Emerging Insight

# LatAm: How to trade economic cycles

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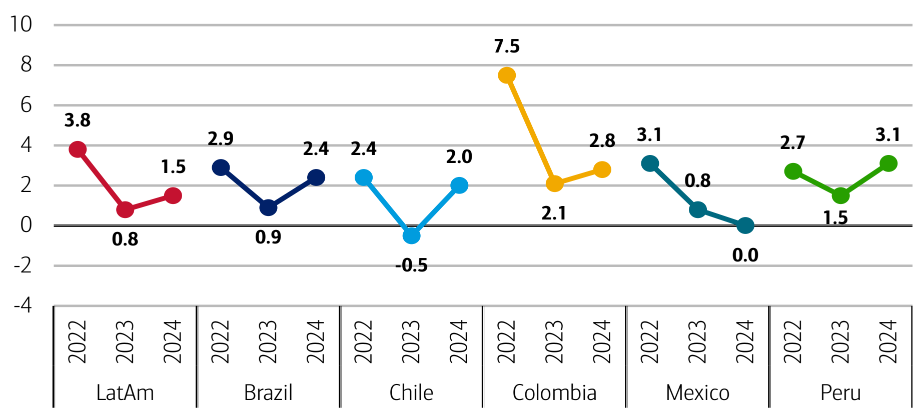
## Key takeaways

- We estimate a three-state Markov switching model to identify recessions, and look at historical conditional expected returns.
- During recessions, FX returns look attractive in Brazil and Mexico on the back of high carry, and Peru given FX intervention.
- Rates tend to perform well in Mexico and Brazil, probably driven by the expectation of an approaching easing cycle.

## *By C. Irigoyen, A. Gabriel, C. Gonzalez Rojas*

**Chart of the day: GDP growth forecasts in LatAm (%)**
We expect a significant slowdown in Mexico and Chile




**Source:** BofA Global Research

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## LatAm in Focus

## How to trade economic cycles

Through the lens of a Markov switching model, we compute conditional returns across growth regimes. During recessions, all asset classes underperform in Chile and Colombia. Total FX returns are attractive in Brazil and Mexico on the back of high carry, and Peru given FX intervention. Meanwhile, rates tend to perform well in Mexico and Brazil, probably driven by the expectation of an aggressive easing cycle approaching.

*See our full analysis in our recent report:* [Positioning ahead of economic regimes]



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## Investors are turning focus to a recessionary environment

Investors are increasingly concerned about the likelihood of a global recession. With a deterioration of economic growth expected in the near-term across most of LatAm, and more so following the recent financial strains, there is increasing investor interest in how to position ahead of the expected slowdown in economic activity.

Unlike the NBER (National Bureau of Economic Research) in the US, there is no reliable and widely accepted institution defining the beginning and end of recessions in LatAm. In practice, most analysts call a recession after two consecutive quarters of negative GDP growth. Given the lag with which national GDP data are published, relying on the two-quarter rule implies that a recession will be called about three quarters into it. Sometimes, this may mean that the recession is already close to concluding. Therefore, relying on this rule severely limits the insights that one can draw in real time.

In LatAm, beyond the significant delay in publishing national account data, there is no widely accepted definition, even ex-post. Except for Mexico, where the Mexican Institute of Finance Executives set up a Business Cycle Dating Committee, countries in the region lack an institution determining the start and end of recessions. And while the OECD has made efforts to provide a recession indicator for some countries in LatAm, their episodes are far too long and tend to extend far beyond what any market participant would consider to be the end of the recession cycle.

## First things first, let's identify recessions...

We propose a methodology to identify recessions close to real time across countries in LatAm (and beyond). We use monthly economic activity data to estimate a three-state Markov switching model. Given our assumption about the data-generating process, the model endogenously assesses whether the economy is in a high-growth, low-growth, or recession regime. This allows us to methodically identify recessions, just as they begin, based on what the model identifies as the most likely state of the economy.

### The Markov switching model

We leverage academic literature and focus our attention on the Markov switching model developed by Hamilton (1989, 1990). This is a non-linear time series model that estimates probabilities about the state of the economy, which we can use to infer likely start and end dates to recessions. As shown by Hamilton, a simple model with just two states (high-growth and recession) performs well for the US, broadly aligning with the NBER definitions. However, it is important to note that the US is characterized by stable growth that is sometimes interrupted by moderate recessions.

### LatAm has more cyclones than cycles

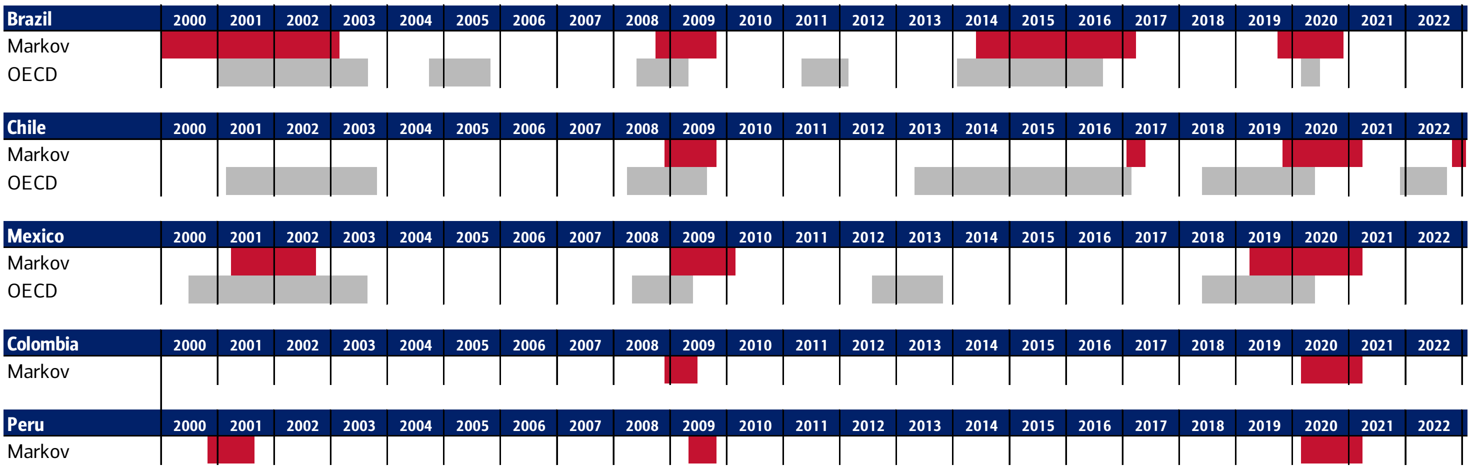
In LatAm, countries tend to exhibit much more pronounced cyclical behavior relative to the US. The region has experienced extended growth booms (e.g. commodity booms) that were then followed by busts. However, there have also been several extended periods when growth was be positive, but meager. This is consistent with academic literature that documents that shocks to trend growth, rather than transitory fluctuations around a stable trend, are the primary source of output fluctuations in emerging markets.

A model with just two states, then, does not cut it in LatAm, even though it tends to work quite well for the US. We modify the assumption on the Markov process to include three states of nature: *high-growth*, *low-growth*, and *recession*. This parsimonious change gives us enough flexibility while preserving tractability.

We construct a monthly economic activity indicator for Brazil, Chile, Colombia, Mexico, and Peru with monthly GDP indexes and use these as inputs for the model. At each point in time, the model estimates the probability of the economy being in each of the three regimes, and we pick the most likely state.

**Exhibit 1: Recessions in LatAm through the lens of the Markov switching model**

The Markov switching model identifies recessions well, even if it may be late in calling the end of each episode.




**Source:** BofA Global Research, Haver

**Note:** Gray bars denote recessions as identified by the OECD, when available. Red bars denote recessions identified by the three-state Markov switching model.

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We can compare the recession regimes we find to the indicator from the OECD (Exhibit 1). While the model seems quite precise in calling the beginning of the recessions, it lacks some precision to call their conclusion. Still, the overall fit is quite precise, and does not seem to show false positives—a flaw the OECD indicator seems to be prone to.

## Is LatAm in a recession?

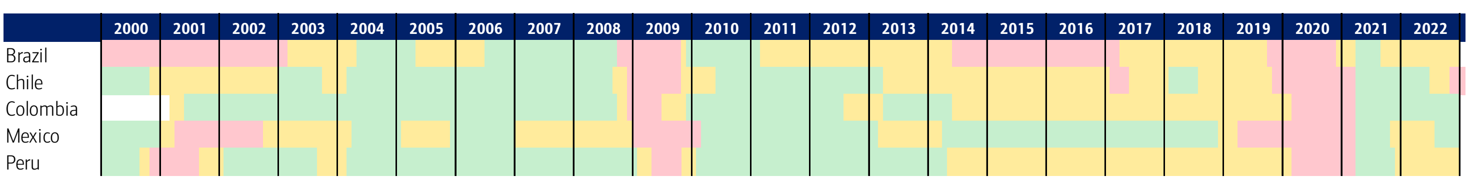
One of the biggest concerns for investors is whether the global economy is headed to a recession in 2023. This question is particularly relevant for LatAm, as it was the region that embarked on the most aggressive hiking cycle in the world to contain historically high inflation. Not only that, but LatAm has a large sensitivity to US and China growth. A potential recession in the US on the back of hawkish Fed policy could have negative implications for economic growth in LatAm. The Chart of the Day shows our current economists' forecasts for LatAm, which unambiguously point to deceleration.

Our Markov switching model allows us to construct a higher-frequency estimation of the underlying state of the economy. Put simply, our model can be used to statistically infer whether an economy is in a high-growth, low-growth, or recession regime. This information is useful for two reasons. First, one regime can provide useful information about the likelihood that the economy transitions to a different regime. Second, asset prices can behave differently in the different regimes, so having information about the current regime could have important implications that could be exploited by investors.

Exhibit 2 shows the current estimate for what our Markov switching model identifies as different economic regimes in LatAm. Currently, only Chile seems to be in a recession, while Brazil and Peru are in the low-growth regime, and Mexico and Colombia remain in the high growth regime.

**Exhibit 2: Economic regimes in LatAm**

Our model suggests a recession in Chile. Brazil and Peru are in the low-growth regime, while Mexico and Colombia are in the high-growth regime




**Source:** BofA Global Research, Haver.

**Note:** Green, yellow, and red denote high-growth, low-growth, and recession regimes, respectively, as identified by the three-state Markov switching model. Data for Colombia is unavailable before March 2001. At the time of publication, Chile is the only country where data is available for January 2023.

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## The (lack of) power of the yield curve

After identifying recessions in LatAm, an investor may wonder if it is possible to make any forward-looking inference about the likelihood that each economy could enter a recession in the future. A natural approach would be to analyze whether the slope of the yield curve provides useful information about recessions. After all, this is true for the US, where a yield curve inversion has preceded recessions for decades. In fact, the NY Fed publishes an estimate of the recession probability over the next 12 months by running a simple regression of the NBER recession indicator on the 3m10y slope of the yield curve. Large jumps in this indicator tend to be fairly accurate at predicting recessions.

Unfortunately, the same is not the case for LatAm. Using the results of our Markov switching model and the slope of the local yield curve under a similar simple regression framework provides very noisy probabilities. Even controlling for the slope of the US yield curve, the resulting probabilities remain highly volatile and uninformative. In our view, several factors could explain why the slope of the yield curve in LatAm carries little informational value about potential recessions, from data availability to more shallow financial markets and weaker monetary policy transmission.

## Positioning to surf the cyclones in LatAm

While identifying recession is interesting, most investors would be more eager to know how asset returns behave around the macroeconomic cycle. We use our Markov switching model to analyze historical returns across asset classes conditional on the Markov state. We focus on total FX returns, decomposed in spot return and carry, as well as equity excess returns using benchmark indexes, and returns on proprietary BofA bond indexes. For each asset class, we also compute the conditional volatility of returns, as well as the conditional Sharpe ratio.

For equities, we look at the USD (unhedged) returns in MSCI indexes, which track the performance of large- and mid-cap segments of each country's equity market. For local bonds, we focus on USD (unhedged) returns using or proprietary BofA ICE bond indexes, which track the performance of sovereign local currency bonds across different maturities (market weighted).

Exhibit 3 shows the conditional average returns, volatility, and Sharpe ratios across asset classes for each regime: *high-growth*, *low-growth*, and *recession*. Most asset classes exhibit negative returns during recessions. On the other hand, equities tend to exhibit the highest Sharpe ratio during high-growth regimes, consistent with equity returns being highly related to growth.

This may be an intuitive result but not a trivial one. In fact, while risk premium should unambiguously be detrimental for risk assets in a recessionary environment, different combinations of monetary and fiscal policy could tilt returns in either direction. For example, if an aggressive monetary easing cycle was in the horizon, increasing investor positioning in receivers would likely make rates rally.

Interestingly, total FX returns are positive in Brazil and Mexico during recession regimes, likely a reflection of an attractive carry prevailing over changes in risk premium. Peru also exhibits positive returns during recession regimes, in this case likely driven by frequent FX interventions. Rates also tend to perform well in Mexico and Brazil during recession regimes, probably driven by the expectation of an aggressive easing cycle approaching, also outweighing the potential deterioration in risk sentiment.

Equities unambiguously have their worst performance during recessions, indicating stocks still have room to fall after recessions begin, perhaps reflecting that markets wait until recessions have begun to fully price them in. In Chile and Colombia, all assets underperform during recessions, which may indicate that the deterioration in risk premium may outweigh any benefit coming from an expected turn in monetary policy.

During high-growth regimes, in contrast, equities show all their shine, while local rates only remain attractive in Brazil and Mexico. Total FX returns tend to be positive, but with relatively low Sharpe ratio and they underperform relative to equities. During low-growth regimes, in turn, most asset classes across countries have low but positive Sharpe Ratios. Equities tend to offer the best risk reward in Brazil and Mexico, while LDM looks like the best asset class in Peru, and FX seems the most attractive asset class in Chile.

Overall, according to our analysis, if investors have high conviction about a recession approaching in the near term, historical data suggests they should be long FX in Brazil, Mexico, and Peru, and be long LDM in Brazil and Mexico. In contrast, the same data suggest they should stay away of Chilean and Colombian assets ahead of a recession.

**Exhibit 3: Conditional asset returns, volatility, and Sharpe ratios**

Statistics are conditional on the Markov state for recession, low-growth, and high-growth regimes.

| Brazil | FX Total | FX Spot | FX Carry | LDM | Equities |
|---|---|---|---|---|---|
| Recession | | | | | |
| *Annualized returns* | 10% | 0% | 10% | 12% | -14% |
| *Annualized volatility* | 15% | 15% | 6% | 27% | 37% |
| *Sharpe ratio* | 0.69 | -0.01 | 1.77 | 0.43 | -0.37 |
| Low-growth | | | | | |
| *Annualized returns* | 3% | -4% | 7% | 1% | 20% |
| *Annualized volatility* | 20% | 19% | 4% | 16% | 41% |
| *Sharpe ratio* | 0.15 | -0.21 | 1.57 | 0.08 | 0.49 |
| High-growth | | | | | |
| *Annualized returns* | 6% | -2% | 8% | 15% | 45% |
| *Annualized volatility* | 18% | 16% | 4% | 18% | 30% |
| *Sharpe ratio* | 0.36 | -0.11 | 2.12 | 0.83 | 1.51 |

| Mexico | FX Total | FX Spot | FX Carry | LDM | Equities |
|---|---|---|---|---|---|
| Recession | | | | | |
| *Annualized returns* | 4% | 0% | 5% | 9% | -5% |
| *Annualized volatility* | 8% | 8% | 2% | 11% | 31% |
| *Sharpe ratio* | 0.58 | -0.03 | 2.67 | 0.80 | -0.16 |
| Low-growth | | | | | |
| *Annualized returns* | 0% | -4% | 5% | 3% | 10% |
| *Annualized volatility* | 13% | 12% | 2% | 11% | 29% |
| *Sharpe ratio* | 0.03 | -0.37 | 2.10 | 0.27 | 0.36 |
| High-growth | | | | | |
| *Annualized returns* | 1% | -3% | 4% | 4% | 15% |
| *Annualized volatility* | 8% | 7% | 2% | 12% | 25% |
| *Sharpe ratio* | 0.13 | -0.46 | 1.87 | 0.34 | 0.62 |

| Chile | FX Total | FX Spot | FX Carry | LDM | Equities |
|---|---|---|---|---|---|
| Recession | | | | | |
| *Annualized returns* | -2% | -3% | 1% | -3% | -12% |
| *Annualized volatility* | 11% | 11% | 2% | 18% | 29% |
| *Sharpe ratio* | -0.23 | -0.32 | 0.50 | -0.15 | -0.40 |
| Low-growth | | | | | |
| *Annualized returns* | 3% | 1% | 2% | 1% | -2% |
| *Annualized volatility* | 10% | 10% | 2% | 9% | 31% |
| *Sharpe ratio* | 0.28 | 0.09 | 0.91 | 0.12 | -0.06 |
| High-growth | | | | | |
| *Annualized returns* | 0% | -2% | 2% | 1% | 19% |
| *Annualized volatility* | 11% | 12% | 2% | 12% | 22% |
| *Sharpe ratio* | 0.04 | -0.14 | 0.98 | 0.07 | 0.88 |

| Peru | FX Total | FX Spot | FX Carry | LDM | Equities |
|---|---|---|---|---|---|
| Recession | | | | | |
| *Annualized returns* | 2% | 2% | 1% | -14% | -13% |
| *Annualized volatility* | 4% | 2% | 2% | 6% | 32% |
| *Sharpe ratio* | 0.67 | 0.66 | 0.32 | -2.22 | -0.40 |
| Low-growth | | | | | |
| *Annualized returns* | 1% | -2% | 3% | 6% | 15% |
| *Annualized volatility* | 6% | 5% | 2% | 11% | 33% |
| *Sharpe ratio* | 0.10 | -0.46 | 1.27 | 0.51 | 0.46 |
| High-growth | | | | | |
| *Annualized returns* | 3% | 1% | 2% | -1% | 24% |
| *Annualized volatility* | 7% | 6% | 3% | 11% | 37% |
| *Sharpe ratio* | 0.39 | 0.09 | 0.75 | -0.05 | 0.65 |

| Colombia | FX Total | FX Spot | FX Carry | LDM | Equities |
|---|---|---|---|---|---|
| Recession | | | | | |
| *Annualized returns* | -2% | -4% | 2% | -5% | -28% |
| *Annualized volatility* | 10% | 10% | 1% | 12% | 18% |
| *Sharpe ratio* | -0.17 | -0.36 | 1.84 | -0.38 | -1.54 |
| Low-growth | | | | | |
| *Annualized returns* | -2% | -5% | 3% | -1% | 0% |
| *Annualized volatility* | 9% | 8% | 2% | 15% | 27% |
| *Sharpe ratio* | -0.18 | -0.57 | 1.72 | -0.05 | 0.01 |
| High-growth | | | | | |
| *Annualized returns* | 5% | 1% | 4% | 0% | 40% |
| *Annualized volatility* | 15% | 14% | 3% | 15% | 44% |
| *Sharpe ratio* | 0.32 | 0.06 | 1.41 | -0.01 | 0.91 |

**Source:** BofA Global Research, Haver

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# News and Views

## Brazil: Potential downward revision to inflation expectations ahead

| David Beker | Natacha Perez |
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According to the Brazilian Central Bank's (BCB) weekly survey (Focus), inflation expectations for 2023 went up slightly, now at 5.96% (from 5.93% last week), amid uncertainty regarding the new value of the ICMS state tax on fuels (which should be higher than the current value in most states). Meanwhile, expectations for 2024, 2025 and 2026 remained stable at 4.13%, 4.00% and 4.00%, respectively. Considering the 5-day rolling window median forecasts, 2024 inflation expectations went down to 4.05% (from 4.18%), signaling a potential retracement ahead. Median expectations for the selic rate between 2023 and 2025 remained the same as in last weeks, at 12.75%, 10.00% and 9.00%; while forecasts for 2026 went down to 8.75% (from 9.00%). GDP growth forecasts remained stable for 2023, at 0.90%, but increased a touch for 2024-2026, reaching 1.48% (from 1.40%), 1.80% (from 1.71%) and 1.80% (from 1.78%), respectively. Moreover, the exchange rate expectations were unchanged for the whole horizon, at R$5.25/US$1 in YE2023, R$5.30/US$1 in YE24 and YE25, and R$5.40/US$1 in YE26.

- **To follow:** This week, eyes remain on the fiscal rule, as further detailing of the government's proposal (and its bill) and news around the government's revenue package to support the fiscal framework are awaited. For now, consensus is close to our IPCA forecast of 6.00% for 2023-end, but remains above our expectation of 3.70% in 2024-end. Long term inflation expectations have converged to 4%, in line with our scenario of an increase in 2024 mid-target, to 4% (from 3%). Regarding interest rates, consensus remains more hawkish than us, with selic rate expectations above our forecasts of 11.00% for 2023-end and 9.50% in 2024-end. GDP consensus numbers are in line with our forecast of a 0.90% growth in 2023, but more pessimistic than our 2.40% growth expectation in 2024. The survey showed that market participants expect a more depreciated currency at YE2023, as we believe the FX will hit R$5.20/US$1. In 2024YE, the opposite occurs, as we forecast the exchange rate at R$5.40/US$.

## Brazil: 12-month accumulated trade balance increases to US$65.4bn in March

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The trade balance posted a US$11.0bn surplus in March (from a US$2.8bn surplus in February), above our and market expectations at US$10.0bn and US$9.5bn, respectively. Exports totaled US$33.1bn in March, up 12.4% yoy and a record high for the entire series, while imports totaled US22.1bn, up 1.4% yoy. The positive results can be partially explained by the record high exports of soybean and crude oil. Meanwhile, the weak import data reinforces the slowdown trend in domestic activity. The overall accumulated balance in 12 months continues with a strong surplus of US$65.4bn (from US$62.1bn in February), with exports totaling US$337.9bn and imports US$272.4bn.

Manufacturing industry was responsible for the largest part of the exports in the month, reaching US$15.4bn, followed by agriculture, which reached US$9.0bn, and extractive industry, totaling US$8.5bn. Soybean, oil and iron ore were Brazil's main exporting products. On the imports side, US$20.1bn corresponded to manufacturing industry products, U$1.4bn to extractive industry products and US$0.4bn to agricultural products. Oil and fertilizers were Brazil's main importing products. Exports to China, Hong Kong and Macau increased by 9.6% yoy, mainly due to soybean exports, reinforcing the positive effect of the reopening in these economies over the Brazilian trade balance.

- **To follow:** Our preliminary forecast for April is a US7.9bn surplus in Trade Balance, and for 2023-end, we still expect a US$40bn surplus. Despite the recent decline in grain prices, we still expect soybean exports to support positive numbers ahead, since April and May are the peak months of soybean harvesting.

### Mexico: Remittances above expectations at US$4.35bn in February

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Remittances in February above than expected at US$4.35bn (E. US$4.30bn, BofA US$4.46). On annual terms, remittances increased 11.2% yoy (23.4% last year), the number of remittances increased 10.9% yoy (vs 15.8% last year) while the average remittance increased 0.3% yoy (vs 6.6% last year) to US$375. On MXN, remittances contracted 0.6% yoy (vs 21.1% last year). Year to date, remittances totaled US$8.8bn (11.8% ytd). In the last 12 months, remittances accumulate to US$59.4bn.

- **To follow:** Remittances were strong in February, as the labor market in the US was still strong in February. We expect remittances to decelerate more when the US labor market does. The unemployment rate for Hispanic or Latino ethnicity is already increasing, and it was at 5.3% in February up from 3.9% in September (the trough).

### Mexico: Banxico survey consensus says more growth and less inflation for 2023

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Banxico's survey of analysts for March shows higher GDP growth expectations for 2023 at 1.4% (BofA 0.8%), from 1.2% before, but lower for 2024 at 1.8% (BofA 0.0%), from 1.9%. Headline inflation expectation for end-2023 is now at 5.2% (BofA 5.5%, with upside risks) from 5.3% before, while for end-2024 it remained unchanged at 4.1% (BofA 4.4%). Core inflation expectation for end-2023 was unchanged at 5.4% (BofA 5.2%) but increased for end-2024 to 4.1% (BofA 4.2%), from 4.0% before. The 12-month ahead inflation expectation remained unchanged at 4.8% (BofA 4.8%), as well as the long-term inflation expectation (5-8 years) at 3.6%. Exchange rate expectation for end-2023 fell to 19.4 (BofA 20.0), from 19.8 previously, and for end-2024 also fell at 20.3 (BofA 21.0) from 20.5 previously. Lastly, consensus continue to expect the overnight rate at 11.50% for end 2023 (BofA 11.50%) and at 8.50% for end-2024 (BofA 8.0%), from 8.63%.

- **To follow:** We remain more bearish in terms of growth than consensus as we expect the deceleration in the US to spread to Mexico. We also expect slightly more inflation than consensus as we expect prices to remain sticky due to a tight labor market, persistent increases in wages and unanchored inflation expectations.

### Mexico: The Ministry of Finance released the 2024 budget guidelines with good fiscal numbers

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The Ministry of Finance (MoF) released the draft of the 2024 budget guidelines (pre-criterios). The MoF now expects a primary deficit of 0.1% of GDP for 2023 (vs a deficit of 0.2% in the 2023 budget). However, the public sector balance is now expected to show a deficit of 3.7% of GDP (vs a deficit of 3.6% in the 2023 budget) while the broadest measure of the public sector balance, the PSBR, is now expected to show a deficit of 4.2% of GDP (vs a deficit of 4.1% in the 2023 budget). For 2024, the MoF expects a primary surplus of 0.7% of GDP (vs a surplus of 1.0% in the 2023 Budget) and the PSBR at a deficit of 3.2% of GDP (vs a deficit of 2.7% in the 2023 Budget). The broadest measure of public sector debt (HBPSBR) is expected at 49.9% in 2023 (vs 49.4% in the 2023 Budget) and at 49.9% in 2024 (vs 49.4% in the 2023 Budget).

- **To follow:** Mexico continues with relatively good fiscal numbers. But we see two important risks to the downside: (1) the MoF does not consider the possibility of a US recession that spreads to Mexico (it has 3% GDP growth in Mexico in 2023 and 2024, we have 0.8% and 0.0%) and (2) a weaker peso would quickly increase debt to GDP numbers (MoF has MXN ending 2023 at 19.1 and at 19.3 for end 2024, we have 20.0 and 21.0).

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