Risk Report

Year nº8 Vol nº78 Apr/2020

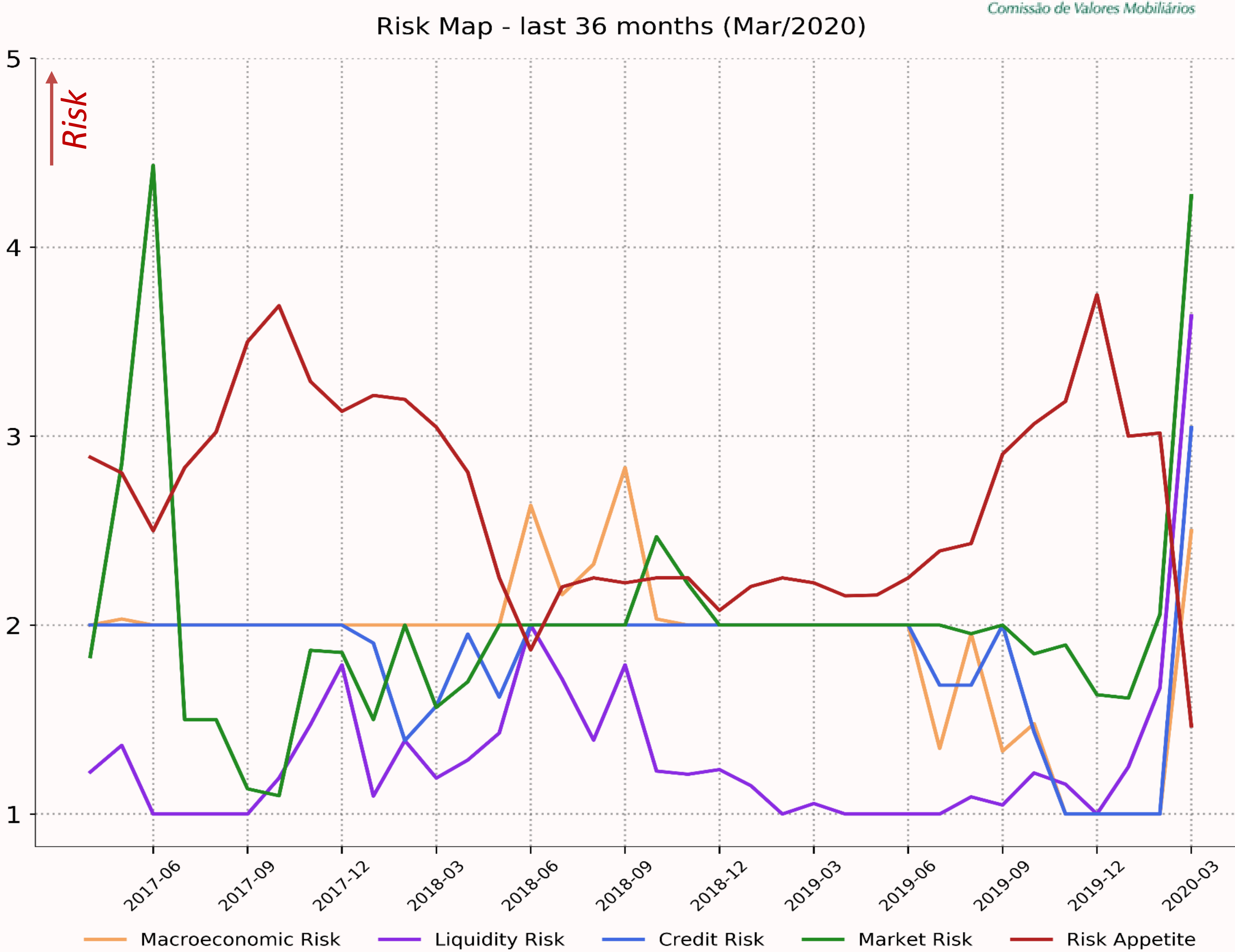
Scenario

Na comparação com a edição de março, nosso Mapa de Riscos verificou na edição de abril uma alta em todos os indicadores de risco, em linha com a queda do indicador de apetite pelo risco. O contexto no qual tais indicadores operaram no mês deve sobremaneira enfatizar o choque de oferta e incerteza causado pelo cenário econômico mundial, no qual o Brasil e diversas jurisdições tomaram medidas de isolamento social para o combate à pandemia de coronavirus.

O cenário econômico mostrou rápida deterioração nos indicadores de risco soberano ao redor do mundo (gráficos 1.3 e 1.4), uma vez que as principais economias mundiais lançaram pacotes de auxílio emergencial que tendem a pressionar para cima sua dívida pública. Especialmente nos países emergentes, adiciona-se a isso o efeito de queda de arrecadação gerado pelo choque de oferta e o de fuga de capitais em direção a ativos considerados menos especulativos (como os treasuries americanos), tendendo acerretar desvalorização cambial e alta de juros soberanos nominais (gráficos 1.1 e 1.2).

Os choques de volatilidade enfrentados, bem como a queda abrupta dos principais índices acionários (gráficos 2.1 e 2.2) foram constatadas como mais severas e rápidas do que aquelas observadas na crise de 2008. Alguns dos principais índices associados ao mercado de capitais brasileiro denotaram desvalorização rápida e alta volatilidade (gráficos 2.5 e 2.6). O cálculo de um indicador de correlação cruzada para uma cesta de índices financeiros relevantes (incluso os mencionados) mostrou elevação recorde, também acima da crise de 2008, em linha com a expressiva alta no indicador de risco de mercado.

Por fim, destaca-se a elevação no indicador do risco de crédito corporativo nacional (gráfico 5.1), em linha com a abrupta queda de valor dos títulos corporativos tanto para as economias emergentes quanto a nível global (gráficos 2.3 e 2.4).



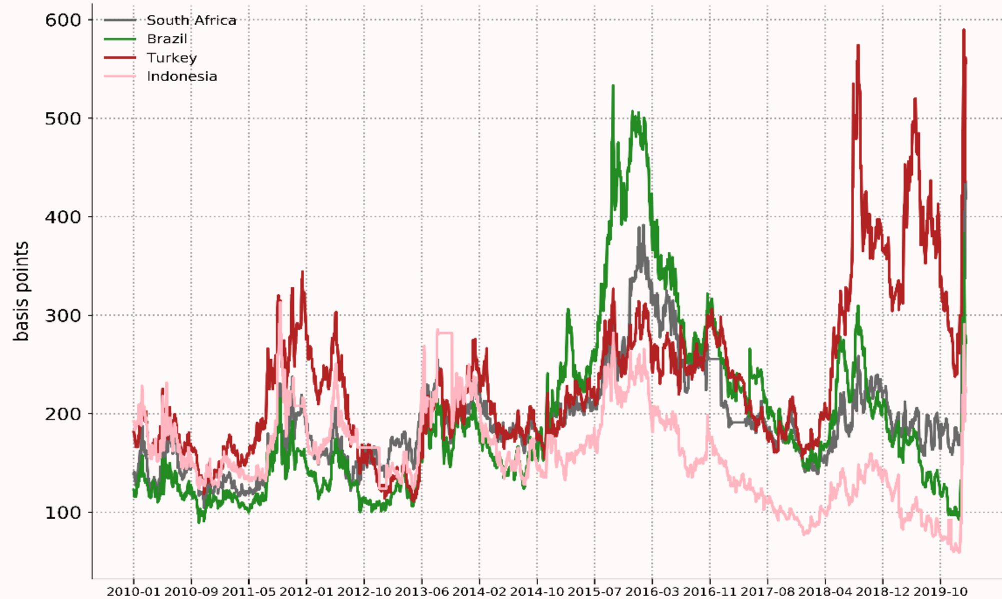
Note: Data as of 2020-03-31 and does not reflect any future changes that may have occurred after.

1. Macroeconomic Risk

1.1. USD FX Rates - Emerging Markets (Mar/2020)

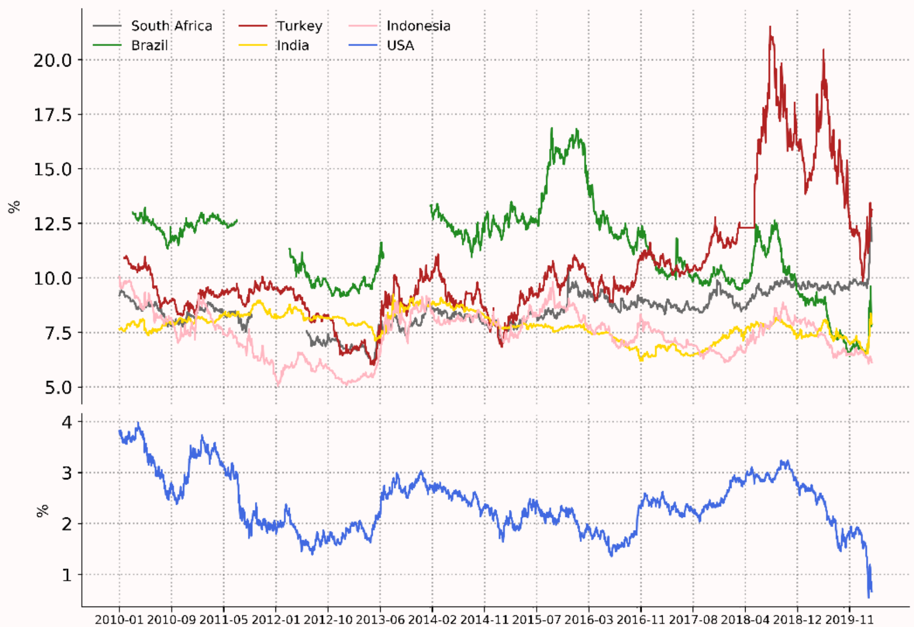
Fonte/Source: Bloomberg

1.3. Sovereign CDS - Emerging Markets (Mar/2020)



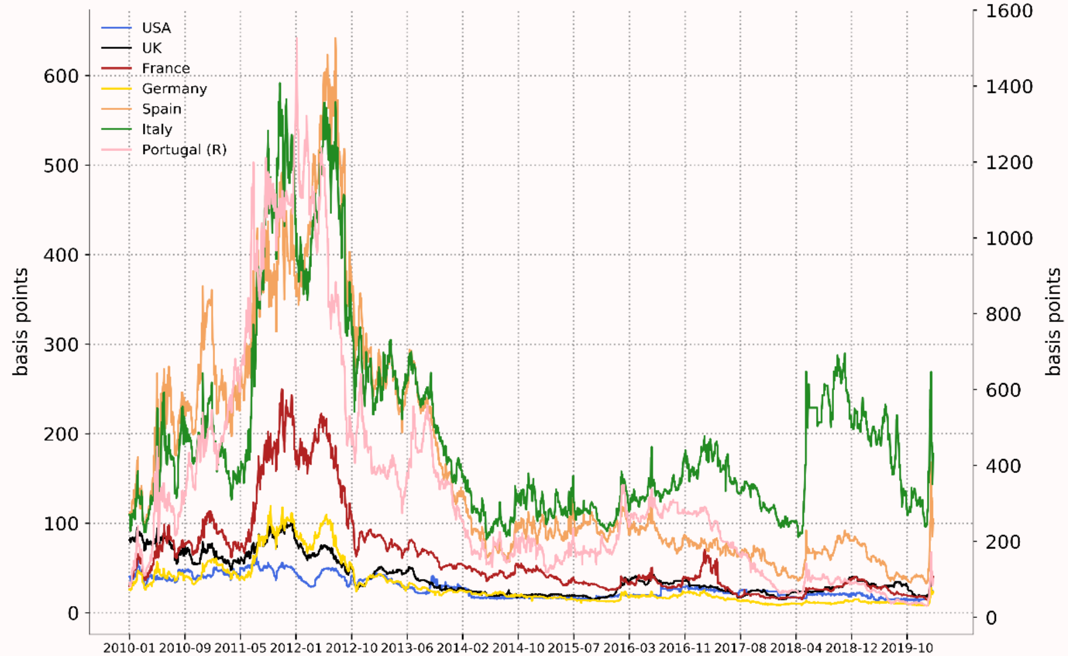
Fonte/Source: Bloomberg

1.2. 10-Year Sovereign Interest Rates - EM vs USA (Mar/2020)



Fonte/Source: Bloomberg

1.4. Sovereign CDS - Developed Markets (Mar/2020)



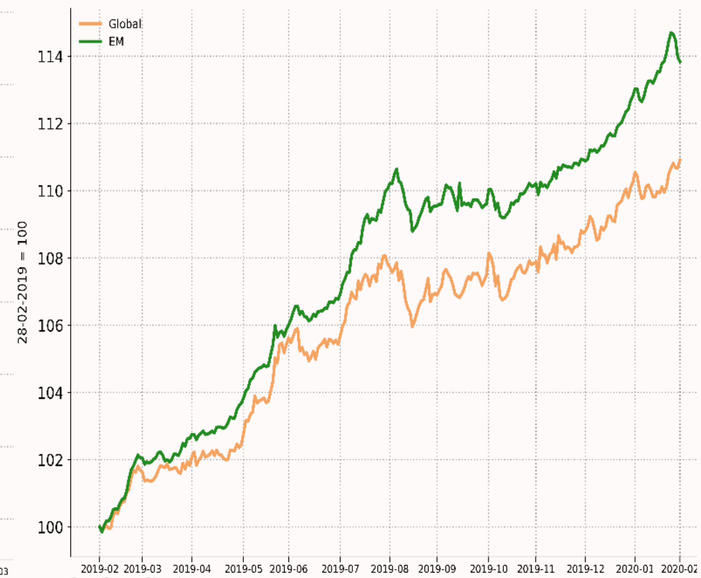
Fonte/Source: Bloomberg

2. Market Risk

2.1. USD MSCI Equity Indexes - trailing 12 months (Mar/2020)

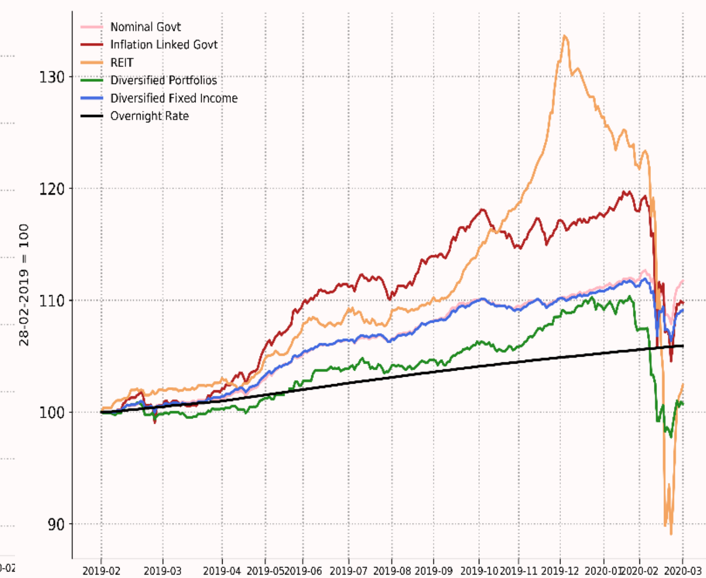
Fonte/Source: Bloomberg

2.3. Corporate Bond Indexes - trailing 12 months (Feb/2020)



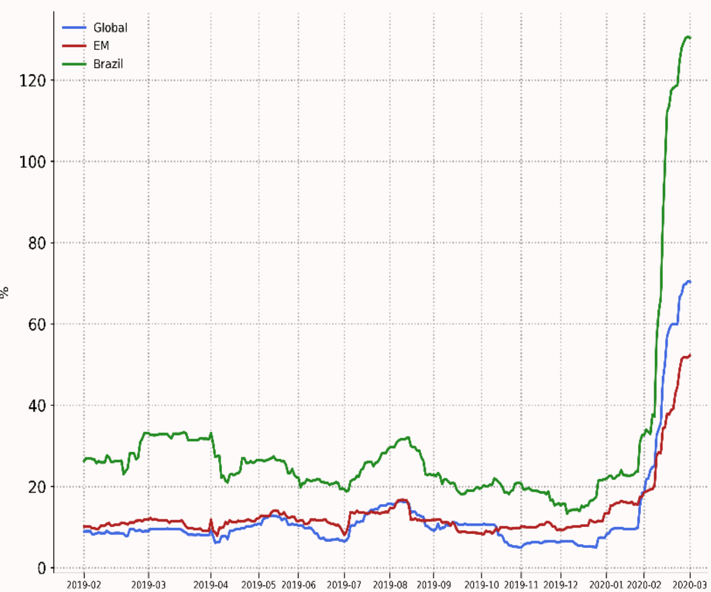
Fonte/Source: Bloomberg

2.5. Brazilian Capital Markets Indexes - trailing 12 months (Mar/2020)



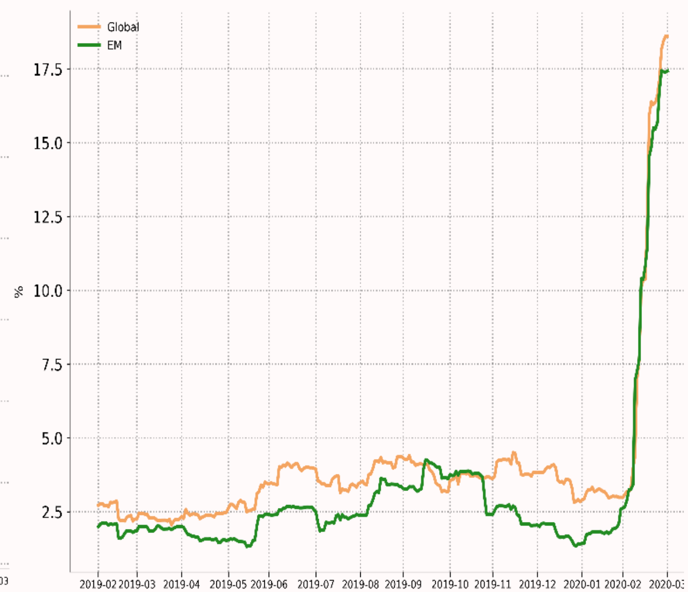
Fonte/Source: Bloomberg

2.2. USD MSCI Equity Indexes - 30-day historic annualized vol (Mar/2020)



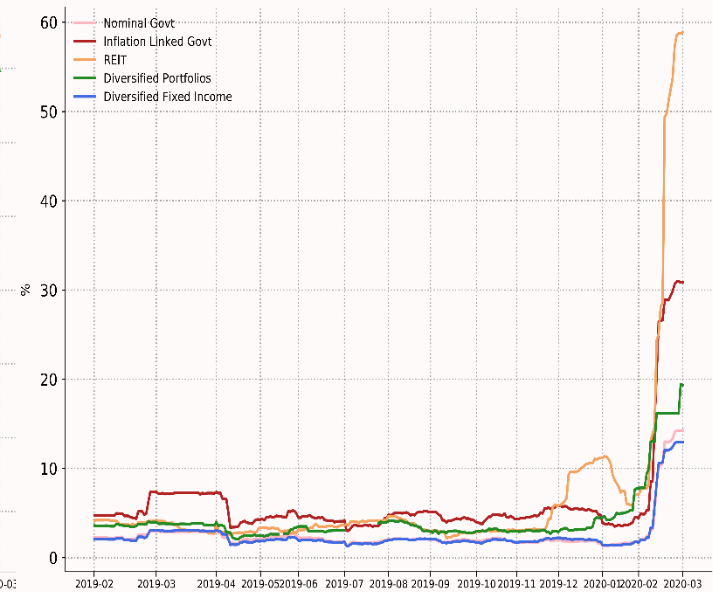
Fonte/Source: Bloomberg

2.4. Corporate Bond Indexes - 30-day historic annualized vol (Mar/2020)



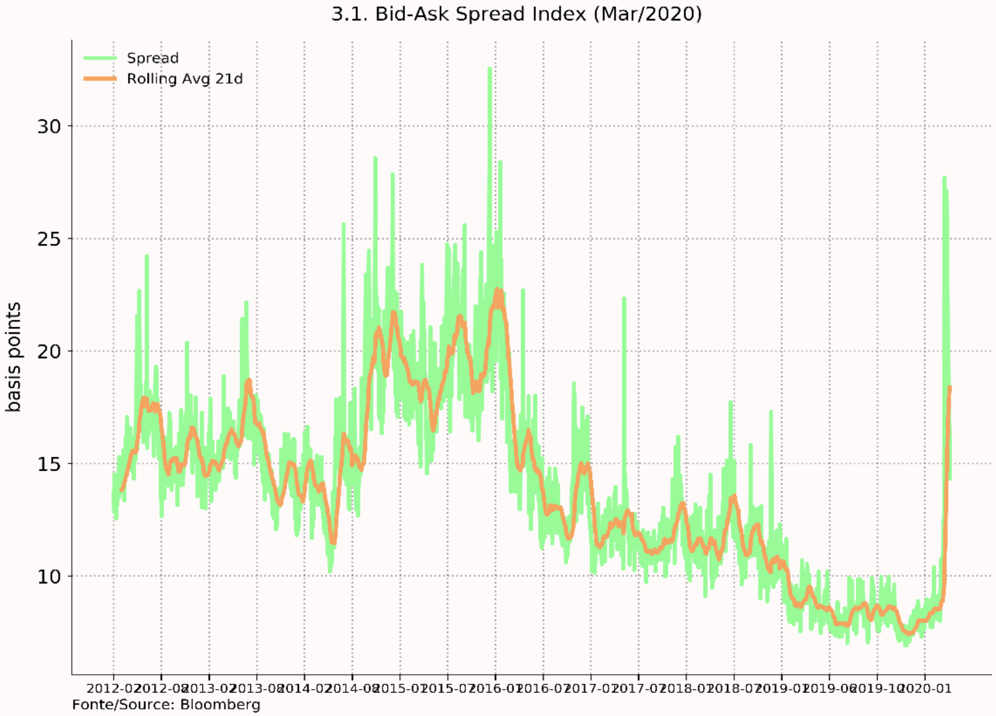
Fonte/Source: Bloomberg

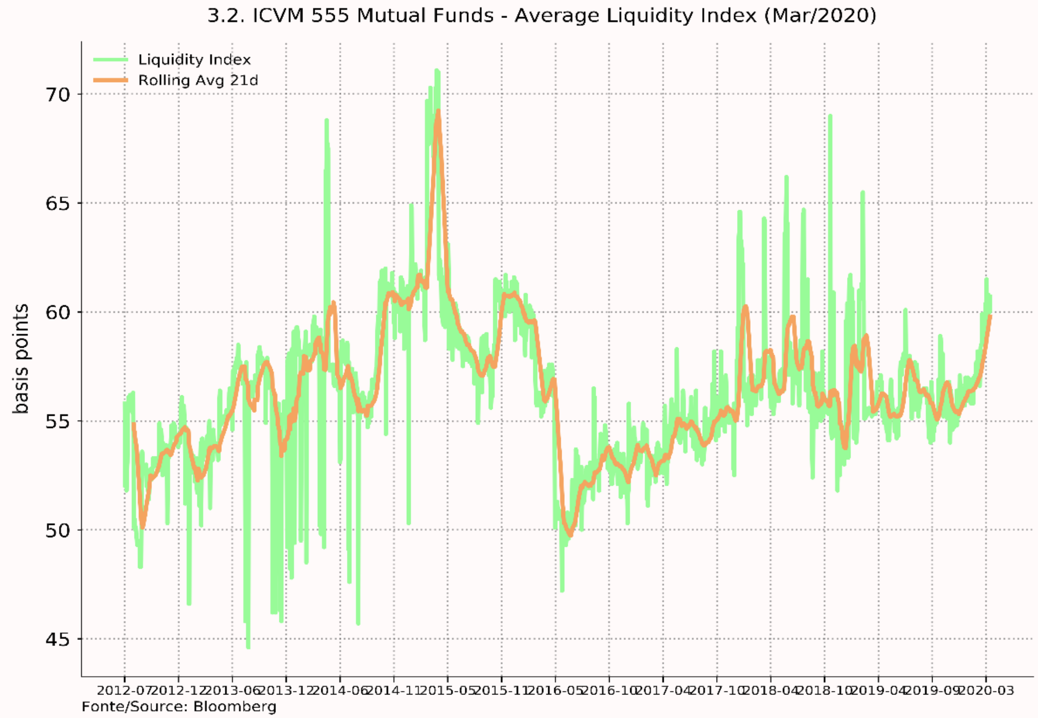
2.6. Brazilian Capital Markets Indexes - 30-day historic annualized vol (Mar/2020)

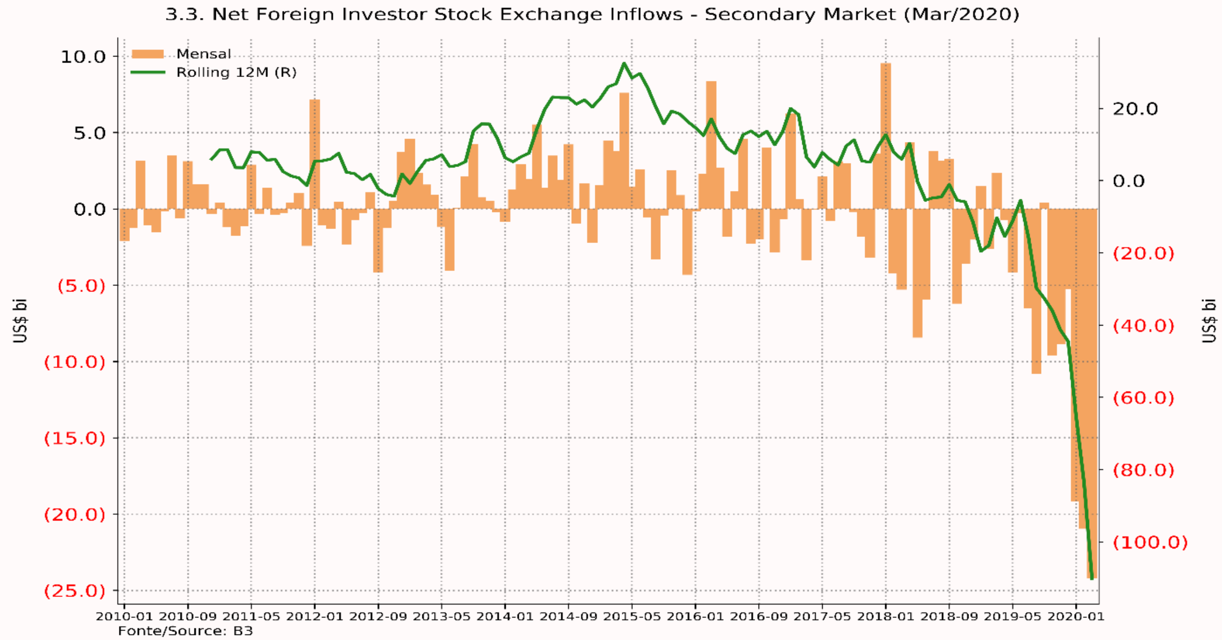


Fonte/Source: Bloomberg

3. Liquidity Risk







4. Appetite for Risk

4.1. Adjusted Estimated PE Ratio - MSCI Indexes (Mar/2020)

Fonte/Source: Bloomberg

4.2. Spreads vs US Treasuries (Mar/2020)

Fonte/Source: Bloomberg

5. Credit Risk

5.1. Weighted Average Default Probability Index (Mar/2020)

Fonte/Source: Bloomberg

Methodology
Graphs and analysis contained in this report are partially or fully based on non—proprietary data, including commercial providers and other public authorities. CVM does utilize this data in good faith and does not hold itself responsible for its accuracy and completeness. The content of this report is merely analytic and neither does constitute investment recommendations nor policy guidance.

Risk Map

Macroeconomic Risk: simple monthly average of the daily Z-score (2500 day rolling window) of the 5YR Brazilian sovereign CDS (graph 1.3). Z-score Intervals and corresponding Risk Scale: above 2sd => 5; between 1,5 e 2sd => 4; between 0,5 e 1,5sd => 3; between-1 e 0,5sd=> 2; below -1sd => 1.
Market Risk: arithmetic average of two composites, respectively the arithmetic monthly average of the daily Z-score (1250 day rolling window) of the 30 day realized annualized volatility of the MSCI Brasil Index (equities, see below) and the Anbima IMA-G Index (fixed income, see below). Z-score Intervals and corresponding Risk Scale: above 2sd => 5; between 1,5 e 2sd => 4; between 0,5 e 1,5sd => 3; between-1 e 0,5sd=> 2; below -1sd => 1.
Liquidity Risk: simple monthly average of the daily Z-score (1250 day rolling window) of the Bid-Ask Spread Index (see below) . Z-score Intervals and corresponding Risk Scale: above 2sd => 5; between 1,5 e 2sd => 4; between 0,5 e 1,5sd => 3; between -1 e 0,5sd=> 2; below -1sd => 1.
Risk Appetite: weighted average of three composites: first, the arithmetic average of the Adjusted Estimated PE Ratio, with a 0.5 weight; second, the arithmetic monthly average of the daily Z-score (1250 day rolling window) of the other two series that compose the Risk Appetite section (see below), each series with a weight equal to 0.25. Z-score Intervals and corresponding Risk Scale for the Adjusted Estimated PE Ratio: above 2sd => 5 between 1,5 e 2sd => 4; Entre 0,5 e 1,5sd => 3; Between -1 e 0,5sd => 2; Below -1sd => 1. Z-score Intervals and corresponding Risk Scale for remaining series: below -2sd => 5; between -1,5 e -0,5sd => 4; between -0,5 e 1sd => 3; between 1 e 2sd => 2; above 2sd => 1.
Credit Risk: simple monthly average of the daily Z-score (1250 day rolling window) of the Weighted Average Default Probability Index (see below). Z-score Intervals and corresponding Risk Scale: above 2sd => 5; between 1,5 e 2sd => 4; between 0,5 e 1,5sd => 3; between-1 e 0,5sd=> 2; below -1sd => 1.

Macroeconomic Risk

Selected FX return (USD pairs): aaily trend of the local currencies of some emerging markets usually considered peers to Brazil against the USD.
Interest Rates. aaily trend of yearly interest rates for local currency sovereign bonds, calculated based on Bloomberg bond indexes for the US and for some emerging markets usually considered peers to Brazil.
CDS (Credit Default Swap): derivative in which the long transfers a series of payments (known as “spread” or “premium”) for the short in exchange for protection against a credit event impacting the reference entity. The graphs depict the daily trend of the closing price (in b.p.) of the 5YR sovereign CDS spreads of some emerging markets usually considered peers to Brazil, and of some European countries.

Market Risk

Equity Indexes: the MSCI World Index (denominated in this report as “Global”) reflects the performance of the equity markets of several global markets. The MSCI Emerging Markets Index (denominated in this report as “Emerging”) reflects the performance of the equity markets of several emerging markets. The MSCI Indexes also reflect single markets, such as the case of the MSCI Brazil Index.
Corporate Bond Indexes: indexes developed by Barclays/Bloomberg to measure the performance of investment grade bonds, converted to USD when appropriate. The BEHGTRUU Index (denominated in this report as “Emerging”) refers to bonds in emerging markets, while the LGCPTRUU Index (denominated in this report as “Global”) does the same for the global markets. In Bloomberg methodology, the bonds are weighted by market value, unhedged.
Reference indexes: IRF-M = index composed by a basket of sovereign fixed-rate bonds (LTN and NTN-F). IMA-B = fixed income index that depicts the trend, at market prices, of a basket of retail price inflation-linked sovereign bonds (called NTN-B). IHFA = index for the mutual fund industry in Brazil, whose value reflects, in local currency, the performance of a hypothetical portfolio of mutual funds selected according to a methodology developed by ANBIMA. IFIX = main index for the Brazilian REIT industry. IMA-G = weighted average of the daily returns of IMA-B, IMA-C (wholesale price inflation linked sovereign bond index), IMA-S (floating rate sovereign bonds index) e IRF-M indexes. CDI = index for the main bank overnight rate in Brazil, widely used as benchmark.
Volatility. Dispersion measure for the realized returns of an index or of a security. The 30 day realized volatility refers to the annualized standard deviation of the closing price returns in the last 30 trading days, expressed in percentage terms.

Liquidity Risk

Bid/Ask Spread Index: difference of bid and ask prices of a security divided by its midprice, frequently used as a gauge for market liquidity. The lower this ratio, the more liquid the security tends to be. The graph refers to the daily trend of the median spread calculated based on a sample comprised by half of the Ibovespa Index members with the lowest turnover volume for a given month.
Liquidity Index –ICVM 555 Funds: estimated daily trend of the ratio between the total reported Liquid Assets less Estimated Cash Outflows (according to ICVM 512) and the total reported NAV. Excludes FoFs, funds with a single shareholder and funds with NAV below BRL5MM. Data is being continuously cleansed of outliers and reporting errors.
Foreign Investment in Stocks: Monthly foreign investor net inflows in the B3 secondary market for equities and equities derivatives.

Risk Appetite

Adjusted Estimated PE Ratio: ratio between the current price of an index or security and its estimated positive earnings for the following accumulated 12 months, according to the consensus of market analysts, excluding companies with negative EPS projections. The PE ratio can be understood as the payback time estimated to recover through its profits the capital investment in a given company. A high PE ratio indicates that the security might be overvalued relative to its recent profit potential. Inversely, a low PE ratio points that the security might be undervalued relative to its profit potential. In this report, the country/region analysis is done using the daily ratio for the corresponding MSCI Indexes as a reference. The calculated indicators refer to the Z-score (1250 trading day rolling window) of such ratios.
Emerging IG vs Treasuries Spread: spread between a USD investment grade mixed corporate/sovereign bond index for emerging markets and the a US treasuries index, expressed as an annual percentage yield. Calculations use the BEHGTRUU Index and the BUSY Index, both available through Bloomberg.
10YR USD Sovereign Bond Spread – Brazil x US Treasuries: difference between the yields of a generic 10YR USD-denominated sovereign Brazilian bond and an analogous *treasury*, both calculated by Bloomberg.

Credit Risk

Weighted Average Default Probability Index: grasps the average default probability of non-holding non-financial corporates traded in the B3 exchange. Its calculation proceeds as follows: for each trading day and for the whole available sample of eligible companies in that day, the weighted average (by market cap) of the 1YR default probabilities is calculated (“BB_1YR_DEFAULT_PROB”), as made available by Bloomberg.