from the IMF's World Economic Outlook database.

Average effective tariff. This measure is the average rate of effectively applied tariffs, weighted by the product import shares corresponding to each partner country. Data are classified using the UN Harmonized System of trade at the six- or eight-digit level. This variable is available from the WITS website for a maximum of 149 countries, but with uneven year coverage; it is available for 109 countries for 2000–16.

Exchange rate variables

Bilateral exchange rate against the U.S. dollar. The IMF's International Financial Statistics database provides exchange rates in national currencies per U.S. dollar. Exchange rates in the database are classified into three broad categories, reflecting the role of the authorities in determining the rates and/or the multiplicity of the exchange rates in a country. The three categories are the market rate, describing an exchange rate determined largely by market forces; the official rate, describing an exchange rate determined by the authorities—sometimes in a flexible manner; and the principal, secondary, or tertiary rate, for countries maintaining multiple exchange arrangements. Data for the market exchange rate against the U.S. dollar are available for 34 advanced economies and 137 EMDEs, including 30 LICs, for 1970–2018.

Nominal and real effective exchange rates. The nominal and real effective exchange rates rely primarily on Darvas (2012). The database includes annual and monthly data for 178 countries, considerably more than in any other publicly available database. The series are available through mid-2017. The annual database covers 171 countries over 1960-2017, and the monthly database includes data for 165 countries over 1970-2017.

De facto exchange rate regime. The exchange rate regime classification of Shambaugh (2004) is used to determine whether a country has a pegged or flexible exchange rate. The original classification has four categories: “1” reflects no fluctuation at all; “2” indicates movements within 1 percent bands; “3” indicates movements within 2 percent bands; and “4” indicates a one-time devaluation with no change in the remaining 11 months of the year. Shambaugh (2004) assesses these movements against relevant base currencies. The constructed dummy variable indicating a pegged exchange rate regime is defined to equal 1 for countries classified as 1, 2, 3, or 4. A value of 0 is assigned to flexible exchange rates—that is, exchange rates that routinely fluctuate outside a 2 percent band. The indicator is available on an annual basis for 176 countries for 1960-2014.

De jure exchange rate regime. An alternative measure of the exchange rate regime is taken from Ilzetzki, Reinhart, and Rogoff (2017). They present annual and monthly data for 194 countries for 1946-2016. The classification includes the following categories:

1. No separate legal tender or currency union
2. Pre-announced peg or currency board arrangement
3. Pre-announced horizontal band that is narrower than or equal to ± 2 percent
4. De facto peg
5. Pre-announced crawling peg; de facto moving band narrower than or equal to ± 1 percent
6. Pre-announced crawling band that is narrower than or equal to ± 2 percent or de facto horizontal band that is narrower than or equal to ± 2 percent
7. De facto crawling peg
8. De facto crawling band that is narrower than or equal to ± 2 percent
9. Pre-announced crawling band that is wider than or equal to ± 2 percent
10. De facto crawling band that is narrower than or equal to ± 5 percent

11. Moving band that is narrower than or equal to ± 2 percent (that is, allows for appreciation and depreciation over time)
12. De facto moving band ± 5 percent / managed floating
13. Freely floating
14. Freely falling
15. Dual market in which parallel market data are missing.

All countries with classification categories 1 to 11 are considered fixed exchange rate regimes and assigned a value of 1. Categories 12 to 15 are treated as flexible exchange rate regimes and assigned a value of 0.

Structural variables

Demographic variables. Population growth is the average annual growth of midyear population. It is available for 209 countries for 1970-2017 and obtained from the World Bank World Development Indicators. The old-age dependency ratio measures the ratio of people older than 64 years as a percent age of the working-age population (ages 15 to 64 years). The young-age dependency ratio is the share of people younger than 15 years as a percentage of the working-age population. The dependency ratios are also collected from the World Bank World Development Indicators and are available for 189 countries for 1970-2017.

Labor market flexibility. The labor market flexibility indicator uses the Fraser Institute's Economic Freedom of the World database. The labor market flexibility index uses survey responses to construct labor market flexibility indicators in four areas: minimum wage, hiring and firing practices, collective bargaining, and unemployment benefits. The survey asks respondents to answer questions on a scale from 1 (disagree) to 7 (agree), where 7 indicates strongest agreement. The index is standardized on a 0-10 scale. A higher value represents a more flexible labor market. Data are available for 152 countries for every five-year period between 1980 and 2000, and annually for 2001-14 (Gwartney, Lawson, and Hall 2017).

Collective bargaining coverage rate. The collective bargaining coverage rate is an indicator of the degree to which wages and working conditions are regulated by collective agreements. It measures the number of workers in employment whose pay and/or conditions of employment are determined by one or more collective agreements as a proportion of all those who are eligible to conclude a collective agreement. The collective bargaining coverage rate is available from ILOSTAT for 62 countries from 2001 to 2013.

Trade union density rate. Trade union membership, defined as the total number of workers who belong to a trade union, can be an indicator of trade union strength. The trade union density rate expresses union membership as a proportion of the eligible workforce and can be used as an indicator of the degree to which workers are organized. Data for this measure are available from ILOSTAT for 49 countries for 2000-13.

Rainfall. Rainfall data, defined as precipitation in millimeters per month, come from the Climate Change Knowledge Portal. The data set is produced by the Climatic Research Unit of the University of East Anglia and reformatted by the International Water Management Institute. It contains historical precipitation data aggregated from 2-degree gridded data to the country and basin levels. It is derived from observational data and provides quality-controlled temperature and rainfall values from thousands of weather stations worldwide, as well as derivative products, including monthly climatologies and long-term historical climatologies. The data cover more than 180 countries for 1901-2017.

Country classification

Country groups. Advanced economies include Australia; Austria; Belgium; Canada; Cyprus; the Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hong Kong SAR, China; Iceland; Ireland; Israel; Italy; Japan; the Republic of Korea; Latvia; Lithuania; Luxembourg; Malta; the Netherlands; New Zealand; Norway; Portugal; Singapore; the Slovak Republic; Slovenia; Spain; Sweden; Switzerland; the United Kingdom; and the United States.

Emerging market and developing economies (excluding low-income countries) include Albania; Algeria; Angola; Antigua and Barbuda; Argentina; Armenia; Azerbaijan; The Bahamas; Bahrain; Bangladesh; Barbados; Belarus; Belize; Bhutan; Bolivia; Bosnia and Herzegovina; Botswana; Brazil; Brunei Darussalam; Bulgaria; Cabo Verde; Cambodia; Cameroon; Chile; China; Colombia; the Republic of Congo; Costa Rica; Côte d'Ivoire; Croatia; Djibouti; Dominica; the Dominican Republic; Ecuador; the Arab Republic of Egypt; El Salvador; Equatorial Guinea; Eswatini; Fiji; Gabon; Georgia; Ghana; Grenada; Guatemala; Guyana; Honduras; Hungary; India; Indonesia; the Islamic Republic of Iran; Iraq; Jamaica; Jordan; Kazakhstan; Kenya; Kiribati; Kuwait; the Kyrgyz Republic; the Lao People's Democratic Republic; Lebanon; Lesotho; Libya; the former Yugoslav Republic of Macedonia; Malaysia; Maldives; the Marshall Islands; Mauritania; Mauritius; Mexico; the Federated States of Micronesia; Moldova; Mongolia; Montenegro; Morocco; Myanmar; Namibia; Nauru; Nicaragua; Nigeria; Oman; Pakistan; Palau; Panama; Papua New Guinea; Paraguay; Peru; the Philippines; Poland; Qatar; Romania; the Russian Federation; Samoa; São Tomé and Príncipe; Saudi Arabia; Serbia; the Seychelles; the Solomon Islands; South Africa; Sri Lanka; St. Kitts and Nevis; St.

Lucia; St. Vincent and the Grenadines; Sudan; Suriname; Thailand; Tonga; Trinidad and Tobago; Tunisia; Turkey; Turkmenistan; Tuvalu; Ukraine; the United Arab Emirates; Uruguay; Uzbekistan; Vanuatu; República Bolivariana de Venezuela; Vietnam; and Zambia.

Low-income countries include Afghanistan; Benin; Burkina Faso; Burundi; the Central African Republic; Chad; the Comoros; the Democratic Republic of Congo; Eritrea; Ethiopia; The Gambia; Guinea; Guinea-Bissau; Haiti; the Democratic People's Republic of Korea; Liberia; Madagascar; Malawi; Mali; Mozambique; Nepal; Niger; Rwanda; Senegal; Sierra Leone; Somalia; South Sudan; the Syrian Arab Republic; Tajikistan; Tanzania; Togo; Uganda; the Republic of Yemen; and Zimbabwe. The classification of LICs is based on the World Bank Group classification as of June 2018.

Commodity exporter status. A country is classified as a “commodity exporter” if one of the following two conditions was met during 2012-14: on average, commodity exports accounted for 30 percent or more of total goods exports, or exports of any single commodity accounted for 20 percent or more of total goods exports. Economies for which these thresholds were met because of re-exports were excluded. When data were not available, judgment was used. This taxonomy results in the classification of some well-diversified economies as importers, even if they are exporters of certain commodities (for example, Mexico). Commodity importers are all economies that are not classified as commodity exporters.

Regions. Regional dummy variables for East Asia and Pacific, Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, South Asia, and Sub-Saharan Africa follow the World Bank Group classification.

Net food importer status. Net food importers are classified based on net food imports (food imports minus food exports) as a percentage of GDP. Food comprises the commodities in sections 0 (food and live animals), 1 (beverages and tobacco), and 4 (animal and vegetable oils and fats), as well as division 22 (oil seeds, oil nuts, and oil kernels) in the UN Standard International Trade Classification. A country is classified as a net food importer (the dummy is assigned the value 1) if its net food imports as a percentage of GDP are above the median of net food imports across countries in a given year.

Net energy importer status. Net energy importers are classified based on net fuel imports (fuel imports minus fuel exports) as a percentage of GDP. A country is classified as a net energy importer (the dummy is assigned the value 1) if its net fuel imports as a percentage of GDP are above the median of net fuel imports across countries in a given year.

TABLE A.3 Database

Variable name in database	Description	Units	Country coverage	Year coverage	Source
inflation	Consumer price inflation	Percent	175	From 1970	Central bank websites; IMF IFS; Haver Analytics; OECDstat
ppi	Producer price inflation	Percent	103	From 1970	Central bank websites; IFS; Haver Analytics; OECDstat
core_inf	Core consumer price inflation	Percent	145	From 1970	Central bank websites; IFS; ILOSTAT; Haver Analytics; OECDstat
deflator_gdp	GDP deflator change	Percent	175	From 1970	Central bank websites; IFS; Haver Analytics;
food_inf	Food and non-alcoholic beverages consumer price inflation	Percent	171	From 1970	ILOSTAT database on CPI Components; IMF Consumer Price Index database; Haver Analytics; OECDstat
energy	Energy consumer price inflation	Percent	167	From 1970	Central bank websites; Haver Analytics; ILOSTAT; OECDstat
co_energy	Global energy commodity price inflation	Percent	175	From 1970	World Bank Pink Sheet commodity price data
co_non_energy	Global non-energy commodity price inflation	Percent	175	From 1970	World Bank Pink Sheet commodity price data
co_food	Food commodity price inflation	Percent	175	From 1970	World Bank Pink Sheet commodity price data
pegtype_bi	De facto exchange rate regime	Dummy variable; 1=fixed,	168	From 1970	Shambaugh (2004); IMF AREAER
xr_regime	De jure exchange rate regime	Dummy variable; 1=fixed, 0=flexible	169	From 1970	Ilzetzki, Reinhart, and Rogoff (2017)
cbi_trans	Central bank transparency	Index; 0=least transparent; 15=most transparent	108	1998-2014	Dincer and Eichengreen (2014)
cbi_trans_fit	Central bank transparency, extended sample	Index; 0=least transparent; 15=most transparent	165	From 1970	cbi_trans extended using Garriga (2016)
saving_wdi	Gross national savings	Percent of GDP	169	From 1980	IMF World Economic Outlook

Note: Country coverage indicates the number of countries with data available in any year during 1970-2017. AREAER = Annual Report on Exchange Arrangements and Exchange Restrictions; CPI = consumer price index; GDP = gross domestic product; IFS = International Financial Statistics; IMF = International Monetary Fund.

TABLE A.3 Database (continued)

Variable name in database	Description	Units	Country coverage	Year coverage	Source
mon_policy	Monetary policy framework	Dummy variable: 2=Monetary aggregate targeting 3=Inflation targeting regimes 4=Free floating without inflation targeting regimes (including all Euro Area countries) 11= Exchange rate anchor, U.S. dollar (including ECCU) 12= Exchange rate anchor, euro (including WAEMU and CEMAC) 13= Exchange rate anchor, composite 14=Exchange rate anchor, other currency	175	From 1990	IMF AREAER
IT	Presence of inflation targeting framework	Dummy variable; 1=inflation targeting; 0=not inflation targeting	175	From 1970	IMF AREAER; Carare and Stone (2006); Caceres, Carriere-Swallow, and Gruss (2016)
TOR_i	Central bank head turnover	Number of changes in central bank heads before the end of his or her legal	143	From 970	Dreher, Sturm, and de Haan (2010)
CMA, CXA	Commodity importer and exporter status	Dummy variables; CMA of 1=commodity importers; CMA of 0=otherwise; CXA of 1=commodity exporter; CXA of 0=otherwise	175	From 1970	World Bank Global Economic Prospects reports
region	EMDE regions	EAP=East Asia and Pacific; ECA=Europe and Central Asia; LAC=Latin America and the Caribbean; MNA=Middle East and North Africa; SAR=South Asia; SSA=Sub-Saharan Africa	175	From 1970	World Bank Group classification
incomegroup	Income groups AEs (31), EMDEs (110), LICs (31)	AE=advanced economies; EMDE=non-LIC EMDEs; LIC=low-income countries	175	From 1970	World Bank and IMF classification
saving_wdi	Gross national savings	Percent of GDP	169	From 1980	IMF World Economic Outlook

Note: Country coverage indicates the number of countries with data available in any year during 1970-2017. AEs = advanced economies; AREAER = Annual Report on Exchange Arrangements and Exchange Restrictions; CEMAC = Central African Economic and Monetary Community; ECCU = Eastern Caribbean Currency Union; EMDEs = emerging market and developing economies; GDP = gross domestic product; LICs = low-income countries; WAEMU = West African Economic and Monetary Union.

TABLE A.3 Database (continued)

Variable name in database	Description	Units	Country coverage	Year coverage	Source
it, it_lower, it_upper	“it” refers to Inflation target, mid-point target, or average of target range; “it_upper” refers to upper bound of target range; and “it_lower” refers to lower bound of target range	Percent	38	From 1990	National central bank websites; Central Bank News website; IMF AREAER; other documents
cap100_new	De jure financial openness (Quinn-Toyoda Index)	Index; 0=least open; 100=most open	122	From 1970	Quinn and Toyoda (2008)
ka_open_new	De jure financial openness (Chinn-Ito Index)	Index; 0=least open; 1=most open	173	From 1970	Chinn and Ito (2006)
ka_new	De Jure Financial Openness Capital Control Measures data set of restrictions on capital account inflows and outflows for 10 categories of assets for 100 countries between	Index; 0=least open; 1=most open	99	From 1995	Fernandez et al. (2016)
fin_int	De facto financial openness, defined as the sum of international assets and liabilities in percent of GDP	Percent of GDP	175	From 1970	Lane and Milesi-Ferretti 2007; IMF Balance of Payments and International Investment Position Statistics
back_gvc	Backward participation in GVCs, defined as foreign value added in domestic exports in percent of total domestic exports	Percent	58	1995, 2000, 2005, and 2008-11	OECD-WTO TiVA
for_gvc	Forward participation in GVCs, defined as domestic value added embodied in foreign exporters, as percent of foreign exports	Percent	58	1995, 2000, 2005, and 2008-11	OECD-WTO TiVA

Note: Country coverage indicates the number of countries with data available in any year during 1970-2017. AREAER = Annual Report on Exchange Arrangements and Exchange Restrictions; GDP = gross domestic product; GVCs = global value chains; IMF = International Monetary Fund; OECD = Organisation for Economic Co-operation and Development; TiVA = Trade in Value Added; WTO = World Trade Organization.

TABLE A.3 Database (continued)

Variable name	Description	Units	Country coverage	Year coverage	Source
gvc_total	Sum of intermediate exports and imports as percent of GDP	Percent of GDP	58	1995, 2000, 2005, and 2008-11	WITS; World Development Indicators
gvc_dummy	High integration into global value chains, defined as one of two conditions being met: the sum of backward and forward participation in global value chains is greater than the median of the sample in a particular year, or the intermediate trade ratio is greater than the median of the sample in a particular year	Dummy variable; 1=highly integrated ; 0=not highly integrated	175	From 1970	Constructed from back_gvc, for_gvc, and gvc_total
trade_open	Sum of exports and imports of goods and services as percent of GDP	Percent of GDP	175	From 1970	World Development Indicators; IMF World Economic Outlook
tariff	Average effective tariff, weighted by product-level import share from each partner country	Percent	166	1988-2016	WITS
debt_gdp	Gross public debt as percent of GDP	Percent of GDP	175	From 1970	Abbas et al. (2011); Mauro et al. (2015); IMF Historical Public Debt Database; IMF World Economic Outlook
neer	Nominal effective exchange rate	Index, various base years	171	From 1970	Darvas (2012)
neer_index	Nominal effective exchange rate, rebased to 2007	Index, 2007=100	171	From 1970	Darvas (2012)
pop_growth	Average annual growth of midyear population	Percent	173	From 1970	World Development Indicators
old_dep	Old-age dependency ratio, defined as number of people older than 64 as percent of the working-age population (ages 15 to 64 years)	Percent of working-age population	171	From 1970	World Development Indicators
flexibility	Labor market flexibility	Index; 0=least flexible; 10=most flexible	152	2001-14	Fraser Institute Economic Freedom of the World

Note: Country coverage indicates the number of countries with data available in any year during 1970-2017. GDP = gross domestic product; IMF = International Monetary Fund; WITS = World Integrated Trade Solution.

TABLE A.3 Database (continued)

Variable name in database	Description	Units	Country coverage	Year coverage	Source
foodnet	Net food imports, defined as food imports minus food exports as percent of GDP. Food comprises the commodities in SITC sections 0 (food and live animals), 1 (beverages and tobacco), and 4 (animal and vegetable oils, and fats), as well as SITC division 22 (oil seeds, oil nuts, and oil kernels).	Percent of GDP	167	From 1970	World Development Indicators
foodnet_dum	High net food importer status defined as net food imports as percent of GDP above the median of net food imports across countries in a given year	Dummy variable; 0=net food imports below cross-country median; 1=net food imports above cross-country median	140	From 1970	Constructed from foodnet
energynet	Net fuel imports, defined as fuel imports minus fuel exports as percent of GDP	Percent of GDP	167	From 1970	World Development Indicators
energynet_dum	High net energy importer status defined as net fuel imports in percent of GDP above the median of net fuel imports across countries in a given year	Dummy variable; 0=net fuel imports below cross-country median; 1=net fuel imports above cross-country	140	From 1970	Constructed from energynet
young_dep	Young dependency ratio, defined as number of people younger than 15 as percent of the working-age population (ages 15 to 64 years)	Percent of working-age population	171	From 1970	World Development Indicators
bargaining	Collective bargaining coverage, defined as the number of workers in employment whose pay and/or conditions of employment are determined by one or more collective agreements as a proportion of all those who are eligible to conclude a collective agreement	Percent of workers eligible to conclude a collective agreement	62	2001-13	ILOSTAT
inv	Gross capital formation	Percent of GDP	162	From 1980	IMF World Economic Outlook
fiscal_rule	Adoption of a fiscal rule	Dummy variable; Yes=fiscal rule has been adopted; No=no fiscal rule has been adopted	92	1985-2015	Schaechter et al. (2012)

Note: Country coverage indicates the number of countries with data available in any year during 1970-2017. GDP = gross domestic product; IMF = International Monetary Fund; SITC = Standard International Trade Classification.

TABLE A.3 Database (continued)

Variable name in database	Description	Units	Country coverage	Year coverage	Source
ener_weight	Weight of energy in the consumer price index; when unavailable, weight of housing, water, electricity, and gas	Percent	143	From 1970	OECDstat; Haver Analytics; IMF International Financial Statistics
food_weight	Weight of food and non-alcoholic beverages in the consumer price index	Percent	145	From 1970	OECDstat; Haver Analytics; IMF International Financial Statistics
crude_petro	Crude oil price (unweighted average of Dubai, Brent, and WTI prices)	U.S. dollars per barrel	170	From 1970	World Bank Pink Sheet commodity price data
kcrude_petro	Crude oil price (unweighted average of Dubai, Brent, and WTI prices) at constant 2005 U.S. dollars	U.S. dollars per barrel	170	From 1970	World Bank Pink Sheet commodity price data
gdp_weo	GDP in billions of U.S. dollars	Billions of U.S. dollars	169	From 1980	IMF World Economic Outlook
gdp_growthweo	Real GDP growth	Percent	174	From 1981	IMF World Economic Outlook
pppgdp_weo	PPP valuation of country GDP, in billions of U.S. dollars	Billions of U.S. dollars	169	From 1980	IMF World Economic Outlook
union	Trade union density rate, defined as union membership as a proportion of the eligible workforce	Percent of the eligible workforce	75	2000-13	ILOSTAT
trend	Trend component of inflation, estimated as in Stock and Watson (2016)	Percent	148	From 1970	World Bank estimates

Note: Country coverage indicates the number of countries with data available in any year during 1970-2017. GDP = gross domestic product; IMF = International Monetary Fund; WTI = West Texas Intermediate.

TABLE A.3 Database (continued)

Variable name in database	Description	Units	Country coverage	Year coverage	Source
cycle	Cyclical component of inflation, estimated as in Stock and Watson	Percent	148	From 1970	World Bank estimates
var_trend	Variance of trend component of inflation, estimated as in Stock and Watson (2016)	Percent	148	From 1970	World Bank estimates
var_cycle	Variance of cyclical component of inflation, estimated as in Stock	Percent	148	From 1970	World Bank estimates
inflation_qoq	Quarter-on-quarter, seasonally adjusted, annualized CPI inflation	Percent	111	From 1970	Haver Analytics; OECDstat; IMF International Financial Statistics
inflation_q	Year-on-year, CPI inflation	Percent	172	From 1970	Haver Analytics; OECDstat; IMF International Financial Statistics
food_qoq	Quarter-on-quarter, seasonally adjusted, annualized food CPI inflation	Percent	163	From 1970	ILOSTAT database on CPI Components; IMF Consumer Price Index database; Haver Analytics; OECDstat
energy_qoq	Quarter-on-quarter, seasonally adjusted, annualized energy CPI inflation	Percent	92	From 1970	Haver Analytics; ILOSTAT; UNdata; OECDstat.
ppi_qoq	Quarter-on-quarter, seasonally adjusted, annualized PPI	Percent	103	From 1970	Haver Analytics; OECDstat
core_qoq	Quarter-on-quarter, seasonally adjusted, annualized core CPI inflation	Percent	142	From 1970	Haver Analytics; OECDstat; IMF International Financial Statistics
deflator	Quarter-on-quarter, seasonally adjusted, GDP deflator	Percent	96	From 1970	Haver Analytics; OECDstat
headline	Consumer price index, month-on-month inflation rate	Percent	170	From 1970	Haver Analytics
food	Food and non-alcoholic beverages price index, month-on-month inflation rate	Percent	169	From 1970	ILOSTAT database on CPI Components; IMF Consumer Price Index database; Haver Analytics;

Note: Country coverage indicates the number of countries with data available in any year during 1970-2017. CPI = consumer price index; GDP = gross domestic product; IMF = International Monetary Fund; PPI = producer price index.

TABLE A.3 Database (continued)

Variable name in database	Description	Units	Country coverage	Year coverage	Source
Core	Core inflation, month-on-month inflation rate	Percent	112	From 1970	Haver Analytics; OECDstat; IMF International Financial Statistics; calculated
core_inflation	Official core inflation	Percent	56	From 1970	OECDstat; Haver Analytics; IMF International Financial Statistics
g_energy	Global energy commodity prices (nominal U.S. dollars)	Index, 2010=100	181	From 1970	World Bank Pink Sheet commodity price data
g_non_energy	Global non-energy commodity prices (nominal U.S. dollars)	Index, 2010=100	169	From 1970	World Bank Pink Sheet commodity price data
g_food	Global food commodity prices (nominal U.S. dollars)	Index, 2010=100	169	From 1970	World Bank Pink Sheet commodity price data
rainfall	Rainfall	Precipitation in millimeters per month	167	1990-2016	Climate Change Knowledge Portal
ind_pro	Industrial production	Index, 2010=100	60	From 1970	Haver Analytics; OECDstat; IMF International Financial Statistics
ind_pro_sa	Industrial production, seasonally adjusted	Index, 2010=100	34	From 1970	Haver Analytics; OECDstat; IMF International Financial Statistics
m3	Money supply M3	Local currency units	74	From 1980	Haver Analytics; OECDstat; IMF International Financial Statistics
base_money	Base money, local currency	Local currency units	42	From 1980	Haver Analytics; OECDstat; IMF International Financial Statistics
broad_money	Broad money, local currency	Local currency units	126	2001-17	Haver Analytics; OECDstat; IMF International Financial Statistics

Note: Country coverage indicates the number of countries with data available in any year during 1970-2017.

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