New deaths are falling as vaccination progresses, but uncertainties regarding the Delta variant remain.

**New deaths/million**
(7-day rolling average)

**Share of population with at least one dose**
(% of population and total doses administered, in millions)

- Chile
- Canada
- United Kingdom
- Israel
- European Union
- United States
- Brazil
- Turkey
- Japan
- Colombia
- India
- Russia
- Rest of the World

**World Total: 4.8 billion doses**

Note: Data on the share of population with at least one dose is not available for China. Therefore, "rest of the world" does not include China.

Vaccination in the UK has reduced the number of deaths. In the U.S. hospitalization has increased more in low-vaccination states.

**Cases vs. deaths over days 1-50 of UK’s second and third Covid waves**

**Second wave**

<table>
<thead>
<tr>
<th>Days</th>
<th>Cases per 100k population</th>
<th>Deaths per 10k population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.3</td>
<td>1.5</td>
</tr>
<tr>
<td>5</td>
<td>4.5</td>
<td>1.8</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>6.2</td>
<td>4.2</td>
</tr>
<tr>
<td>20</td>
<td>8.7</td>
<td>5.9</td>
</tr>
<tr>
<td>25</td>
<td>9.4</td>
<td>8.1</td>
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<tr>
<td>30</td>
<td>19.1</td>
<td>10.2</td>
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<tr>
<td>35</td>
<td>21.4</td>
<td>14.6</td>
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<tr>
<td>40</td>
<td>24.4</td>
<td>20.8</td>
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<tr>
<td>45</td>
<td>29.1</td>
<td>28.4</td>
</tr>
<tr>
<td>50</td>
<td>33</td>
<td>25.9</td>
</tr>
</tbody>
</table>

**Third wave**

<table>
<thead>
<tr>
<th>Days</th>
<th>Cases per 100k population</th>
<th>Deaths per 10k population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
<td>5</td>
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<td>10</td>
<td>3.8</td>
<td>0.9</td>
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<tr>
<td>15</td>
<td>4.4</td>
<td>1.1</td>
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<td>20</td>
<td>5.4</td>
<td>1.1</td>
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<td>25</td>
<td>6.6</td>
<td>1.1</td>
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<td>30</td>
<td>10.2</td>
<td>1.2</td>
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<td>40</td>
<td>15.4</td>
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<td>45</td>
<td>22.2</td>
<td>2.2</td>
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<tr>
<td>50</td>
<td>33.6</td>
<td>2.1</td>
</tr>
</tbody>
</table>

**Hospitalizations in U.S.**

(per 100k population)

- States with high vaccination are those with 60% of their population with at least one dose administered when the Delta variant became prevalent.

Sources: Newstatesman, HHS and TD Securities.
Brazilian vaccination campaign is advancing.

**Brazil: daily doses**
Estimated offer x registered (thousands/day)

Availability of doses based on a schedule published by the Ministry of Health on August 11th, with adjustments that reflect news published by the press. Scenario considers AstraZeneca-Oxford, Coronavac, Pfizer-BioNTech and Janssen vaccines. Dose delivery schedule subject to changes.

**Brazil: vaccination by age group**

Global economic recovery continues to be directly linked to the evolution of the pandemic and the pace of vaccination.

### GDP*
(Average 2019 = 100)

- **Média 2019 = 100**
- **China**
- **Asia ex Japan and China**
- **USA**
- **Japan**
- **Euro area**
- **UK**

*Series with dotted lines in Q2 2021 are Bloomberg forecasts. Series at constant prices, seasonally adjusted. The series 'Asia ex Japan and China' was calculated as a weighted average of Singapore, South Korea, Hong Kong, India, Indonesia, Philippines, Malaysia, Thailand, Taiwan and Turkey. The series of Singapore, India, Indonesia and Hong Kong are not seasonally adjusted.*

### Demand-Side Growth and Contributions

- **Government (-1.5% ; -0.3%)**
- **Net Exports (-0.4pp)**
- **Change Inventories (-1.1pp)**
- **Fixed Investment (3%; 0.6pp)**
- **Household Consumption (11.8%; 7.8pp)**
- **GDP (6.5%)**

### Euro area GDP
(Q4 2019 = 100)

- **Euro area=2.0**
- **Germany=1.5**
- **France=0.9**
- **Spain=2.8**

Values in ( ) represent Q2 21 numbers.

Sources: Bloomberg, BEA, National Bureau of Statistics, Refinitiv.
**GLOBAL ECONOMY**

**EMEs: Economic activity**

Sources: Bloomberg, IBGE and Focus Report.

---

**Economic Activity Index**

![Economic Activity Index graph](image)

- **Retail sales** (Jan/2020=100)
- **GDP forecasts** (%)

**Sources:** Bloomberg, IBGE and Focus Report.
GLOBAL ECONOMY  Fiscal policy

Fiscal response

Gross Debt – emerging markets
(% of GDP)

Historical pattern of general government debt
(1935-2020, % of GDP)

Sources: [1] IMF WEO Apr/21. For Brazil, the source is BCB. Brazil’s 2021 figure refers to June . [2] IMF Historical Public Debt Database.
Financial conditions more stimulative in the U.S. and decrease in long-term yields recently.

**GS Financial Conditions Index**

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan 2020 = 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-23</td>
<td>98</td>
</tr>
<tr>
<td>Feb-23</td>
<td>100</td>
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<tr>
<td>Mar-23</td>
<td>102</td>
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<tr>
<td>Apr-23</td>
<td>104</td>
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<tr>
<td>May-23</td>
<td>102</td>
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<tr>
<td>Jun-23</td>
<td>100</td>
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<tr>
<td>Jul-23</td>
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<tr>
<td>Aug-23</td>
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<td>Sep-23</td>
<td>94</td>
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<td>Oct-23</td>
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<td>Nov-23</td>
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<td>Dec-23</td>
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<td>86</td>
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<tr>
<td>Feb-24</td>
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<tr>
<td>Mar-24</td>
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<tr>
<td>Apr-24</td>
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<tr>
<td>May-24</td>
<td>78</td>
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<td>Jul-24</td>
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<td>Aug-24</td>
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<td>Sep-24</td>
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<td>Nov-24</td>
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<td>Dec-24</td>
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<td>Jan-25</td>
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<tr>
<td>Feb-25</td>
<td>60</td>
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<td>Mar-25</td>
<td>58</td>
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<tr>
<td>Apr-25</td>
<td>56</td>
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<td>May-25</td>
<td>54</td>
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<tr>
<td>Jun-25</td>
<td>52</td>
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<tr>
<td>Jul-25</td>
<td>50</td>
</tr>
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</table>

**Change in 10-year yield* (YTD b.p.)**

<table>
<thead>
<tr>
<th>Month</th>
<th>USA</th>
<th>UK</th>
<th>Euro Area</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-25</td>
<td>-5</td>
<td>-5</td>
<td>-5</td>
<td>-5</td>
</tr>
<tr>
<td>Feb-25</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Mar-25</td>
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<td>Apr-25</td>
<td>15</td>
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<td>May-25</td>
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<td>Jun-25</td>
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<td>25</td>
</tr>
<tr>
<td>Jul-25</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

*Accumulated change since January 1st, 2021.

Source: Bloomberg.
GLOBAL ECONOMY

**Inflation**

AEs: Inflation

---

### Consumer Price Index (CPI) % YoY

- Data range: Oct-05 to Oct-23
- Countries: USA, Japan, UK, Euro Area, Australia

### Industrial Producer Price Index (PPI) % YoY

- Data range: Jul-15 to Jul-25
- Countries: China, South Korea, USA, Germany, Japan

---

**Implicit inflation (5-years break-even)**

- Countries: UK, US, Australia, Germany, Japan

---

Source: Bloomberg.
Analysts are as optimistic as they have been in 20 years. Stock indexes rising.

**Sell side positive ratings***

**Stock indexes**

*Note: The index is the % of all sell side ratings that were OWs or Buys among all ratings, using the top 1000 U.S. stocks by market cap.

Sources: Morgan Stanley, Bloomberg.
GLOBAL ECONOMY

Housing prices

Sources: FT, Bloomberg.

House prices - countries

U.S. Housing Components

U.S. Rent Price Expectation 1 Year Ahead

Number of countries recording house prices increasing
Number of countries recording house prices decreasing
Proportion of countries recording an increase in house prices (% right)

CPI Owner’s Equivalent Rent
CPI Primary Rents
Case-Shiller Index (advanced 14 months, right axis)

Sources: FT, Bloomberg.

Indicators suggest some bottlenecks in the global economy.

### Global PMI - Delivery Times
(Smaller numbers represent longer time)

#### International Freight Costs
- Global Container Index
- Baltic Exchange Dry Global Index
- Harpex Global Charter Rate Index

#### Semiconductors Index
(Dec 1993 = 100)

Sources: Bloomberg, CEIC, Destatis, BLS.
The transition for a greener economy is fueling a huge demand for key raw materials.

* Demand from other sectors was assessed using historical consumption, relevant activity drivers and the derived material intensity. STEPS = Stated Policies Scenario, an indication of where the energy system is heading based on a sector-by-sector analysis of today’s policies and policy announcements; SDS = Sustainable Development Scenario, indicating what would be required in a trajectory consistent with meeting the Paris Agreement goals.

Mineral demand for clean energy technologies is increasing. The climate-change fight is adding to the global inflation.

Modern cars are relying more on electronics that include semiconductors.

All automotive electronics (% of total car cost):
- 2000: 18%
- 2010: 27%
- 2020: 40%
- 2030: 45%

Minerals used in selected transports (kg/vehicle):
- Copper: 50
- Nickel: 100
- Cobalt: 150
- Lithium: 200

Sources: CPM Group, International Energy Agency (IEA), Bloomberg.
Several EMEs facing inflation pressures are raising interest rates. Most EMEs remain with inflation expectations anchored.
EMEs with weaker fundamentals suffered the worst of the market sell-off, and made the higher increases in policy rates.
Strong recovery of GDP and jobs in 2021

**GDP**
(2019=100)

2021 +5.28%
2020 -4.1%

**GDP Forecast for 2021**
(Median of market expectations – Focus)

**High frequency indicators**

**Economic Activity**

- **Electricity demand**
  - mm7d; % change compared to reference period\(^1\)/

- **Mobility indicator**
  - mm7d; % change compared to reference period\(^2\)/

- **Debit card sales**
  - mm7d; Nominal values (BRL millions)

\(^1\) Reference period: 5/Jan/2020 to 22/Feb/2020

\(^2\) Reference periods:
  - Waze: 11-15/Feb/2020
  - Google Mobility: 3/Jan/2020 to 6/Feb/2020

Sources: ONS, seasonally adjusted by BCB; Waze and Google Mobility; Câmara Interbancária de Pagamentos (CIP)
DOMESTIC ECONOMY

Confidence indicators

Source: FGV. Seasonally adjusted data.

Business confidence X consumer confidence

By income range (in BRL thousand)

Average 2018-2019 = 100

> R$ 9.6 thousand

R$ 4.8 to 9.6 thousand

R$ 2.1 to 4.8 thousand

< R$ 2.1 thousand

Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18 Jan-19 Jan-20 Jan-21

Jan-13 Mar-14 May-15 Jul-16 Sept-17 Nov-18 Jan-20 Mar-21
### DOMESTIC ECONOMY

#### Inflation

**Consumer inflation**

**Sources:** IBGE, BCB.

<table>
<thead>
<tr>
<th>Month</th>
<th>IPCA</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov-13</td>
<td>11</td>
<td>-6</td>
</tr>
<tr>
<td>Oct-14</td>
<td>8.25</td>
<td>-2</td>
</tr>
<tr>
<td>Sept-15</td>
<td>5.5</td>
<td>2</td>
</tr>
<tr>
<td>Aug-16</td>
<td>2.75</td>
<td>6</td>
</tr>
<tr>
<td>Jul-17</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Jun-18</td>
<td>14</td>
<td>14</td>
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<tr>
<td>May-19</td>
<td>18</td>
<td>18</td>
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<tr>
<td>Apr-20</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Mar-21</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

**IPCA and target - (% YoY)**

- IPCA: Input prices deflator for gross domestic product (GDP)
- Average of core inflation measures: A measure of core inflation that excludes volatile items.
- Target: Inflation target set by the Central Bank.

**Inflation segments (% YoY)**

- Administered prices
- Services
- Industrials goods
- Food at home

Sources: IBGE, BCB.
Inflation

The date of the projections (in September, December, March and June) corresponds to the cutoff date of the Central Bank of Brazil Inflation Report.

Sources: IBGE, BCB.
DOMESTIC ECONOMY

Inflation expectations for CPI

Source: BCB

Market expectations – Focus (% p.y.)

Source: BCB
In its 240th meeting, the Copom unanimously decided to increase the Selic rate by 1.00 p.p. to 5.25% p.a.

The Committee judges that this decision reflects its baseline scenario for prospective inflation, a higher-than-unusual variance in the balance of risks, and is consistent with the convergence of inflation to its target over the relevant horizon for monetary policy, which includes 2022 and, to a lesser extent, 2023.

The adjustment also reflects the Committee's perception that the recent deterioration of inertial components of inflation, in a moment of reopening of the service sector, could result in an additional deterioration of inflation expectations. The Committee understands that, at this moment, the strategy of a quicker monetary adjustment is the most appropriate to guarantee the anchoring of inflation expectations.

At this moment, the Copom's baseline scenario and balance of risk indicate as appropriate a tightening cycle of the policy rate to a level above the neutral.

For the next meeting, the Committee foresees another adjustment of the same magnitude. The Copom emphasizes that its future policy steps could be adjusted to ensure the achievement of the inflation target and will depend on the evolution of economic activity, on the balance of risks, and on inflation expectations and projections for the relevant horizon for monetary policy.
Accumulated flows into the stock market

*Data until June 30th 2021.

IPO/Follow on – Foreign investor’s participation (%)

*Data until June 30th 2021.
Credit continues to increase. Interest rates are close to historically low levels.

Outstanding credit (YoY %)

<table>
<thead>
<tr>
<th>Size</th>
<th>Change (%) in 2020 (Dec/20 vs. Dec/19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>14.6%</td>
</tr>
<tr>
<td>Medium</td>
<td>29.6%</td>
</tr>
<tr>
<td>Small</td>
<td>37.7%</td>
</tr>
<tr>
<td>Micro</td>
<td>51.5%</td>
</tr>
</tbody>
</table>

Interest rates (% per year)

Interest rates for different sectors including households, corporate, and total.

Share in the total credit (by size of firms)

- **Mar-11:** 7.9% Micro, 11.0% Small, 22.7% Medium, 61% Total
- **Jun-21:** 11.0% Micro, 6.9% Small, 24.3% Medium, 57% Total

Source: BCB
DOMESTIC ECONOMY

Corporate credit

Credit Market

Accumulated Primary Emissions
(BRL Billions)

Emissions Jan-Jul:
2018: 92.75 bi
2019: 113.62 bi
2020: 55.27 bi
2021: 120.58 bi

Source: B3
Financial flows

Percentual change in financial inflows (quarterly average current year x quarterly average previous year)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Micro and small</th>
<th>2020</th>
<th>2021</th>
<th>Medium</th>
<th>2020</th>
<th>2021</th>
<th>Corporate</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Adm and NGOs</td>
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<td></td>
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<td>Mar</td>
<td>Jun</td>
<td>Sep</td>
<td>Dec</td>
<td>Mar</td>
<td>Jun</td>
<td>Sep</td>
<td>Dec</td>
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<td></td>
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</tr>
<tr>
<td>Agriculture</td>
<td>22%</td>
<td>28%</td>
<td>40%</td>
<td>38%</td>
<td>56%</td>
<td>36%</td>
<td>36%</td>
<td>87%</td>
<td>18%</td>
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<tr>
<td>Food</td>
<td>22%</td>
<td>14%</td>
<td>27%</td>
<td>31%</td>
<td>36%</td>
<td>31%</td>
<td>38%</td>
<td>66%</td>
<td>8%</td>
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<tr>
<td>Automotive</td>
<td>11%</td>
<td>7%</td>
<td>23%</td>
<td>37%</td>
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<td>64%</td>
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<tr>
<td>Beverage and Tobacco</td>
<td>28%</td>
<td>13%</td>
<td>34%</td>
<td>45%</td>
<td>51%</td>
<td>43%</td>
<td>55%</td>
<td>86%</td>
<td>5%</td>
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<tr>
<td>Const, wood and furniture.</td>
<td>17%</td>
<td>3%</td>
<td>24%</td>
<td>35%</td>
<td>40%</td>
<td>39%</td>
<td>46%</td>
<td>70%</td>
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<tr>
<td>Animal husbandry</td>
<td>27%</td>
<td>24%</td>
<td>46%</td>
<td>50%</td>
<td>51%</td>
<td>35%</td>
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<tr>
<td>Electronics</td>
<td>16%</td>
<td>1%</td>
<td>26%</td>
<td>33%</td>
<td>38%</td>
<td>38%</td>
<td>30%</td>
<td>58%</td>
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<tr>
<td>Energy</td>
<td>2%</td>
<td>-10%</td>
<td>-11%</td>
<td>17%</td>
<td>47%</td>
<td>31%</td>
<td>56%</td>
<td>81%</td>
<td>23%</td>
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<tr>
<td>Mach. &amp; equipment</td>
<td>12%</td>
<td>4%</td>
<td>10%</td>
<td>26%</td>
<td>41%</td>
<td>37%</td>
<td>58%</td>
<td>61%</td>
<td>11%</td>
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<td>Health, sanitation &amp; educ.</td>
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<td>Others</td>
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1 Change between Jul/21 and Jul/20
2 Change between Jul/21 and Jul/19

Source: BCB

Quantity of Firms

with financial transactions in the National Financial System (SFN)

<table>
<thead>
<tr>
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<th>Micro and small (millions)</th>
<th>Medium (thousands)</th>
<th>Corporate (thousands)</th>
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<tr>
<td>Apr/19</td>
<td>3.4</td>
<td>124.9</td>
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<td>Apr/21</td>
<td>4.7</td>
<td>123.1</td>
<td>9.1</td>
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</table>

29
#Inclusion

#Competitiveness

#Transparency

#Education

#Sustainability
Technology Agenda
PIX gains space and becomes popular

**PIX keys**
(in millions)

- **Total:** 294.15 mi
  in July/2021

- 282.2 million keys
- 11.9 million keys
- 96.3 mi households
- 6.4 mi legal entities

**Volume of transactions and average value**
(in BRL billions and in BRL)

**Pix versus other instruments**
(in million of transactions)

Source: BCB.
PIX Evolution Agenda

**3º quarter**
- **Pix Saque** (cash withdrawal) and **Pix Troco** (cashback)
- scheduled payments

**4º quarter**
- Contactless Pix
  - (For transactions carried out through short-range wireless connectivity technology)
- **Offline Pix**
  - Payer offline and payee online
  - Both offline
- Mechanism of transaction reversal
  - (for fraud or operational error)

**2022**
- Non-priority settlement
- Scheduled guaranteed transactions
- Direct debit

**Future Agenda**
- Pix for cross-border payments

*Linked to Open Finance: Payment initiator at Pix*
Open Finance

Implementation will be gradual

Goals:
- To promote *competition, efficiency and data safety*
- Proper *balanced conditions* between existing financial institutions and new players

Solutions that can be developed from Open Finance:
- Devices to compare services and fees
- Apps for financial advice and planning
- Payments initiation in social medias
- Credit marketplace
Modernization of exchange rate legislation

- **Proposal:**
  - Establishing a modern, compact, and safe legal framework for FX market.

- **Objectives:**
  - Simplify the FX legislation and improve the business environment in Brazil.
  - Ease the connections with payment systems of other countries.
BCB’s Regulatory Sandbox starts in 2021 with the Cycle 1.

**TO UNDERSTAND THE REGULATORY SANDBOX**

1. **During the sandbox licensing process, BCB will assess whether the submitted projects comply with the definition of innovative project and whether their development is under the regulatory scope of BCB and CMN, among other criteria.**

2. **Legal persons, notary and registration service providers, public companies, and semi-public companies can participate, even when not yet fully licensed by BCB.**

3. **Simplified monitoring procedures will be adopted, considering the complexity and risks associated to each innovative project and, should BCB deems appropriate, additional limits and criteria may be applied.**

4. **By the end of cycle 1, participants may obtain a permanent license from BCB to operate. The projects may be a stepping stone for the improvement of the regulation issued by BCB and CMN.**
AGENDA BC#
Convergence

Text
Payments
Content

Financial Innovation
Intensive use of clouding
Innovation in the financial system

- Simplification
- Internationalization
- Convertibility

Digital currency

Open Finance

Innovation in the currency
A CBDC for Brazil: The Digital Real

Guidelines:

- Extension of the Brazilian real
- Retail payments
- Innovative models development
- Not be interest-bearing
- Guarantee of legal certainty
- Data privacy and security
- Preventing and combating money laundering
- Interoperability and integration
- High cyber security

Next step:
Open discussion with society
Sustainability

Measures:

• BCB’s S&E Responsibility
• Partnerships
• Policies
• Supervision
• Regulation
Regulation – public consultations

- Definition of sustainability criteria applicable to new rural credit transactions (Public Consultation #82).
  - Government database integration.
  - Better risk management.
  - Access to new funding sources - Open Finance.
Regulation – public consultations

- Improvement of the rules related to the management of social, environmental and climate policy risks by financial institutions, as well as requirements to be observed by them in the establishment of their Social, Environmental and Climate Responsibility Policy (Public Consultation #85).

- Rules for the disclosure of information about social risk, environmental risk, and climate-related risk management by financial institutions (Public Consultation #86).
More technology
The epidemic has accelerated technological change in medicine, education, finance, communication

Common factors in recovery
More sustainable and more inclusive growth

World trade
Changes in global value chains

Vision for the future

Low interest rates and high liquidity in the world
There are challenges, but also opportunities to reinvent the economy with private resources

Impact of possible reflation global conditions on EMEs
Thank you!

Roberto Campos Neto
Governor of Banco Central do Brasil
August 19, 2021