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Rules of Thumb for US Spillovers to Global Financial Conditions (Bhushan)

- Our global financial conditions index (FCI) has tightened, in part because the Fed has turned more hawkish in the face of rising inflation but slowing growth. Where are risks to growth from FCI spillovers largest? We estimate rules of thumb for the impact of US monetary policy, growth, and inflation surprises on our FCIs via long rates, equities and the trade-weighted exchange rate index (TWI).
- We find that a 100bp hawkish Fed surprise tightens our global FCI by much more (40bp) than a 1pp positive US growth or inflation surprise (both roughly flat). Our US FCI tightens in response to all three surprises, as do our EM FCIs (to varying degrees), while the effects on DM ex. US FCIs are more mixed.
- Hawkish Fed surprises raise long rates, weigh on equities, and depreciate the TWI in nearly every country. We find that a 100bp hawkish Fed surprise tightens our FCI by 80bp in the US (100bp including corporate bond spreads), 70bp in China, 40bp in the UK and Latam, 30bp in CEEMEA, and 20bp in Asian EMs ex. China. In contrast, FCIs are unchanged in the Euro area, and ease in Canada and Australia following large TWI depreciations.
- Positive US growth surprises raise long rates and equities, but weigh on TWIs in DMs. We estimate that a 1pp US growth surprise tightens FCIs by 5-10bp in the US, Australia, and Canada, but eases FCIs slightly in the Euro Area and Japan (by 5 & 10bp respectively). As a result of small moves following positive US inflation surprises, we find that a 1pp US inflation surprise tightens FCIs moderately in the US (+10bp), and slightly in Canada and CEEMEA (+5bp) but leaves FCIs in the Euro area and elsewhere roughly unchanged.
- The relatively large impact of Fed surprises suggests that news about the Fed's criteria for slowing down or speeding up from a 50bp hiking pace will be important for global FCIs. Further hawkish developments would weigh on global growth, mostly via the US, China, and EMs, but have limited spillovers to the Euro area, and actually possibly support growth in Canada.
- That said, FCIs may respond more to inflation and growth surprises than our statistical estimates suggest because they matter for Fed policy, especially when the economy is overheated.

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Rules of Thumb for US Spillovers to Global Financial Conditions

The Fed has turned more hawkish in the face of rising inflation but slowing growth, and our global FCI ex. Russia has tightened by over 100bp this year. Where are risks to growth from FCI spillovers largest? We estimate rules of thumb for the impact of US monetary policy, growth, and inflation surprises on our FCIs via long rates, equities, and the TWI.

We estimate the impact of US surprises on FCIs using daily changes in 2-year interest rates on FOMC meeting days for monetary policy surprises, and our MAP scores for growth and inflation.[1] We isolate the effect of these US surprises from other news using a statistical technique developed by MIT economist Roberto Rigobon.[2] We focus on the effect on FCIs via long rates, equities, and TWI exchange rates because corporate bond spreads can respond to news with a lag.[3]

US Rules of Thumb

We start with the US. Exhibit 1 shows that a 100bp hawkish Fed policy surprise tightens our US FCI by 80bp through higher long rates (+60bp), lower equities (-7%), and a higher TWI (+3%). If we include estimates of the impact on corporate spreads from the literature, the total FCI impact rises to 100bp, consistent with our 1:1 mapping between Fed shocks and the FCI.

In contrast, we find much smaller US FCI effects from growth and inflation surprises. We estimate that a 1pp positive US growth surprise only slightly tightens the US FCI by 5bp while a 1pp positive US inflation surprise tightens the FCI by a moderate 10bp.[4] For growth surprises, the limited net impact is because rising equities (+1.5%) work against the tightening from higher rates (+20bp) and an appreciating currency (+0.5%). Inflation surprises lead to more tightening than growth surprises because all components of the FCI tighten (rates +5bp, equities -1%, TWI + 0.5%) but much less tightening than a monetary policy surprise because the absolute effects are significantly smaller.

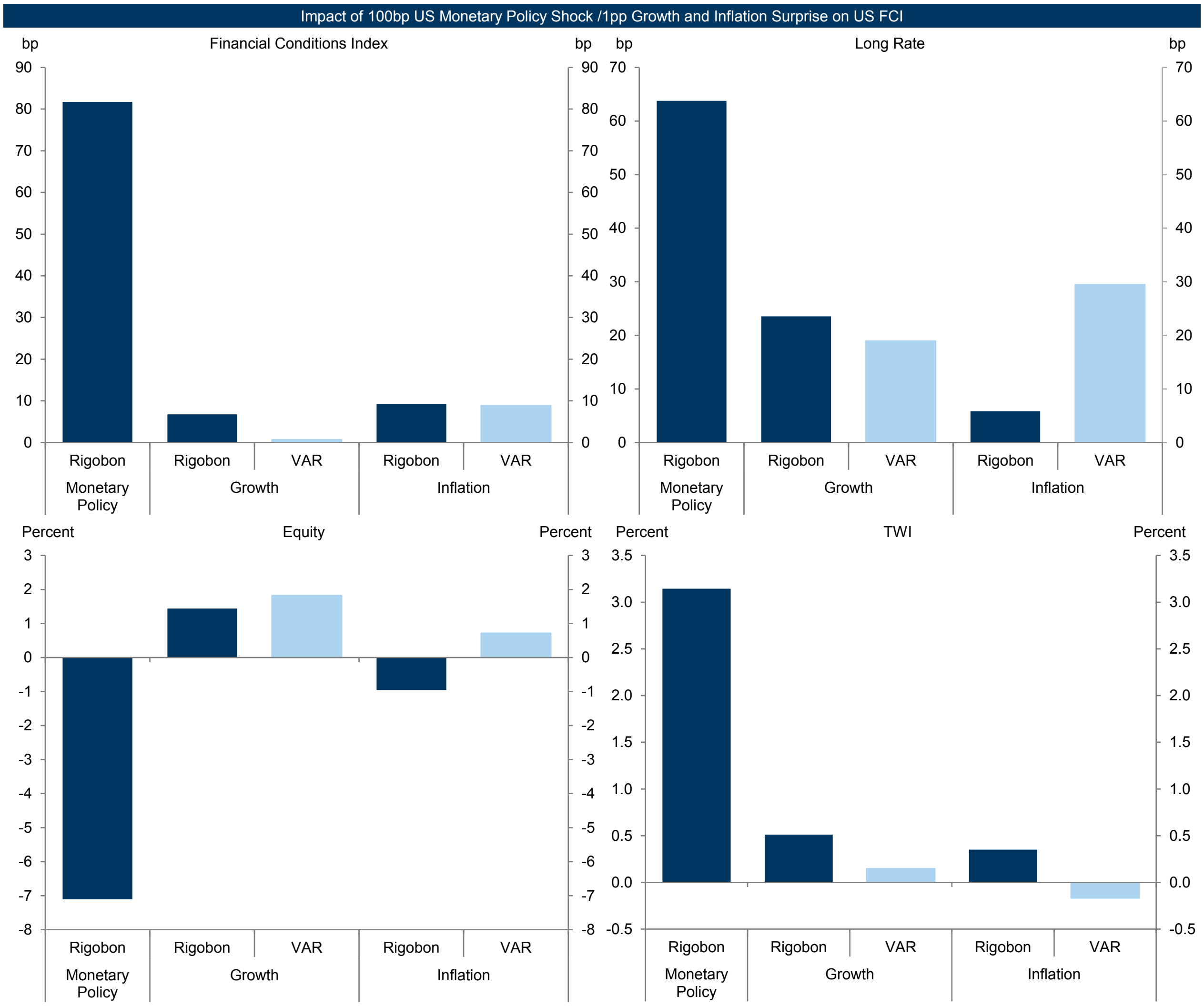
1 Our daily MAP surprise indices summarize the importance and strength relative to consensus expectations of economic indicators.

2 We have previously used this Rigobon method to estimate the impact of monetary policy surprises on our US FCI. In the case of growth and inflation, this method uses the difference between the relationship between our MAP indices and FCIs on days with/without large data surprises.

3 See Daan Struyven and David Choi, "Fed Pricing: The Cost of Doing Nothing", US Economics Analyst, 23rd June 2019.

4 A 1pp growth shock roughly corresponds to a 500k beat in non-farm payrolls. The 1pp inflation shock is for core CPI.

Exhibit 1: A 100bp Hawkish Fed/1pp Growth/1pp Inflation Surprise Tightens our US FCI by Roughly 80bp/5bp/10bp via Long Rates, Equities, and the Dollar



Source: Goldman Sachs Global Investment Research

Next, we stress test our growth and inflation results using a Vector Auto Regression (VAR) model with the long rate, equities, and the TWI as dependent variables. We use changes in Consensus Economics forecasts as a measure of US growth and inflation surprises.[5] The VAR results roughly match those from the Rigobon method (Exhibit 1). The VAR estimates that a 1pp growth surprise leaves our US FCI roughly unchanged (vs. +5bp in Rigobon method) and that a 1pp inflation surprise tightens our US FCI by 10bp (vs. +10bp).

Global Rules of Thumb

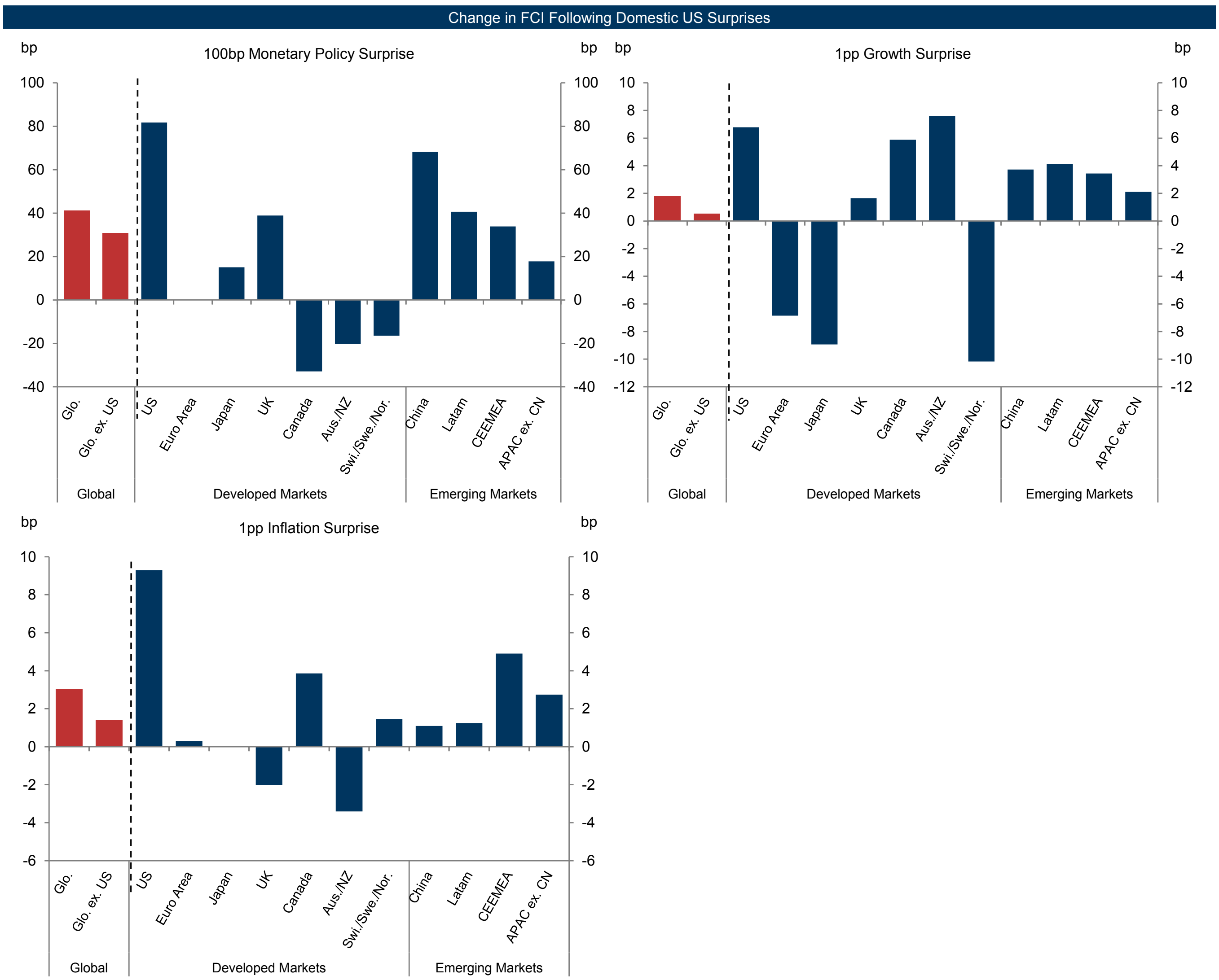
Exhibit 2 summarizes our estimates of the global FCI effects from US surprises based on the Rigobon method.[6]

[5] While these more likely reflect genuine news rather than one-off data surprises, they are only available at a monthly frequency. We also control for foreign surprises, oil prices, CAIs, and volatility as measured by the VIX.

[6] For each country, we use the sample over which our FCIs are constructed.

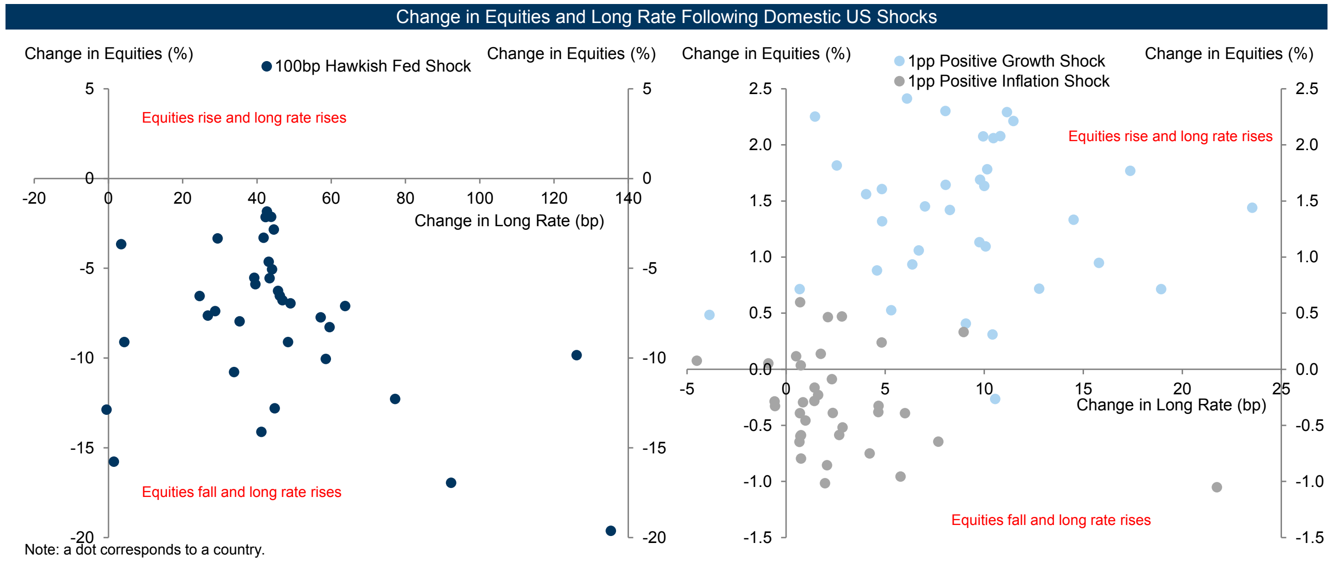
As in the US, we find that a 100bp hawkish Fed surprise tightens global FCIs by much more (40bp or 30bp excluding the US) than a 1pp positive US growth or inflation surprise (both flat even excluding the US) (Exhibit 2). Once again, this result is driven by monetary policy surprises i) pushing up long rates and pushing down equities, and ii) leading to larger absolute moves than either growth or inflation surprises (Exhibit 3). While our EM FCIs tend to tighten in response to a hawkish Fed, stronger US growth, or higher US inflation, the effects on DM ex-US FCIs are mixed.

Exhibit 2: Large FCI Tightening Effects From Hawkish Fed Shocks



Source: Goldman Sachs Global Investment Research

Exhibit 3: Equities and Rates Both Tighten FCIs After a Hawkish Fed Shock or a Positive US Inflation Shock but Rising Equities Buffer FCIs After a Positive US Growth Shock



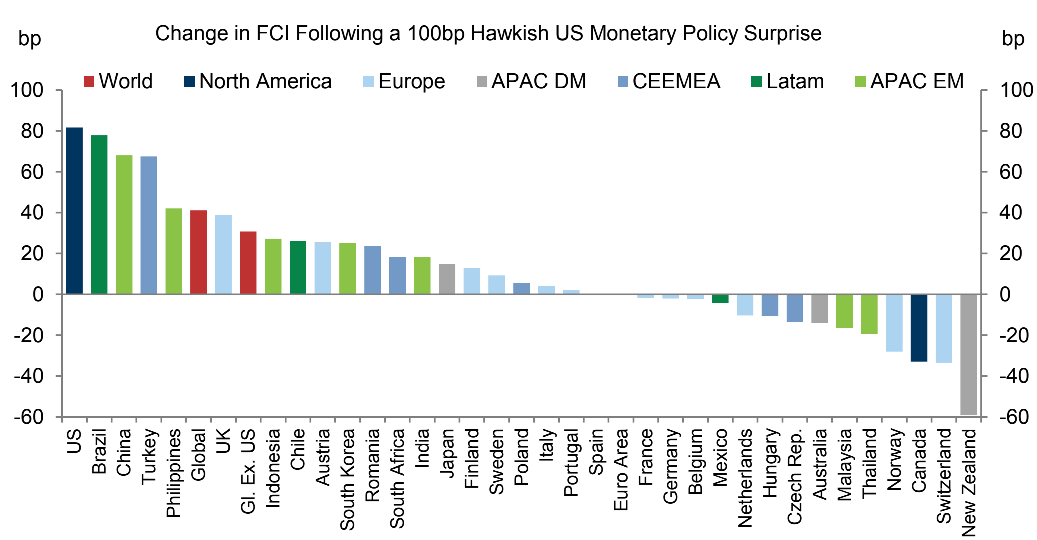
Source: Goldman Sachs Global Investment Research

We next highlight our most notable country- and asset-level estimates of the FCI effect from US Fed, growth, and inflation surprises.

A Hawkish Fed

Hawkish Fed surprises tighten FCIs in most EMs but either ease or have limited impacts on DM FCIs (Exhibit 4). Specifically, we find that a 100bp hawkish Fed surprise tightens our FCI by roughly 70bp in China, 40bp in the UK and Latam, 30bp in CEEMEA, and 20bp in Asian EMs ex. China. In contrast, FCIs are unchanged in the Euro area, and FCIs ease in New Zealand, Switzerland, Canada, and Australia.

Exhibit 4: A 100bp Hawkish Fed Policy Surprise Tightens FCIs Most in the US, Brazil, China, and Turkey but Eases FCIs in New Zealand, Switzerland, Canada, and Australia



Source: Goldman Sachs Global Investment Research

Hawkish Fed surprises raise long rates, lower equities, and depreciate the TWI in nearly every country (Exhibit 5). The biggest exception to this pattern is China, where we find a large TWI appreciation and very limited spillovers to rates. This contrasts with most other EMs that face significant FCI tightening, such as Brazil and Turkey, due to higher long rates and sharply lower equities. Logically, EMs where our FCI weights the TWI higher (such as Thailand and Hungary – roughly 20% weight) experience less FCI tightening.

Exhibit 5: Long Rates Rise, Equities Fall, and Most Currencies Depreciate Following a Hawkish Fed Surprise

Impact on FCIs from 100bp Hawkish US Monetary Policy Surprise	Long Rate (bp)	Equity (%)	TWI (%)	FCI (bp)
Developed Markets				
North America				
US	64	-7.1	3.1	82
Canada	49	-7.0	-6.7	-33
Europe				
Euro Area	43	-4.6	-3.3	0
Germany	46	-6.3	-3.3	-2
France	43	-1.8	-3.3	-2
Italy	40	-5.9	-3.3	4
Spain	44	-2.1	-3.3	0
UK	39	-5.5	0.4	39
Switzerland	3	-3.7	-2.3	-33
Sweden	47	-6.8	-1.6	9
Norway	29	-7.4	-4.0	-28
Asia-Pacific				
Japan	25	-6.5	-1.7	15
Australia	60	-8.3	-7.7	-14
New Zealand	45	-2.8	-8.4	-59
Emerging Markets				
CEEMEA				
Turkey	126	-9.8	0.0	68
Poland	48	-9.1	-3.2	6
South Africa	77	-12.3	-3.7	18
Romania	45	-12.8	-1.0	24
Czech Republic	35	-8.0	-2.5	-13
Hungary	92	-17.0	-3.9	-11
Latam				
Brazil	135	-19.6	-1.2	78
Mexico	34	-10.8	-4.4	-4
Chile	-1	-12.9	0.7	26
Asia-Pacific				
China	4	-9.1	6.3	68
India	1	-15.8	-0.6	18
Indonesia	59	-10.1	-1.8	27
South Korea	27	-7.6	0.1	25
Thailand	46	-6.5	-2.2	-19
Philippines	57	-7.7	0.0	42
Malaysia	29	-3.3	-2.0	-16

Note: long rate incorporates sovereign spread for Euro Area countries.

Source: Goldman Sachs Global Investment Research

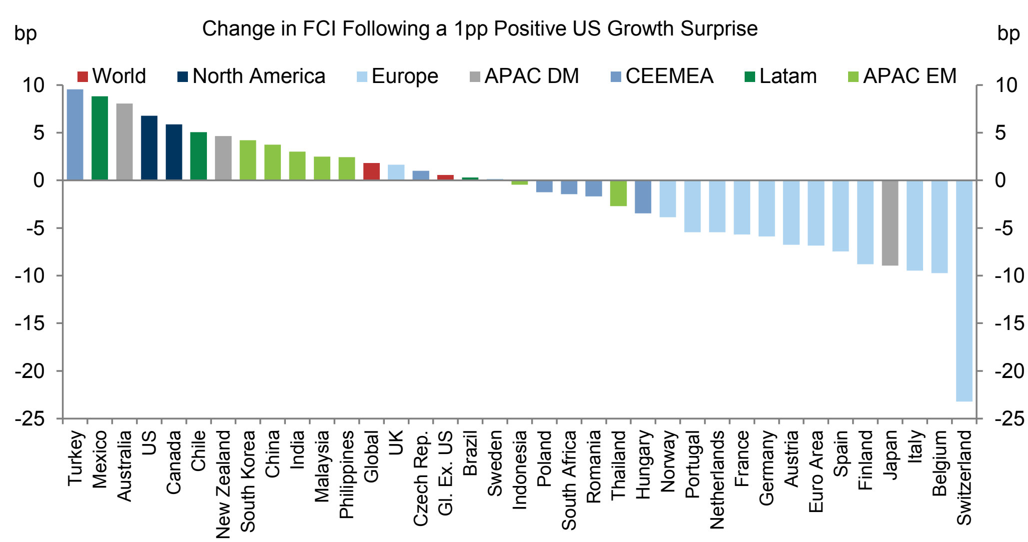
On the whole, we estimate less FCI tightening from hawkish Fed surprises in DMs due to larger TWI depreciations and smaller drawdowns in equities. A higher dollar weight in

DM TWIs and a greater currency sensitivity to rate differentials with the US help explain the larger TWI FCI effects.[7] The negative effect from dollar appreciation on EM growth (trough trade volume and dollar denominated debt effects) may explain the larger hit to EM equities.[8] FCIs in New Zealand, Canada, Norway, Australia, and Switzerland ease the most following a hawkish Fed shock because of significant TWI depreciations (and a higher TWI weight in the FCI than other DMs) and, in the case of Switzerland, because of very limited rate spillovers. The exception is the UK, where we find significant FCI tightening, driven by a limited TWI response.

A Booming US Economy

Positive US growth surprises ease FCIs in the Euro Area and Japan but tighten or have limited impacts on FCIs in most EMs (Exhibit 6). We estimate that a 1pp US growth beat slightly tightens FCIs by 10bp in Australia and Turkey and by 5bp in Canada, China, and Latam. On the other hand, we find that FCIs ease in the Euro area and Japan, by 5bp and 10bp respectively.

Exhibit 6: A 1pp Positive US Growth Surprise Very Moderately Tightens FCIs in Neighbouring Countries but Eases FCIs in Europe and Japan



Source: Goldman Sachs Global Investment Research

Positive US growth surprises boost long rates and equities globally, but weigh on TWIs in DMs (Exhibit 7). FCIs ease the most in Switzerland, the Euro area and Japan because of larger depreciations and bigger boosts to equities than elsewhere, and limited spillover to long rates in the case of Switzerland and Japan. FCIs tighten in Canada, Australia, and New Zealand because of a larger spillover to rates, limited movements in the currency, and smaller gains in equities. This split suggests that countries which have not been stuck at their lower bound in recent history face greater risk of a monetary policy response to positive US growth news, and so more FCI tightening.

7 For the greater DM currency sensitivity to rate differentials with the US, see Michael Cahill, "Updating our FX Cyclical Fair Value Models", Global Markets Analyst, 18th June 2018.

8 See Sid Bhushan and Daan Struyven, "Weaker Dollar Supports Global Growth", Global Economics Analyst, 26th August 2020.

EM FCIs tend to slightly tighten in response to positive US growth surprises. This is because equities tend to rise by less and TWIs tend to depreciate less, which outweighs the generally more moderate pass through to rates. The exception to this pattern is CEEMEA ex. Turkey, where FCIs are unchanged or slightly ease following a US growth surprise because the pass through to rates and the TWIs is most moderate, and because equities rise more than elsewhere.

Exhibit 7: Long Rates Rise, Equities Rise, and DM Currencies Depreciate Following a Positive US Growth Surprise

Impact on FCIs from 1pp Positive US Growth Surprise	Long Rate (bp)	Equity (%)	TWI (%)	FCI (bp)
Developed Markets				
North America				
US	24	1.4	1	7
Canada	16	0.9	0	6
Europe				
Euro Area	10	2.1	-0.8	-7
Germany	11	2.3	-0.8	-6
France	11	2.1	-0.8	-6
Italy	8	2.3	-0.8	-9
Spain	8	1.6	-0.8	-7
UK	10	1.1	0.2	2
Switzerland	3	1.8	-0.9	-23
Sweden	10	1.8	0.0	0
Norway	6	2.4	0.0	-4
Asia-Pacific				
Japan	4	1.6	-1.2	-9
Australia	19	0.7	-0.2	8
New Zealand	13	0.7	-0.1	5
Emerging Markets				
CEEMEA				
Turkey	17	1.8	0.6	10
Poland	7	1.5	-0.1	-1
South Africa	8	1.4	-0.2	-1
Romania	1	0.7	-0.1	-2
Czech Republic	5	1.6	0.1	1
Hungary	1	2.3	0.0	-3
Latam				
Brazil	5	1.3	0.2	0
Mexico	15	1.3	0.3	9
Chile	7	1.1	0.4	5
Asia-Pacific				
China	5	0.9	0.4	4
India	11	-0.3	-0.2	3
Indonesia	-4	0.5	0.2	0
South Korea	10	1.1	0.1	4
Thailand	10	0.3	-0.3	-3
Philippines	5	0.5	0.1	2
Malaysia	9	0.4	0.0	2

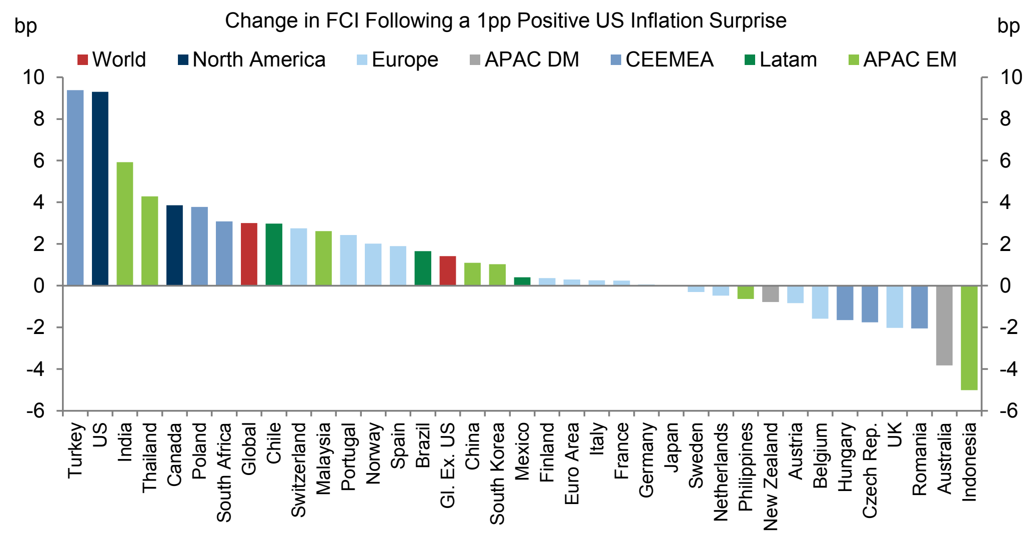
Note: long rate incorporates sovereign spread for Euro Area countries.

Source: Goldman Sachs Global Investment Research

Rising US Inflation

Positive US inflation surprises tend to very slightly tighten FCIs (Exhibit 8). We estimate that a 1pp US inflation surprise tightens FCIs slightly by 5bp in Canada and CEEMEA and by roughly 3bp in Asian EMs ex. China. The Euro area FCI is largely unchanged while the Australia FCI eases slightly by 5bp.

Exhibit 8: A 1pp Positive US Inflation Surprise Has Limited FCI Spillovers



Source: Goldman Sachs Global Investment Research

Positive US inflation surprises cause long rates to edge up, most equities to edge down, and DM TWIs to edge down (Exhibit 9). Among DMs, the most notable FCI tightening is in Canada, which is intuitive because high trade with the US likely means more price spillovers. As with monetary policy shocks, we see more deprecation in Australia and New Zealand than other DMs, which causes FCIs in the former to ease by 5bp.

The response of EM FCIs is mixed. In CEEMEA and Latam, long rates rise and equities fall but FCIs are buffered by depreciating TWIs. In contrast, long rates and equities are more immune in Asian EMs, while TWIs face more appreciation. The effect on FCIs varies depending on the relative magnitude and weights of these diverging moves. For example, the very large boost to Turkey long rates leads to a 10bp FCI tightening but the TWI depreciation in Mexico means that the FCI is unchanged.

Exhibit 9: Long Rates Edge Up, Equities Edge Down, and DM Currencies Edge Down Following a Positive US Inflation Surprise

Impact on FCIs from 1pp Positive US Inflation Surprise	Long Rate (bp)	Equity (%)	TWI (%)	FCI (bp)
Developed Markets				
North America				
US	6	-1.0	0.3	9
Canada	4	-0.8	0.0	4
Europe				
Euro Area	1	-0.5	-0.1	0
Germany	1	-0.6	-0.1	0
France	1	-0.4	-0.1	0
Italy	1	-0.3	-0.1	0
Spain	1	-0.8	-0.1	2
UK	2	0.5	-0.1	-2
Switzerland	2	0.1	0.1	3
Sweden	1	-0.2	-0.1	0
Norway	2	-0.1	0.0	2
Asia-Pacific				
Japan	1	-0.6	-0.2	0
Australia	1	-0.6	-0.6	-4
New Zealand	3	-0.5	-0.3	-1
Emerging Markets				
CEEMEA				
Turkey	22	-1.1	-0.2	9
Poland	2	-1.0	0.1	4
South Africa	5	-0.3	0.1	3
Romania	5	0.2	-0.3	-2
Czech Republic	2	-0.9	-0.2	-2
Hungary	9	0.3	-0.2	-2
Latam				
Brazil	5	-0.4	-0.2	2
Mexico	8	-0.6	-0.5	0
Chile	3	-0.6	0.1	3
Asia-Pacific				
China	1	0.6	0.2	1
India	2	-0.4	0.4	6
Indonesia	-5	0.1	-0.3	-5
South Korea	-1	-0.3	0.1	1
Thailand	-1	-0.3	0.2	4
Philippines	3	0.5	-0.1	-1
Malaysia	-1	0.1	0.2	3

Note: long rate incorporates sovereign spread for Euro Area countries.

Source: Goldman Sachs Global Investment Research

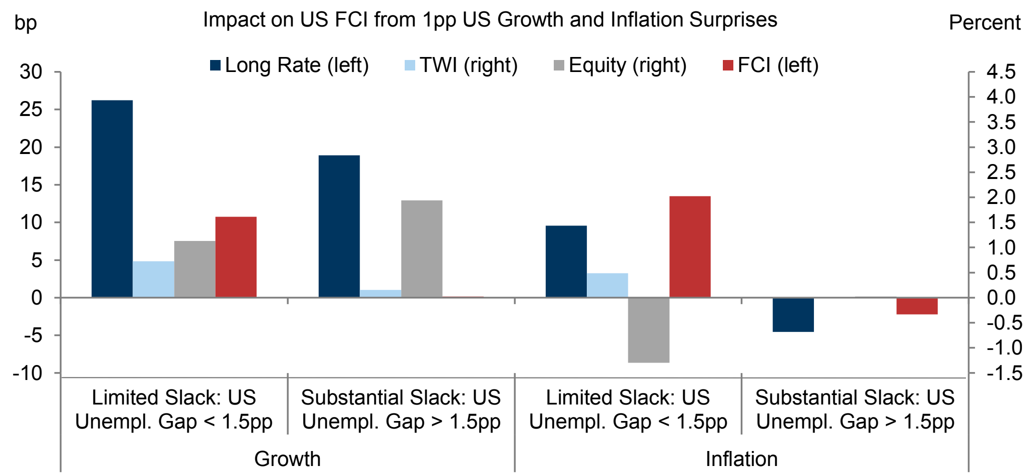
Figuring Out the Fed

Overall, our analysis estimates intuitive FCI sensitivities to US shocks for a large set of countries in a consistent manner. That said, the exact magnitudes of the sensitivities are uncertain and subject to several caveats. First, the FCI sensitivities vary over time with, for instance, larger tightening effects from positive US growth and inflation surprises when there is little slack (Exhibit 10).[9] Additionally, growth and inflation data

[9] We also estimate larger spillovers from US shocks to the Chinese TWI in the earlier part of our sample.

surprises tend to be backward-looking, we do not account for corporate bond spreads, and different market opening times and often lagged responses complicate identifying appropriate time windows.

Exhibit 10: US Growth and Inflation Surprises Tighten our US FCI When There Is Little Slack but Have Limited Effects Otherwise



Source: Goldman Sachs Global Investment Research

Nonetheless, our finding that Fed shocks are relatively important for FCI spillovers is robust. This implies that news about the Fed's criteria for slowing down or speeding up from a 50bp pace, and for responding to potential recession signs if inflation remains firm will be important for global FCIs. Further hawkish developments would weigh on global growth, mostly via the US, China, and EMs, but have limited spillovers to the Euro area, and actually possibly support growth in Canada.

That said, FCIs may respond more to inflation and growth surprises than our statistical estimates suggest because they matter for Fed policy, especially when the economy is overheated. (Exhibit 10).

Sid Bhushan

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