

International Finance: Lecture 1

Global Economy and Monetary System

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Outline

- 1 Course Overview
- 2 Global Economic Conditions
- 3 Global Imbalances and Debts
- 4 Foreign Exchange and Reserve



Course Logistics

① Textbooks

- Biwei Chen (2021) International Finance Lectures: Global Economy and Monetary System. 3e. Cognella Custom Publishing
- Robert C. Feenstra and Alan M. Taylor (2021) International Macroeconomics. 5e. Macmillan Learning

② Zoom meetings and office hours

③ Slides, notes, videos, readings

④ Evaluation components

- Problem sets (25%)
- In-class quizzes (15%)
- Midterm and final (60%)
- Attendance and participation

All materials, assignments, and announcements are via MyCourses.

Study Guide: How to get the most of this course?

"International Finance is the most difficult course I have studied and taught."

- ① Preview the lecture slides ahead of each lecture
 - ② Take notes during lectures (lecture slides are incomplete)
 - ③ Review the lectures afterwards with your study group
 - ④ Read the articles and connect the dots after the lecture
 - ⑤ Pay attention to all course announcements and emails
 - ⑥ Start early to work on assignments in groups and alone
 - ⑦ Attend instructor and TA office hours to ask questions
 - ⑧ Practice makes perfect. Seek help when getting stuck

The Subject of International Economics

International Economics is the extension of Economics in an open economy, consisting of International Trade and International Finance. International Trade follows the tradition of Microeconomics and International Finance Macroeconomics.

- ① International Trade studies flows of goods and services across countries.
 - Trade facts and history
 - Trade theories and models
 - Trade policies and institutions
 - ② International Finance examines flows of money across borders.
 - Balance of payment
 - Exchange rate determination
 - International monetary system
 - International macroeconomic policies

Course Topics

- ① Global economy: current conditions and historical trends
- ② International economic transactions and relations
 - Nations' balance of payments (income statement)
 - Net international investment positions (external wealth)
- ③ Foreign exchange markets and international monetary system
 - Foreign exchange markets: institutions and practices
 - Exchange rate determination: theories and models
 - Evolution of international monetary system
- ④ International macroeconomic policies
 - Open-economy policy trilemma
 - Choice of exchange rate regimes
 - Economic and monetary integration
 - Financial crisis rescues and reforms

Basic Concepts: International Trade and Investment

Trade Balance

The difference between a nation's exports and imports of goods and services.

Terms of Trade

The ratio of an index of a country's export prices to import prices.

Trade Openness

The ratio of trade (goods and services) to Gross Domestic Product.

Foreign Direct Investment (FDI)

FDI is defined as an investment reflecting a lasting interest and control by a foreign direct investor, resident in one economy, in an enterprise resident in another economy (foreign affiliate).

Basic Concepts: Balance of Payments

Balance of Payments (BOP)

BOP records a country's international transactions. The U.S. BOP includes current account, financial account, and capital account.

Current Account (CA)

CA is the sum of trade balance, net factor income, net unilateral transfers.

Financial Account (FA)

FA records transactions between residents and nonresidents that involve real (land) and financial assets (securities).

Capital Account (KA)

KA records capital transfers (gifts of assets) and the transactions of nonfinancial, nonproduced assets (e.g., patents, copyrights, trademarks).

Basic Concepts: Net International Investment Position

Net International Investment Position (NIIP)

The stock of external assets minus the stock of external liabilities. In other words it is the value of foreign assets owned by private and public sector of a country minus the value of domestic assets owned by foreigners. NIIP is usually expressed in relation to an economy's size – NIIP to GDP ratio.

External Wealth

Net worth with respect to the rest of the world (ROW), calculated by adding up all of the ROW assets owned by the home country and then subtracting all of the home assets owned by the ROW.

Valuation Effects

The value of existing external assets and liabilities may change over time due to capital gains or losses. In the case of external wealth, this change in value could be due to price effects or exchange rate effects.

Basic Concepts: Exchange Rates

Exchange Rate

The price at which one currency can be exchanged for another. Also referred to as the bilateral exchange rate.

Nominal Effective Exchange Rate (NEER)

A measure of the overall value of an economy's currency relative to a set of other currencies. The effective exchange rate is an index calculated as a weighted average of bilateral exchange rates.

Real Effective Exchange Rate (REER)

A weighted average of bilateral exchange rates, expressed in price-adjusted terms. Unlike the NEER, it is further adjusted for the effects of inflation in the countries concerned.

Basic Concepts: Exchange Rate Regimes

Exchange Rate Regime

The manner or rules under which an economy manages the exchange rate of its currency, particularly the extent to which it intervenes in the foreign exchange market. Exchange rate regimes range from floating to pegged.

Foreign Exchange Reserves

Foreign assets held by the central bank that can be used to finance the balance of payments and for intervention in the exchange market. Foreign assets consist of gold, Special Drawing Rights (SDRs), and foreign currency (most of which is held in short-term government securities and can be used for intervention).

Foreign Exchange Intervention

The purchase or sale of an economy's currency in the foreign exchange market by a government entity (typically a central bank) in order to influence its exchange rate. Interventions may be sterilized or unsterilized depending on whether domestic monetary base is affected.

IMF Publications and Reports (w)

- ① **World Economic Outlook Report:** a survey by the IMF staff usually published twice a year. It presents IMF staff economists' analyses of global economic developments during the near and medium term.
- ② **Global Financial Stability Report:** provides an assessment of the global financial system and markets, and addresses emerging market financing in a global context.
- ③ **External Sector Report:** analyzes global external developments and provides multilaterally consistent assessments of external positions of the world's largest economies, representing over 90 percent of global GDP.
- ④ **Fiscal Monitor Report:** is prepared twice a year to survey and analyze the latest public finance developments, update fiscal implications of the crisis and medium-term fiscal projections, and assess policies to put public finances on a sustainable footing.
- ⑤ **IMF DataMapper** <https://www.imf.org/external/datamapper/datasets>

Global and U.S. Economic Conditions

News, Data and Indicators

<https://www.ft.com>

<https://www.wsj.com>

<https://www.bloomberg.com>

<https://internationalfinance.com>

Institute of International Finance IIF <https://www.iif.com>

Peterson Institute for International Economics PIIE <https://www.piie.com>

Federal Reserve Bank of Dallas: Global Economic Conditions

<https://www.dallasfed.org/-/media/Documents/institute/global.pdf>

Dallas Fed: Database of Global Economic Indicators

<https://www.dallasfed.org/institute/dgei>

Federal Reserve Bank of New York: U.S. Economy in a Snapshot

<https://www.newyorkfed.org/research/snapshot>

Research Papers, Reports, and Economists

NBER The International Finance and Macroeconomics Program (w)

IMF Economic Review (w) & Working Papers and Staff Notes (w)

US Treasury Macroeconomic and Foreign Exchange Policies (w)

BIS Annual Economic Reports (w) & Quarterly Reviews (w)

FRB International Finance Discussion Papers (w)

International Finance Economists

- <https://carmenreinhart.com>
- <https://www.krugmanonline.com>
- <https://www.mauriceobstfeld.com>
- <https://scholar.harvard.edu/rogoff>
- <https://eml.berkeley.edu/~eichengr>
- <https://scholar.harvard.edu/gopinath>



Outline

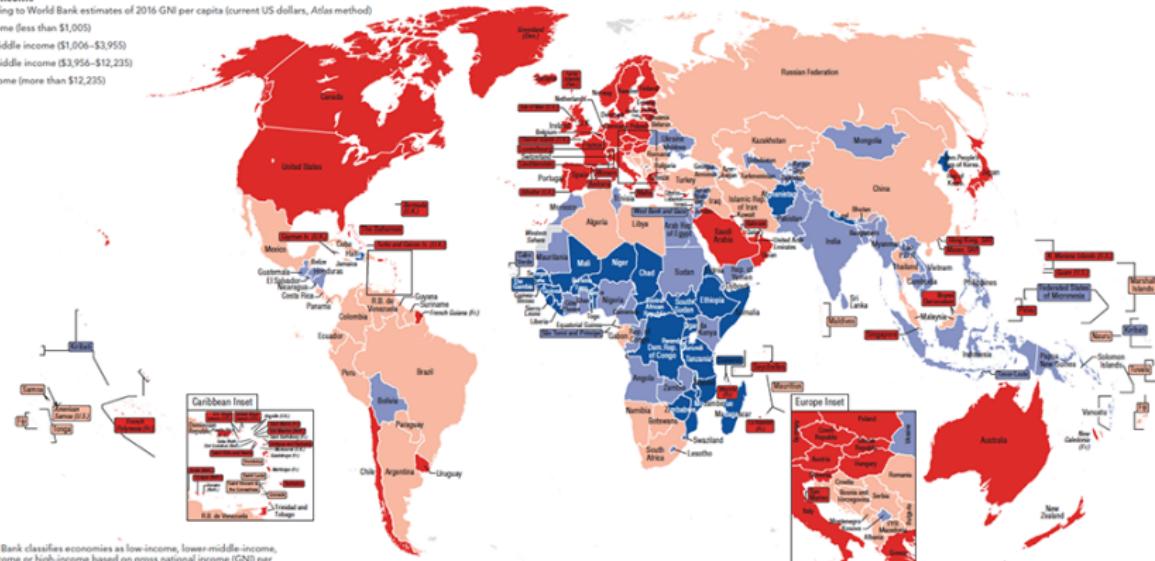
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Global Income Atlas GNI 2018 (w)

The world by income

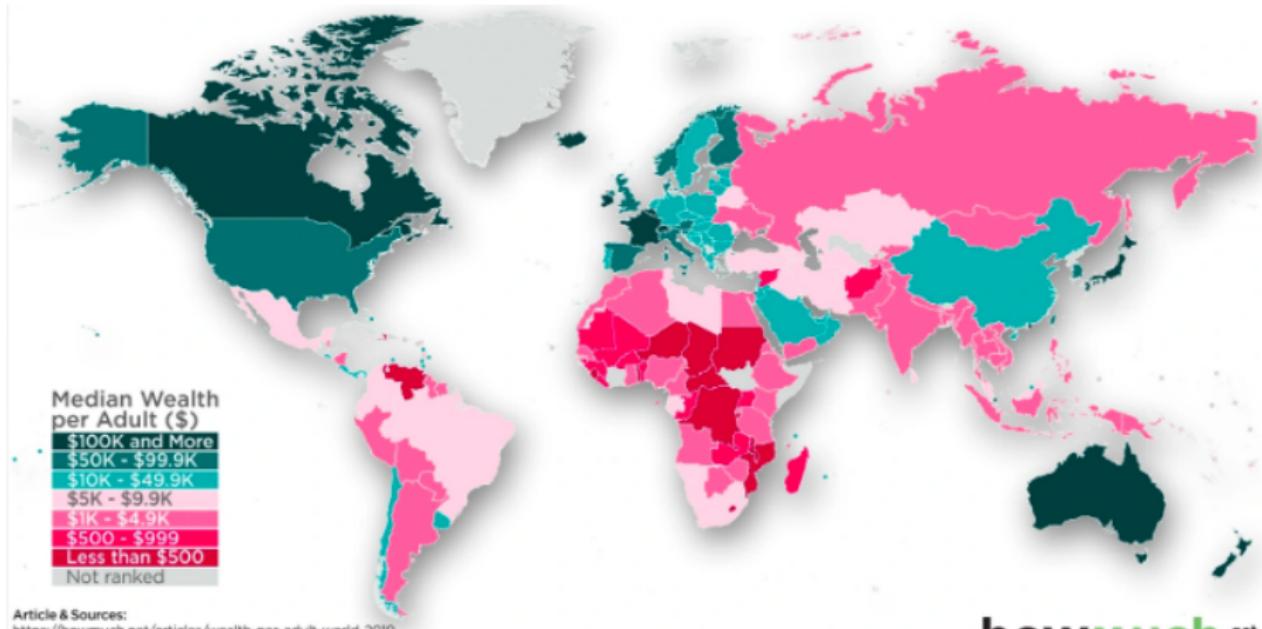
Classified according to World Bank estimates of 2016 GNI per capita (current US dollars, Atlas method)

- Low income (less than \$1,005)
- Lower middle income (\$1,006–\$3,955)
- Upper middle income (\$3,956–\$12,235)
- High income (more than \$12,235)
- No data



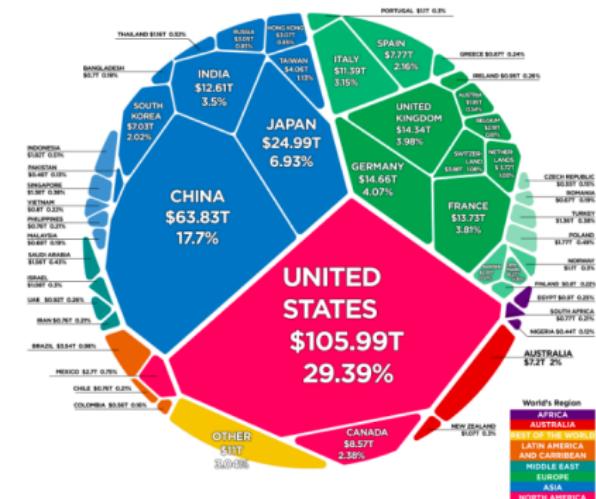
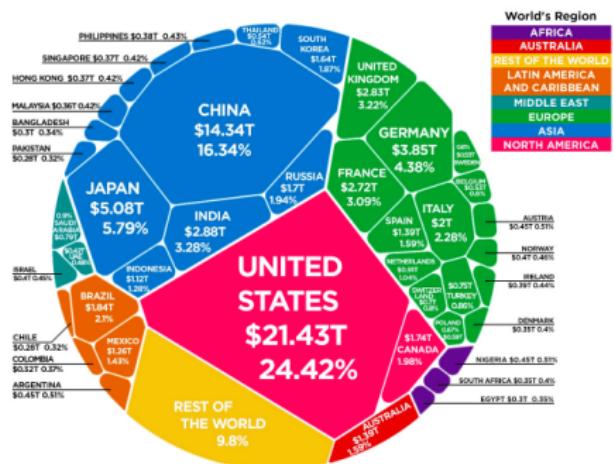
<http://datatopics.worldbank.org/sdgatlas/the-world-by-income.html>

Global Wealth 2019 (w)



howmuch .net

Global Income and Wealth Distribution 2019 (w) (w)

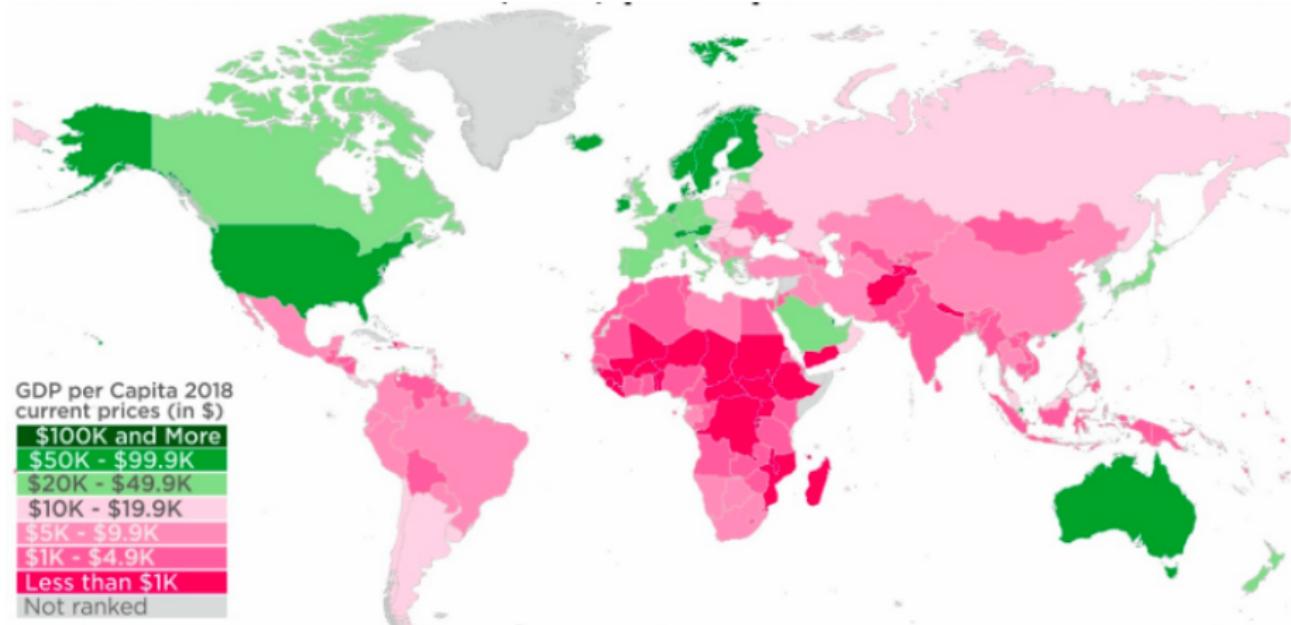


Article & Sources

<https://howmuch.net/articles/the-world-economy-2019>

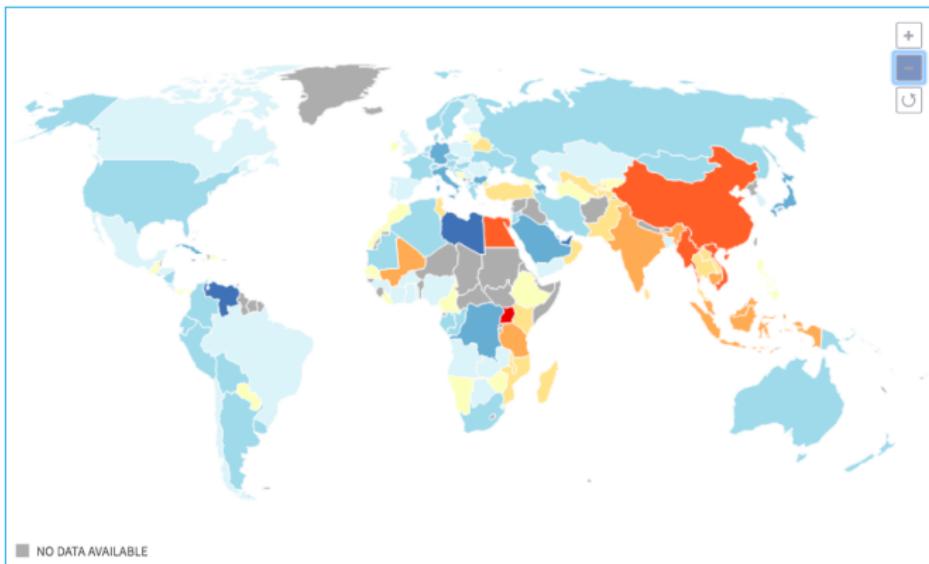
<https://databank.worldbank.org>

Global GDP per capita 2018 (w)



<https://howmuch.net/articles/gdp-per-capita-2018>

Global Economic Growth Projections to 2027 (w)



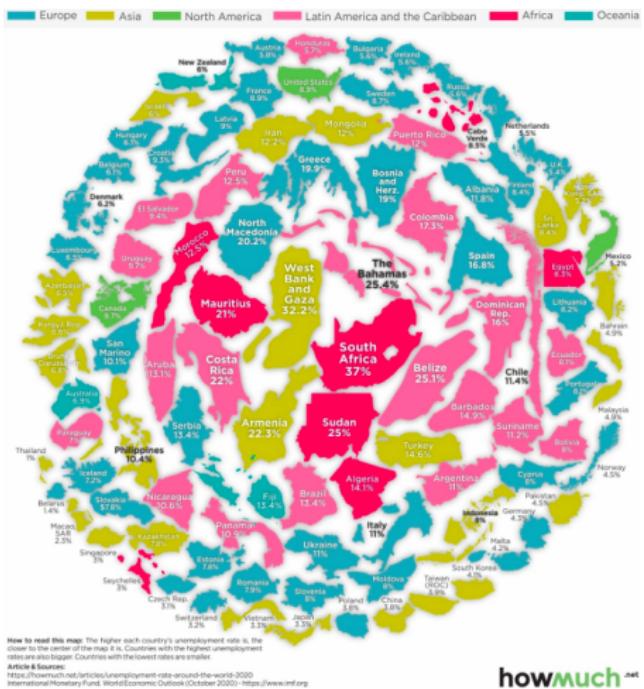
<http://atlas.cid.harvard.edu/growth-projections>

Global Economic Growth Projections to 2027 (w)



<http://atlas.cid.harvard.edu/growth-projections>

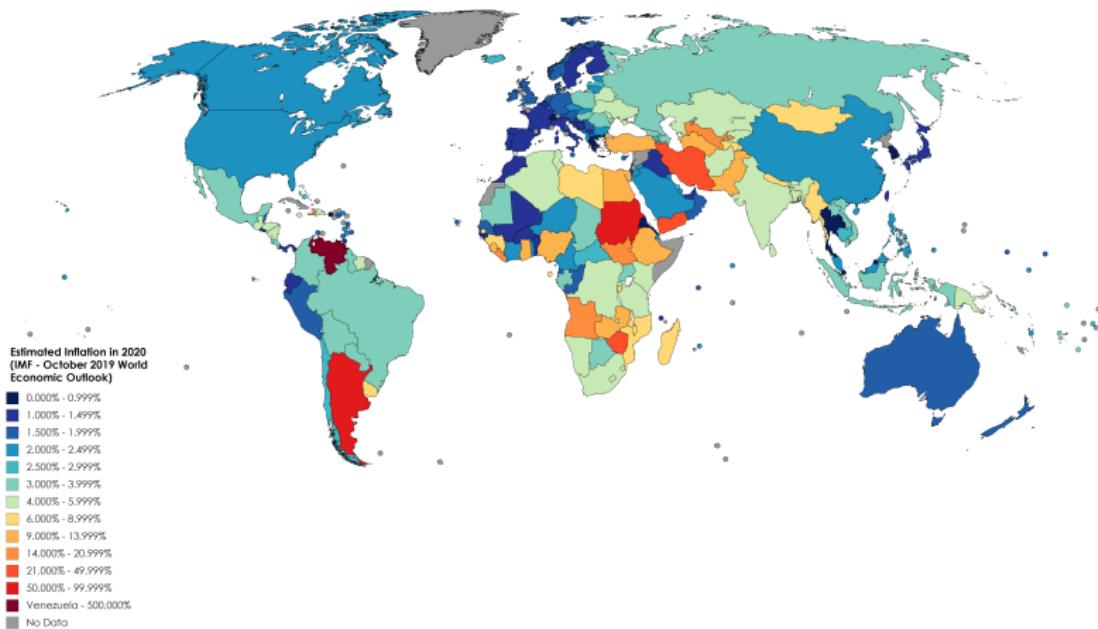
Unemployment Rate Around the World 2020 (w)



howmuch.net

Unemployment rates are significantly higher in underdeveloped countries compared to advanced economies. The worst rates are in South Africa, the West Bank and Gaza and the Bahamas. Singapore, the Czech Republic and Switzerland have the lowest rates in the world. The US falls somewhere in the middle of the pack compared to the rest of the world. Two regions fairing relatively well compared to the rest of the world are Central and East European countries as well as parts of Asia.

Inflation Around the World 2020 (w)



Source: IMF Projections in 2020

Created with resphat.net

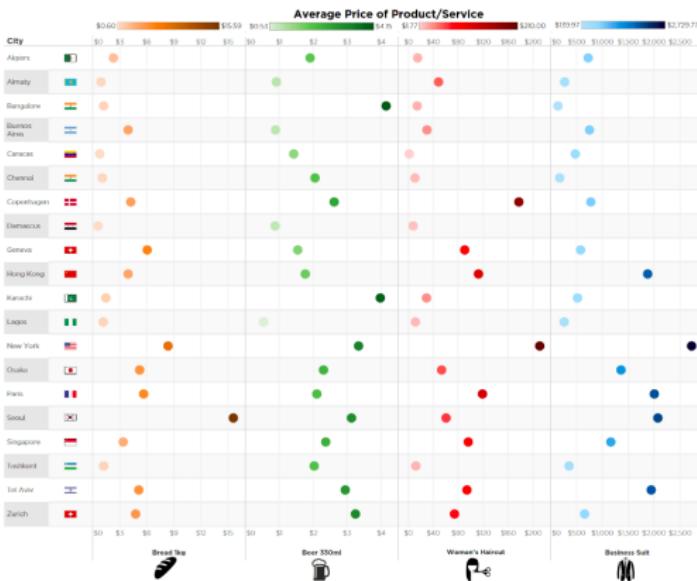
Living Cost Around the World 2019 (w)

Top 5 most expensive cities

- 1-3. Paris, France & Hong Kong, China & Singapore
- 4. Zurich, Switzerland.
- 5. Geneva, Switzerland & Osaka, Japan (tie)

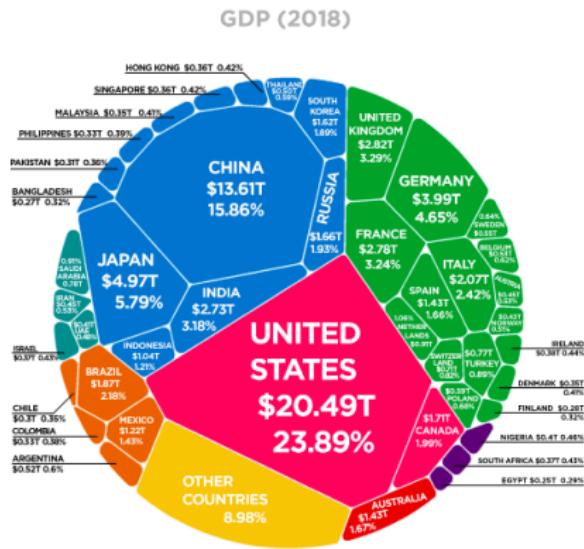
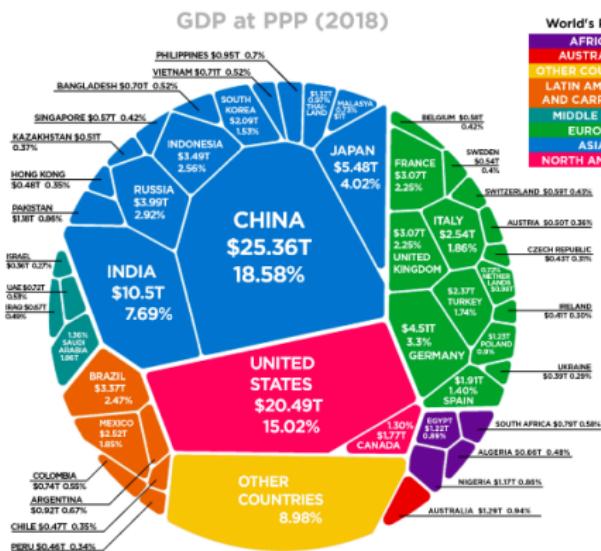
Top 5 cheapest cities

- 1. Caracas, Venezuela
- 2. Damascus, Syria
- 3. Tashkent, Uzbekistan
- 4. Almaty, Kazakhstan
- 5. Bangalore, India



Source: Howmuch.net

Global GDP at PPP 2018 (w)

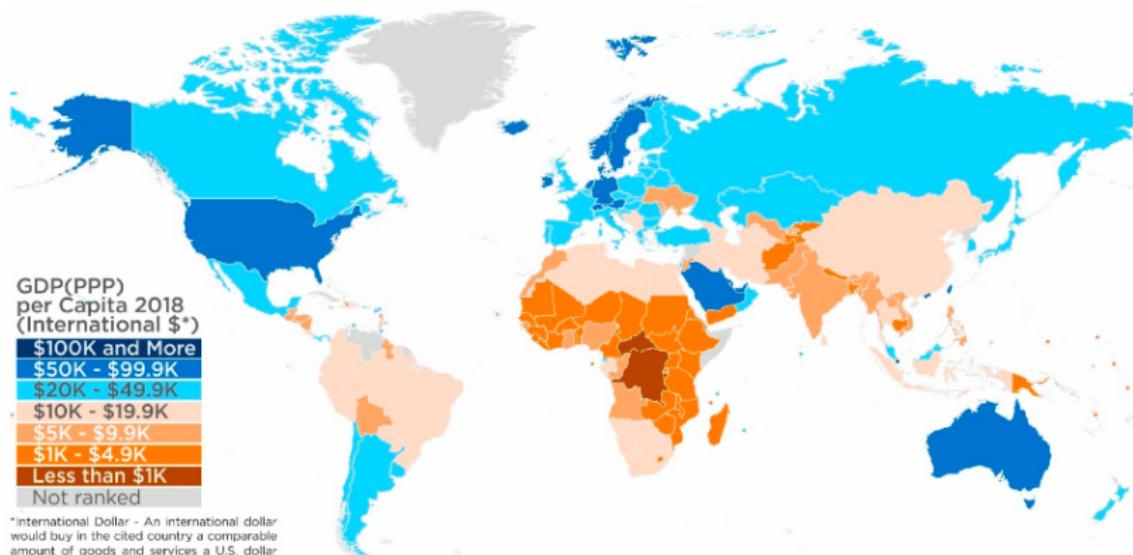


Article & Sources:

<https://howmuch.net/articles/the-world-economy-pop-2018>
[The World Bank - https://datacatalog.worldbank.org](https://www.worldbank.org)

howmuch.net

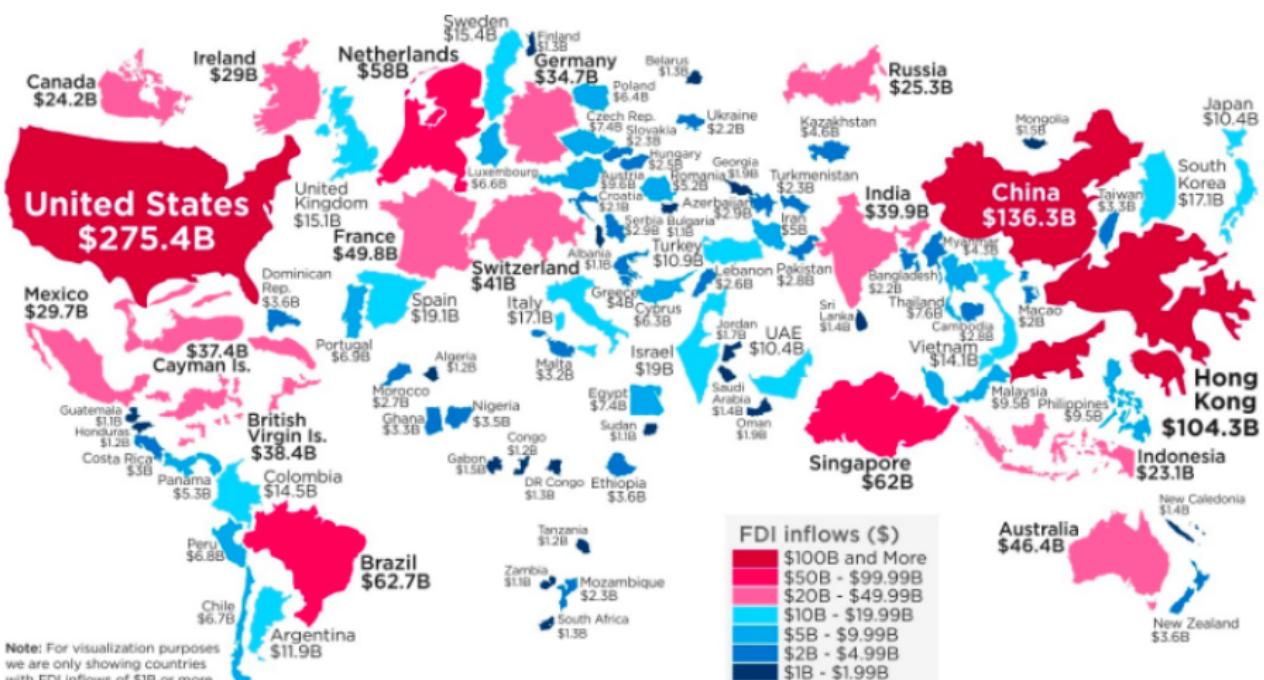
Global GDP (PPP) per capita 2018 (w)



Article & Sources:
<https://howmuch.net/articles/gdp-per-capita-around-the-world-2018>
International Monetary Fund - <https://www.imf.org>

howmuch net

Global Foreign Direct Investment 2017 (w)

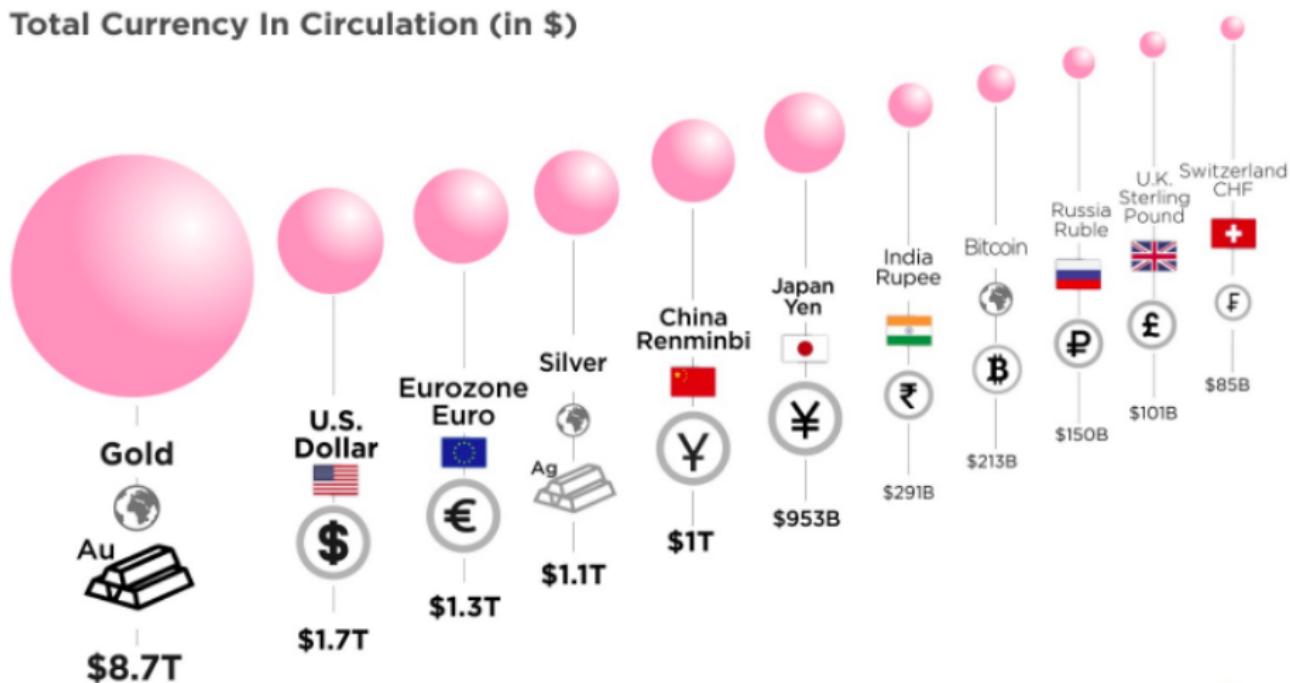


Note: For visualization purposes we are only showing countries with FDI inflows of \$1B or more.

<https://www.visualcapitalist.com/mapped-foreign-direct-investment-by-country/>

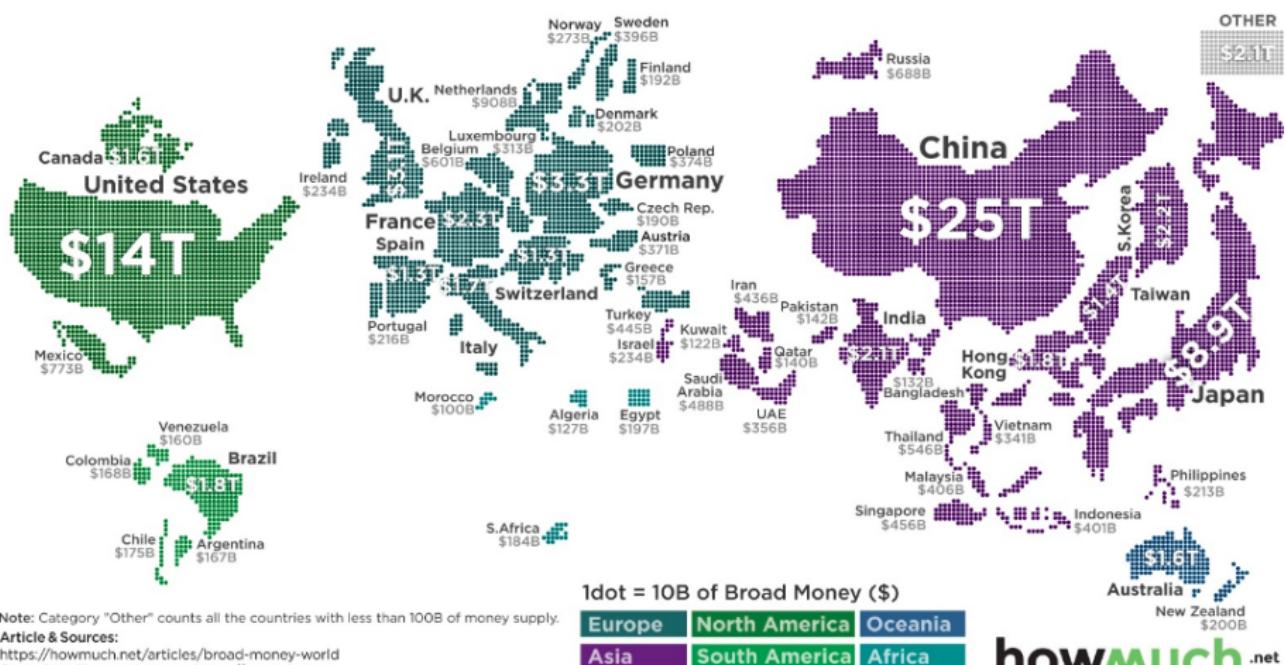
Global Currencies 2019 by Category (w)

Total Currency In Circulation (in \$)



<https://howmuch.net/articles/how-much-currencies-are-worth>

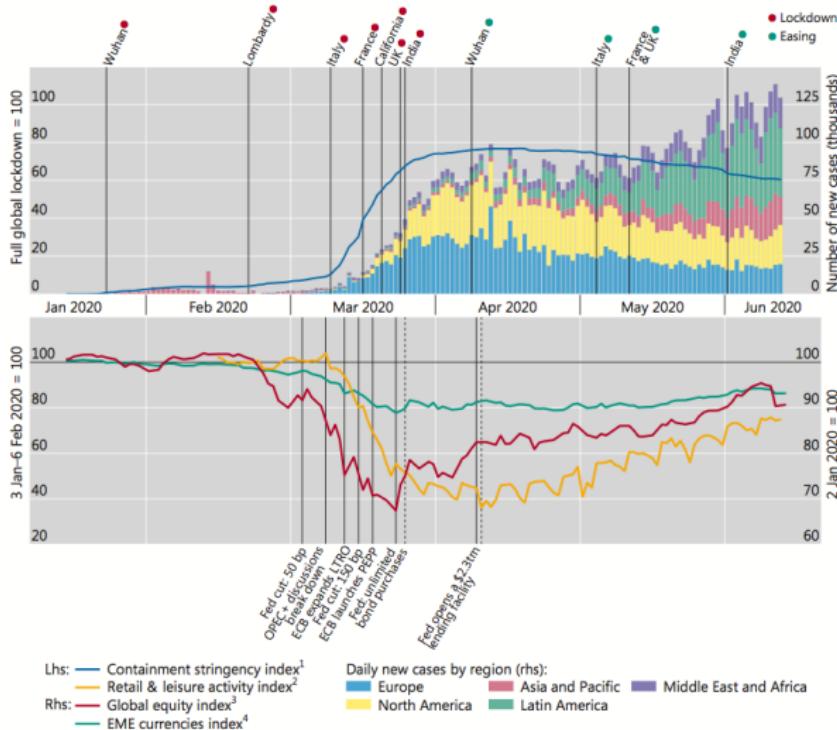
Global Money Stock 2019 by Country (w)



<https://howmuch.net/articles/broad-money-world-2019>

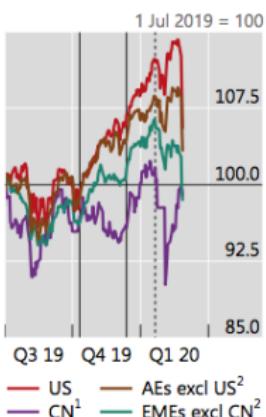
howMuch .net

Covid-19 Pandemic Timeline

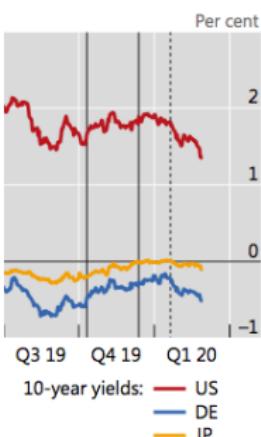


Financial Markets Falter on Covid-19 Shock

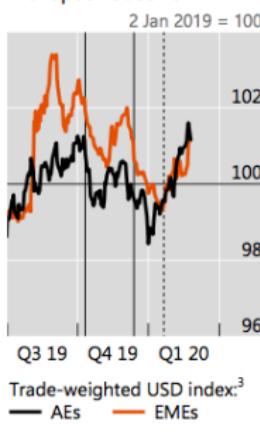
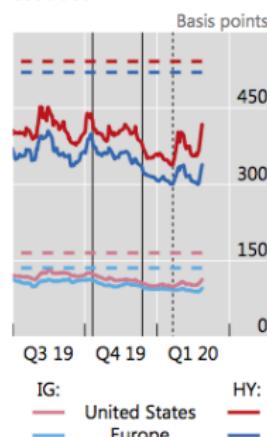
Stock markets tumble



Long-term yields fall



US dollar stages a V-shaped rebound

Credit markets turn more cautious⁴

The solid vertical lines indicate the trading day preceding 11 October 2019 (US announces that a phase-one trade deal with China has been agreed) and 13 December 2019 (US and China announce that the phase-one deal is to be signed the following month). The dashed vertical lines indicate 20 January 2020 (Chinese officials acknowledge that Covid-19 might be transmissible between humans).

The dashed horizontal lines in the fourth panel indicate 2005-current averages.

¹ Shanghai composite equity index. ² GDP-weighted averages across regional economies. ³ For AEs: advanced foreign economies, goods and services; for EMEs: emerging market economies, goods and services. ⁴ Option-adjusted spreads.

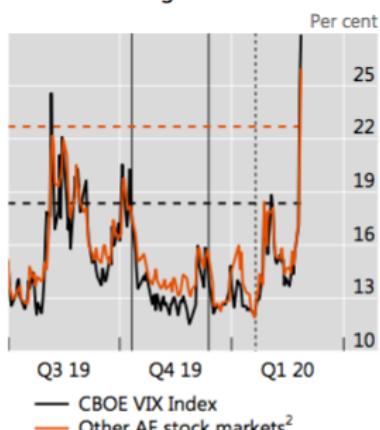
Sources: Federal Reserve Bank of St Louis, FRED; Bloomberg; Datastream; ICE BofAML indices; BIS calculations.

Economic Uncertainty Raises on Covid-19 Shock

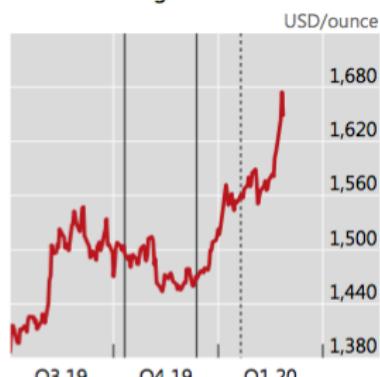
Commodity prices plunge...¹



...volatilities surge...



...and so does gold



The solid vertical lines indicate the trading day preceding 11 October 2019 (US announces that a phase-one trade deal with China has been agreed) and 13 December 2019 (US and China announce that the phase-one deal is to be signed the following month). The dashed vertical lines indicate 20 January 2020 (Chinese officials acknowledge that Covid-19 might be transmissible between humans).

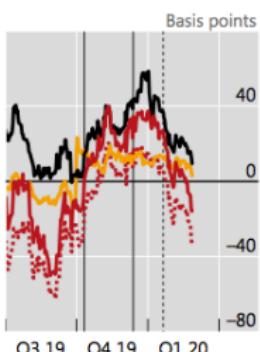
The dashed horizontal lines in the centre panel indicate 2005–current averages.

¹ Bloomberg commodity indices. ² Implied volatility of the EURO STOXX 50 and Nikkei 225 indices; weighted average based on market capitalisation.

Sources: Bloomberg; BIS calculations.

Flight to Safety with Covid-19 Outbreak

Yield curves flatten on Covid-19 concerns

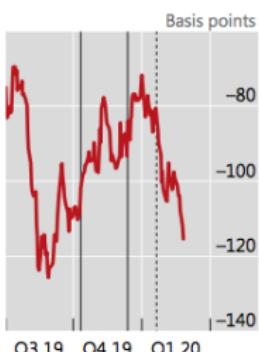


Gov't bond spread:

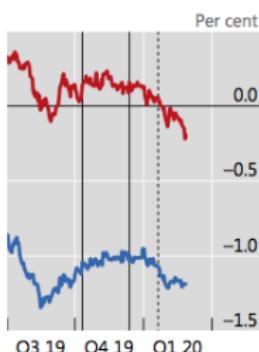
10yr-3m: — US — JP
— DE

5yr-3m: US

US term premium drops¹



Long-term real yields turn down



Riskier European sovereign spreads swing



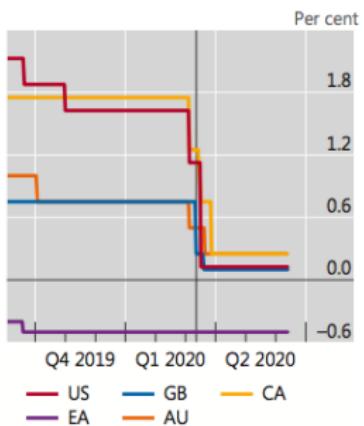
The solid vertical lines indicate the trading day preceding 11 October 2019 (US announces that a phase-one trade deal with China has been agreed) and 13 December 2019 (US and China announce that the phase-one deal is to be signed the following month). The dashed vertical lines indicate 20 January 2020 (Chinese officials acknowledge that Covid-19 might be transmissible between humans).

¹ Ten-year term premium from T Adrian, R Crump and E Moench, "Pricing the term structure with linear regressions", *Journal of Financial Economics*, vol 110, no 1, 2013.

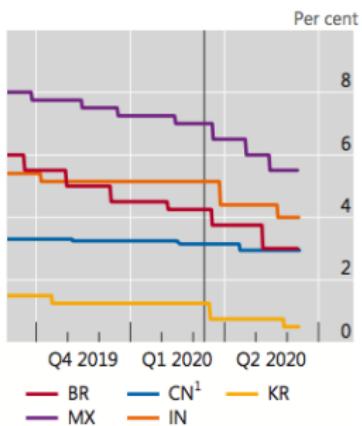
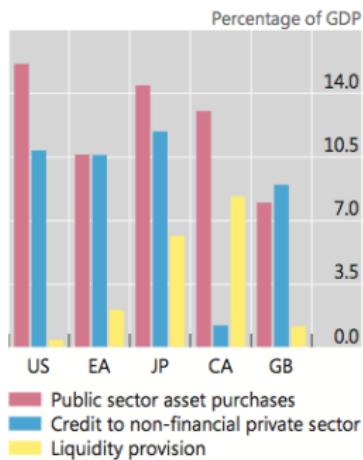
Sources: Federal Reserve Bank of New York; Bloomberg; BIS calculations.

Monetary Policy Responses to Covid-19 Shock

Policy rates: AEs



Policy rates: EMEs

Monetary policy responses²

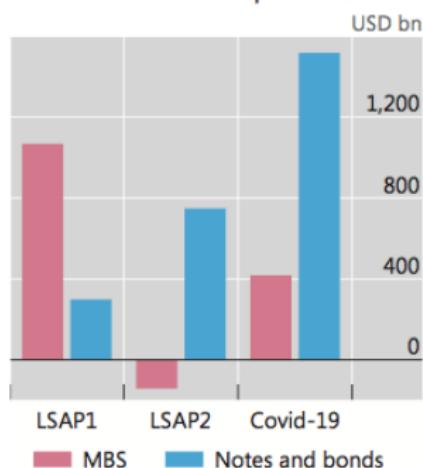
The vertical lines in the left-hand and centre panels indicate 11 March 2020 (coronavirus outbreak declared a pandemic by the World Health Organization).

¹ Medium-term lending facility, one-year rate. ² Projected maximum support during March–December 2020, based on official announcements. See Cavallino and De Fiore (2020).

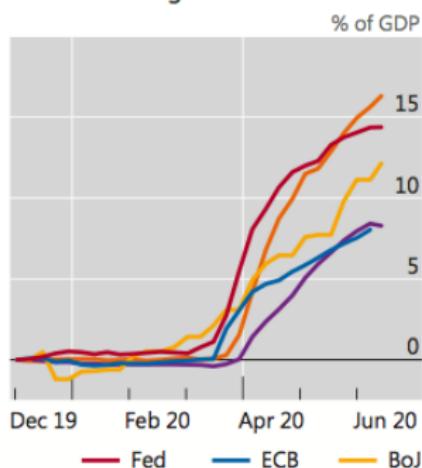
Sources: P Cavallino and F De Fiore, "Central banks' response to Covid-19 in advanced economies", *BIS Bulletin*, no 21, June 2020; Datastream; national data; BIS calculations.

Monetary Consequence after Covid-19 Shock

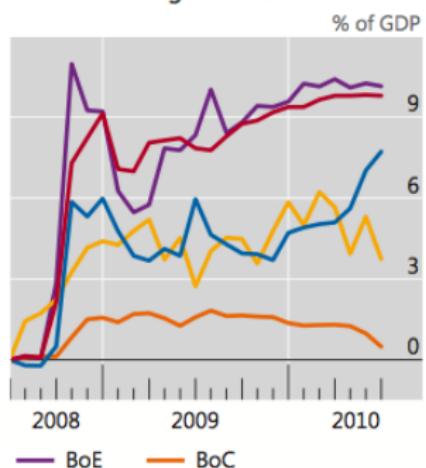
Federal Reserve asset purchases¹



Balance sheet growth: Covid-19²



Balance sheet growth: GFC²



¹ Difference in weekly holdings between the start and the end of the selected periods: LSAP1 = November 2008–March 2010; LSAP2 = November 2010–June 2011; Covid-19 = January 2020–latest available data. MBS = mortgage-backed securities. ² Cumulative changes in total balance sheet size since December 2019 (centre panel, weekly) and since June 2008 (right-hand panel, monthly). As a percentage of four-quarter moving sum of quarterly GDP; for April 2020 onwards, sum of Q2 2019–Q1 2020 GDP.

Sources: Bank of Canada; Bank of England; Board of Governors of the Federal Reserve System; Datastream; national data; BIS calculations.

Fiscal Policy Responses to Covid-19 Shock

As a percentage of GDP

Graph I.16

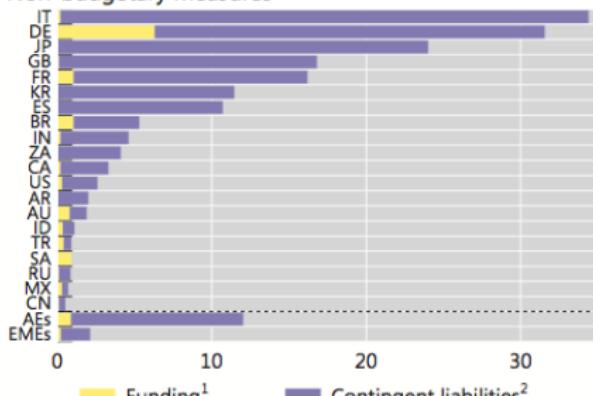
Budgetary measures



Health

Stimulus

Non-budgetary measures



Funding¹

Contingent liabilities²

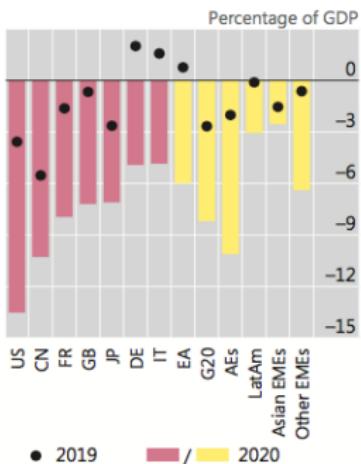
Estimates focus on government discretionary measures that supplement existing automatic stabilisers, which differ across countries in their breadth and scope. AEs = AU, CA, DE, ES, FR, GB, IT, JP and US; EMEs = AR, BR, CN, ID, IN, KR, MX, RU, SA, TR and ZA. For regions, weighted averages based on GDP and PPP exchange rates.

¹ Equity injections, asset purchases, loans and debt assumptions, including through extra-budgetary funds. ² Guarantees on loans and other contingent liabilities such as loans channelled through public financial agencies.

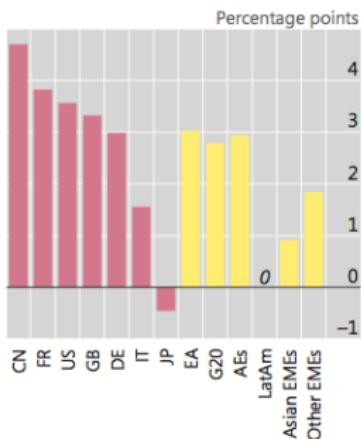
Sources: IMF, *Fiscal Monitor*, April 2020 and update June 2020; IMF, *World Economic Outlook*; BIS calculations.

Fiscal Consequences after Covid-19 Shock

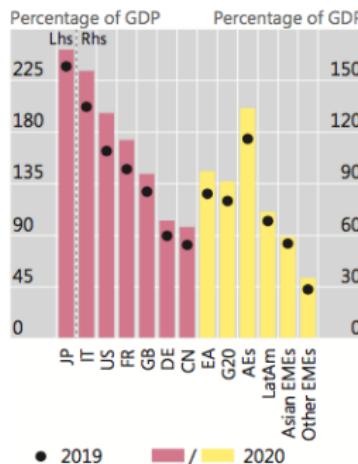
Massive widening fiscal deficits¹
expected for 2020



Primary deficits for 2021 projected to
remain significantly above pre-
Covid-19 shock average level²



Public debts likely to undergo
steepest increase since GFC

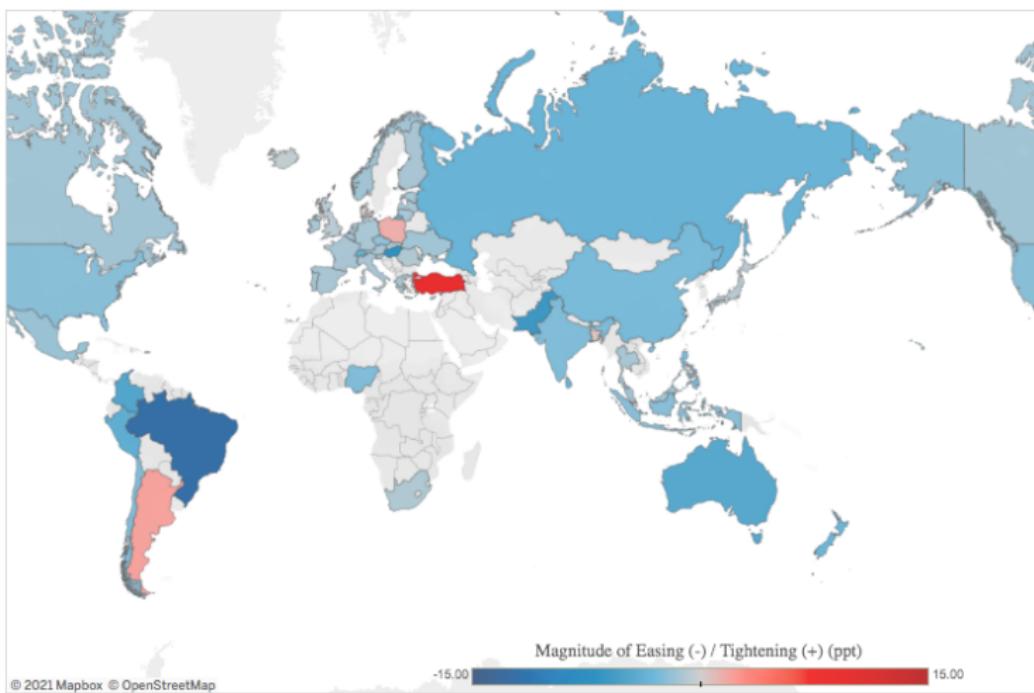


For regions, weighted averages based on GDP and PPP exchange rates. AEs = AU, CA, DE, ES, FR, GB, IT, JP and US; LatAm = AR, BR, CL, CO, MX and PE; Asian EMEs = HK, ID, IN, KR, MY, PH and TH; Other EMEs = CZ, HU, PL, RU, SA, TR and ZA.

¹ Primary deficits. ² Difference between 2021 estimate and the average of 2016–19.

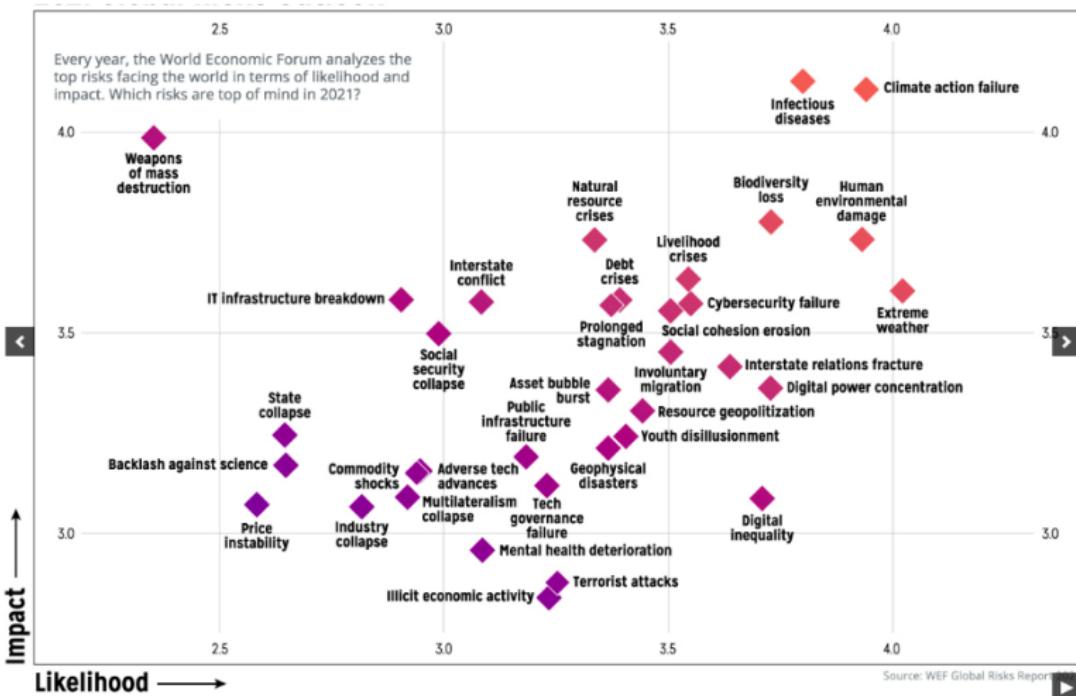
Sources: IMF, *World Economic Outlook*, April 2020; BIS calculations.

Global Monetary Policy Stance, Dec 2020 (w)



<https://www.cfr.org/global/global-monetary-policy-tracker/p37726>

Global Risks Outlook 2021 (w)



<https://www.visualcapitalist.com/visualized-a-global-risk-assessment-of-2021-and-beyond/>



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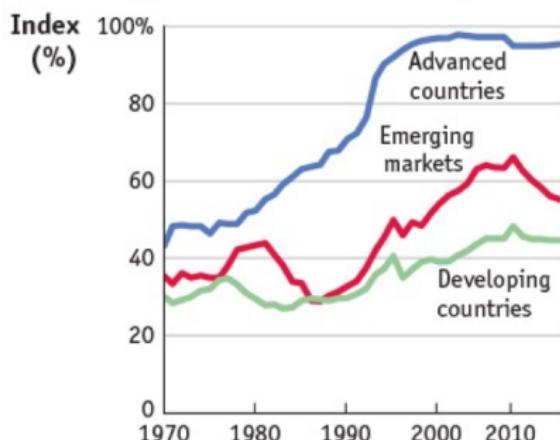
A Framework for Assessing Global Imbalances [\(w\)](#)

Global Imbalance: external positions of systemically important economies that reflect distortions or entail risks for the global economy.

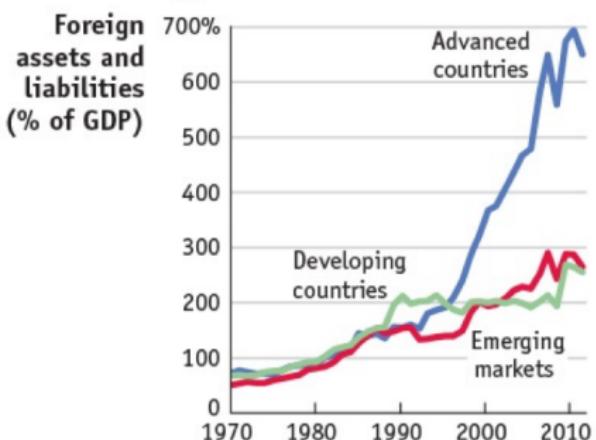
- ① External positions: refer not only to current account flows, but also the net foreign assets of countries (which, if changes in the prices of those assets and liabilities are zero, then it is the accumulated sum of past net current account flows).
- ② Systemically important economies: these are the economic blocks running the imbalances, that are relevant to the world market operations, e.g. China, the Euro area or the United States.
- ③ Reflect distortions or entail risks: this part concerns both the causes (distortions) and possible consequences (risks) of the imbalances. This means that even an external imbalance that was not originated on some market distortion, would fall under the definition of global imbalances, if significant risks arise from it.

Financial Globalization since 1970

(a) Increase in Financial Openness



(b) Increase in Financial Transactions

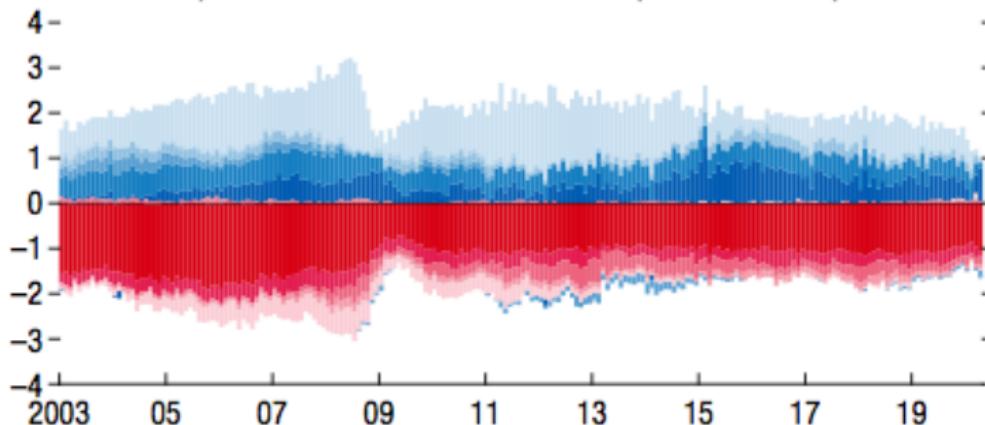


Source: FT (2017)

Merchandise Trade Balances 2003-2020

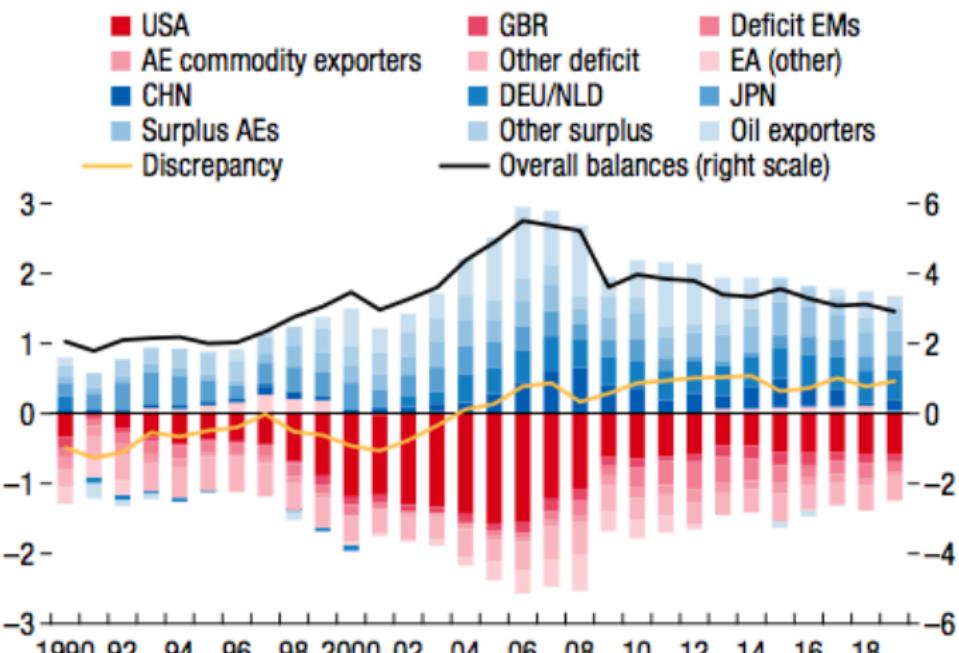
1. Merchandise Trade Balances, Monthly, 2003–20 (Percent of world GDP)

- | | | |
|--------------------------|-----------------|-----------------|
| ■ USA | ■ GBR | ■ Deficit EMs |
| ■ AE commodity exporters | ■ Other deficit | ■ EA (other) |
| ■ CHN | ■ DEU/NLD | ■ JPN |
| ■ Surplus AEs | ■ Other surplus | ■ Oil exporters |



Source: IMF 2020 External Sector Report.

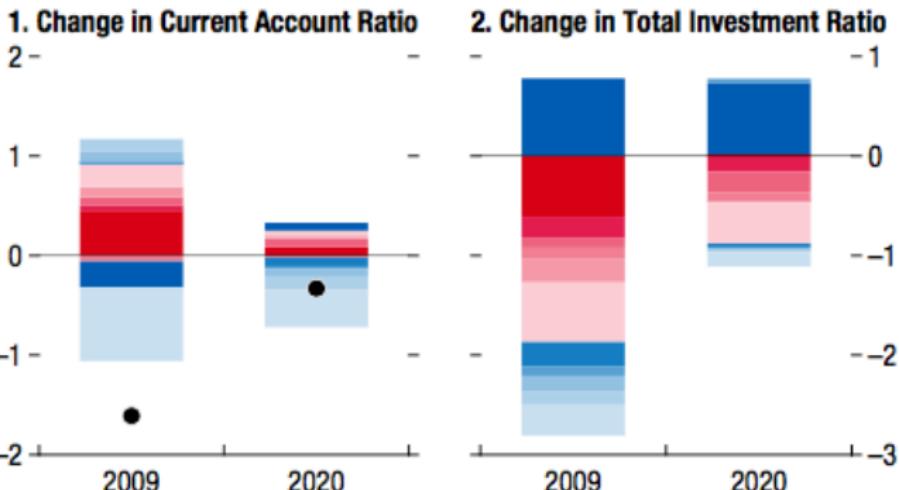
Current Account Balances (%World GDP) 1990-2019



Source: IMF 2020 External Sector Report.

Changes in Current Account and Investment Ratios

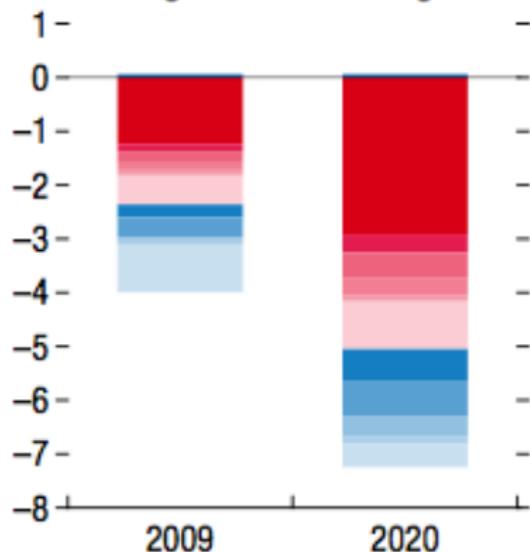
- USA
- AE commodity exporters
- CHN
- Surplus AEs
- Change in overall balance (absolute sum of global deficits and surpluses)
- GBR
- Other deficit
- DEU/NLD
- Other surplus
- Deficit EMs
- EA (other)
- JPN
- Oil exporters



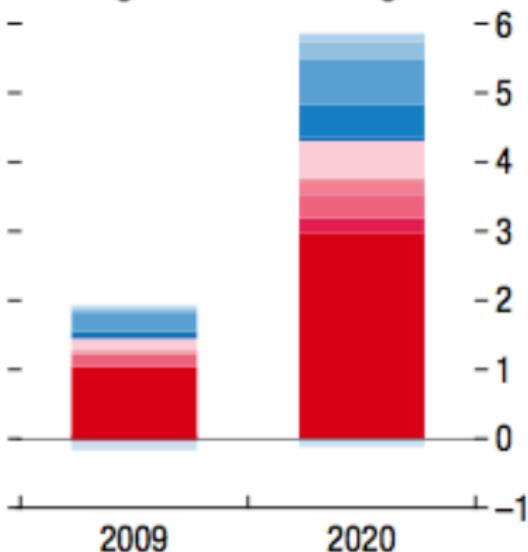
Source: IMF 2020 External Sector Report.

Changes in Public and Private Savings Ratios

3. Change in Public Saving Ratio



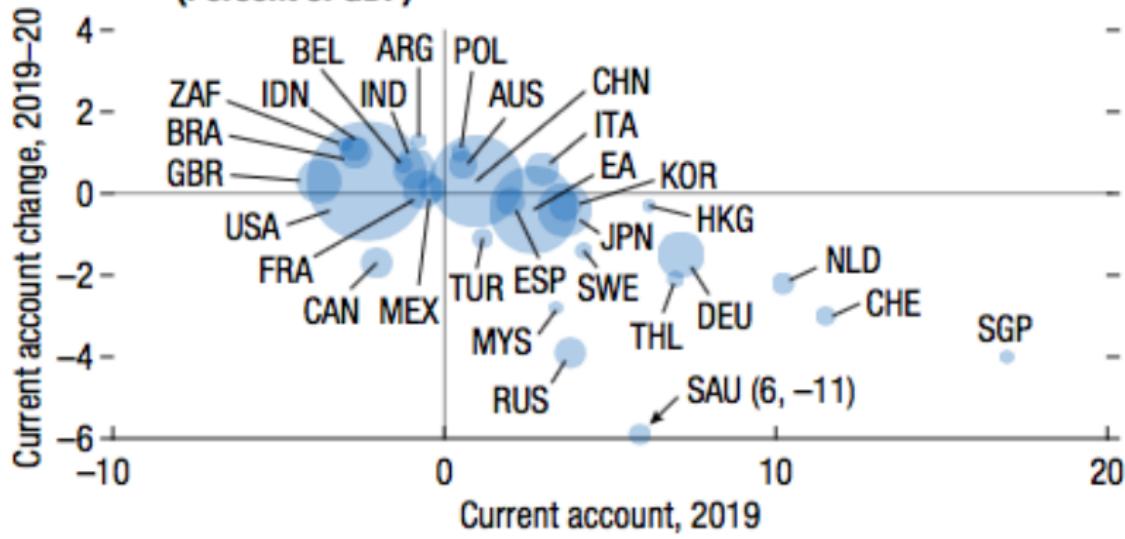
4. Change in Private Saving Ratio



Source: IMF 2020 External Sector Report.

Change in Current Account Balance, 2019-20

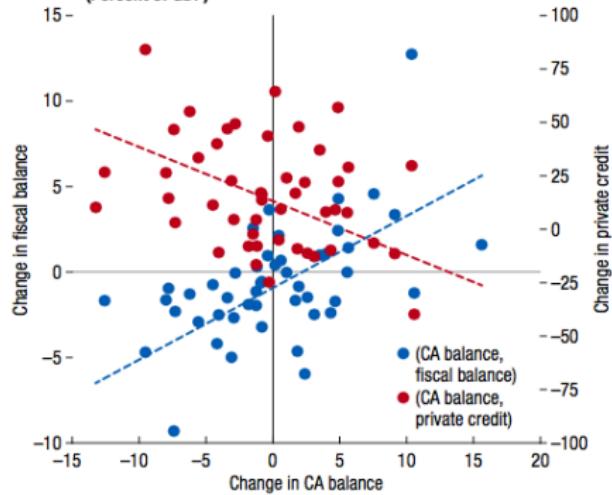
3. Change in Current Account Balance, 2019–20² (Percent of GDP)



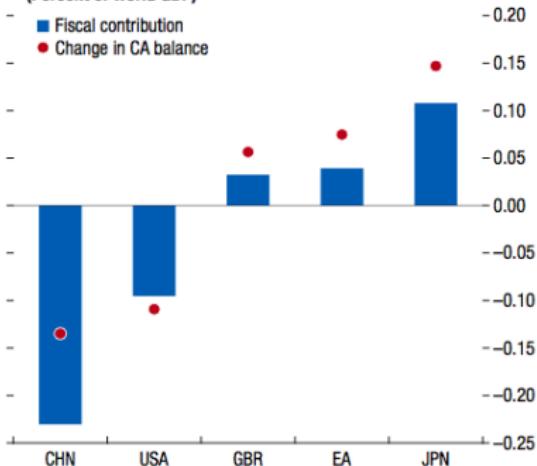
Source: IMF 2020 External Sector Report.

Current Account: The Role of Fiscal and Credit Policy

1. Selected Economies: Change in Current Account Balance vs. Fiscal Balance and Private Credit, 2007–18¹
(Percent of GDP)



2. Systemic Economies: Fiscal Contribution to the Change in the Current Account, 2013–18²
(Percent of world GDP)

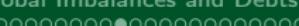
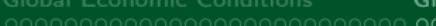


Sources: Bank for International Settlements; IMF, *World Economic Outlook*; World Bank, Global Financial Development Database; and IMF staff calculations.

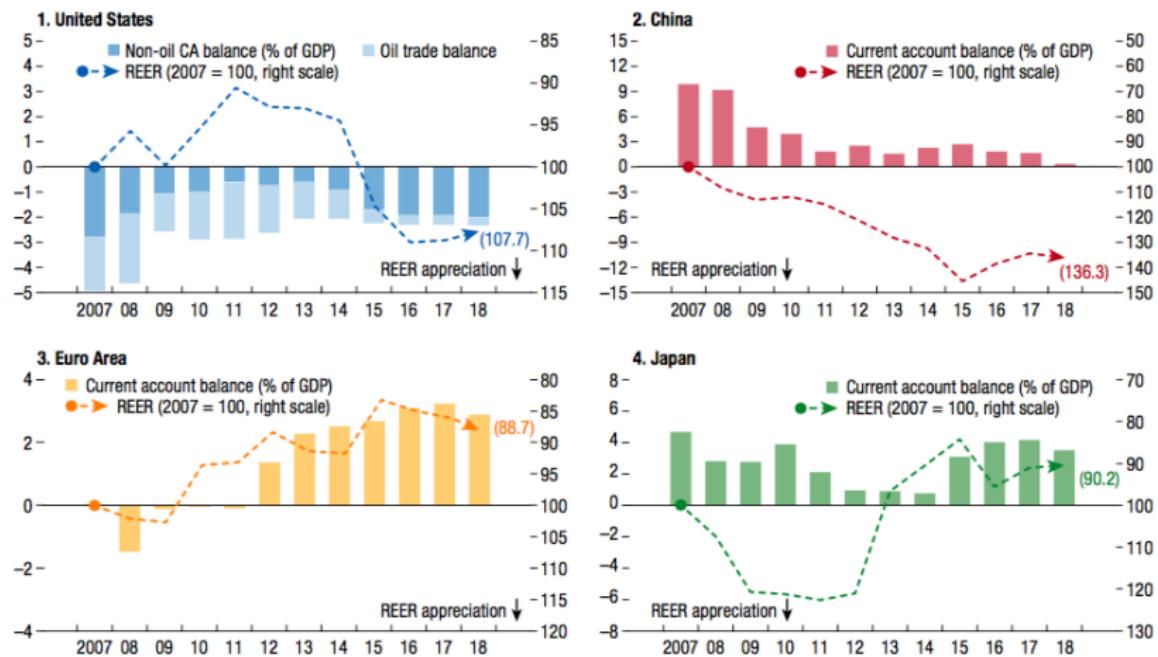
Note: Data labels use International Organization for Standardization (ISO) country codes. CA = current account; EA = euro area.

¹Panel 1 comprises all 49 economies in the External Balance Assessment (EBA) model.

²The fiscal contribution is calculated by multiplying the coefficient on the fiscal balance from the EBA current account model with the change in the fiscal balance relative to world GDP between 2013–18. Fiscal balance refers to the cyclically adjusted general government balance.

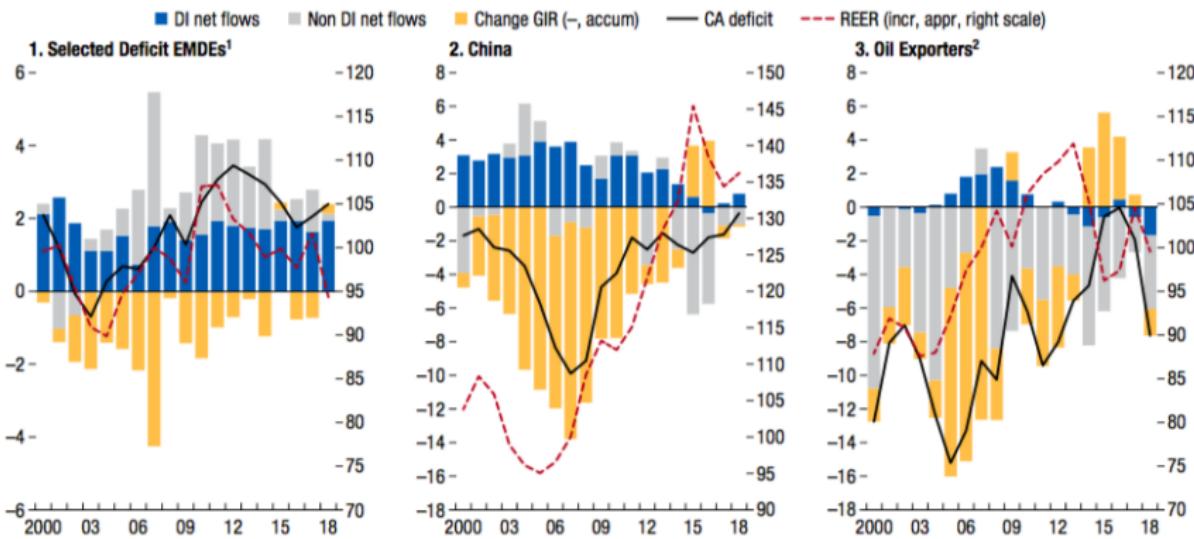


Current Account and Real Exchange Rate, 2007-18



Source: IMF 2019 External Sector Report.

Emerging Market and Developing Economies: CA & FA



Sources: IMF, *World Economic Outlook*; and IMF staff calculations.

Note: CA = current account; EMDEs = emerging market and developing economies; DI = direct investment; Non-DI = portfolio and other investment; GIR = gross international reserves; REER = real effective exchange rate.

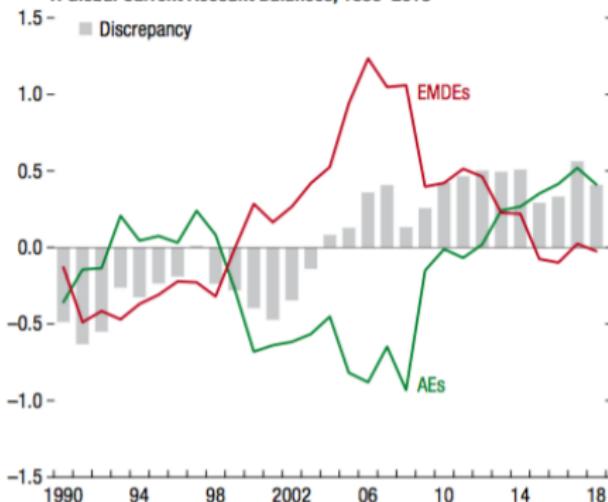
¹Argentina, Brazil, India, Indonesia, Mexico, South Africa, and Turkey; weighted average (share of GDP and REER index).

²Russia and Saudi Arabia; weighted average (share of GDP and REER index).

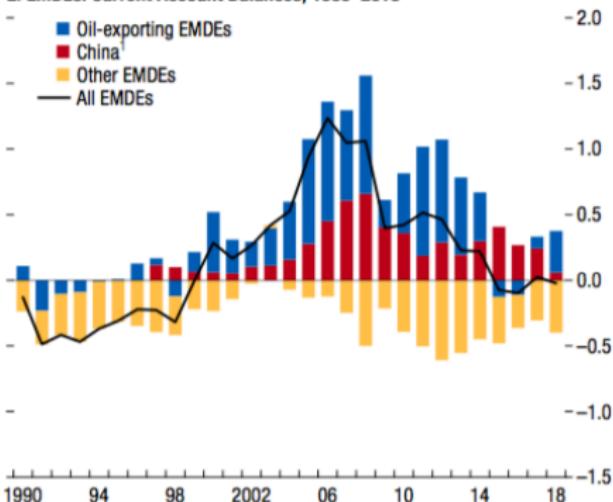
Global Allocation of Capital Flows 1990-2018

(Percent of world GDP)

1. Global Current Account Balances, 1990–2018



2. EMDEs: Current Account Balances, 1990–2018

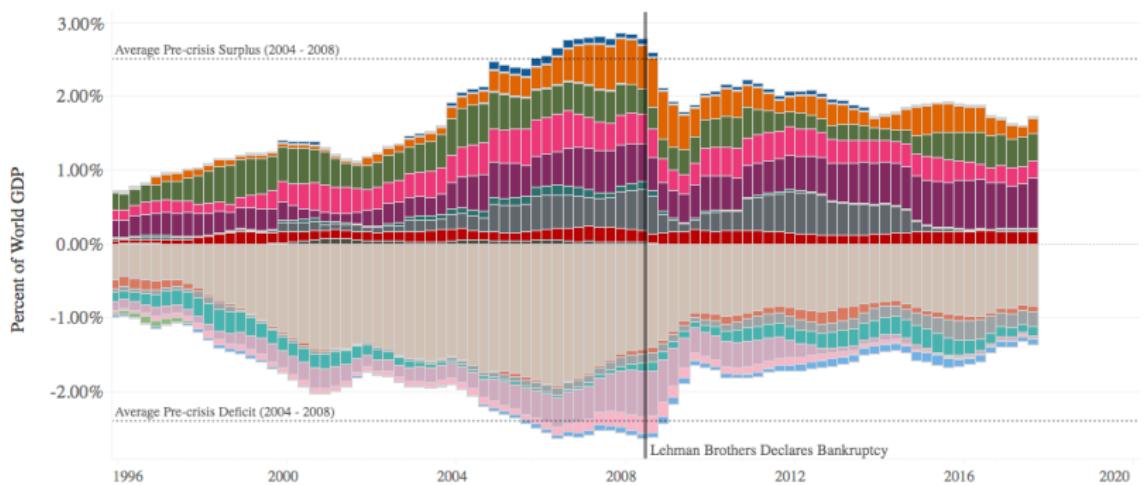


Sources: IMF, *World Economic Outlook*; and IMF staff calculations.

Note: AE = advanced economy; EMDEs = emerging market and developing economies.

¹EMDEs include oil-exporting EMDEs. China's current account data are available starting in 1997.

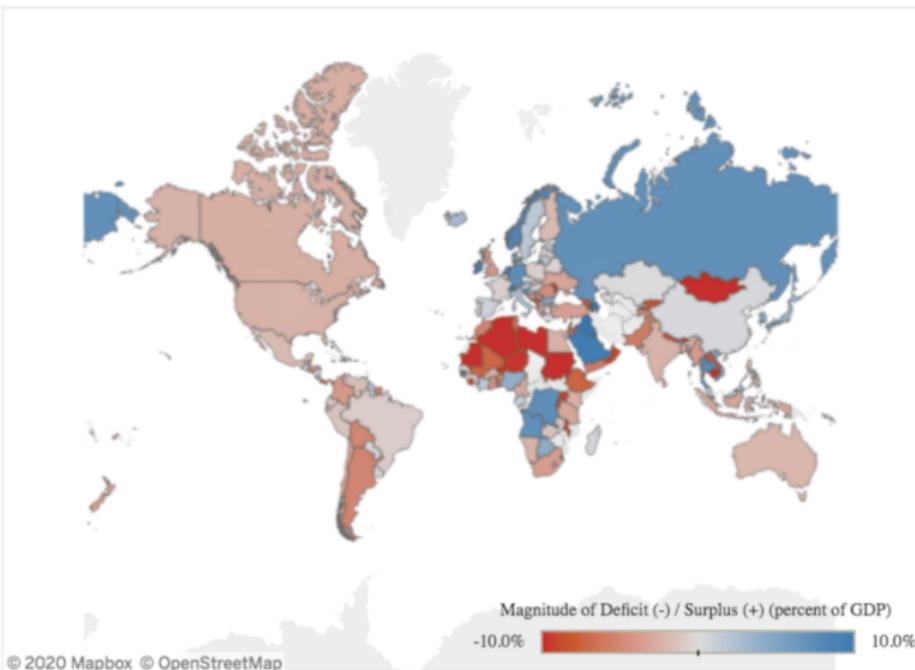
Global Imbalances Index 1996-2018 (w)



Africa	Anglophone Countries*	China	East Asia (ex China)	Eurozone	Other Europe	Latin America/the Caribbean	Middle East/North Africa	South Asia/Pacific
Surplus	■	■	■	■	■	■	■	■
Deficit	■	■	■	■	■	■	■	■

<https://www.cfr.org/report/global-imbalances-tracker>

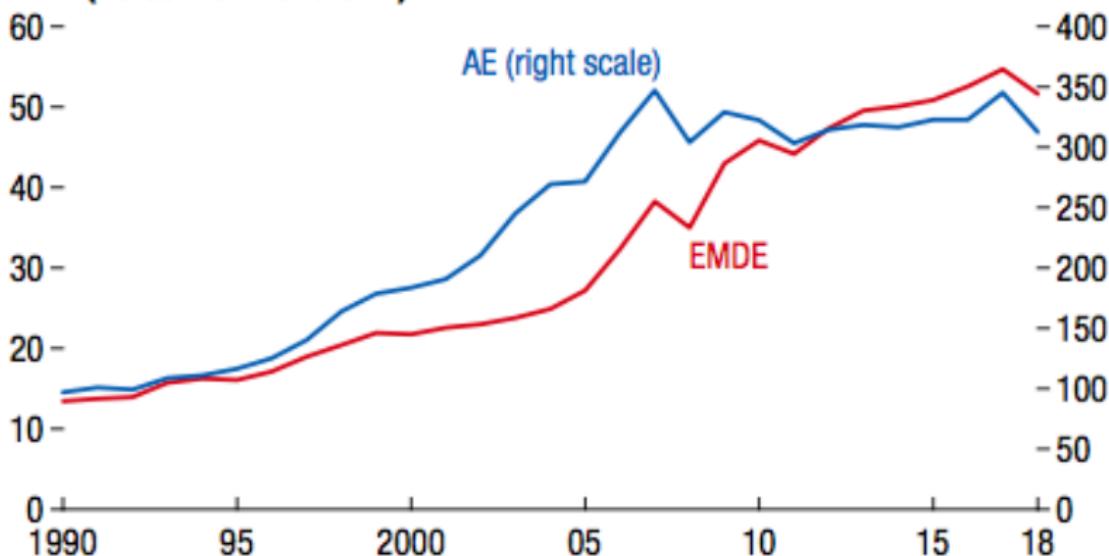
Global Imbalances Map 2018 (w)



<https://www.cfr.org/report/global-imbalances-tracker>

External Assets and Liabilities: 1990-2018

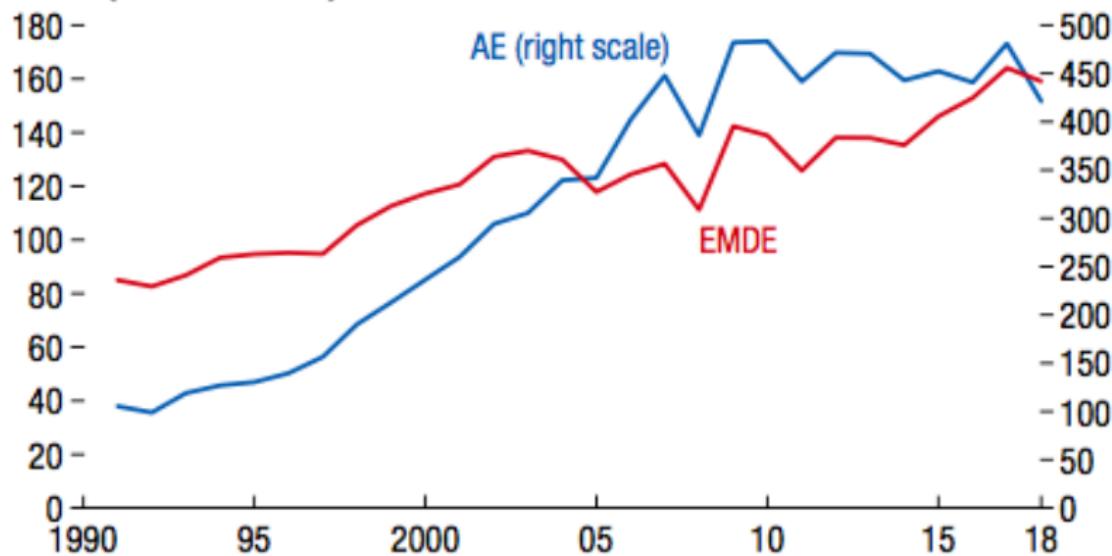
1. External Assets and Liabilities (Percent of world GDP)



Note: AE=advanced economies; EMDE=emerging market and developing economies.

External Assets and Liabilities (Median): 1990-2018

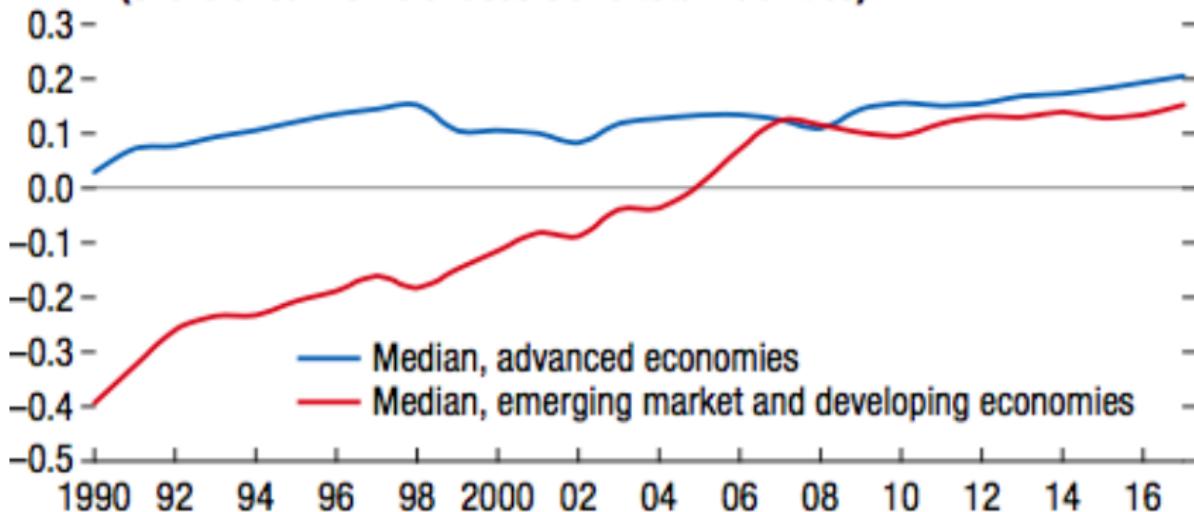
2. External Assets and Liabilities, Median Country (Percent of GDP)



Source: IMF 2020 External Sector Report.

External Position Currency Mismatch: 1990-2017

3. Foreign Currency Exposure by Group, 1990–2017³ (Share of sum of total assets and total liabilities)

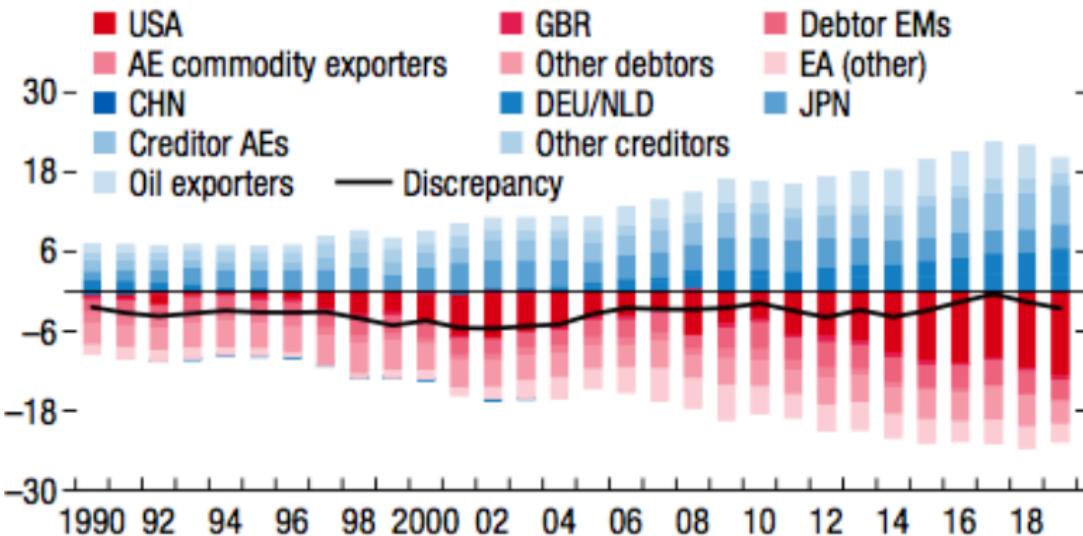


Source: IMF 2020 External Sector Report. Aggregate foreign currency exposure is defined as net foreign assets denominated in foreign currency as a share of total assets and total liabilities.

External Assets and Liabilities: NIIP 1990-2019

1. Net International Investment Position, 1990–2019¹

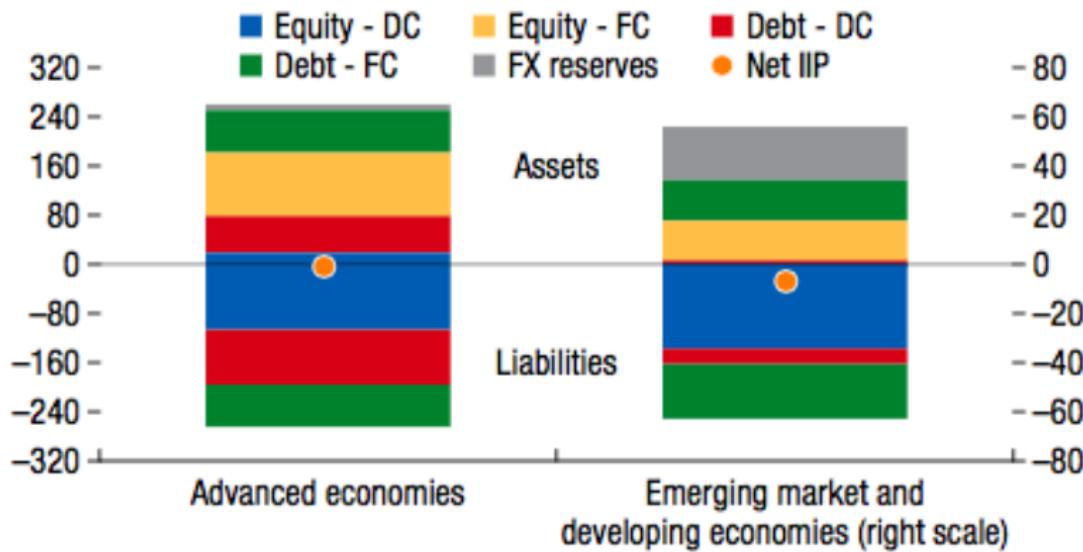
(Percent of world GDP)



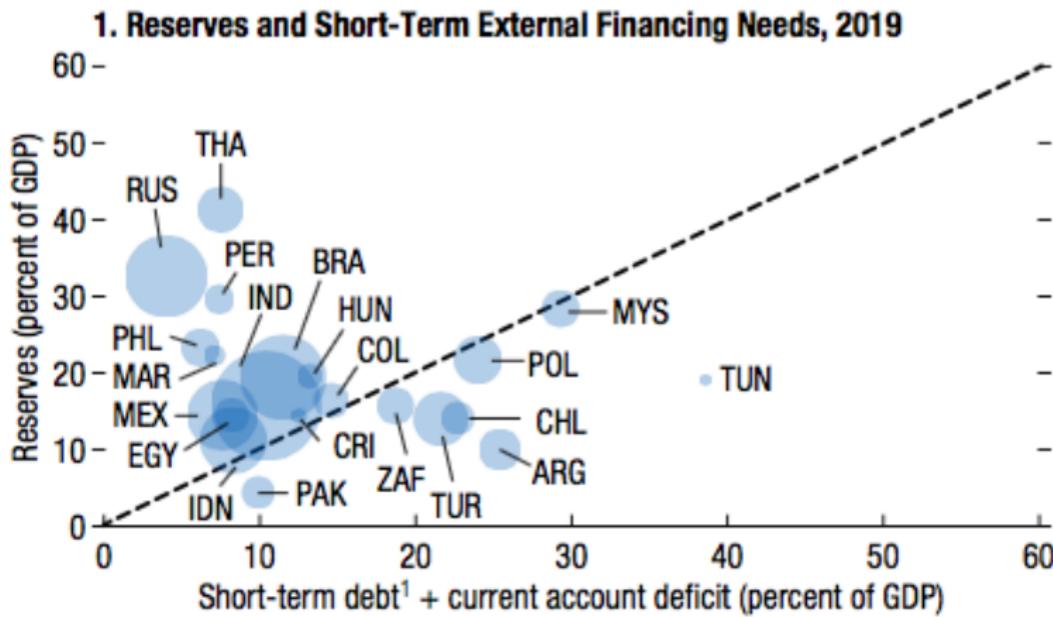
Source: IMF 2020 External Sector Report.

External Assets and Liabilities: Composition 2017

2. Composition by Country Group, 2017² (Percent of group GDP)

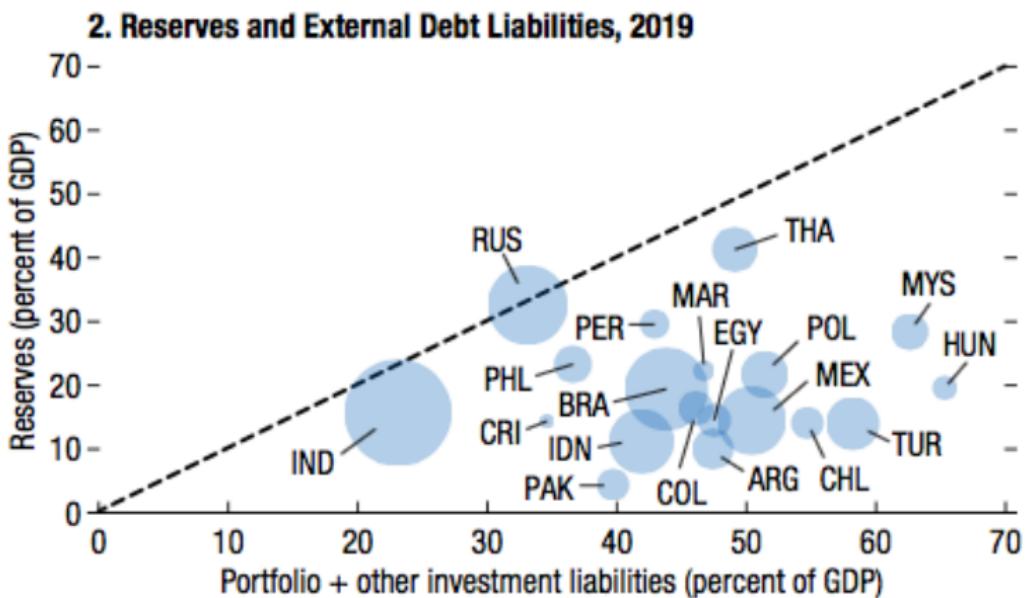


Reserves and Short-Term External Financing 2019



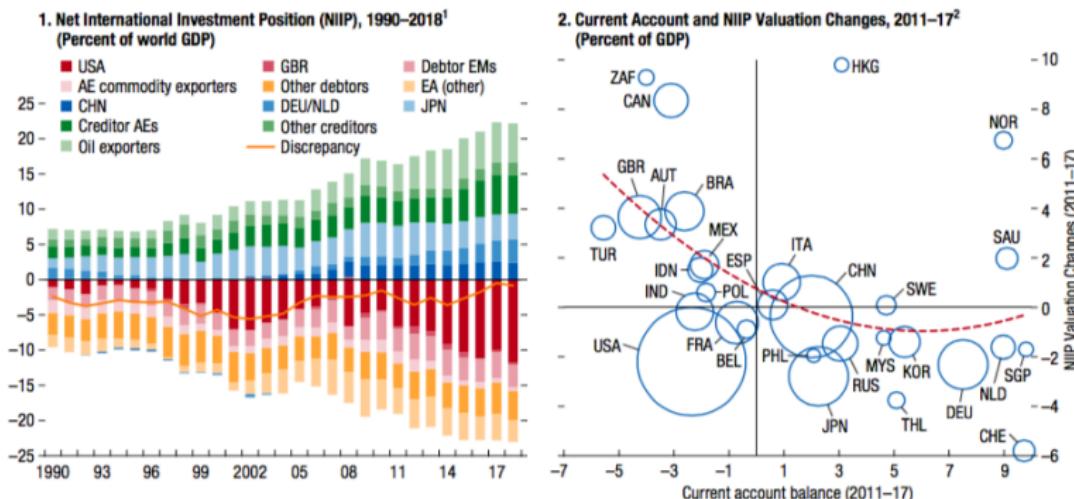
Source: IMF 2020 External Sector Report.

Reserves and External Debt Liabilities 2019



Source: IMF 2020 External Sector Report.

External Position and Valuation Changes, 1990-2018



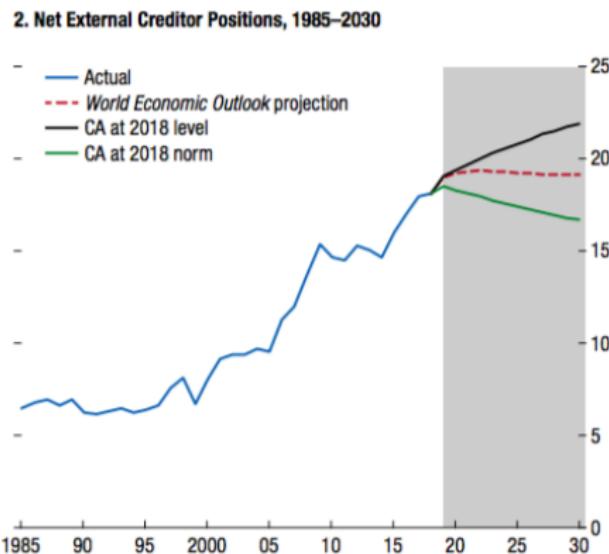
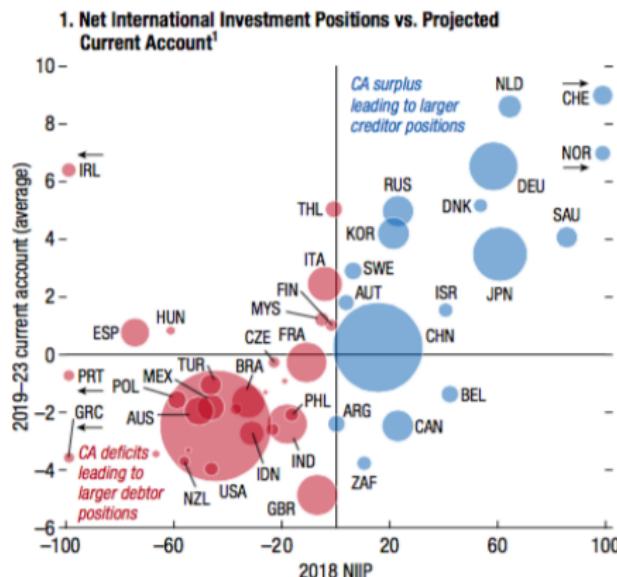
Sources: External Wealth of Nations database, IMF, *World Economic Outlook*; Updated and extended version of data set constructed by Lane and Milesi-Ferretti (2007); and IMF staff calculations.

Note: AEs = advanced economies; EA = euro area; EMs = emerging market economies; NIIP = net international investment position. Data labels in the figure use International Organization for Standardization (ISO) country codes.

¹AE commodity exporters comprise Australia, Canada, and New Zealand; Debtor EMs comprise Brazil, India, Indonesia, Mexico, South Africa, and Turkey; Oil exporters comprise WEO definition plus Norway. Creditor AEs comprise Hong Kong SAR, Korea, Singapore, Sweden, Switzerland, and Taiwan Province of China. Other debtor (creditor) comprise all other economies with negative (positive) NIIP positions.

²See the methodology in Adler and Garcia-Macia (2018).

Current Account and External Position: Projections



Sources: IMF, *World Economic Outlook*, and IMF staff calculations.

Note: Data labels use International Organization for Standardization (ISO) country codes. CA = current account.

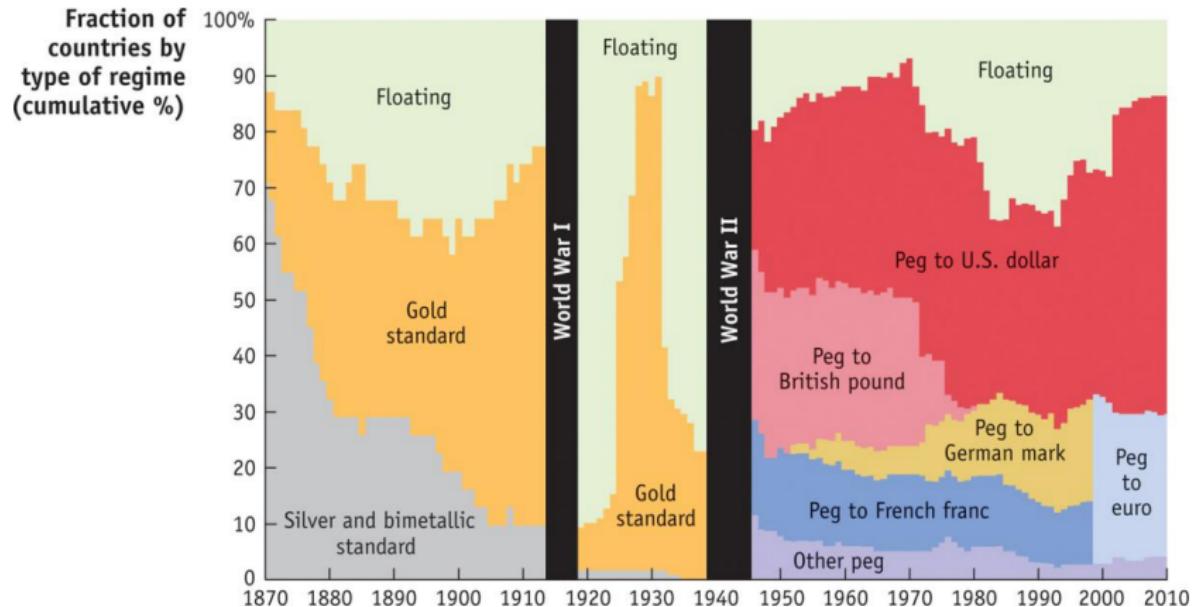
¹Bubble sizes are proportional to US dollar GDP.



Outline

- 1 Course Overview
- 2 Global Economic Conditions
- 3 Global Imbalances and Debts
- 4 Foreign Exchange and Reserve

Global Exchange Rate Regimes

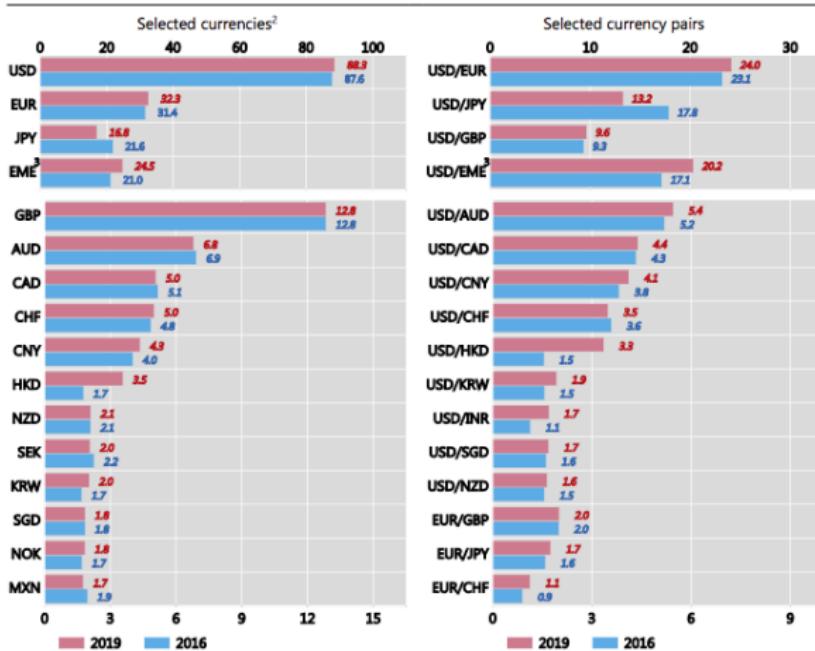


Source: FT (2017)

Global Foreign Exchange Turnover – By Currency

Net-net basis, daily averages in April, in per cent

Graph 1

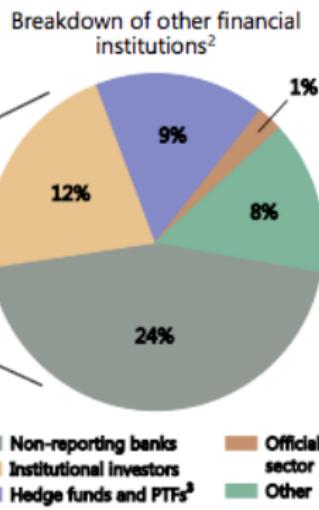
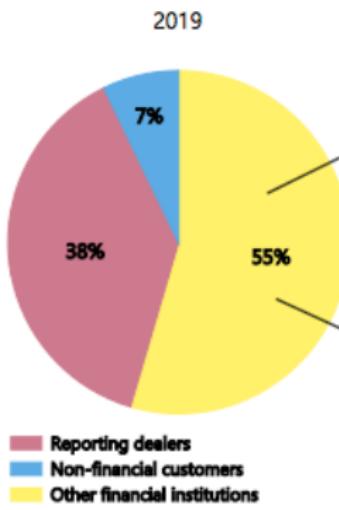
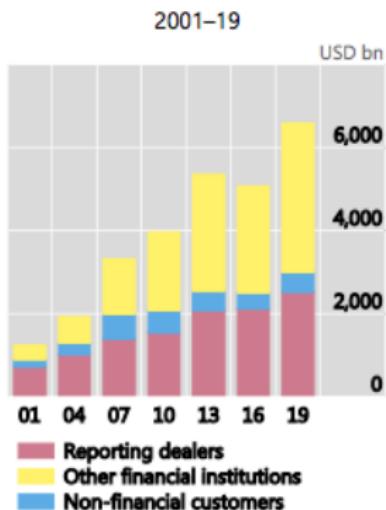


Source: BIS.

Global Foreign Exchange Turnover – By Counterparty

Net-net basis, daily averages in April

Graph 3



¹ Adjusted for local and cross-border inter-dealer double-counting, ie "net-net" basis. ² For definitions of counterparties, see page 19. ³ Proprietary trading firms.

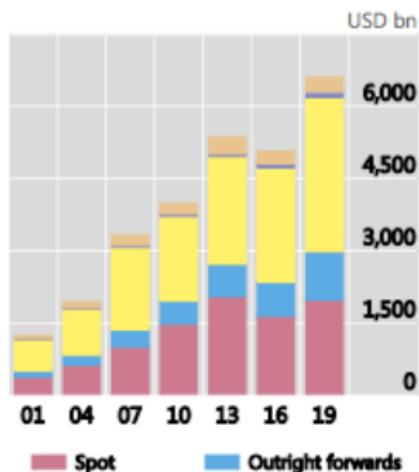
Source: BIS Triennial Central Bank Survey. For additional data by counterparty, see Tables 4 and 5 on pages 12 and 13, respectively.

Global Foreign Exchange Turnover – By Instrument

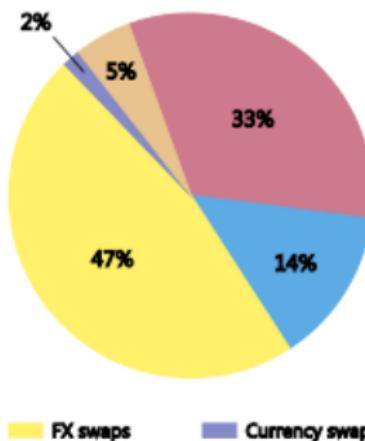
Net-net basis, daily averages in April

Graph 2

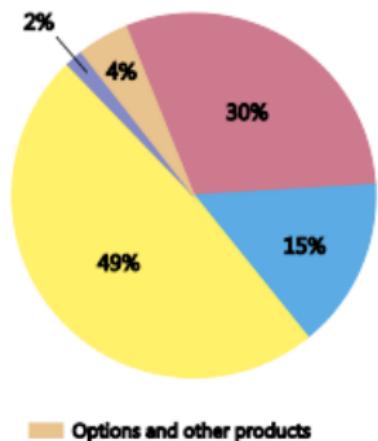
2001–19



2016



2019

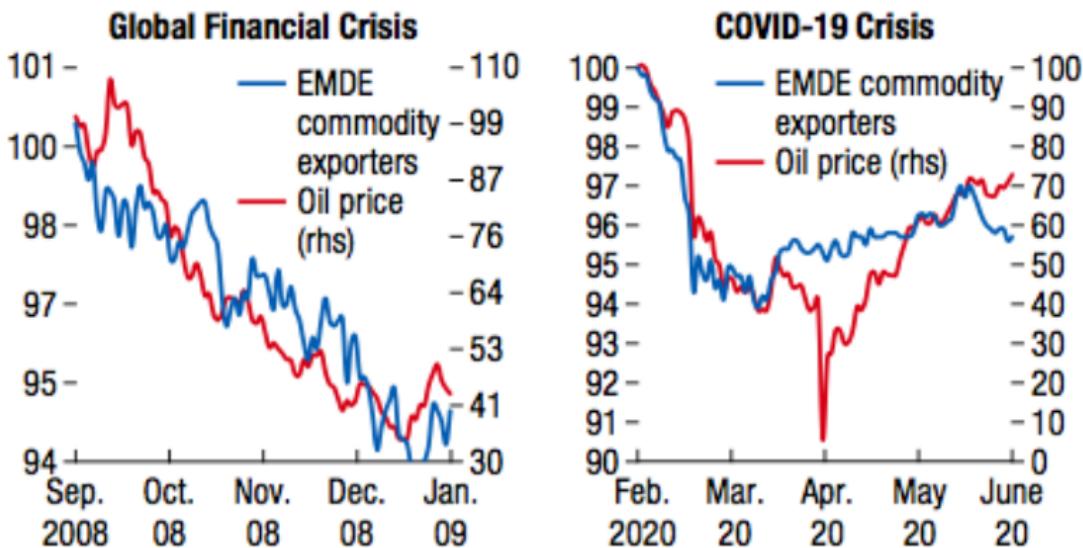


¹ Adjusted for local and cross-border inter-dealer double-counting, ie “net-net” basis.

Source: BIS Triennial Central Bank Survey. For additional data by instrument, see Table 1 on page 9.

EMDE Exchange Rate and Oil Price

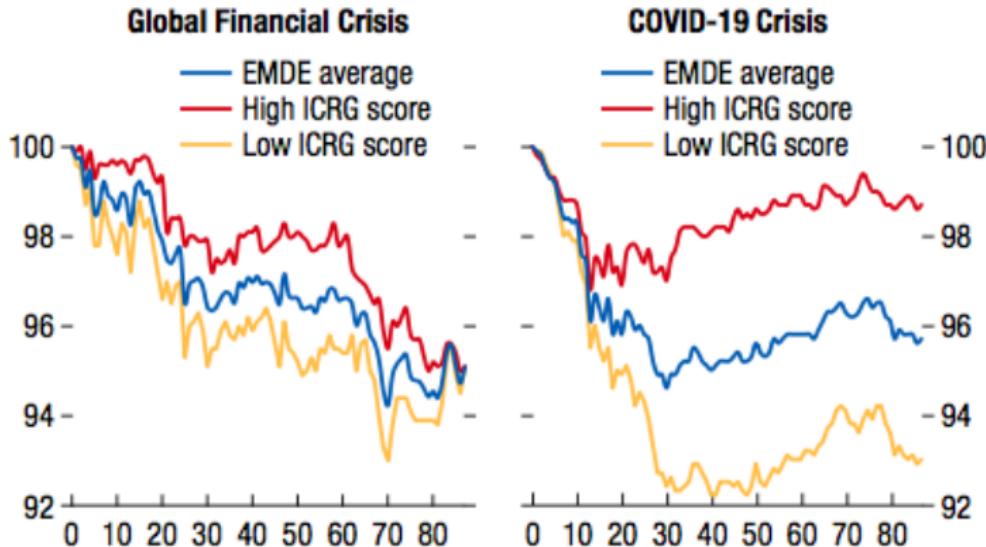
1. EMDE NEER and Oil Price



Source: IMF 2020 External Sector Report. NEER=nominal effective exchange rate.

EMDE Exchange Rate and Precrisis Vulnerabilities

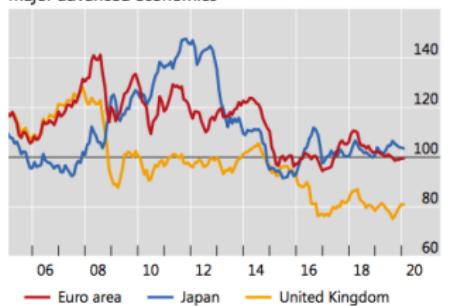
2. EMDE NEER and Precrisis Vulnerabilities¹



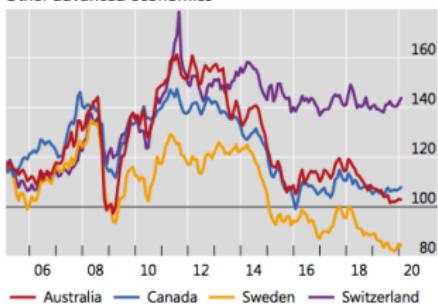
Source: IMF 2020 External Sector Report. The figure is based on the International Country Risk Guide composite risk score for the year before the crisis.

US Dollar Exchange Rates (Indice) 2005-2020

Major advanced economies



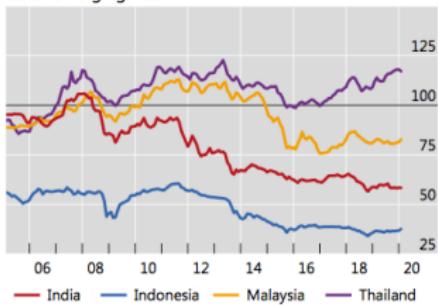
Other advanced economies



Emerging Asia



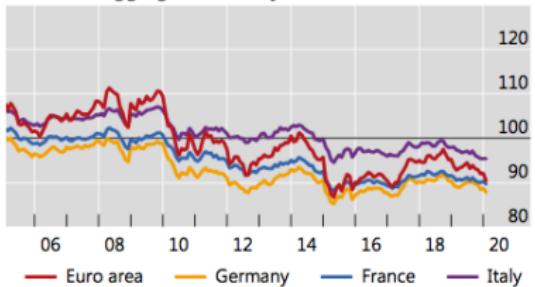
Other emerging Asia



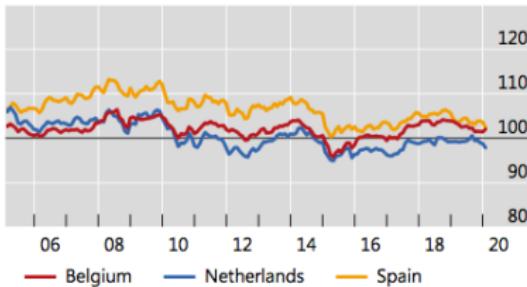
Source: BIS. An increase indicates a local currency appreciation against the USD.

Real Effective Exchange Rates 2005-2020

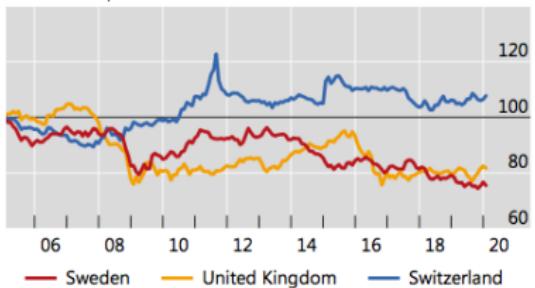
Euro area: aggregate and major countries



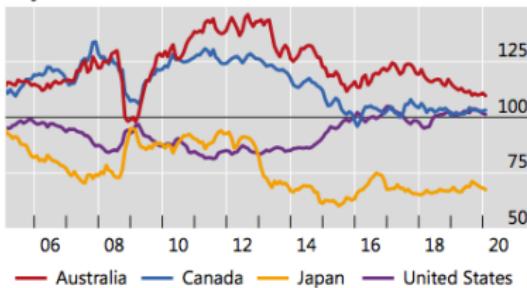
Euro area: other countries



Other European countries



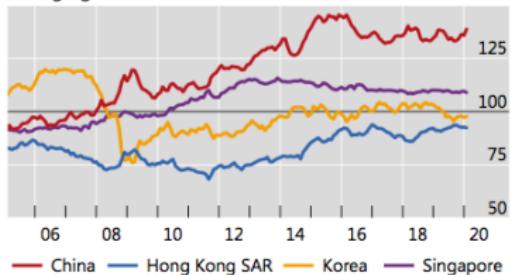
Major advanced economies



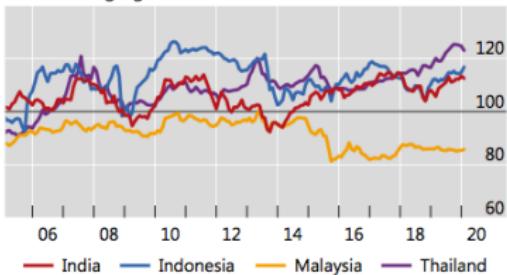
Source: BIS. An increase indicates a real appreciation of the currency against a broad basket of currencies.

Real Effective Exchange Rates 2005-2020

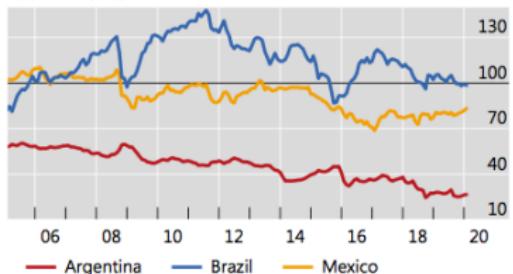
Emerging Asia



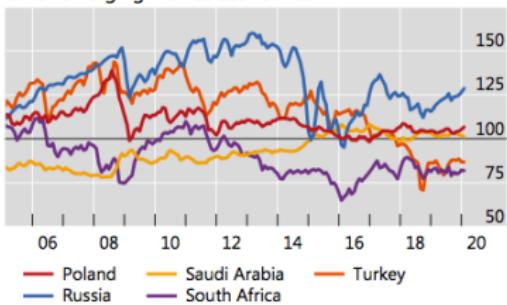
Other emerging Asia



Latin America



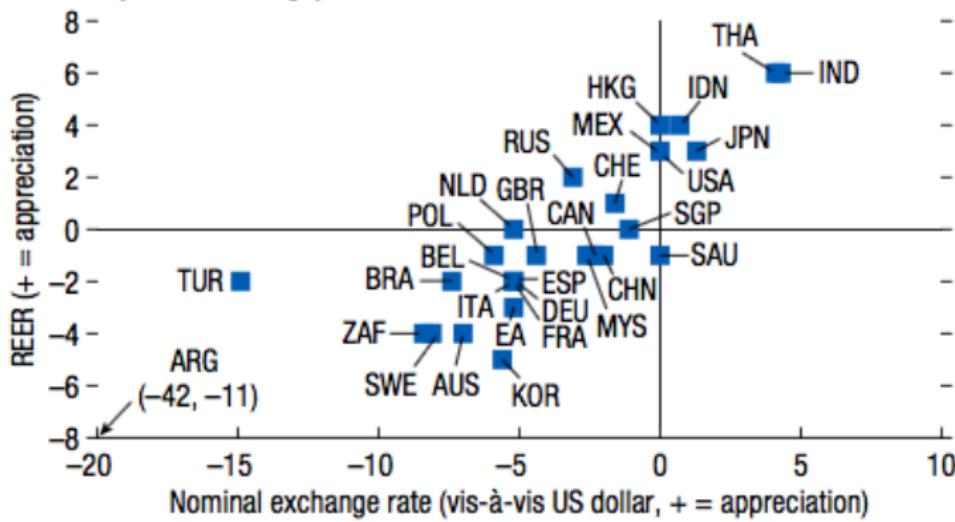
Other emerging market economies



Source: BIS. An increase indicates a real appreciation of the currency against a broad basket of currencies.

Nominal and Real Effective Exchange Rates 2019

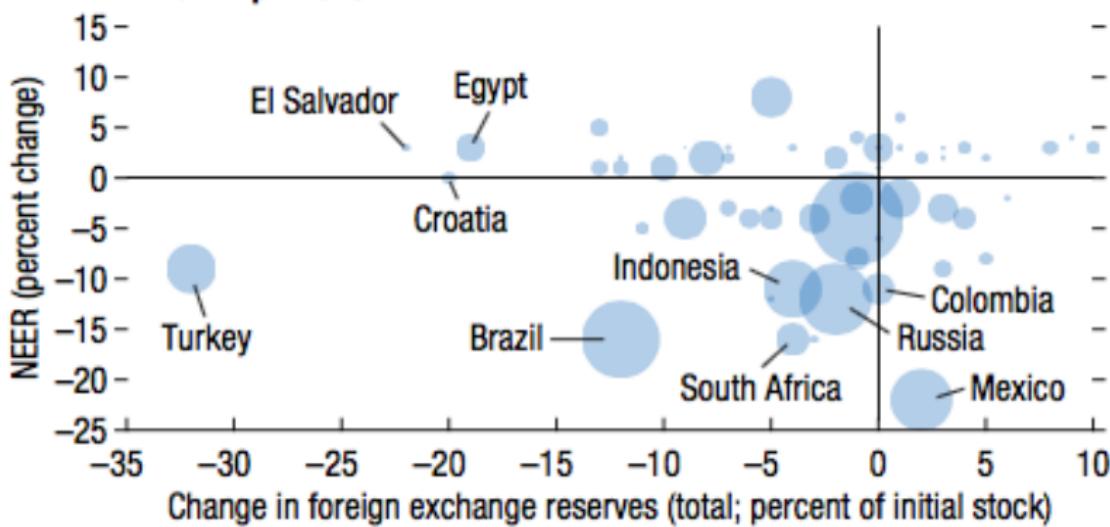
2. Nominal and Real Effective Exchange Rates, 2019² (Percent change)



Source: IMF 2020 External Sector Report. NEER=nominal effective exchange rate.

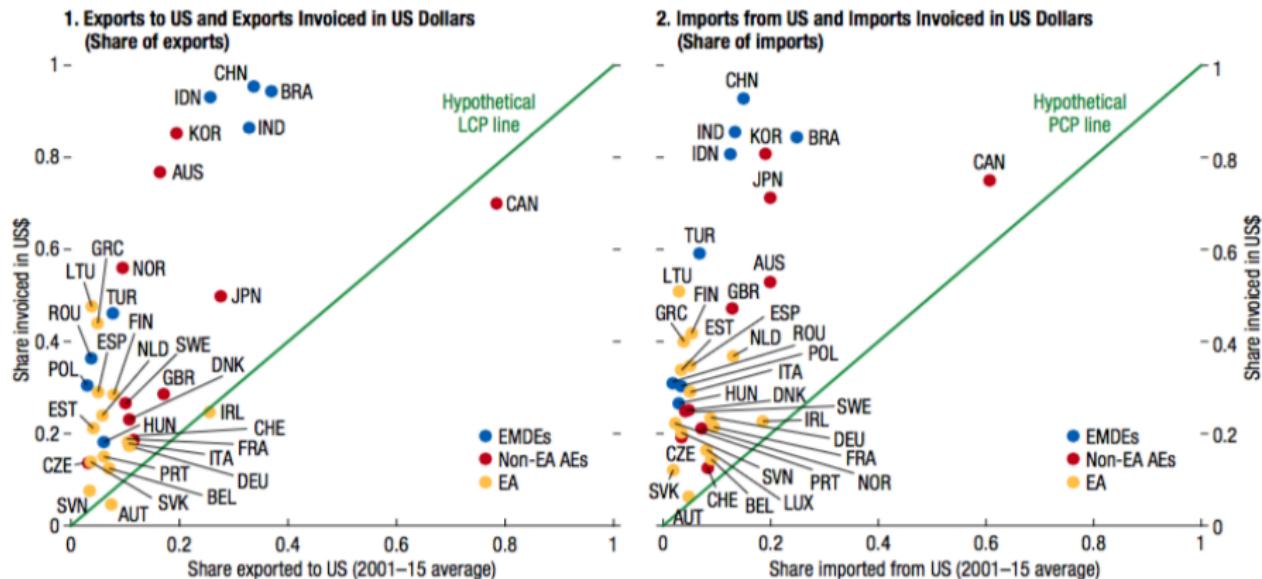
Foreign Exchange Reserves and NEER 2020.03-04

3. Change in Foreign Exchange Reserves² and NEER Change, Mar.–Apr. 2020



Source: IMF 2020 External Sector Report. NEER=nominal effective exchange rate.

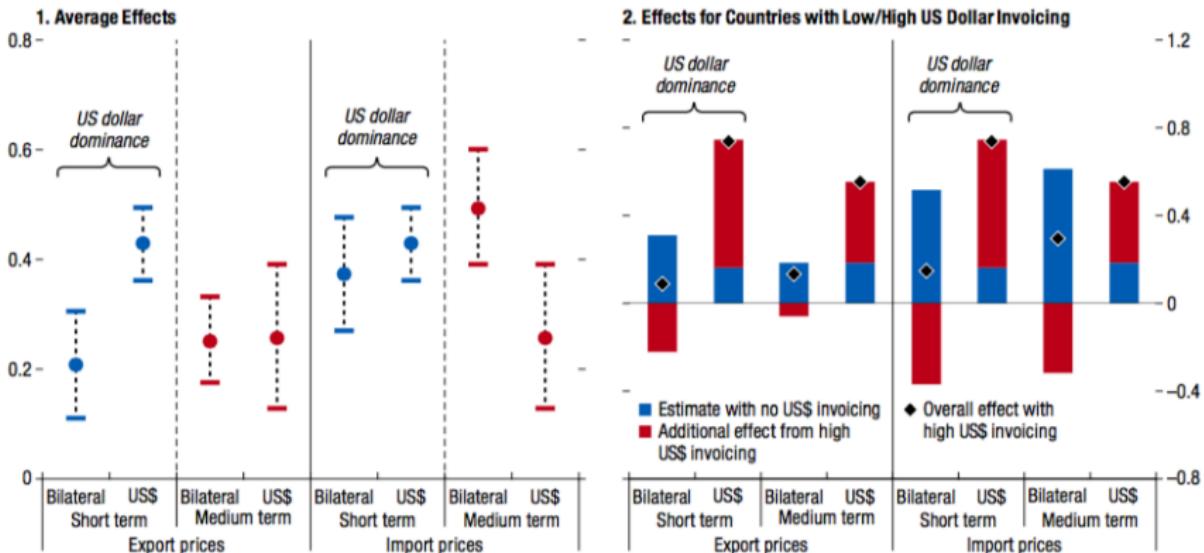
Trade with United States and US Dollar Invoicing



Sources: Gopinath (2015); World Input-Output Database 2016; and IMF staff calculations.

Note: AEs = advanced economies; EA = euro area; EMDEs = emerging market and developing economies; LCP = local currency pricing; PCP = producer currency pricing. Data labels use International Organization for Standardization (ISO) country codes.

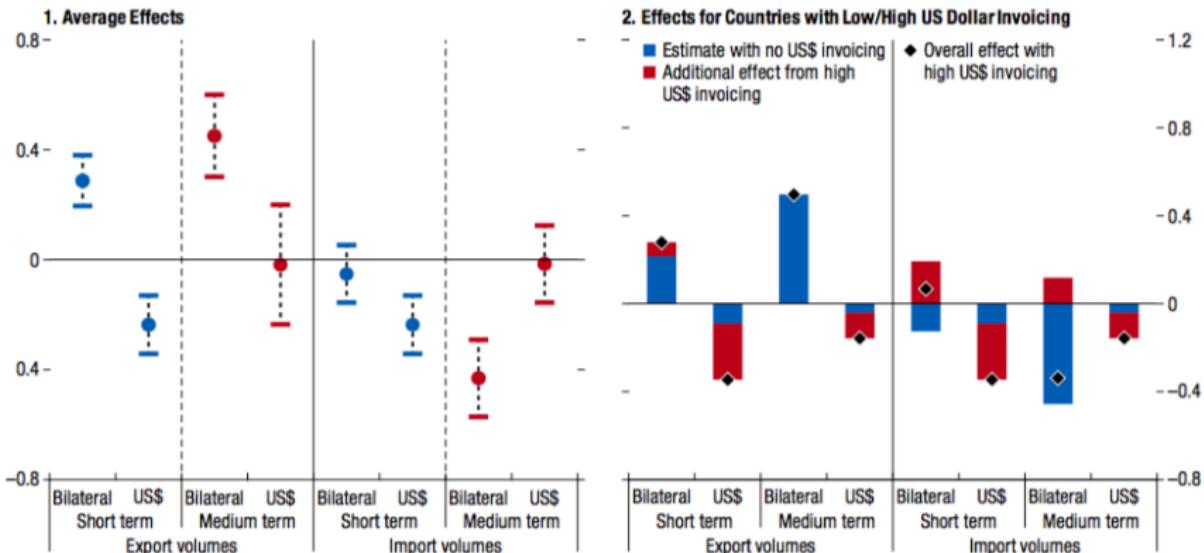
Exchange Rate Pass-through



Sources: IMF staff estimates based on data sets from Gopinath and others (2018) and Boz and others (forthcoming).

An increase in either exchange rate implies a depreciation of the domestic currency of the exporter, for export prices (trade prices in the exporter's currency), and a depreciation of the domestic currency of the importer for import prices (trade prices in the importer's currency). Panel 1 reports point estimates and 95 percent confidence bands. See Online Annex 2.1 for details on methodology and country sample.

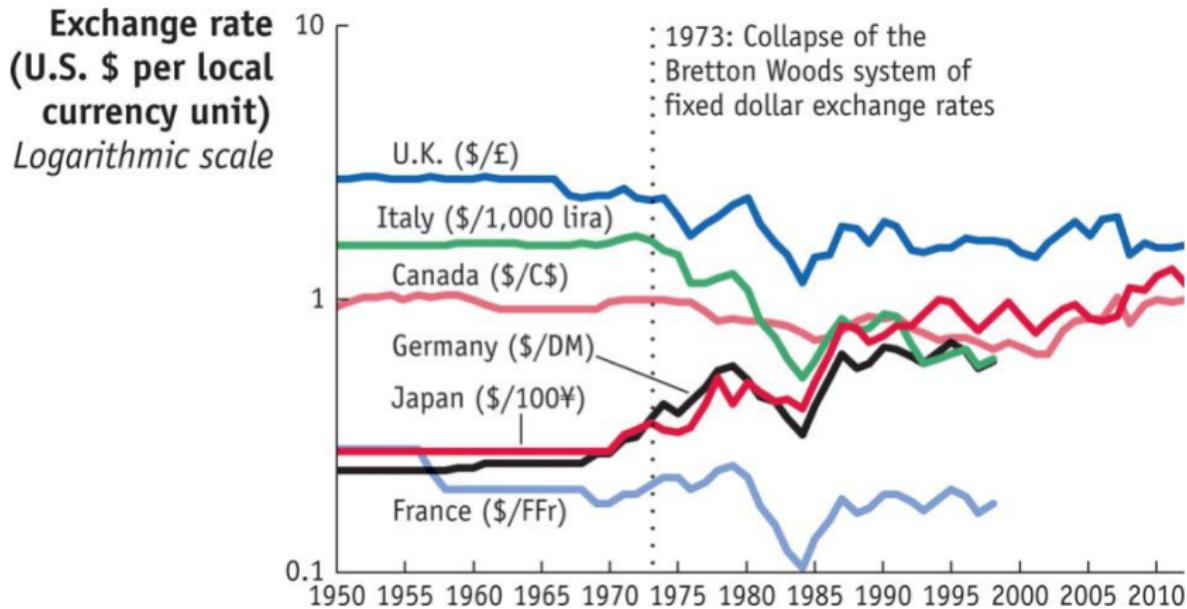
Trade Elasticities to Exchange Rates



Sources: IMF staff estimates based on data sets from Gopinath and others (2018) and Boz and others (forthcoming).

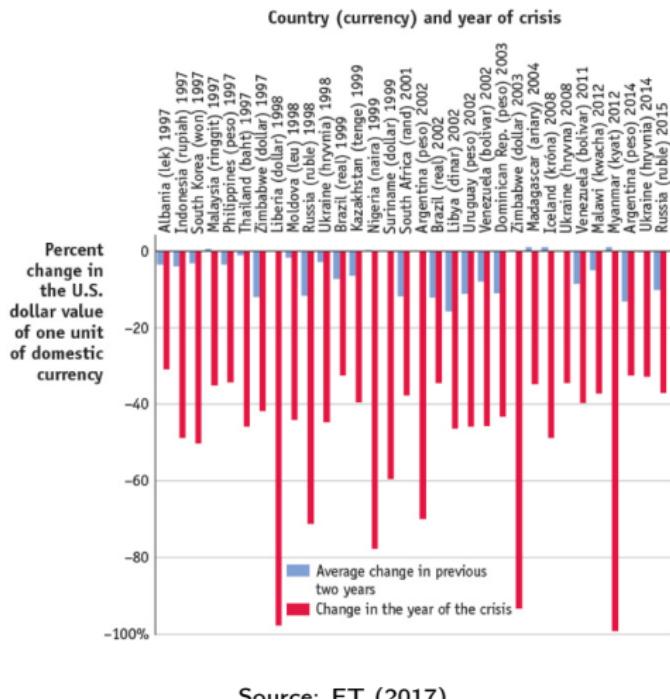
An increase in either exchange rate implies a depreciation of the domestic currency of the exporter, for export volumes, and a depreciation of the domestic currency of the importer, for import volumes. Panel 1 reports point estimates and 95 percent confidence bands. See Online Annex 2.1 for details on methodology and country sample.

Exchange Rate Overshooting



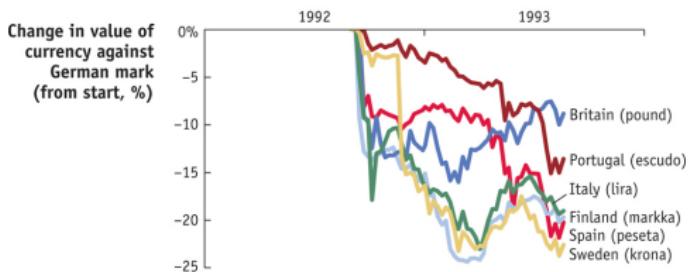
Source: FT (2017)

Global Currency Crises 1997-2015

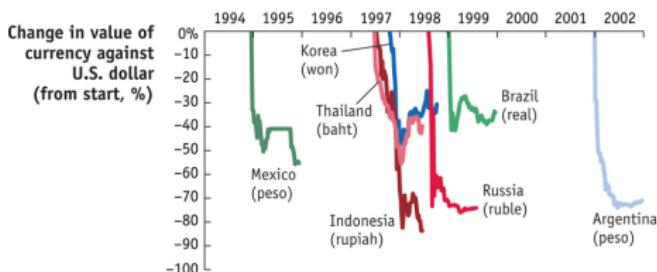


Global Currency Crises 1992-2002

(a) Depreciation in Year after 6 European Exchange Rate Crises in 1992

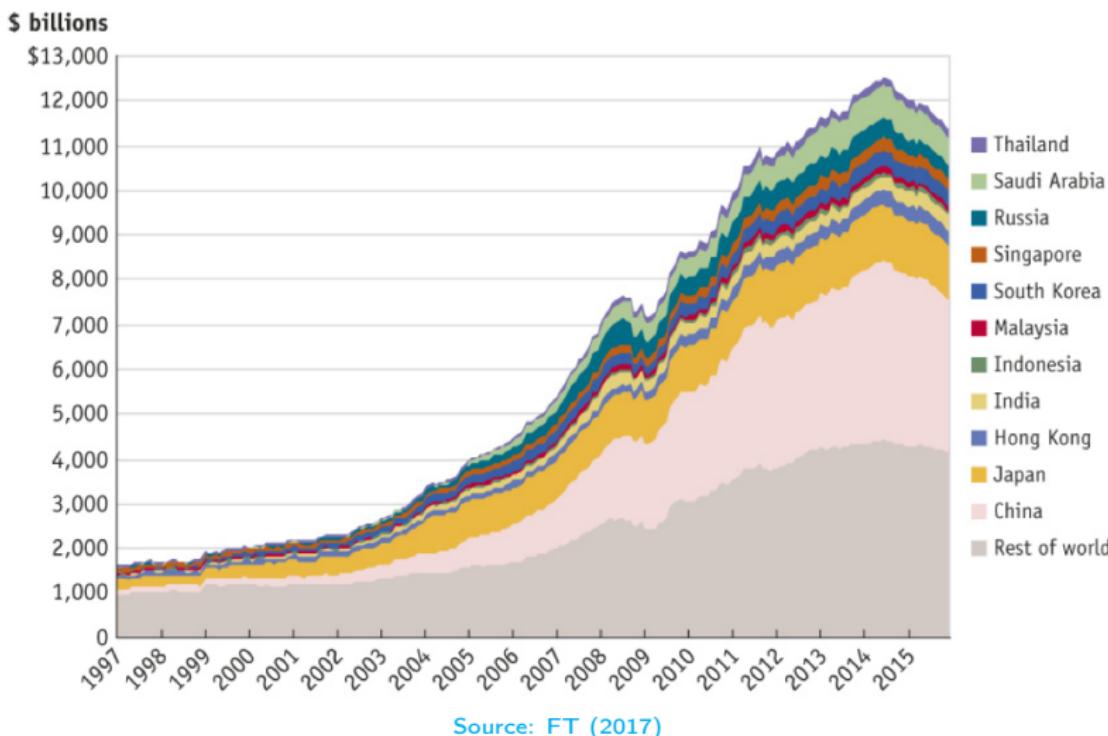


(b) Depreciation in Year after 7 Emerging Market Crises in 1994–2002



Source: FT (2017)

Global Dollar Reserve Accumulation 1997-2016



The World's Top Reserve Currencies 2019 (w)

Total Allocated Exchange Reserves by Currency (in \$)



- 1 U.S. Dollar: \$6.74 trillion (61.82%)
- 2 Euro: \$2.21 trillion (20.24%)
- 3 Japanese Yen: \$572 billion (5.25%)
- 4 Pound Sterling: \$495 billion (4.54%)
- 5 Chinese Renminbi: \$213 billion (1.95%)

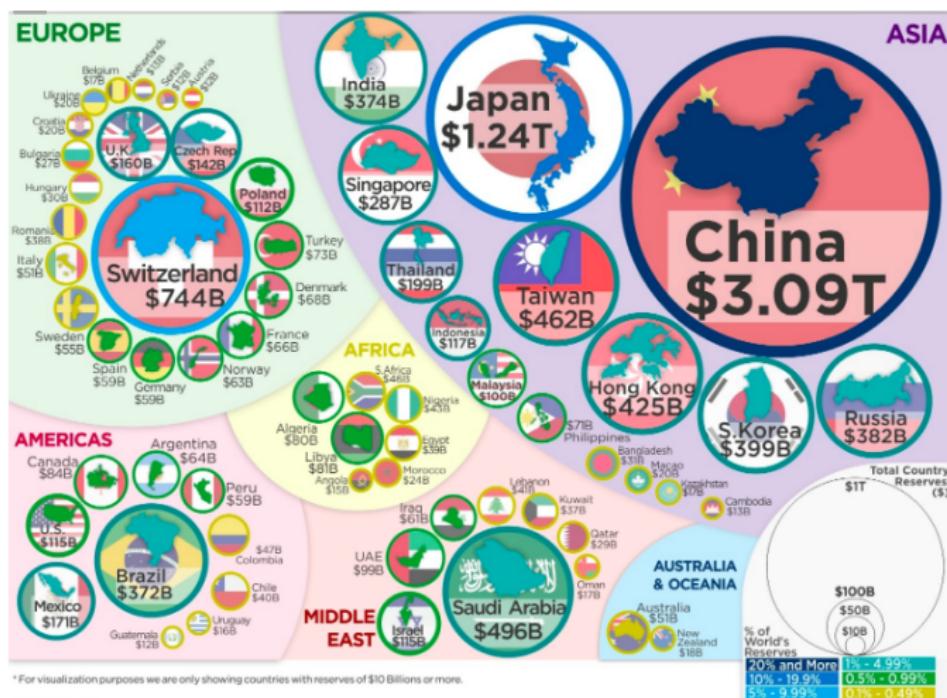
Source: Howmuch.net

Article & Sources:

<https://howmuch.net/articles/worlds-top-reserve-currencies-2019>
International Monetary Fund - <http://data.imf.org>

howmuch.net

Global Foreign Currency Reserve 2019 (w)



<https://howmuch.net/articles/international-liquidity-country>

Global Gold Reserves 2018 (w)



Note: International Monetary Fund (IMF), European Central Bank (ECB) and the Bank of International Settlements (BIS) are holding the gold reserves in values of \$129.2B, \$23.2B and \$4.7B respectively. Gold Price Retrieved on 05/05/2009.
How to read this map: Countries appear bigger as their gold reserves are bigger. E.g. United States. Conversely, countries that have smaller reserves of gold appear smaller. E.g. Gabon

<https://howmuch.net/articles/gold-reserves-around-the-world>

Global Crude Oil Reserves (w)

Crude Oil Reserves in Billion Barrels (Gbbl)



Note: For visualization purposes we are showing only countries with 100,000,000 bbl (0.1Gbbl) of crude oil reserves or more.

<https://howmuch.net/articles/worlds-biggest-crude-oil-reserves-by-country>

References

- [1] Krugman, Obstfeld & Meltiz, 2018, International Finance: Theory and Policy, 11e, Pearson.
- [2] Feenstra & Taylor, 2017, International Macroeconomics, 4e, Macmillan.
- [3] IMF Publications and Reports, 2020. <https://www.imf.org/en/publications>
- [4] BIS Triennial Central Bank Survey of Foreign Exchange Markets. (w)

Web References

[1] Peterson Institute for International Economics PIIE

<https://www.piie.com>

[2] Institute of International Finance IIF

<https://www.iif.com>

[3] Federal Reserve Bank of Dallas: Global Economic Conditions

<https://www.dallasfed.org/-/media/Documents/institute/global.pdf>

[4] Dallas Fed: Database of Global Economic Indicators

<https://www.dallasfed.org/institute/dgei>

[5] Federal Reserve Bank of New York: U.S. Economy in a Snapshot

<https://www.newyorkfed.org/research/snapshot>