



Estimates of Fundamental Equilibrium Exchange Rates, May 2023

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This study updates estimates of Fundamental Equilibrium Exchange Rates (FEERs) using April 2023 as the base month. These new estimates take as their point of departure the most recent issue of the World Economic Outlook (WEO) of the International Monetary Fund (IMF, 2023a, b). I apply the real effective exchange rate series of the Bank of International Settlements (BIS, 2023a) to take account of changes in real exchange rates subsequent to the base period used in the WEO.

Progress Curbing Inflation

In the past several months the United States and other advanced economies have made major progress in reversing the surge in inflation that erupted in 2021-2022. The inflationary outbreak after four decades of low inflation reflected Covid-19 supply-chain disruptions and (especially in the United States) demand stimulus from pandemic fiscal relief expenditures, as well as (especially in Europe) supply shocks from the Russia-Ukraine war (Cline, 2023).

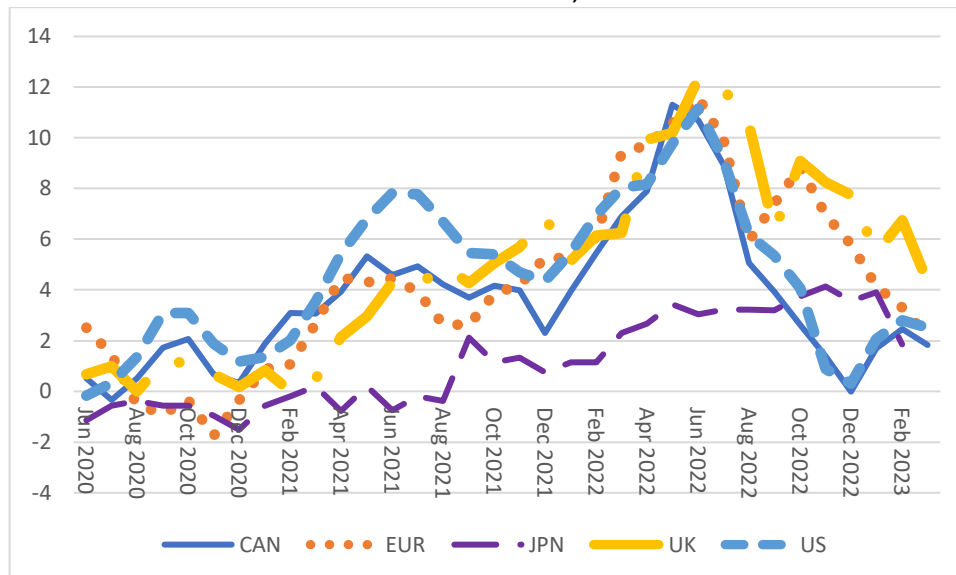
Figure 1 shows the path of six-month consumer price inflation at an annual rate for Canada, the euro area, Japan, the United Kingdom, and the United States, beginning in June 2020 early in the pandemic. The six-month annualized rate provides a better measure of trend inflation than the usual 12-month metric.² The rates were typically 2 percent or below in the second half of 2020, but then rose to peaks of 11-12 percent by June 2022 for Canada, the United States, the euro area, and the UK before easing to a pace of 2-2½ percent for the first three and about 4½ percent for the UK by March 2023. In Japan, six-month trend inflation rose from about zero in the second half of 2020 and the first half of 2021 to as high as about 4 percent by October 2022 through January 2023, easing to 2 percent by February. It is too early to declare victory in the fight against inflation, but the success so far has been encouraging.³

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² The BIS (2023c) data used for figure 1 are not seasonally adjusted. Using seasonal adjustment is especially helpful when the six-month measure is applied; for the United States, doing so places the December 2022 low reading at 2.9 percent (Cline, 2023, p. 3) rather than the 0.3 percent shown in figure 1. FRED (2023), series PCEPILFE.

³ Note, however, that in March 2023, US 6-month annualized inflation using the Personal Consumption Expenditures price index excluding food and energy still stood as high as 4.3 percent.

Figure 1
Six-month CPI Inflation at Annual Rate, six Advanced Economies



Source: Calculated from BIS (2023c).

Trends in Exchange Rates

The US dollar passed an important turning point after it peaked in October of 2022. As shown in figure 2, in October the Federal Reserve's measure of the dollar's broad real effective exchange rate reached about 14 percent above where it stood in January 2020 before the pandemic.⁴ From October 2022 to April 2023, the broad real dollar fell by about 6 percent. A likely influence in this reversal was the fact that the US had been further ahead in its monetary tightening cycle than other major central banks, which began catching up.

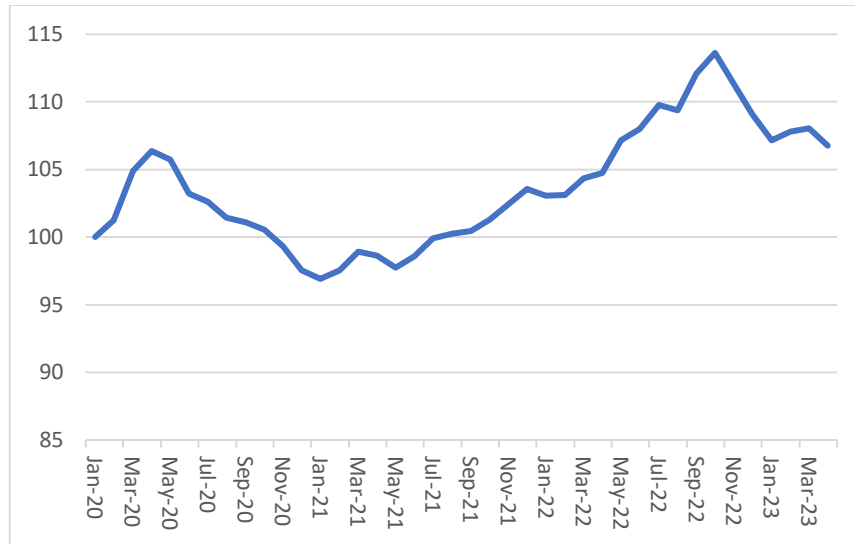
The Federal Reserve first raised the Federal Funds Rate from its pandemic level of zero to 25 basis points in March 2022 (arguably already too little and too late); increased the rate by 50 basis points in May of 2022; and then made four successive increases of 75 basis points by November. Then the increase narrowed to 50 basis points in December, followed by three increments of 25 basis points by May 2023. The major slowdown in tightening by early 2023 signaled an approaching end to tightening. In contrast, the ECB still had a negative policy rate (-0.5 percent) until mid-July 2022, but then raised the rate by 50 basis points in late July, followed by increments of 75 basis points in September and November, then three increments of 50 basis points in January through April of 2023, and an increment of 25 basis points in mid-May. By late May, the US policy rate stood at 5 percent and the ECB rate at 3.25 percent. Between October and May the gap between the US and euro policy rates narrowed from 225 basis points to 175 basis points.⁵

⁴ The figure sets January 2020 = 100. Note that the Fed's measure, which uses January 2006 as its base, stood at 106.6 in January 2020, and peaked at 121.2 in October 2022. Federal Reserve (2023a).

⁵ FRED (2023), series DFF and ECBDFR.

Figure 2

Federal Reserve Broad Real Index of the Dollar
(with January 2020 = 100)



Source: calculated from Federal Reserve (2023a)

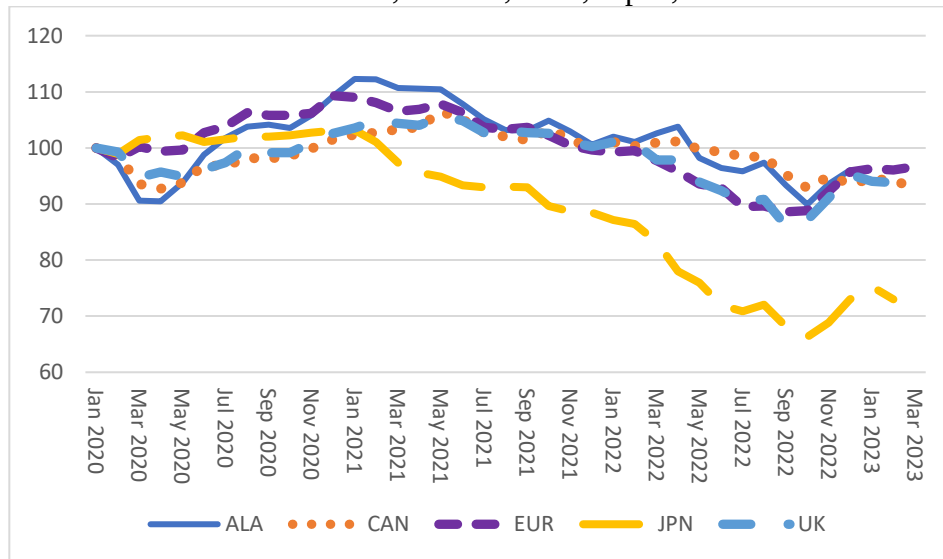
Figure 3, panel A shows the corresponding rebound in the real values of major advanced economy currencies against the dollar from their low point in October (deflating both the dollar and other currencies by their consumer price indexes as reported by the BIS, 2023c). For the full period, the most notable outlier in the figure is Japan. The real bilateral value of the yen against the dollar fell by 34 percent from January 2020 to October 2022, before the cumulative decline narrowed to 27 percent by February 2023. In contrast, the real bilateral rates against the dollar were only about 5 percent below the pre-pandemic levels in March 2023 for the euro, pound sterling, Canadian dollar, and Australian dollar.

Among five major emerging market currencies (panel B), the real resurgence against the dollar is most pronounced for the Korean won and the Mexican peso. The real bilateral peso swung from 5 percent below its pre-pandemic level in October to 5 percent above it by March. The real bilateral won rose from 23 percent below the pre-pandemic level in October to 17 percent below in March. In contrast, there has been little post-October resurgence against the dollar for the Chinese renminbi, Indian rupee, and especially the Brazilian real, which in March remained at its plateau since August 2022 (at about 15 percent below its pre-pandemic level).

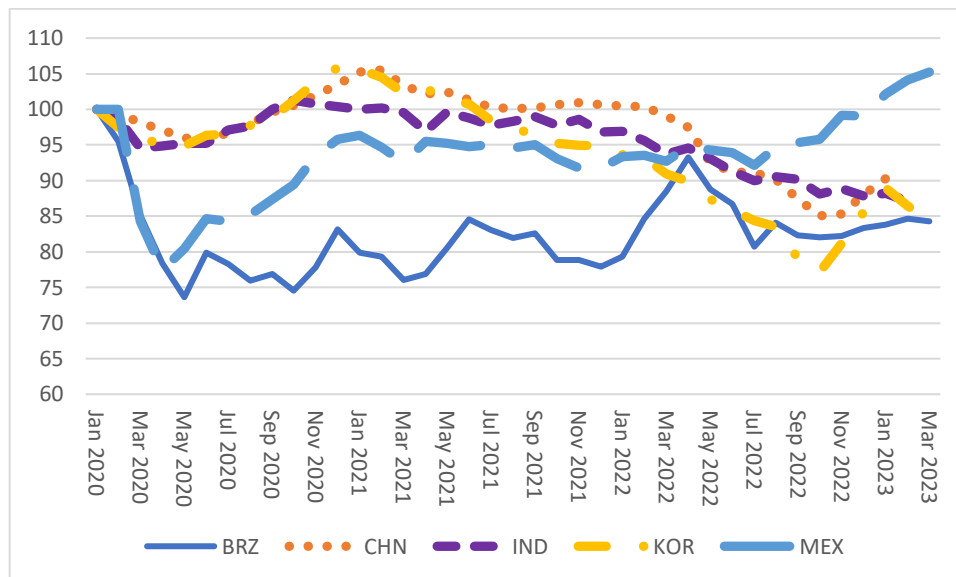
Figure 3

Strength of Real Bilateral Exchange Rates against the US Dollar
(January 2020=100)

A. Australia, Canada, Euro, Japan, and UK



B. Brazil, China, India, Korea, Mexico



Source: calculated from BIS (2023b, c)

US Economic Uncertainty

Two specters have loomed over the US economy in March through late May: risk of a banking crisis, and risk of a government debt default if the debt ceiling were not raised soon.

Failure of 3 Large Regional Banks --The banking risk emerged in early March, with the failures of Silicon Valley Bank on March 10 and Signature Bank on March 12, followed by First Republic Bank on May 1.⁶ Silicon Valley Bank had an unusually large share of total assets invested in hold-to-maturity government or agency-issued mortgage-backed securities. These assets had low credit risk but major interest rate risk, and lost value as US interest rates rose in 2022. At end-2022, SVB had market value losses on its held-to-maturity assets amounting to 93 percent of its total equity, so it was near bankruptcy on a mark-to-market basis.⁷ The bank also had an unusually high share of large deposits uninsured by the FDIC, making it vulnerable to a run.⁸

In the case of Signature Bank, “Depositors panicked after SVB failed because Signature had high amounts of uninsured deposits and was exposed to the crypto sector.”⁹ The collapse of First Republic reflected “huge real estate loans that lost value rapidly as interest rates rose and a concentrated customer base of wealthy depositors ... withdrew large amounts of money quickly.”¹⁰

The decision of the Federal Deposit Insurance Corporation to fully reimburse uninsured depositors in all three banks, combined with better than expected first-quarter earnings reports of regional banks, has at least temporarily calmed fears about a banking crisis.¹¹ However, at least one study has warned about ongoing fragility driven by the combination of uninsured deposits and a broad decline in marked-to-market bank assets.¹²

⁶ These were the 16th, 29th, and 14th largest US banks respectively, with end-2022 assets of \$209 billion, \$110 billion, and \$213 billion. Karl Russell and Christine Zhang, “3 Failed Banks This Year Were Bigger than 25 that Crumbled in 2008,” *New York Times*, May 1, 2023.

⁷ The bank’s 10-K filing with the SEC (2023, p. 95) showed total equity at \$16.3 billion and total assets at \$211.8 billion. However, it showed fair value of only \$76.2 billion for hold-to-maturity securities with book value of \$91.3 billion, indicating an unrealized loss of \$15.1 billion – or 93 percent of book equity.

⁸ Hold-to-maturity securities were 42.9 percent of total assets, compared to only 10.5 percent for all large US banks with more than \$100 billion in assets. Unrealized losses on its held-to-maturity assets amounted to \$16 billion. The bank’s uninsured deposits amounted to 94 percent of total deposits, compared to 41 percent for all large banks. Federal Reserve Board (2023b, p. 23).

⁹ Lora Shinn, “What Happened to Signature Bank?” *Investopedia*, March 24, 2023.

¹⁰ Stacy Cowley, “In and Unsteady Banking Industry, First Republic’s Problems Stood Out,” *New York Times*, May 3, 2023.

¹¹ The FDIC has estimated the cost to the Deposit Insurance Fund for resolving the three banks at \$20 billion for SVB, \$2.5 billion for Signature, and \$13 billion for First Republic Bank. GAO (2023).

¹² Jiang, Matvos, Piskorski, and Seru (2023) estimate that “Even if only half of uninsured depositors decide to withdraw, almost 190 banks with assets of \$300 billion are at a potential risk of impairment, meaning that the mark-to-market value of their remaining assets after these withdrawals will be insufficient to repay all uninsured deposits” (p. 1). The authors emphasize the potential risk from commercial real estate defaults.

The US Debt Ceiling Standoff -- The other recent threat to the US (and world) economy has been the risk of a default on federal debt as a consequence of inability of Congress to reach an agreement on raising the debt ceiling. Last raised in December 2021 to \$31.4 trillion, the ceiling was reached in January 2023.¹³ Since then the Treasury has suspended issuance of new debt while pursuing “extraordinary measures” to avoid breaching the limit. These measures primarily include drawing down the cash balances of the Treasury and allowing the gross magnitudes of both the assets and liabilities of government pension and other accounts to decline.¹⁴ Secretary Janet Yellen has reiterated that the extraordinary measures will be exhausted by June 1, 2023.¹⁵

The Biden administration could have averted the crisis by raising the limit in late 2022 when the Democratic party still controlled the House of Representatives as well as the Senate. In late April the House narrowly passed a bill raising the debt limit by \$1.5 trillion through March 2024, an expiration date that would require another increase in a presidential election year. The bill would cut discretionary spending for 2024 back to 2022 levels (a 9 percent cut) and cap it at 1 percent nominal growth over 10 years. It would block Biden’s initiative to cancel \$400 billion in student debt, cancel leftover Covid-19 relief (about \$80 billion in January), eliminate the \$80 billion ten-year investment in the Internal Revenue Service passed in the Inflation Reduction Act of 2022, repeal investment incentives in that legislation for renewable energy and electric vehicles, and impose stricter work requirements for recipients of food assistance and Medicaid health insurance.¹⁶

In the debt-ceiling standoff of August 2011, US stock market indexes temporarily fell almost 20 percent, although the decline moderated to about 7 percent by year-end.¹⁷ For its part, the dollar did not show weakness but instead remained little changed and then *strengthened* by about 10 percent against the euro by year-end.¹⁸ In the 2013 standoff in which President Obama refused to defund his Affordable Care Act, there was no decline in the stock market and only a modest decline in the dollar against the euro exchange rate.¹⁹

¹³ Debt held by the public is lower, standing at \$24.6 trillion on May 18, 2023. The difference comprises \$6.8 trillion in intragovernmental holdings. Treasury (2023)

¹⁴ From January through early May, Treasury suspended reinvestment of \$294 billion in the Government Securities Investment Fund of the Federal Employees Retirement System. Congressional Research Service (2023, p. 2).

¹⁵ Jim Tankersley and Catie Edmondson, “Biden and McCarthy Set to Resume Negotiations on Debt Limit,” *New York Times*, May 21, 2023.

¹⁶ David Morgan and Richard Cowan, “House Republicans Pass Debt-ceiling Hike, Hoping to Spur Biden to Talks,” *Reuters*, April 27, 2023; “What’s In Republican McCarthy’s Debt-limit Spending Cut Package?”, *Reuters*, April 19, 2023.

¹⁷ From a local high on July 7, 2011 to August 2 when the debt ceiling was raised, the S&P500 fell by 7.3 percent. The decline continued and reached a cumulative 18.8 percent by October 4, but the loss narrowed to 7.1 percent by year-end. *Finance.Yahoo.com*.

¹⁸ From August 2, 2011 to December 30 the dollar rose 10.6 percent against the euro. FRED (2023), series DEXUSEU.

¹⁹ From end-May to end-October, the S&P500 rose 8.1 percent; the dollar fell 4.5 percent against the euro. *Finance.Yahoo.com* and FRED (2023), DEXUSEU.

A forced default on US government debt that persisted more than a few days would likely be extremely costly to the economy, and probably to the dollar as well. The Council of Economic Advisers (2023) has estimated that a “short default” would cost 0.6 percent of GDP in lost economic growth, and a “protracted default”, a loss of 6.1 percent of GDP; the corresponding job losses would amount to 500,000 and 8.3 million, respectively (with unemployment reaching 5 percent under protracted default). There is increasing support for the argument that simply ignoring the debt ceiling would be a lesser violation of the constitution than would defaulting on federal debt or on other spending obligations already passed by Congress.²⁰ President Biden has stated that he believes he can challenge the constitutionality of the debt ceiling, but that there would not be enough time for such a challenge to succeed to avoid a default in the absence of a prompt congressional increase in the limit.²¹

Results of the Main Calculations

Table 1 reports the current account projections of the IMF for the 34 countries (with the euro treated as one economy) covered in the FEERs series dating back to 2008. The first column reports the IMF’s estimates of current account balances in 2022 in the April 2023 WEO. The second column reports the Fund’s projection of the current dollar value of GDP for each economy in 2028.

The third column of the table reports the Fund’s 2028 current account projections, as a percent of GDP. The fourth column then adjusts the 2028 outlook to take account of the change in exchange rates from the February-March base period used in the April WEO to the April base used in this report.²² The adjustment applies the percent change in the real effective exchange rate (REER) to the current account impact parameter (“gamma”, the percent of GDP change in the current account for a 1 percent rise in the country’s REER).²³

²⁰ The 14th amendment provides that the “validity” of public debt “shall not be questioned.” Spending commitments authorized in budgets that have passed Congress should constitute “public debt” with status equal to outstanding treasury securities. See Buchanan and Dorf (2014); Laurence H. Tribe, “Why I Changed My Mind on the Debt Limit,” *New York Times*, May 7, 2023; and Robert Hockett, “There are Good Reasons for Biden to Ignore the Debt Ceiling,” *New York Times*, May 10, 2023. In contrast, McConnell critiques violating the debt limit as a “far-fetched interpretation of Section 4 of the 14th Amendment” and instead invokes Section 8 of Article I of the constitution, which provides that “Congress has the power ‘to borrow money on the credit of the United States.’” (Michael W. McConnell, “Ignoring the Debt Limit Would Be Dangerous,” *New York Times*, May 15, 2023.) He does not address the argument of Buchanan and Dorf that “The key question is what to do, when all paths are unconstitutional” (p. 56). As Tribe puts it, “ignoring the debt ceiling until Congress either raises or abolishes it is a lesser evil than leaving those with lawful claims against the Treasury out in the cold.”

²¹ Tankersley and Edmondson, *op cit*.

²² The April 2023 WEO uses February 15- March 15 as its base period (IMF, 2023b, p. 115). The adjustments apply the average of the February and March real exchange rates. Changes in the real effective exchange rate (REER) from February-March to April use the Bank of International Settlements “broad” series (BIS, 2023a).

²³ This parameter is essentially an overall export price elasticity set at unity, applied to the size of exports of goods and services relative to GDP. The relationship is less than linear and is subject to a ceiling of 0.5, such that for a small open economy with exports at 100 percent of GDP a 1 percent rise in the REER would reduce the current

Notable changes in REERs from the February-March average to April included a rise by 3.6 percent for the United Kingdom, by 5.6 percent for Colombia, 3.2 percent for Brazil, about 3 percent for Hungary and Poland, and 2.1 percent for the Euro. For the United States there was little change (-0.6 percent). For the UK, the stronger currency boosts the estimated medium-term current account deficit by nearly one-half percent of GDP.²⁴ For Russia, the REER fell 9.1 percent from February-March to April. For most economies, the adjusted 2028 current account estimate (next to last column) is very close to the unadjusted WEO projection (previous column).

The FEERs methodology sets ± 3 percent of GDP as the permissible external imbalance.²⁵ A deficit of 3 percent of GDP could eventually bring the economy to a precariously high level of net external debt. The ceiling of 3 percent on the surplus is meant to provide symmetry for the purpose of global adding-up. The final column of table 1 accordingly shows the target current account as either ± 3 percent of GDP (the limit) or the actual projected current account if it is within this limiting range. The four oil-exporting economies are exceptions, with no limits imposed because they are primarily transforming resource wealth into financial wealth rather than increasing total wealth.

Table 2 reports the results of running the Symmetric Matrix Inversion Model (SMIM) to obtain the globally-consistent set of exchange rate changes that most closely approximate the target changes of REERs needed to bring the current account imbalances to their target levels (Cline, 2008). The first column shows the target change in the current account as a percent of GDP. This change is the difference between the ± 3 percent limit and the baseline projection for 2027 if it is outside this limit. As usual in this series, there are large targeted reductions in the surpluses of Singapore (by 8.5 percent of GDP) and Taiwan (by 7.9 percent of GDP). There are also targeted reductions of 1.8 percent of GDP for Switzerland, 1.6 percent for Hong Kong, 1.2 percent for Sweden, 1 percent for Korea, and 0.9 percent of GDP for Japan.

account by 0.5 percent of GDP. Note that for the adjustment from the WEO base month, the calculation further applies only one-half of the normal impact calculation, reflecting past experience with slowly-changing IMF projections of the long-term current account. There is also a special adjustment reducing Switzerland's estimated surplus by 3 percent of GDP to account for the fact that current account data do not separate out the portion attributable to foreign multinational companies.

²⁴ For the UK the current account impact parameter is -0.26. Applying the 3.6 percent rise in the REER, and applying the one-half fraction for moderating short-term swings, the result is to increase the UK's medium-term current account deficit by 0.46 percent of GDP.

²⁵ For a summary of the FEERs methodology, see Cline and Williamson (2012), Appendix A.

Table 1: Target Current Accounts (CA) for 2028

Country	IMF Estimate of 2022 CA (percent of GDP)	IMF 2028 GDP forecast (billions of US dollars)	IMF 2028 CA forecast (percent of GDP)	Adjusted 2028 CA (percent of GDP)	Target CA (percent of GDP)
Pacific					
Australia	1.2	2,005	-0.4	-0.3	-0.3
New Zealand	-8.9	301	-5.3	-5.2	-3.0
Asia					
China	2.3	27,493	0.4	0.7	0.7
Hong Kong	10.7	491	4.5	4.6	3.0
India	-2.6	5,575	-2.5	-2.6	-2.6
Indonesia	1.0	2,049	-1.5	-1.7	-1.7
Japan	2.1	5,344	3.9	3.9	3.0
Korea	1.8	2,123	3.5	4.0	3.0
Malaysia	2.6	635	3.0	3.1	3.0
Philippines	-4.4	640	-0.7	-0.6	-0.6
Singapore	19.3	641	11.5	11.5	3.0
Taiwan	13.4	991	10.9	10.9	3.0
Thailand	-3.3	767	3.4	3.5	3.0
Middle East/Africa					
Israel	3.7	679	2.9	3.1	3.0
Saudi Arabia	13.8	1,257	-1.0	-0.9	-0.9
South Africa	-0.5	469	-2.0	-1.9	-1.9
Europe					
Czech Republic	-2.2	422	2.3	2.1	2.1
Euro area	-0.7	17,629	1.7	1.5	1.5
Hungary	-8.1	231	0.1	-0.8	-0.8
Norway	30.4	591	14.7	14.9	14.9
Poland	-3.2	1,003	-2.0	-2.6	-2.6
Russia	10.3	2,266	2.2	3.4	3.4
Sweden	4.3	699	4.1	4.2	3.0
Switzerland	9.8	1,106	8.0	4.8	3.0
Turkey	-5.4	1,335	-2.1	-2.0	-2.0
United Kingdom	-5.6	4,245	-3.5	-4.0	-3.0
Western Hemisphere					
Argentina	-0.7	712	1.0	0.9	0.9
Brazil	-2.9	2,759	-2.4	-2.6	-2.6
Canada	-0.4	2,605	-2.3	-2.4	-2.4
Chile	-9.0	441	-3.0	-3.0	-3.0
Colombia	-6.2	427	-4.0	-4.5	-3.0
Mexico	-0.9	2,003	-1.0	-1.4	-1.4
United States	-3.6	32,350	-2.3	-2.3	-2.3
Venezuela	3.5	...	...	...	...

Only three of the 34 economies show required improvements in current account balances to limit their deficits to no more than 3 percent of GDP: New Zealand (by 2.2 percent of GDP), Colombia (by 1.5 percent of GDP), and the United Kingdom (by 1 percent of GDP). There are no required corrections for the United States, the euro area, or China.

The second column of table 1 reports the actual changes in the current accounts achieved in the globally-consistent simulation. There is a strong asymmetry between sizable surplus reductions required for several economies but only modest deficit reductions required for just New Zealand, Colombia, and the United Kingdom. As a consequence, the globally-consistent solution under-adjusts for excess surplus countries by 0.6 percent of GDP for Singapore, Malaysia and Thailand; 0.4 percent for Hong Kong, Korea, and Taiwan; 0.3 percent for Sweden and Switzerland; and by 0.2 percent of GDP for Japan. The simulation correspondingly generates an increase in the current account balance of typically 0.2 to 0.3 percent of GDP for economies not needing any change.

The third column shows the change in the REER implied by the target change in the current account. Thus, for Taiwan, the target reduction in the current account surplus by 7.9 percent of GDP requires an appreciation of the REER by 18.2 percent in view of Taiwan's "gamma" coefficient (-0.43 percent of GDP change for 1 percent REER change). The fourth column shows the change in the REER accomplished on a globally-consistent basis in the SMIM simulation. There is a 1.4 percent REER depreciation needed for the United States for this global adding-up, even though for its own equilibrium the US does not need any depreciation.

The fifth column in table 2 reports the average exchange rate for each country against the US dollar in April 2023 (BIS, 2023b). The sixth column shows the percent change in the bilateral rate against the US dollar obtained in the globally-consistent simulation. The final column applies this percent change to the actual rate in April to arrive at the FEER-consistent dollar exchange rate for each country. This rate is \$1.09 per euro, 125 yen per dollar, 7.42 Chinese yuan per dollar, and 1.19 dollars per pound sterling. Australia and New Zealand have FEER-consistent US dollar rates of 68 US cents and 58 US cents, respectively.²⁶ The relatively large appreciation against the dollar needed for the yen (by 7.3 percent) is consistent with Japan's outlier path of steepest real depreciation against the dollar since January 2020 (figure 1B).

²⁶ There is no estimate for Venezuela, where hyperinflation and import controls turn an estimate meaningless.

Table 2: Results of the Simulation: FEERs Estimates

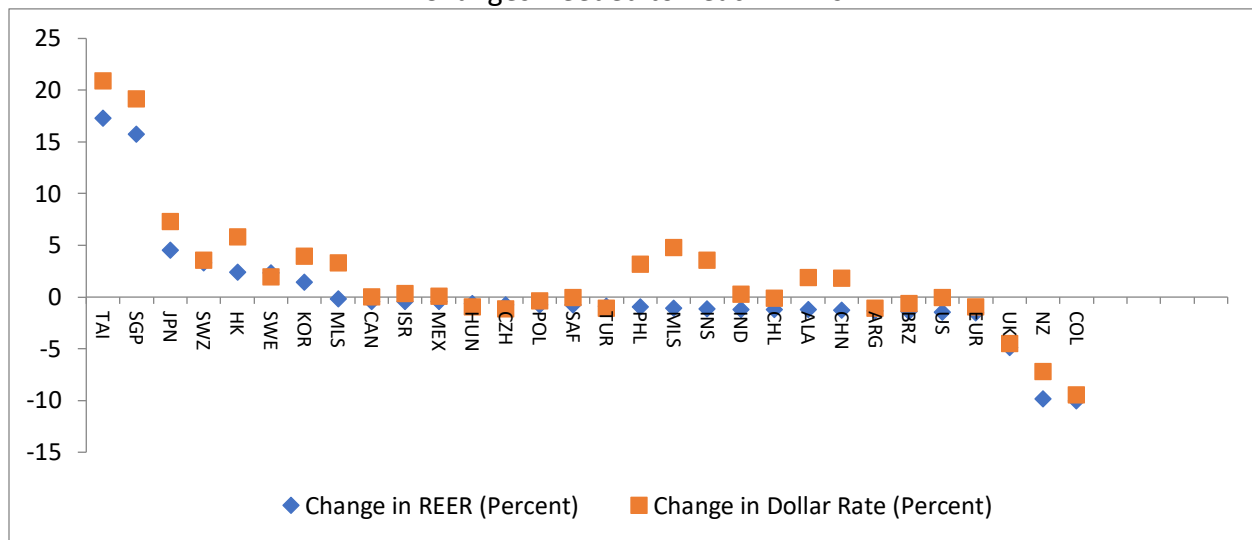
Country	Changes in Current Account as Percentage of GDP		Change in REER (percent)		Dollar Exchange Rate		FEER-consistent dollar rate
	Target Change	Change in Simulation	Target Change	Change in Simulation	Apr 2023	Percentage Change	
Pacific							
Australia*	0.0	0.2	0.0	-1.2	0.67	1.9	0.68
New Zealand*	2.2	2.5	-8.7	-9.8	0.62	-7.2	0.58
Asia							
China	0.0	0.3	0.0	-1.3	6.89	1.9	6.76
Hong Kong	-1.6	-1.2	3.1	2.4	7.85	5.8	7.42
India	0.0	0.3	0.0	-1.2	82.0	0.3	81.7
Indonesia	0.0	0.2	0.0	-1.1	14874	3.6	14362
Japan	-0.9	-0.7	5.7	4.6	134	7.3	125
Korea	-1.0	-0.6	2.4	1.4	1324	4.0	1273
Malaysia	-0.1	0.5	0.1	-1.0	4.43	4.8	4.22
Philippines	0.0	0.2	0.0	-1.0	55.4	3.2	53.7
Singapore	-8.5	-7.9	17.1	15.7	1.33	19.2	1.12
Taiwan	-7.9	-7.5	18.2	17.3	30.6	20.9	25.3
Thailand	-0.5	0.1	1.0	-0.2	34.2	3.3	33.1
Middle East/Africa							
Israel	-0.1	0.1	0.4	-0.4	3.64	0.3	3.62
Saudi Arabia	0.0	0.3	0.0	-0.9	3.75	1.3	3.70
South Africa	0.0	0.2	0.0	-0.7	18.16	0.0	18.17
Europe							
Czech Republic	0.0	0.3	0.0	-0.7	21.4	-1.1	21.6
Euro area*	0.0	0.4	0.0	-1.5	1.10	-0.9	1.09
Hungary	0.0	0.3	0.0	-0.6	342	-0.9	345
Norway	0.0	0.3	0.0	-0.8	10.50	-1.3	10.64
Poland	0.0	0.3	0.0	-0.7	4.22	-0.4	4.24
Russia	0.0	0.2	0.0	-0.8	81.0	-0.2	81.2
Sweden	-1.2	-0.9	3.4	2.4	10.34	2.0	10.13
Switzerland	-1.8	-1.5	4.0	3.3	0.90	3.6	0.87
Turkey	0.0	0.2	0.0	-0.9	19.35	-1.1	19.56
United Kingdom*	1.0	1.3	-4.0	-4.9	1.24	-4.5	1.19
Western Hemisphere							
Argentina	0.0	0.2	0.0	-1.3	216.6	-1.1	218.91
Brazil	0.0	0.2	0.0	-1.4	5.01	-0.6	5.04
Canada	0.0	0.1	0.0	-0.4	1.35	0.0	1.35
Chile	0.0	0.3	-0.2	-1.2	804	-0.1	804
Colombia	1.5	1.6	-9.1	-10.0	4543	-9.5	5017
Mexico	0.0	0.1	0.0	-0.4	18.1	0.1	18.1
United States	0.0	0.2	0.0	-1.4	1.00	0.0	1.00
Venezuela	0.0	0.2	0.0	-0.7	...	...	...

* dollars/currency

... not available

Figure 3 shows the percent changes in exchange rates needed to bring current accounts into alignment with the FEERs targets. The economies are ordered from the largest REER appreciations to the largest REER depreciations. Following the pattern usually found, for the Asian economies there tends to be a greater (positive) difference between the amount of change needed in the bilateral rate against the dollar than in the multilateral REER. The countries with the highest needed appreciations (especially Taiwan and Singapore) tend to be in Asia, and the countries with high trade shares with these economies also tend to be in Asia. These regional trading partners tend to need to appreciate against the dollar to avoid experiencing a depreciation in the multilateral effective exchange rate as key partners appreciate against the dollar.

Figure 3
Changes Needed to Reach FEERs



ARG = Argentina, AUS = Australia, BRZ = Brazil, CAN = Canada, CHL = Chile, CHN = China, COL = Colombia, CZH = Czech Republic, EUR = Euro area, HK = Hong Kong, HUN = Hungary, IND = India, IDN = Indonesia, ISR = Israel, JPN = Japan, KOR = Korea, MLS = Malaysia, MEX = Mexico, NZ = New Zealand, PHL = Philippines, POL = Poland, SGP = Singapore, SAF = South Africa, SWE = Sweden, SWZ = Switzerland, TAI = Taiwan, THA = Thailand, TUR = Turkey, UK = United Kingdom, US = United States.

FEER: Fundamental Equilibrium Exchange Rate

REER: Real Effective Exchange Rate

Conclusion

The principal misalignments of exchange rates identified in this study are highly concentrated, with the globally consistent simulations showing large real appreciations needed for Taiwan (by 17.3 percent), Singapore (by 15.7 percent), and to a lesser extent Japan (by 4.6 percent). Smaller globally-consistent real appreciations are needed for Switzerland (by 3.3 percent), Hong Kong and Sweden (both by 2.4 percent), and Korea (by 1.4 percent). The needed

REER depreciations in the globally consistent solution stand at 9.8 percent for New Zealand, 10.0 percent for Colombia, and 4.9 percent for the United Kingdom. In addition, global consistency imposes REER depreciations in the range of 0.4 to 1.5 percent for many economies even though their deficits do not exceed the allowed ceiling of 3 percent of GDP. This consistency effect is about the same for the euro (-1.5 percent REER change) and the United States (-1.4 percent).

So far there has been little impact of the US debt ceiling standoff on the dollar or US equity markets. The base case is that President Biden and House majority leader Kevin McCarthy are serious in agreeing that “default is off the table” and will reach a compromise (most importantly on the level and time span of spending caps).²⁷ There is however a meaningful risk (perhaps 15 percent probability?) that an agreement will not be reached. In that case the Biden administration might begin to issue new debt once again while taking a legal case for ignoring the debt ceiling to the Supreme Court. The extent of turmoil in financial markets, and downward pressure on the dollar, would then depend on the speed and outcome of the Court’s decision.

²⁷ Catie Edmondson and Katie Rogers, “Biden and McCarthy Describe ‘Productive’ Meeting, but No Agreement is Reached,” *New York Times*, May 22, 2023.

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