INVESTMENT SOLUTIONS & PRODUCTS

Americas | Europe | Latin America

Brazil

Positive scenario for 2019 and 2020

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Summary

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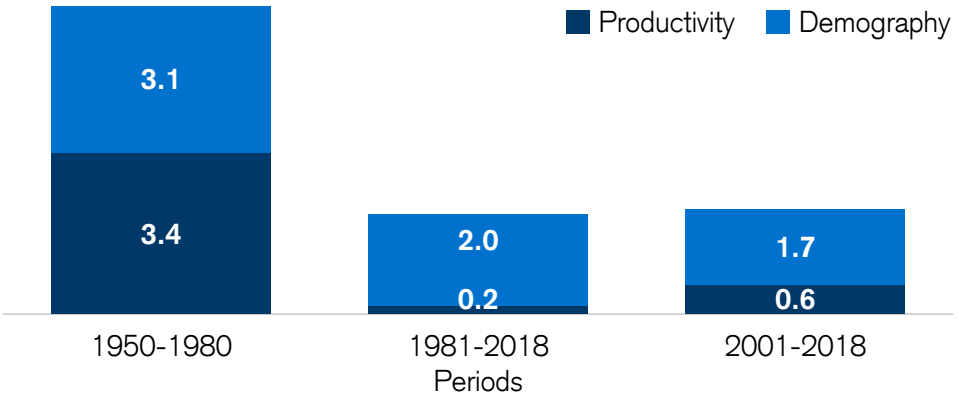
Overview

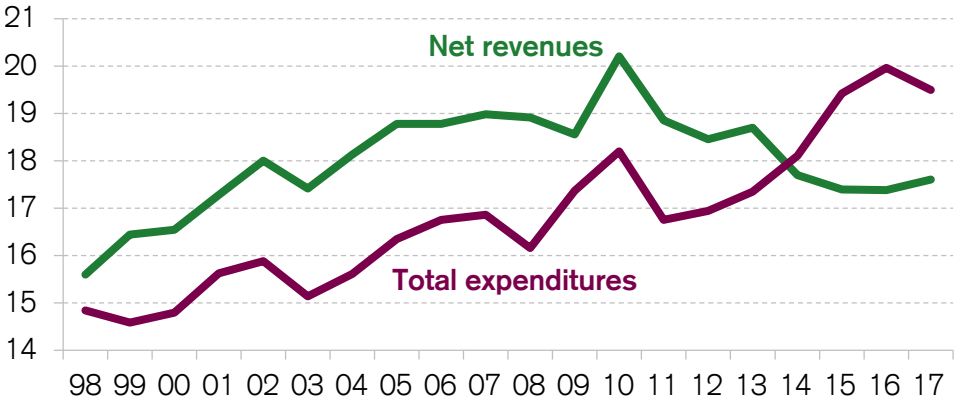
Diagnosis: low growth and deteriorated fiscal accounts

- The two main structural problems of the Brazilian economy are low economic growth and the deterioration of public accounts:
  - GDP growth was close to 2.0% per year on average between 1980 and 2018, with most of this growth coming from demographic factors. Labor productivity grew by only 0.2% per year on average in the same period. In recent years, the dynamics of productivity have been even worse.
  - Public accounts have been on a path of significant deterioration in recent years due to the strong growth in primary expenditures, especially mandatory ones. The incoming administration will need to implement a strong fiscal adjustment in order to stabilize gross debt as a percentage of GDP in the medium term.

Breakdown of GDP growth
(%, pps)



Primary balance of the central government
(% of GDP)

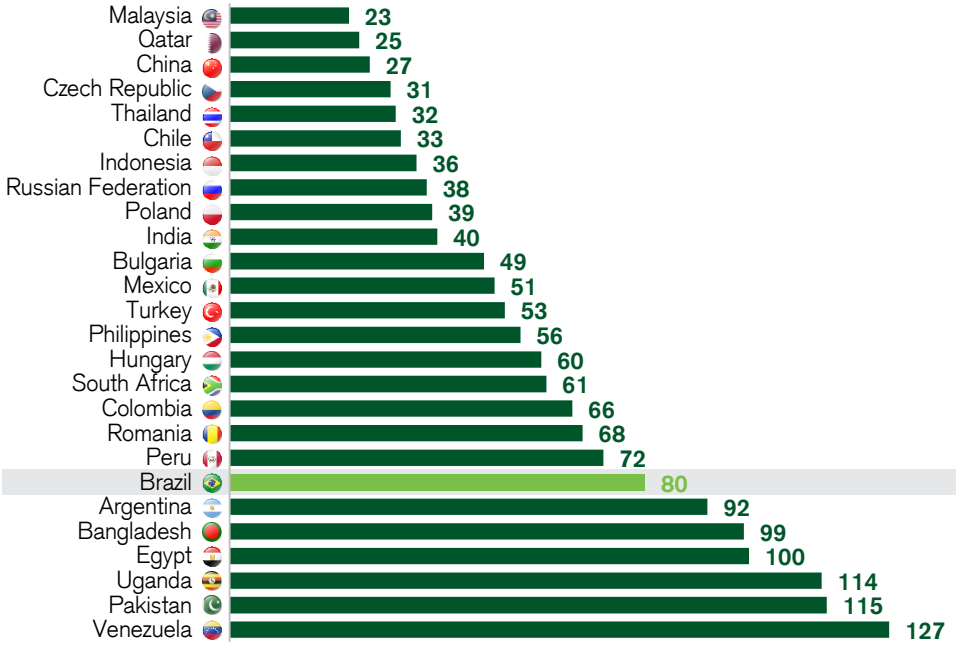


Source: The Conference Board, National Treasury, Credit Suisse

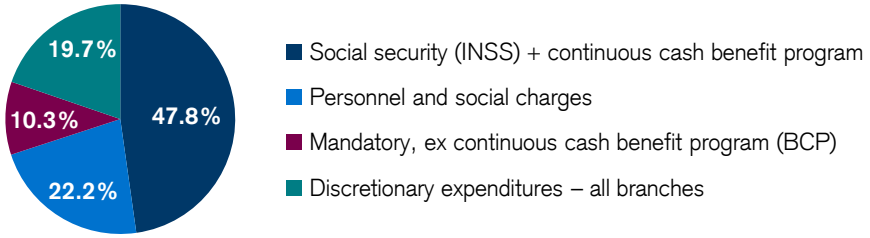
Overview
Solution: microeconomic and fiscal reforms

- The incoming administration will have to focus on the fiscal consolidation process and the productivity agenda to put the country back on the path of sustainable development:
  - Productivity agenda: The country's low productivity is explained by a combination of factors. Among the main measures in this area, we highlight the tax reform, the opening of Brazilian economy to trade, the competitiveness of the banking system, privatizations, and education reform.
  - Fiscal consolidation: Mandatory spending accounts for the majority of primary expenditures, with social security accounting for most of these expenditures. Social security reform is necessary, but it will hardly be enough to solve the country's entire fiscal problem. The freezing of public-sector wages, the reduction of fiscal subsidies, and even increasing the tax burden are additional measures that could be addressed.

Global competitiveness index for emerging markets



Breakdown of primary expenditures of central government (%, 2017)



Source: National Treasury, World Economic Forum, Credit Suisse

Overview

Base scenario: benign environment for reforms

- Most of the necessary reforms requiring approval by the Brazilian Congress in the coming years need either a qualified majority or 60% of the members of each house of Congress.
- In the general election of 2018, the party of the elected president succeeded in becoming one of parties with the highest number of representatives in the Chamber of Deputies and won four seats in the Senate.
- Congress has become more aligned with the president's ideology, with centrist and right-wing parties increasing their representation at the expense of leftist parties, which now hold about 30% and 22% of the seats in the Chamber of Deputies and the Senate, respectively.
- Jair Bolsonaro's strong performance in both the first round and in the runoff and the high influence of his support in gubernatorial elections indicate that the president-elect will not have low popularity in the beginning of his term.
- The first year of a presidential term is very productive. Congress has approved on average two constitutional amendments authored by the executive branch in the first year of each presidential term since 1995. Furthermore, 45% of constitutional amendments approved occurred in the first year of the president's term.
- Congress has been debating some major reforms (e.g., social security) in recent years, which makes the prospects of approval of these measures more favorable.
- The macroeconomic scenario (e.g., economic activity, employment, and inflation) keeps improving and should make a positive contribution to the new president's popularity.

Source: Credit Suisse

Overview

Base scenario: higher GDP growth and stable inflation

- Our baseline scenario assumes that the incoming administration will be able to win approval of some major reforms, particularly the social security and tax reforms. We also expect progress in the concessions and privatization programs, as well as a reduction of trade barriers.
- We are forecasting:
  - Continuity of the economic recovery: We expect GDP growth of 3.0% in 2019 and 2.5% in 2020, driven mostly by the main components of domestic demand, particularly household consumption and investments.
  - Low and stable inflation: Inflation should increase from 3.7% in 2018 to 4.2% in 2019 and 2020. High idle capacity will allow inflation to remain low for the coming quarters, and the anchoring of expectations regarding fiscal policy should keep the dynamics of the exchange rate less volatile.
  - Gradual normalization of monetary policy: The scenario of low and stable inflation will allow the Central Bank of Brazil to normalize the interest rate more smoothly, with the Selic basic interest rate reaching 8.0% at the end of 2019 and 9.0% in 2020.
  - Lower fiscal imbalances: The approval of social security reform and the use of non-recurring revenues should contribute to significant improvement in fiscal accounts in the short term.
  - Maintenance of a strong external position: High international reserves, low foreign debt, and foreign direct investment inflows far outstripping the current-account deficit continue to suggest low vulnerability of external accounts.

Source: Credit Suisse

Overview
Risks: non-robust reforms and higher foreign rates

- The main negative risks are:
  - Approval of a less robust social security reform, leading to a de-anchoring of market expectations regarding the sustainability of fiscal accounts.
  - Faster and stronger monetary tightening cycle in United States.
  - Lower-than-expected growth of the Chinese economy.
  - Intensification of the trade war between the United States and China.
- The main positive risks are:
  - Faster approval of tax and productivity reforms, leading to renewed appreciation in domestic asset prices.
  - Even more significant monetary stimulus, leading to a more substantial acceleration of economic activity and a reduction of the perception of fiscal risk.
  - A larger agenda of privatizations and concessions than that embedded in our base-case scenario, which would foster short-term growth and productivity.

Source: Credit Suisse

Fiscal agenda is main domestic risk for 2019 and 2020

Positive risks

- Faster approval of fiscal and productivity reforms.
- Even more significant monetary stimulus.
- A larger agenda of privatizations and concessions.

Negative risks

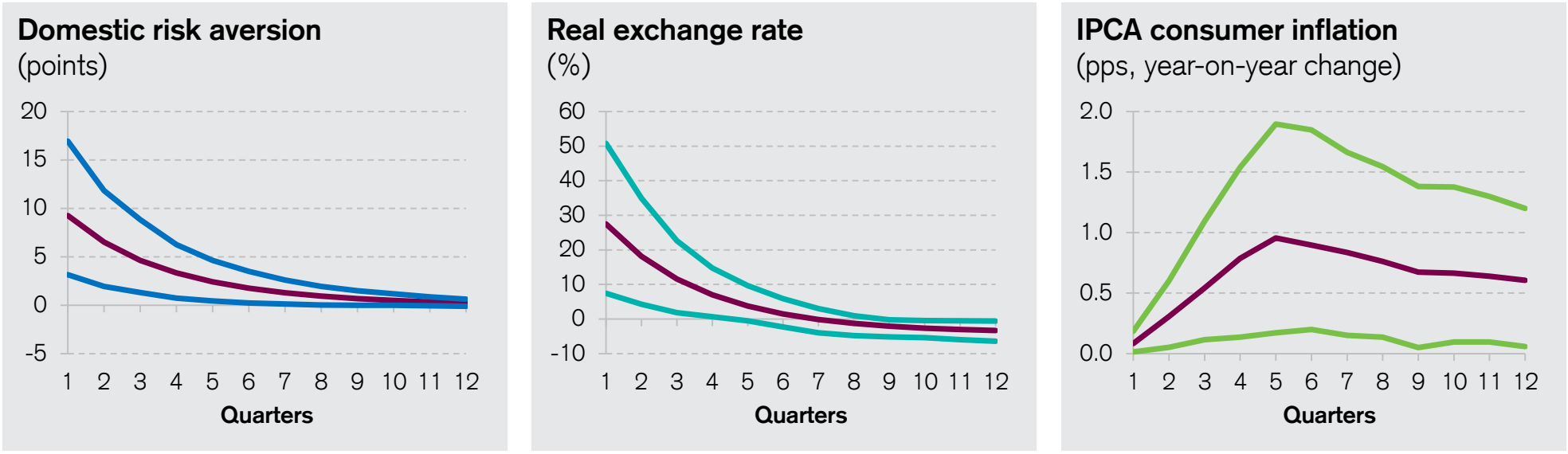
- Approval of a less robust social security reform.
- Faster and stronger monetary tightening cycle in United States.
- Lower-than-expected growth of the Chinese economy.
- Intensification of the trade war between the United States and China.
- Further deterioration of fiscal accounts of states and municipalities.
- Contagion due to additional deterioration of fundamentals in some emerging markets.

Source: Credit Suisse

Rise in global risk aversion would increase inflation

- We estimated our version of the central bank's Dynamic Stochastic General Equilibrium model (SAMBA) in order to understand the impact of the external risks on our base-case scenario.
- For example, assuming a sharp increase in risk aversion, measured by the VIX reaching the same level observed during the global financial crisis of 2008, we would see the following: domestic risk aversion would increase considerably and the exchange rate would depreciate sharply. As a result, year-on-year consumer inflation would increase considerably, anticipating the monetary tightening cycle.

Impulse response function of each variable to shock in VIX external risk aversion

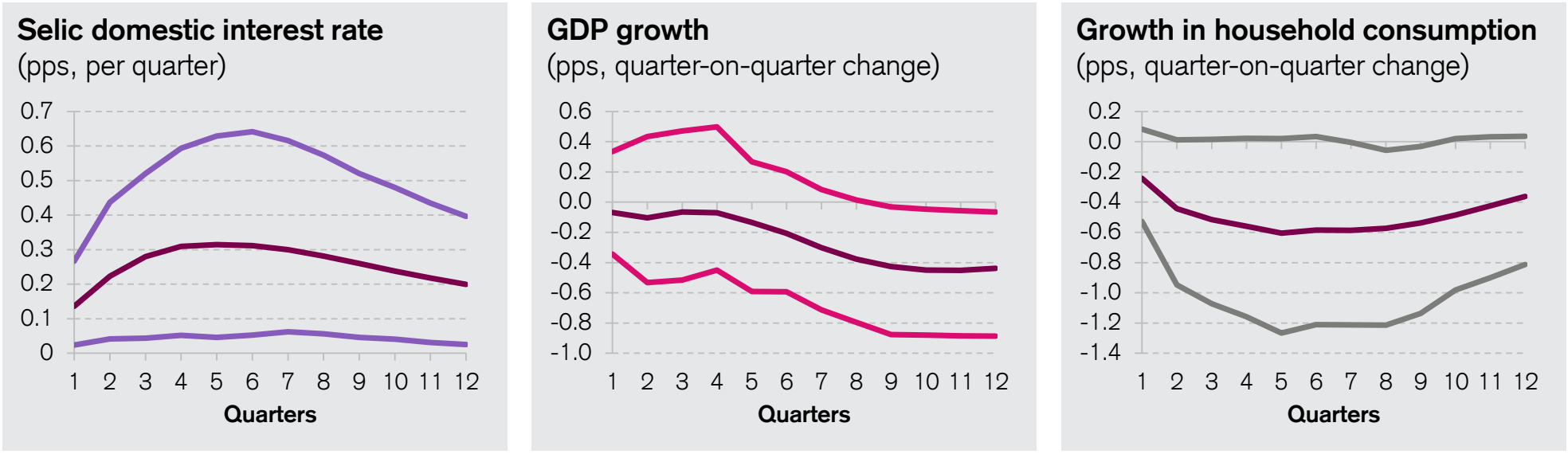


Source: Bloomberg, Central Bank of Brazil, Brazilian Statistics Bureau (IBGE), Credit Suisse

Central bank would anticipate tightening cycle

- Despite the high idle capacity and the benign dynamics of consumer inflation in recent months, potential depreciation of the exchange rate in a scenario of a sharp increase in external risk aversion would drive consumer inflation to levels above the center of the central bank's target and consequently lead the monetary authority to anticipate the tightening cycle.
- The recent recovery of economic activity would be interrupted, with household consumption being the main driver of a recession.

Impulse response function of each variable to shock in VIX external risk aversion

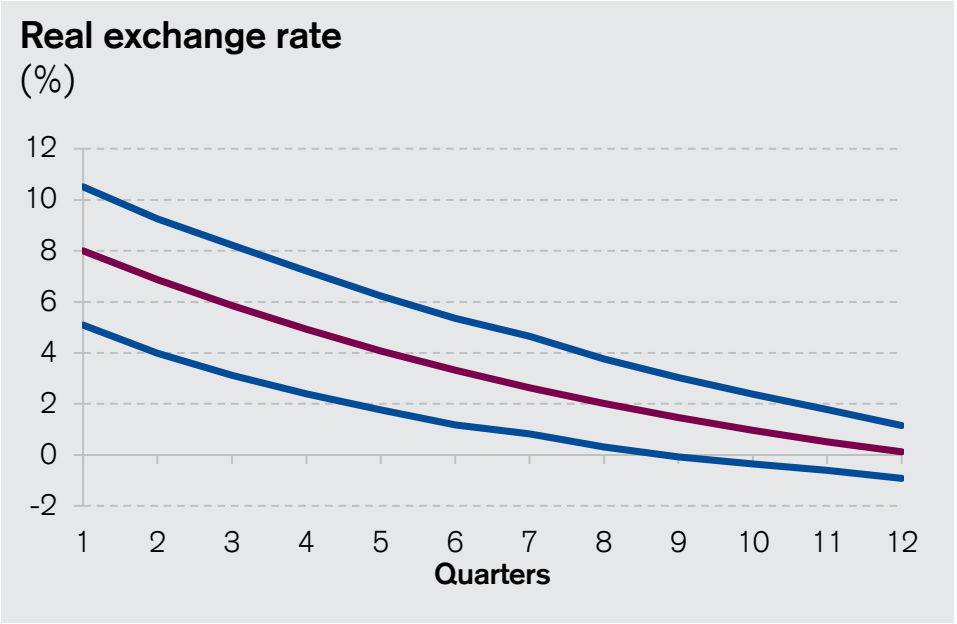


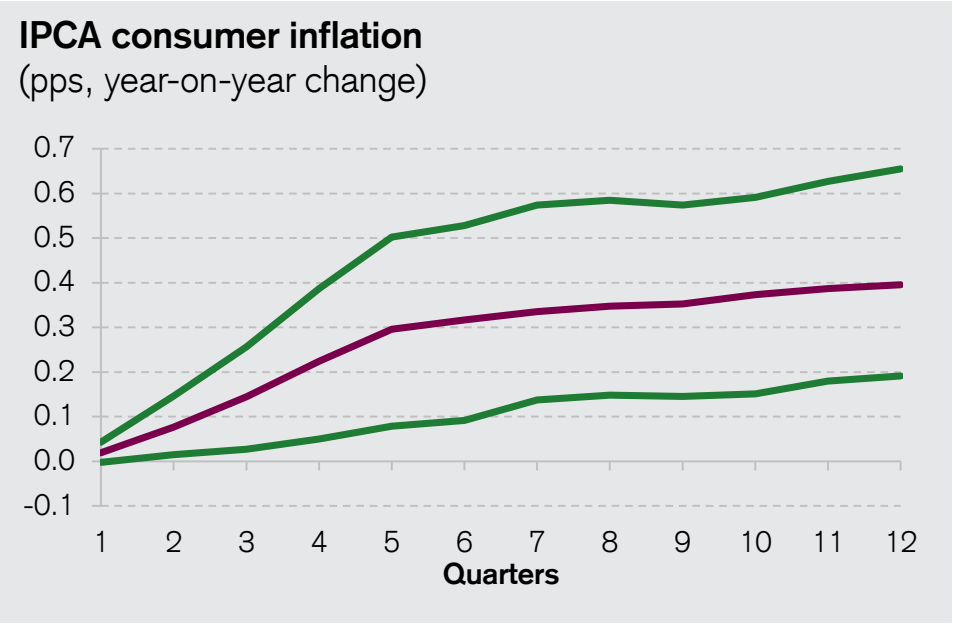
Source: Central Bank of Brazil, Brazilian Statistics Bureau (IBGE), Credit Suisse

Monetary policy in USA is another important risk factor

- Another important risk factor for 2019 and 2020 is the pace of monetary tightening in the USA. The effects on economic activity and inflation would be similar to those observed in the alternative scenario of a sharp increase in the external risk aversion.
- For example, an increase of 100bps in the Fed funds rate is compatible with 8% depreciation of the real exchange rate, causing year-on-year inflation to increase by 40bps in the next few quarters.

Impulse response function of each variable to shock in Fed funds rate





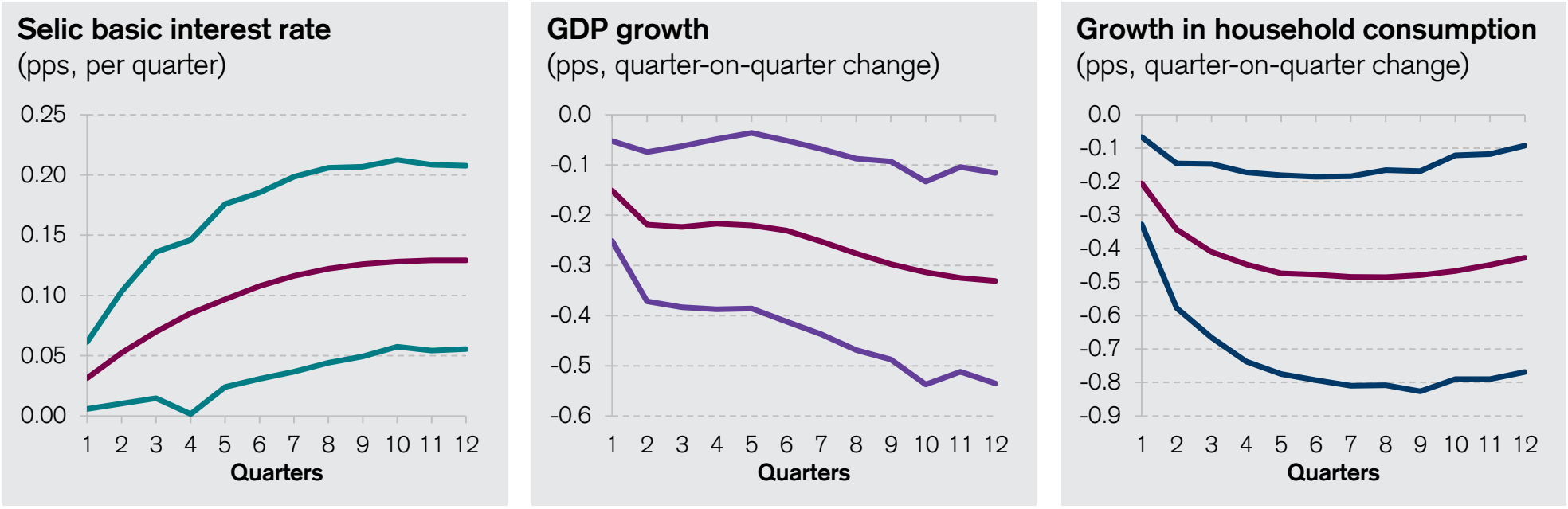
Median | Lower bound | Upper bound

Source: Central Bank of Brazil, Brazilian Statistics Bureau (IBGE), Credit Suisse

Acceleration of economic activity would be reversed

- The central bank would start a tightening cycle to combat the inflationary effects of depreciation of exchange rate and to keep inflation close to the center of the target.
- The substantial tightening of financial conditions would reverse the recent resumption of economic activity. The negative effects on domestic demand would drive a decline in household consumption and, consequently, in GDP in the quarters ahead.

Impulse response function of each variable to shock in Fed funds rate



Source: Central Bank of Brazil, Brazilian Statistics Bureau (IBGE), Credit Suisse

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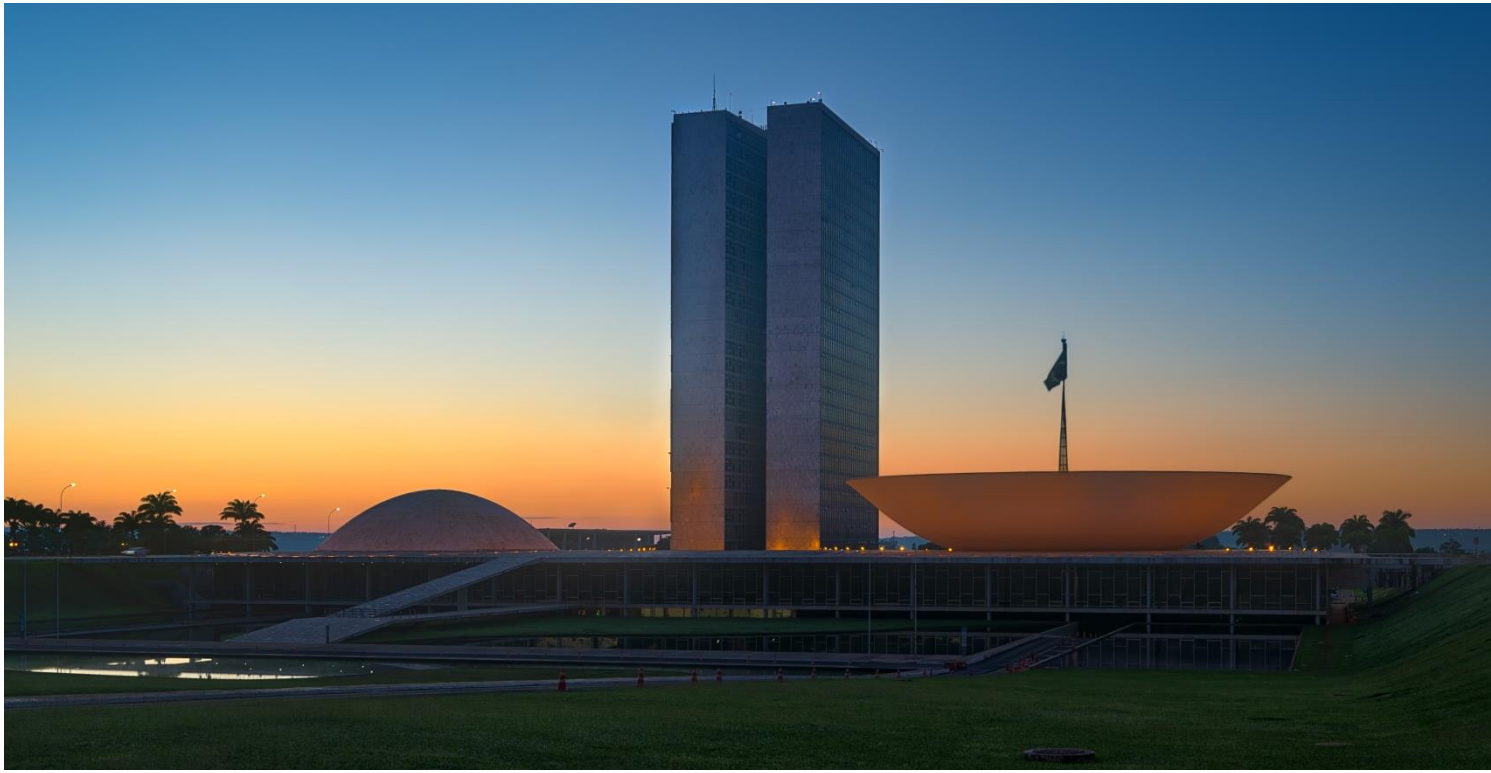
Politics



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Incoming administration to approve economic reforms

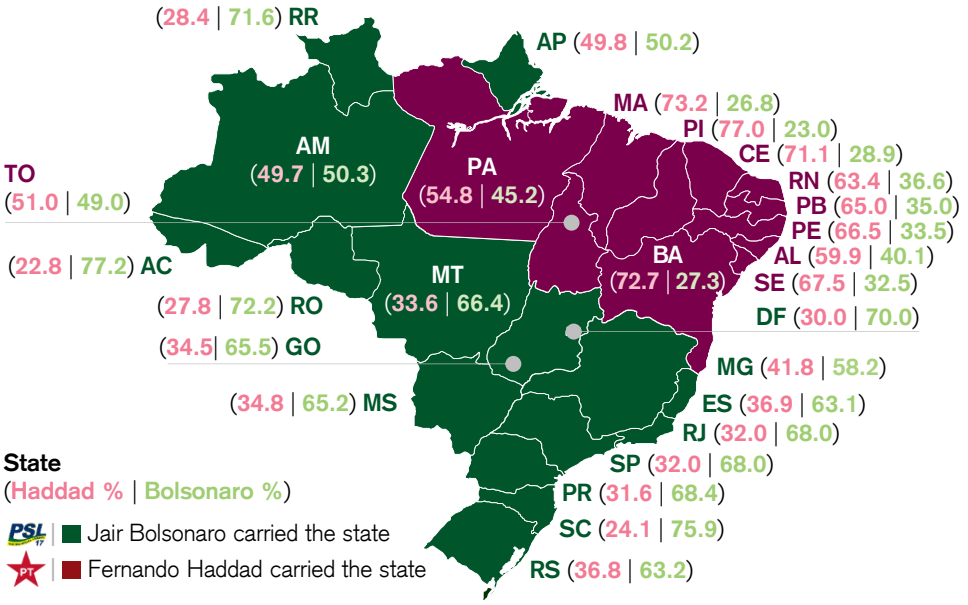
- President Jair Bolsonaro took office on January 1. His administration will likely approve a pension reform, since it will benefit from:
  - Bolsonaro's high popularity at the beginning of his term, as suggested by the significant number of votes for him in the first and second rounds of the presidential election, the strong influence he had on both gubernatorial and legislative elections and beginning of term opinion pools.
  - The "grace period" seen in all previous first years of presidential terms.
  - Two years of debate regarding the need for congressional approval of social security reform makes the environment more favorable for the next administration.
  - The majority of the new Congress favors social security reform, as suggested by some opinion polls.
- The government should also be able to win approval of other important reforms: privatization of state-owned companies, bilateral trade agreements, central bank autonomy, and microeconomic measures to enhance labor productivity.
- However, there are risks to the implementation of these agendas. The main risk is the lack of a political coalition. The fragmented Congress, the incoming administration's rejection of the traditional way of negotiating with political parties, and the need for widespread support for approval of constitutional amendments to enable the reforms portend a challenging scenario for the new administration.

Source: Datafolha, Credit Suisse

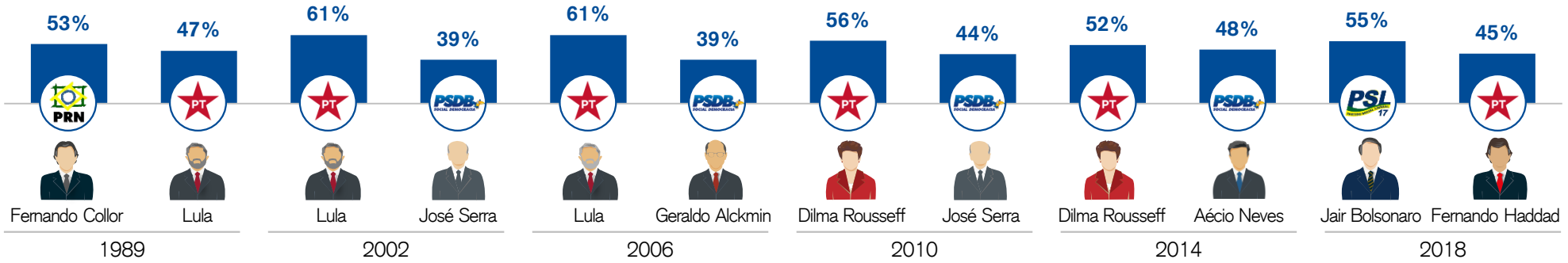
Jair Bolsonaro won in 16 of 27 states

- Bolsonaro won in 16 of the 27 states, with strong performance in the South, Southeast, and Central West regions.
- Of the six most populous states of the country (i.e., São Paulo, Minas Gerais, Rio de Janeiro, Bahia, Rio Grande do Sul, and Paraná), Bolsonaro won in five and Haddad only in Bahia.
- Considering all runoffs since Brazil's redemocratization in 1985, Bolsonaro's margin of victory over Haddad (counting valid votes only) was the fourth-largest.

Election outcome by state



Runoff results since redemocratization

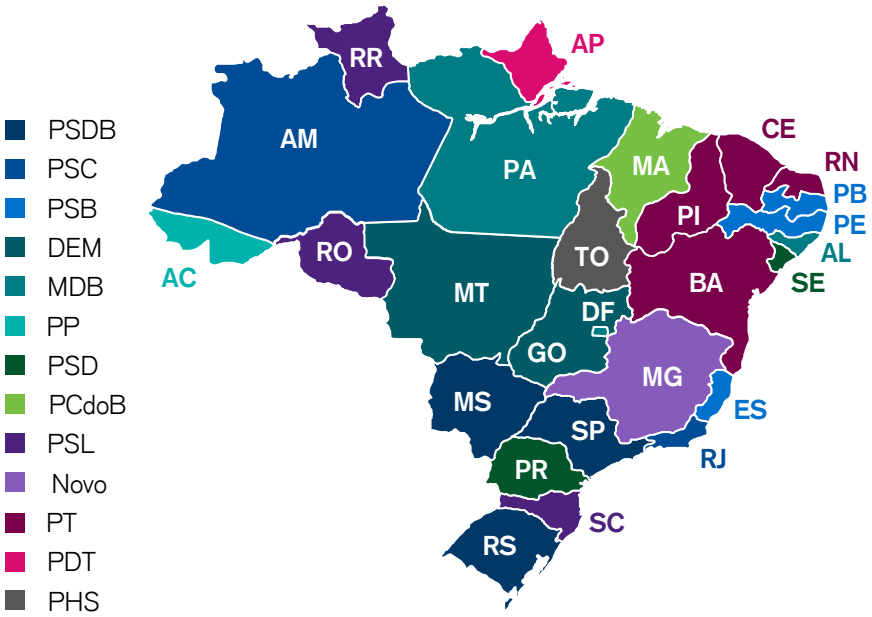


Source: Superior Electoral Court (TSE), Credit Suisse

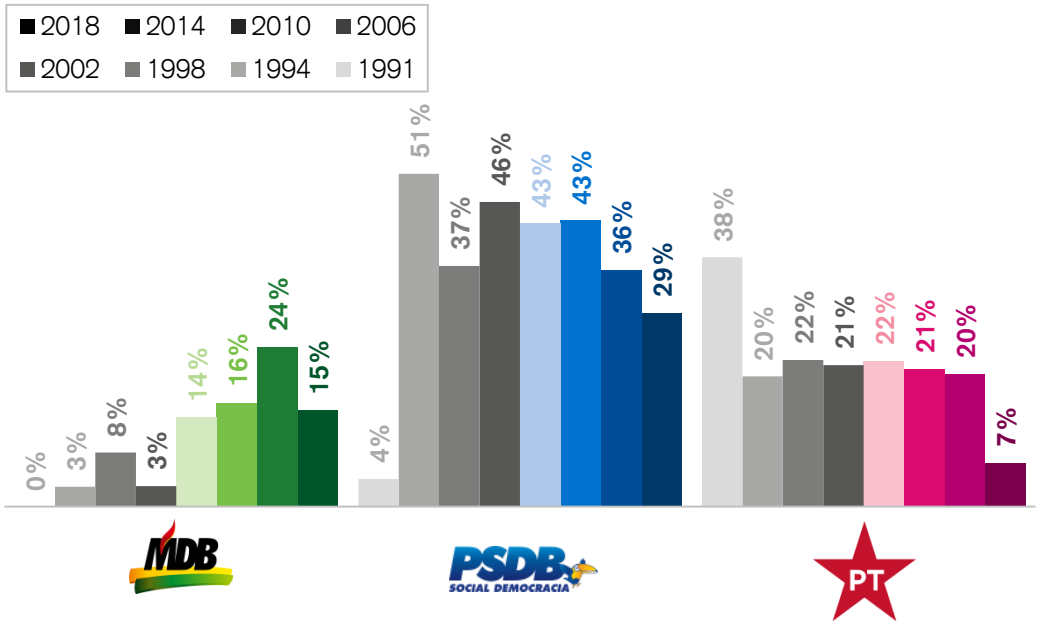
Bolsonaro's support was decisive in gubernatorial elections

- In the 2018 elections, Bolsonaro's party (PSL) won governorships for the first time. The party managed to win in 3 of the 27 states.
- Furthermore, support for Bolsonaro was decisive in the main gubernatorial races in the country, namely in the three most populous states: São Paulo, Rio de Janeiro, and Minas Gerais.
- The PSDB remained the party with the highest support among the country's registered voters, declining from 36% in the previous election to 29% in this one.

Governorships, by party



Percentage of total voters in states, by governor's party



Source: Superior Electoral Court (TSE), Credit Suisse

New administration reduced number of ministries

- President Jair Bolsonaro reduced the number of ministries from the current 29. The number of ministries had already been reduced by President Temer, from 39 under the previous administration.
- New ministries will take on responsibilities currently borne by other departments, with the Ministry of Economy and Ministry of Justice being the main examples of these new structures. The former will aggregate the Ministries of Planning and Industry, while the latter will incorporate the Ministry of Public Security.

Old government structure

- Ministry of Justice
- Ministry of Public Security
- Ministry of National Integration
- Ministry of Cities
- Ministry of Finance
- Ministry of Planning, Development, and Management
- Ministry of Social Development
- Ministry of Culture
- Ministry of Sports
- Ministry of Transportation, Ports, and Civil Aviation
- Office of the Presidential Staff
- Office of Institutional Security
- Secretariat of Government of the Executive Office of the President
- Office of the Secretary-General to the President of Brazil
- Ministry of Defense
- Ministry of Exterior Relations
- Ministry of Education
- Ministry of Health
- Ministry of Agriculture and Food Supply
- Ministry of Tourism
- Office of the Federal Attorney General
- Ministry of Transparency and Office of Federal Inspector General
- Ministry of Science, Technology, Innovation, and Communications
- Central Bank of Brazil
- Ministry of the Environment
- Ministry of Mines and Energy
- Ministry of Human Rights
- Ministry of Labor
- Ministry of Industry, Foreign Trade, and Services

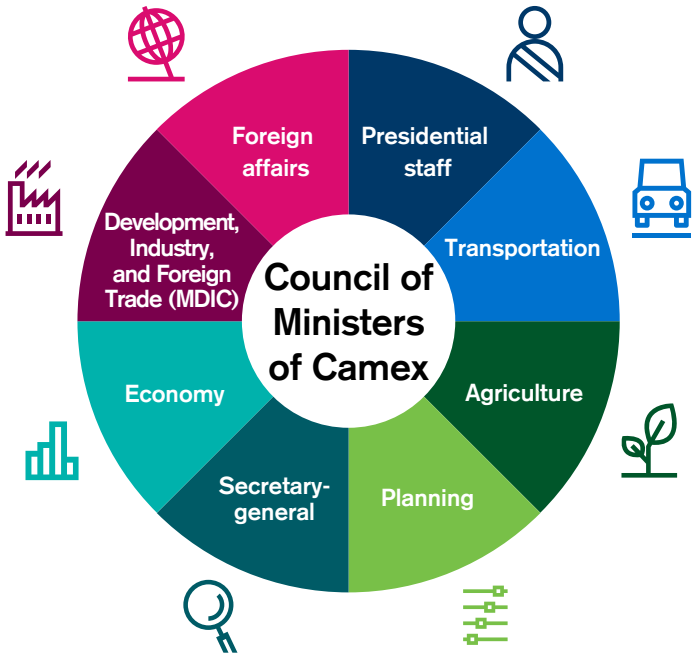
New government structure
(already announced)

- Ministry of Justice
- Ministry of Regional Development
- Ministry of Economy
- Ministry of Citizenship
- Ministry of Infrastructure
- Office of the Chief of Staff
- Institutional Security Cabinet
- Secretariat of Government of the Executive Office of the President
- Office of the Secretary-General to the President of Brazil
- Ministry of Defense
- Ministry of Exterior Relations
- Ministry of Education
- Ministry of Health
- Ministry of Agriculture and Cattle Raising
- Ministry of Tourism
- Office of the Federal Attorney General
- Office of Federal Inspector General
- Ministry of Science and Technology
- Central Bank of Brazil
- Ministry of the Environment
- Ministry of Mines and Energy
- Ministry of Woman, Family and Human Rights

Source: Federal government, Credit Suisse

Merging Camex will likely facilitate trade deals

- Until now, the authority that negotiated trade deals in Brazil was the Chamber of Foreign Trade (Camex), a branch of the now extinct Ministry of Industry headed by a council of ministers. In recent years, the lack of consensus among Camex members and the reduced efforts of past administrations in furthering trade openness hindered new international negotiations. As a result, Brazil is considered one of the most closed economies in the world.
- Bolsonaro's minister of economy has merged the Camex into the Ministry of Economy in order to facilitate the voting process and expedite the opening up of the economy.



Post-negotiation enactment of a trade deal can take several years

Signing of deal by heads of state → Congressional approval by member-states of Mercosur and measures needed by counterparty → Enactment into law by president of Brazil

Mercosur agreements	Signing	Congressional approval in Brazil	Enactment
Mercosur – India	2004	2008	2009
Mercosur – SACU	2009	2015	2016
Mercosur – Egypt	2010	2015	2017
Mercosur – Israel	2007	2009	2010
Mercosur – Peru	2016	2017	-
Mercosur – Palestine	2011	-	-

Source: Ministry of Development, Industry and Foreign Trade (MDIC), Brazilian Confederation of Manufacturers (CNI), Credit Suisse

Few political appointments on team of ministers

Summary background of Bolsonaro's ministers

	 **Paulo Guedes** age 69	 **Tereza Cristina** age 64	 **Marcos Pontes** age 55	 **Onyx Lorenzoni** age 64	 **Augusto Heleno** age 71	 **Sérgio Moro** age 46	 **Luiz Henrique Mandetta** age 54
Ministry	**Economy**	**Agriculture and cattle raising**	**Science and Technology**	**Chief of Staff**	**Institutional Security Cabinet**	**Justice**	**Health**
Place of birth	**Rio de Janeiro** RJ	**Campo Grande** MS	**Bauru** SP	**Porto Alegre** RS	**Curitiba** PR	**Maringá** PR	**Campo Grande** MS
Education	▪ Economics at UFMG ▪ Master's in economics at EPGE/FGV ▪ PhD in economics at University of Chicago	▪ Agricultural engineer at UFV	▪ Bachelor's in aeronautical technology at Academy of the Air Force ▪ Bachelor's in public administration at Academy of the Air Force ▪ Aeronautical engineering at Aeronautics Institute of Technology (ITA) ▪ Master's in systems engineering at Naval Postgraduate School, California	▪ Veterinary medicine at UFSM	▪ Military Academy of Agulhas Negras ▪ Officer Training School (EsAO) ▪ School of Command and Joint Chiefs of Staff of the Army (ECEME)	▪ Law at State University of Maringá ▪ Master's degree in law at UFPR ▪ Doctorate in law at UFPR	▪ Medicine at Gama Filho University
Experience in public sector		▪ Federal Deputy (DEM) for MS (2014–2018) ▪ Secretary of Agricultural Development, Production, Industry, Commerce, and Tourism (Seprotur) of the State of Mato Grosso do Sul ▪ Leader of the Agriculture Caucus in the lower house	▪ Pilot of Brazilian Air Force ▪ Astronaut at NASA	▪ State assembly member in RS (1995–2003) ▪ Federal deputy (2003–2018)	▪ Commander of the Preparatory School for Army Cadets (EsPCEx) ▪ Mission Commander of the UN for the Stabilization of Haiti (2004/05) ▪ Head of the Department of Science and Technology of the Armed Forces	▪ Federal judge ▪ First-instance judge for cases related to Operation Car Wash ▪ Assistant to Justice Rosa Weber for money-for-votes case known as "Mensalão" ▪ Associate professor at UFPR	▪ Secretary of Health of the Municipality of Campo Grande ▪ Federal Deputy (DEM) for MS (2011–2018)
Experience in private sector	▪ Part-time professor at PUC Rio ▪ Part-time professor at IMPA ▪ Professor at University of Chile ▪ Director, partner, and professor at IBMEC ▪ Founding partner of Banco Pactual ▪ Founder of Instituto Millenium ▪ Founding partner of Bozano Investimentos	▪ Director of Federation of Agriculture and Cattle Raising of Mato Grosso do Sul, of the Association of Seed Producers of Mato Grosso do Sul, of the Association of Cattle Breeders of Mato Grosso do Sul, and of the Farmers' Associations of Sonora, Terenos, and Campo Grande.	▪ UN Ambassador for Industrial Development				▪ Military physician ▪ Member of finance committee of Unimed Campo Grande ▪ Physician of Santa Casa de Campo Grande hospital ▪ President of Unimed Campo Grande

Source: Credit Suisse

Few political appointments on team of ministers

Summary background of Bolsonaro's ministers

	 **André Luiz de Almeida Mendonça** age 45	 **Wagner Rosário** age 43	 **Gustavo Bebianno** age 54	 **Fernando Azevedo** age 64	 **Ernesto Araújo** age 51	 **Ricardo Vélez Rodríguez** age 75	 **Roberto Campos Neto** age 49
Ministry	**Office of the Federal Attorney General**	**Office of the Federal Inspector General**	**Office of the Secretary-General to the President of Brazil**	**Defense**	**Exterior Relations**	**Education**	**Central Bank**
Place of birth	**Santos** SP	**Juiz de Fora** MG	**Rio de Janeiro** RJ	**Rio de Janeiro** RJ	**Porto Alegre** RS	**Bogotá** Colombia	
Education	▪ Law at Instituição Toledo de Ensino ▪ Postgraduate specialization in public law at UnB ▪ Master's degree at University of Salamanca ▪ Doctorate at University of Salamanca	▪ Military Academy of Agulhas Negras ▪ Officer Training School (EsAO) ▪ Physical education at School of Physical Education of the Army ▪ Postgraduate specialization degree in exercise physiology at Gama Filho University ▪ Master's degree at University of Salamanca	▪ Law at PUC-RJ	▪ Military Academy of Agulhas Negras ▪ Officer Training School (EsAO) ▪ School of Command and Joint Chiefs of Staff of the Army (ECEME)	▪ Language and literature at UNB ▪ Rio Branco Institute	▪ Humanities at Tihamer Toth Institute ▪ Theology at Seminário Conciliar de Bogotá ▪ Master's in philosophy at PUC-RJ ▪ Ph.D in philosophy at Universidade Gama Filho ▪ Post doctoral Centre de Recherches Politiques Raymond Aron Paris	▪ Economics at UCLA ▪ Postgraduate degree in economics at UCLA
Experience in public sector	▪ Director of the Department of Public Property and Administrative Probity of the Office of the Chief Federal Prosecutor (2008) ▪ General administrative officer of the Office of the Federal Attorney General (2016) ▪ Vice-director of the Office of the Federal Attorney General (2018)	▪ Minister of the Ministry of Transparency and Office of Federal Inspector General ▪ Captain of the Brazilian Army	▪ President of PSL party	▪ General of Eastern Command ▪ Chief of Staff of the Army ▪ Deputy chief of staff of the office of the President ▪ President of the Olympic Public Authority	▪ Advisor in Mercosur division of Itamaraty ▪ Secretary of the Brazilian Mission to the European Union ▪ First-Class Minister of the Department of the United States, Canada and Inter-American Affairs		
Experience in private sector			▪ Lawyer			▪ University professor at UFJF ▪ Professor Emeritus at EsAO ▪ Vice-president of postgraduate specialization and research at University of Medellín	▪ Chief of treasury and regional and international markets (2010-2018) ▪ Head of trading at Santander (2006 -2010) ▪ Trader at Santander (2003-2006)

Source: Credit Suisse

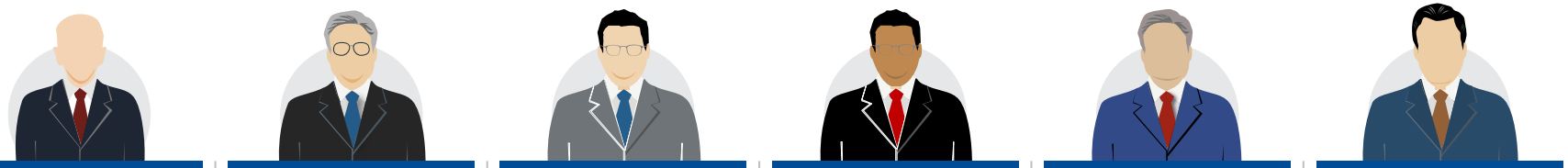
Few political appointments on team of ministers

Summary background of Bolsonaro's ministers

	 Tarcísio Gomes de Freitas age 43	 Osmar Terra age 68	 Gustavo Canuto age 40	 Marcelo Álvaro Antônio age 44	 Carlos Alberto Santos Cruz age 66	 Bento Costa Lima Leite age 60	 Damares Alves age 54	 Ricardo Salles age 43
Ministry	**Ministry of Infrastructure**	**Ministry of Citizenship**	**Ministry of Regional Development**	**Tourism**	**Secretariat of Government**	**Mining and Energy**	**Women, Family, and Human Rights**	**Environment**
Place of birth	**Crateús** CE	**Porto Alegre** RS	**Paranavaí** PR	**Belo Horizonte** MG	**Rio Grande** RS	**Rio de Janeiro** RJ		**São Paulo** SP
Education	▪ Military Academy of Agulhas Negras ▪ Engineering at IME ▪ Officer Training School (EsAO) ▪ Postgraduate specialization in project management at FGV	▪ Medicine at UFRJ ▪ Specialization in perinatal care, education, and baby development at UNB	▪ Computer engineering at Unicamp ▪ Law at Brasília University Center (UniCEUB)	▪ Civil Engineering at University Center of Belo Horizonte (not completed)	▪ Civil engineering at PUC Campinas ▪ Military Academy of Agulhas Negras ▪ Officer Training School (EsAO) ▪ School of Command and Staff of the Army (ECEME)	▪ Postgraduate specialization degree in political sciences from UNB ▪ MBA in public management from FGV ▪ MBA in international management ▪ Command and general staff course	▪ Law	▪ Law (Mackenzie Presbyterian University) ▪ Postgraduate specialization in law (University of Coimbra and University of Lisbon) ▪ Postgraduate specialization in business administration (Getulio Vargas Foundation – FGV)
Experience in public sector	▪ Head of technical section of the engineering of peacekeeping mission in Haiti (2005–2006) ▪ Infrastructure auditor and general coordinator of transportation auditing of the Office of the Federal Inspector General (2008–2011) ▪ Director of the National Transportation Infrastructure Department (2011–2015) ▪ Secretary of project coordination of the PPI	▪ Minister of Social and Agrarian Development (2016-2018) ▪ Federal Deputy - MDB (RS) (2001-2011l, 2015-2019) ▪ Secretary of Health of Rio Grande do Sul (2003-2010) ▪ Mayor of Santa Rosa (RS) (1993-1996)	▪ Advisor to the Office of the Secretary of Civil Aviation to the President (2011-2014) ▪ Chief of staff of the Office of the Secretary of Civil Aviation to the President (2014-2016) ▪ Chief of staff of the Ministry of National Integration (2016-2018)	▪ Federal Deputy (MG -PSL) (2014-2018) ▪ City assembly member of Belo Horizonte (2013-2015) ▪ President of PSL party in Minas Gerais	▪ Commander of peace mission in Haiti (2006–2009) ▪ Commander of peace mission in Congo (2013–2015) ▪ Special Advisor to Secretary of Strategic Affairs ▪ Secretary of Public Security (2017–2018)	▪ Chief of the General Staff of the Army ▪ Chief of Staff of the Office of the Navy Commander ▪ Chief of the Naval Fleet ▪ General director of nuclear and technical development of the Navy	▪ Congressional advisor to Senator Magno Malta ▪ Legal advisor to the following congressional groups: family and support to life, anti-drugs, and evangelical	▪ Private secretary to Governor Geraldo Alckmin (2013 – 2014) ▪ Secretary of the Environment of São Paulo (2016 – 2017)
Experience in private sector			▪ Systems analyst – IBM (2004-2010)				▪ Founder of ATINI Movement - Voice for life ▪ Secretary of the National Anti-Abortion Movement ▪ Advisor to the National Anti-Drugs Movement ▪ Advisor to the Institute Steel Flowers	

Source: Credit Suisse

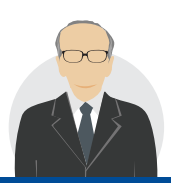
Economics team to follow a liberal agenda



Name	Salim Mattar	Roberto Castello Branco	Joaquim Levy	Mansueto de Almeida	Rubem Novaes	Pedro Guimarães
Position	Office of the Secretary-General of Privatization and Demobilization	Petrobras	Brazilian Development Bank (BNDES)	Brazilian Treasury	Banco do Brasil	Caixa Econômica Federal
Education	▪ Business administration at FUMEC	▪ Doctorate in economics at EPGE/FGV ▪ Post-doctorate in economics at University of Chicago	▪ Master's degree in economics at EPGE/FGV ▪ Doctorate in economics at University of Chicago	▪ Undergraduate degree in economics at UFC ▪ Master's degree in economics at USP	▪ Doctorate in economics at University of Chicago	▪ Doctorate in economics at University of Rochester
Professional experience	▪ Chairman of board of directors of Localiza	▪ Professor at EPGE/FGV ▪ President of IBMEC ▪ Governor of Central Bank of Brazil ▪ Chief economist at Vale	▪ National treasury secretary ▪ Superintendent director of BRAM ▪ Finance minister ▪ Director of finance at World Bank	▪ Researcher at IPEA ▪ National treasury secretary	▪ Professor at FGV ▪ President of SEBRAE ▪ Director at BNDES	▪ Partner at Brasil Plural investment bank ▪ Research analyst in financial sector

Source: Credit Suisse

Economics team to follow a liberal agenda





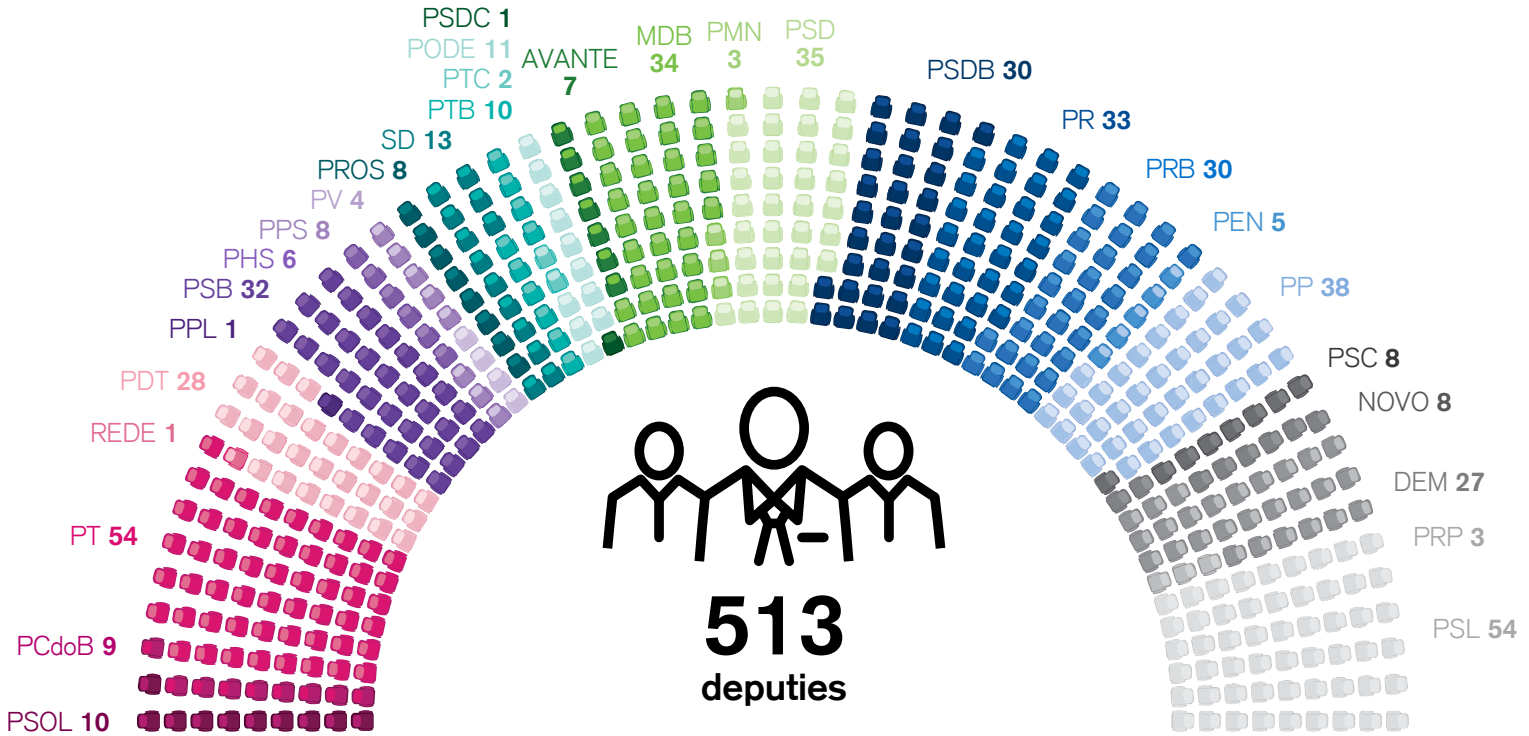

Name	Marcos Cintra	Marcos Troyjo	Carlos von Doellinger	Carlos Alexandre da Costa	Waldery Rodrigues Jr.	Paulo Uebel
Position	Special Secretary of Social Security and the Brazilian Revenue Service	Special Secretary of Foreign Trade and Foreign Affairs	Institute of Applied Economic Research (Ipea)	Secretary of Productivity	Secretary of Finance	Secretary of Planning
Education	▪ Bachelor's in economics at Harvard ▪ Master's in economics at Harvard ▪ Ph.D in economics at Harvard	▪ Bachelor's in political science at USP ▪ Ph.D. in sociology of international relations at USP	▪ Master's in economics at Universidade Candido Mendes	▪ Bachelor's in economics at UERJ ▪ Master's in economics at UCLA ▪ Ph.D. in economics at UCLA	▪ Bachelor's in Engineering at ITA ▪ Master's in Economics at University of Michigan ▪ Ph.D. in economics at UnB	▪ Bachelor's in law at UFRGS ▪ Mater's in Public Administration at Columbia University
Professional experience	▪ Professor at EAESP/FGV ▪ President of Finep ▪ Federal Deputy	▪ Director of BRICLab of University of Columbia ▪ Researcher at Sorbonne University ▪ Member of the advisory board of the World Economic Forum	▪ Former Secretary of Finance of Rio de Janeiro ▪ President of Banco do Estado do Rio de Janeiro (Banerj)	▪ Director of BNDES	▪ General coordinator at Secretariat of Economic Policy ▪ Senior economist at Ipea	▪ Secretary of Administration of the City of Sao Paulo ▪ Executive Director of Instituto Millenium ▪ Global CEO of LIDE - Group of Business' Leaders

Source: Credit Suisse

PT and PSL are parties most represented in Chamber

- With 54 deputies, the PSL, the party of president-elect Jair Bolsonaro, will have the second-highest number of representatives in the Chamber of Deputies. The PT will be the main opposition party, with 54 deputies.
- The two other traditional parties, the PSDB and the MDB, saw a significant reduction in their representation: the number of PSDB deputies declined from 54 to 30 and the number of MDB deputies, from 66 to 34.

Party representation at Chamber of Deputies

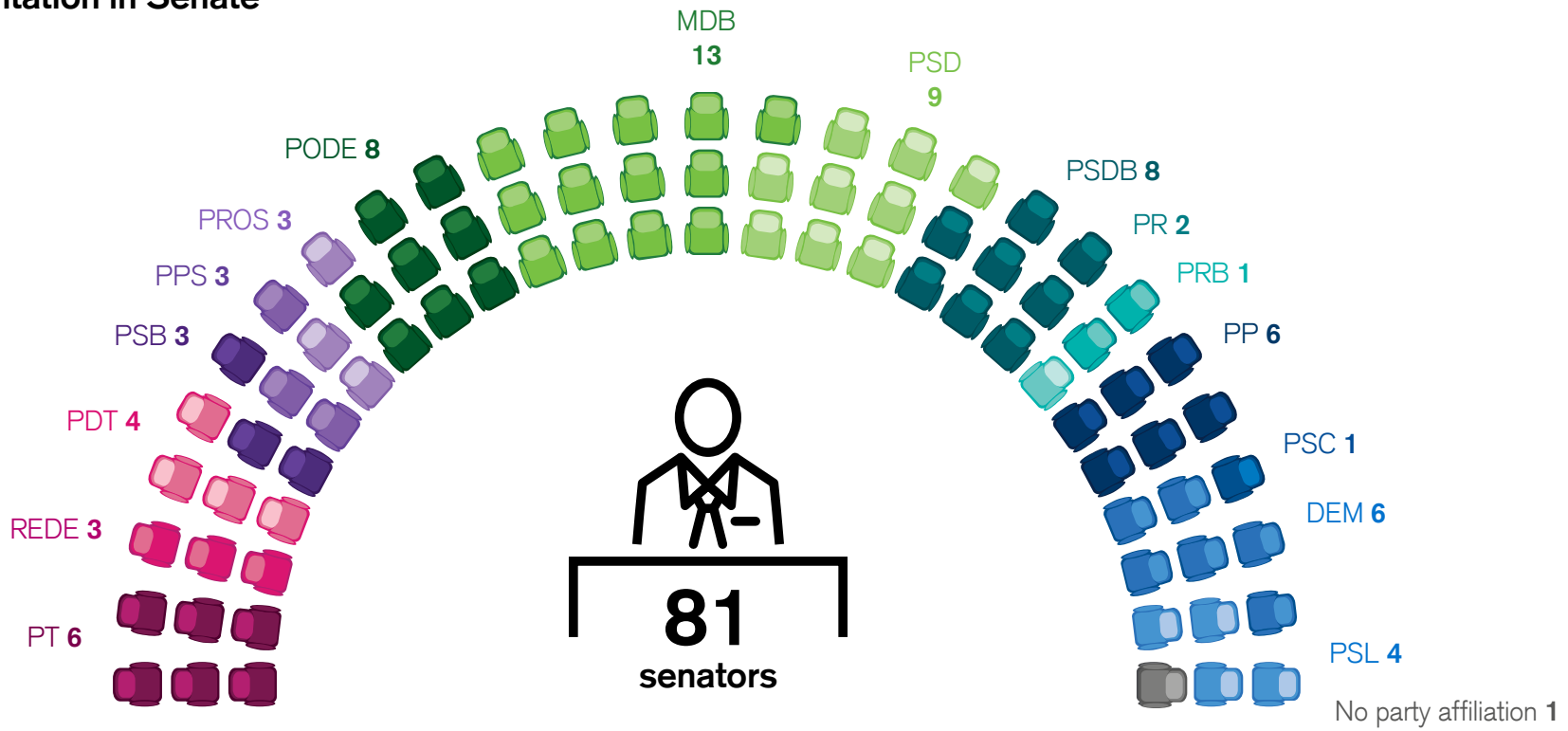


Source: Superior Electoral Court (TSE), Credit Suisse

MDB will remain largest party in Senate

- Despite losing four seats, the MDB will remain the largest party in the Senate. President-elect Jair Bolsonaro's PSL will be represented by four senators.
- The PT's representation declined from 13 to 6 seats. Although it is still the largest leftist party in the Senate, it is now trailed closely by both Rede and the PDT.

Party representation in Senate

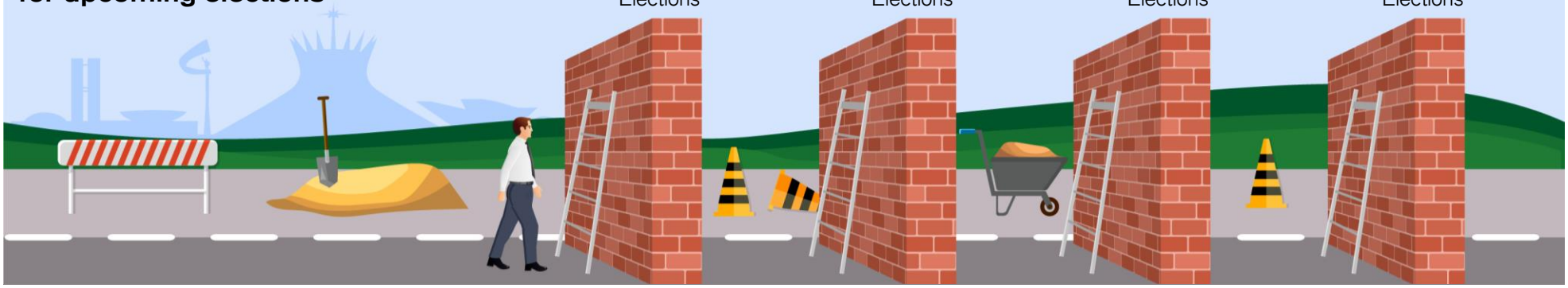


Source: Superior Electoral Court (TSE), Credit Suisse

Twelve parties have not met barrier clause in 2018

- As of 2019, these parties will no longer have access to publicly funded radio and TV advertising time and the Party Fund. Seven of the twelve parties are represented in Congress, with a total of 21 deputies. Parties may merge to reach the threshold or representatives could defect to gain access to funds and advertising time in other parties.

Simulation for the barrier clauses for upcoming elections



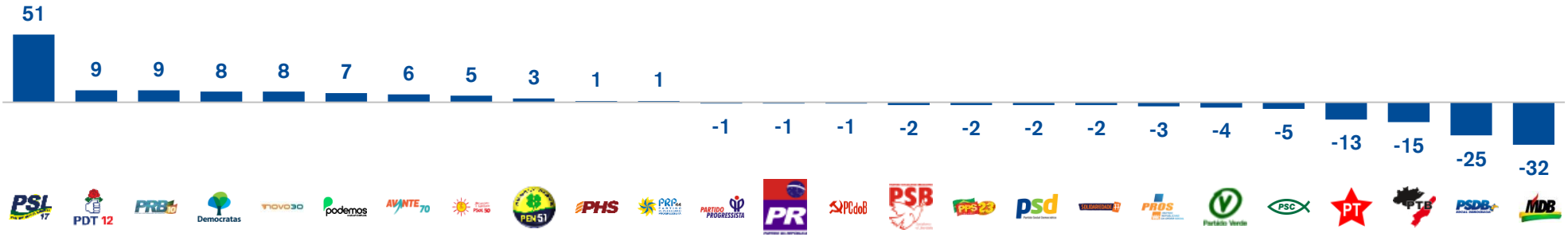
	2018 Elections	2022 Elections	2026 Elections	2030 Elections
Parties meeting the barrier clause in electoral cycle based on 2018 results	23	17	13	11
Percentage of valid votes...	1.5	2.0	2.5	3.0
... distributed in at least nine of the federated units of Brazil, with at least the following percentage of valid votes	1.0	1.0	1.5	2.0
or				
Minimum number of deputies, distributed in at least nine of the federated units	9	11	13	15

Source: Superior Electoral Court (TSE), Chamber of Deputies, Credit Suisse

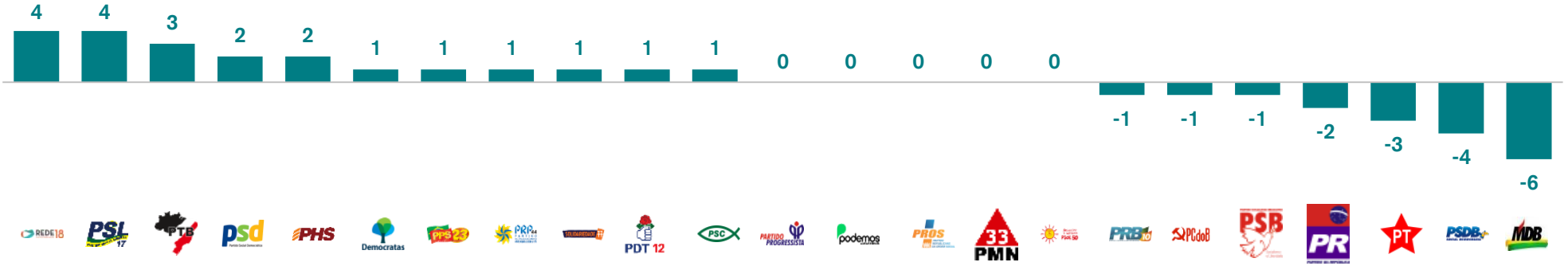
Representation of PSL in Chamber of Deputies rose to 10%

- Bolsonaro's party (PSL) saw a strong increase in its representation in both houses of Congress and is now the second most represented party in the lower chamber. The PSL increased its number of seats in the Chamber of Deputies from 1 in 2014 to 52 in 2018, and from 0 to 4 seats in the Senate.
- The traditional PT, MDB, and PSDB were among the parties with the highest decline in representation in the lower chamber.

Change in total Lower House representatives per party between 2014 and 2018



Change in total Senate representatives per party between 2014 and 2018



Source: Superior Electoral Court (TSE), Credit Suisse

Bolsonaro needs to build a majority in Chamber

- Despite the strong increase in the representation of the PSL in the Chamber of Deputies, Bolsonaro is the president with the lowest representation in the lower chamber since the redemocratization. He will need additional support from other center-right parties in order to have a majority in the lower chamber.
- However, the parties on the left (e.g., PT, PDT, and PSB), which will probably vote against the government's proposals regardless of the subject matter, will hold 27% of the seats in the Chamber of Deputies in 2019.

Distribution of parties in the Chamber (Seats)

President's party

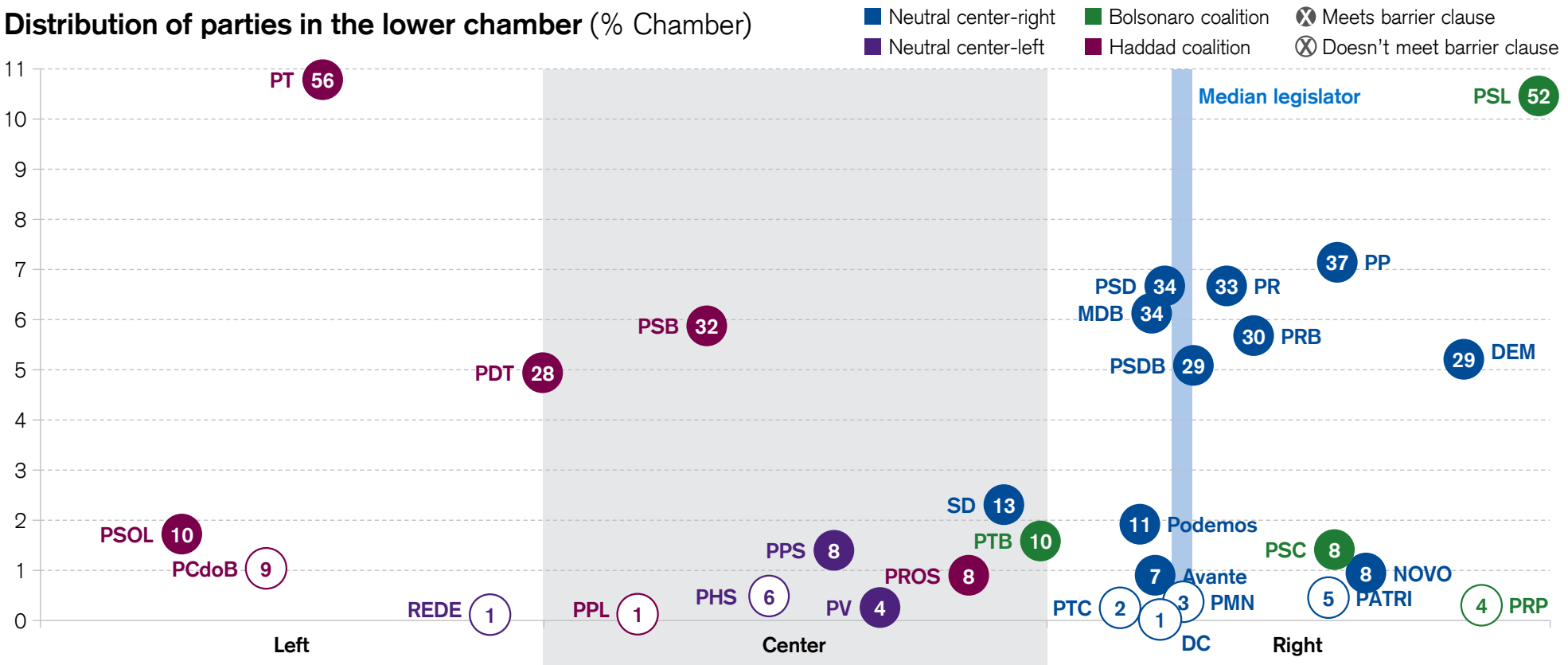
	1994	1998	2002	2006	2010	2014	2018
Main rightwing parties							
PSL	0	1	1	0	1	1	54
PP	85	60	49	41	44	38	38
MDB	107	83	75	89	78	66	34
PSD	3	3	4	0	0	36	35
PR	13	12	26	23	41	34	33
PRB	0	0	0	1	8	21	30
PSDB	63	99	70	66	54	54	30
DEM	89	105	84	65	43	21	27
PTB	32	31	26	22	22	25	10
Main leftwing parties							
PT	50	59	91	83	86	69	54
PSB	15	18	22	27	35	34	32
PDT	34	25	21	24	27	19	28
Other							
Other parties	22	17	44	72	74	95	108

Source: Superior Electoral Court (TSE), Credit Suisse

Higher number of seats for right-wing parties in the Chamber

- PSL's strong performance led to a rightwards shift on the balance of power in the Chamber.
- Coalition-building with parties around the ideological median will be important for the government. Traditional parties such as MDB and PSDB will represent the median member of Congress.

Distribution of parties in the lower chamber (% Chamber)

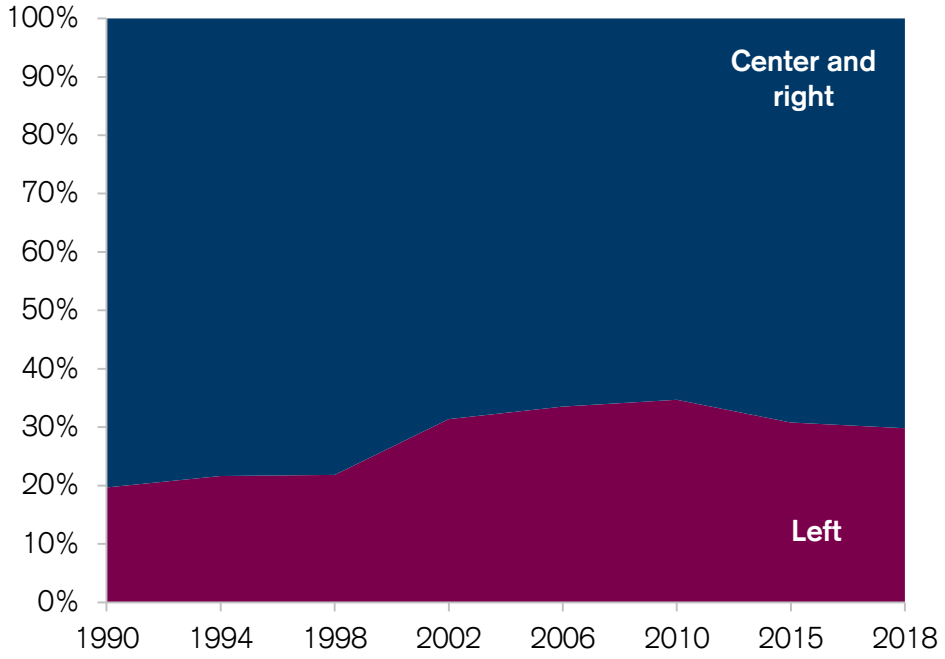


Note: Graph extracted from an article by professors Carlos Pereira and Frederico Bertholini for Folha de S. Paulo newspaper in October 2018. Data from the election results
Source: Folha de S. Paulo, Credit Suisse

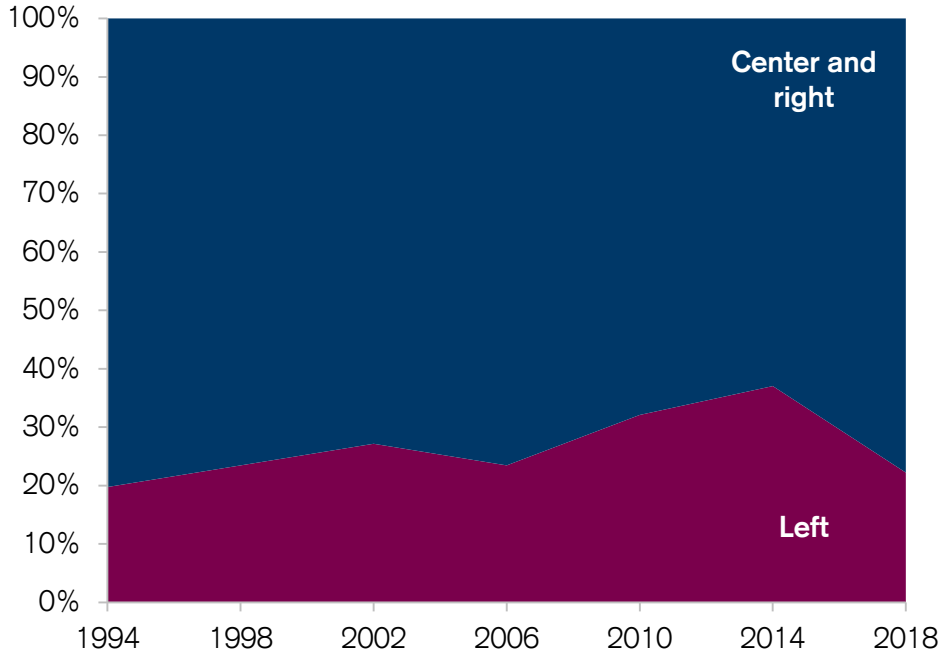
Right-wing parties gained representation in Senate as well

- Right-wing parties increased their number of seats in the Senate from 11 in 2014 to 18 in 2018, while leftist parties saw a reduction in the number of seats they control, from 29 in 2014 to 21 in 2018. As a result, the centrist block continued to hold just over 50% of the total seats in the Senate.
- The composition of both houses reinforces the view that Bolsonaro will need to negotiate with the centrist block in order to gather sufficient votes to approve structural reforms.

Composition of Chamber of Deputies, by ideological alignment



Composition of Senate, by ideological alignment



Data from the election results
Sources: Superior Electoral Court (TSE), Congress, Kevin Lucas and David Samuels (2010), Credit Suisse

PSL has fewer senators than former presidents' parties

- The PSL only has four senators, fewer than those of former presidents' parties at the beginning of their terms. President Jair Bolsonaro should have the support of some center-right and rightwing parties, such as the PSD, DEM, and PP.
- Independent parties such as the MDB and the PSDB play an important role in negotiations for approval of measures in the Senate.

Distribution of parties in Senate (Seats)

President's party

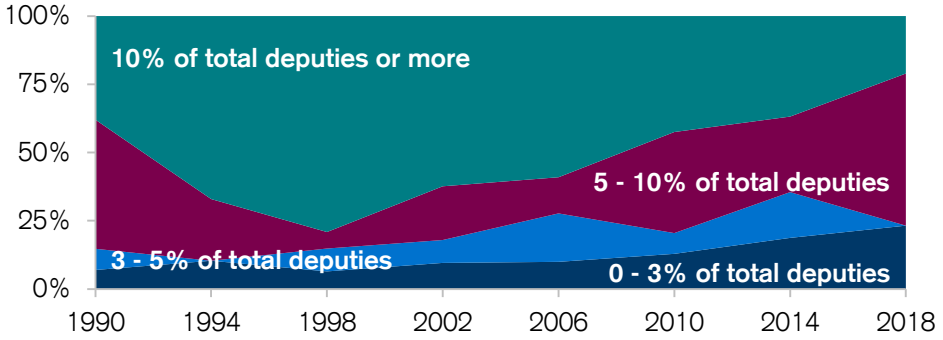
	1994	1998	2002	2006	2010	2014	2018
Main rightwing parties							
MDB	20	25	25	19	19	17	13
PSDB	14	13	13	15	11	9	8
PSD	0	0	0	0	1	2	9
PP	6	0	0	1	5	5	6
DEM	19	17	15	13	6	5	6
PODE	0	0	0	0	0	3	8
PSL	0	0	0	0	0	0	4
PR	0	1	1	4	5	5	2
Main leftwing parties							
PT	4	7	13	9	13	13	6
PDT	5	5	3	5	4	6	4
PSB	2	3	3	3	5	6	3
Other parties							
Other parties	7	6	4	5	7	7	12

Source: Superior Electoral Court (TSE), Credit Suisse

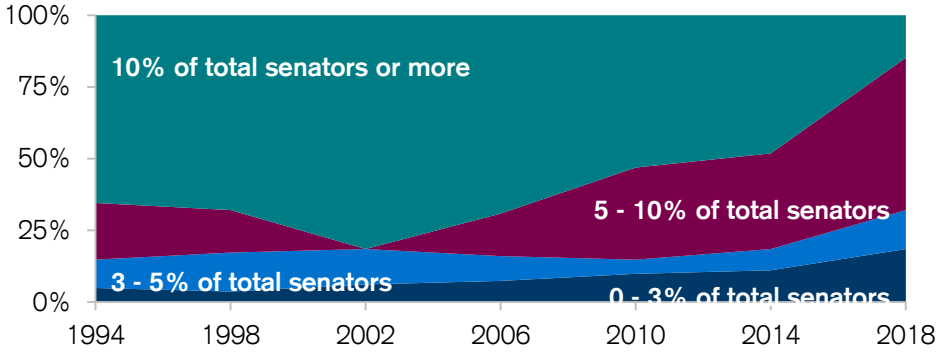
Higher fragmentation in both houses of Congress

- Fragmentation has increased considerably in Congress in recent years. In 1999, 80% of deputies were members of large parties (representing more than 10% of the total), much higher than today's 20%.
- Medium-sized parties gained seats from more traditional ones, and more small parties managed to elect at least one representative. The barrier clause is expected to partially reverse this movement.

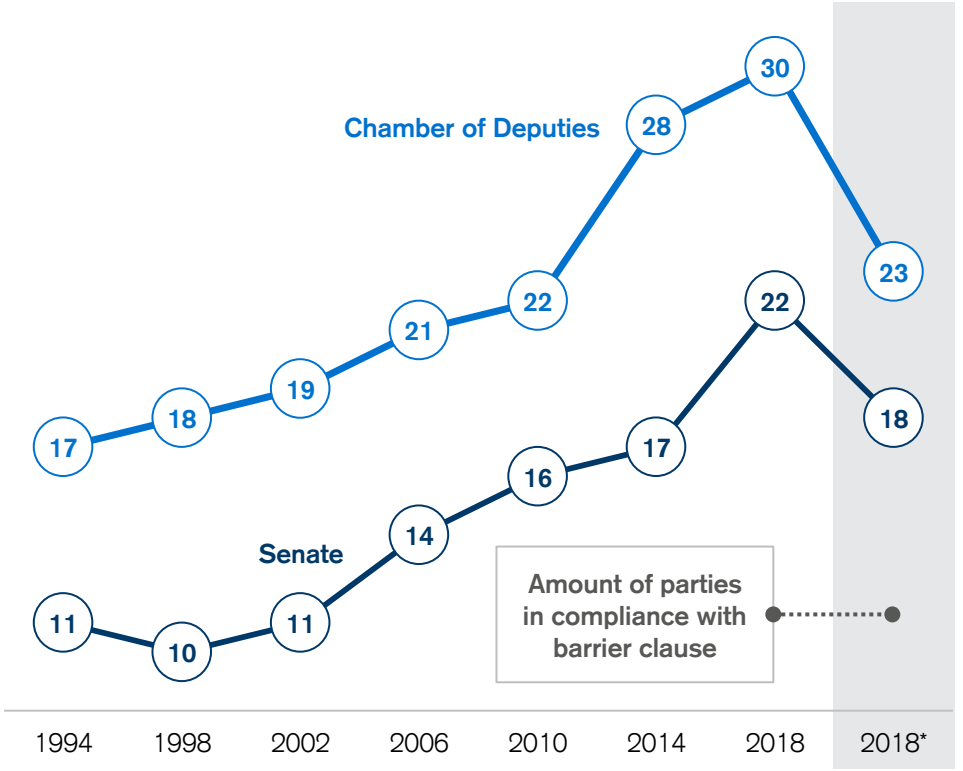
Percentage of deputies in parties, by size range



Percentage of senators in parties, by size range



Number of parties represented in each house



Data from the election results
Source: Superior Electoral Court (TSE), Credit Suisse

Lower number of parties required to reach a coalition

- Despite the increase in fragmentation in the Chamber of Deputies, the minimum number of parties needed to form a coalition of right-wing parties (led by the PSL) is lower than the minimum number required to form a left-wing coalition (led by the PT) at the beginning of the past four terms.
- Based on the classification of parties by ideology, we estimate that the minimum size of a coalition required to approve a constitutional amendment in the lower chamber is 13 parties for the right and to 22 parties for the left.

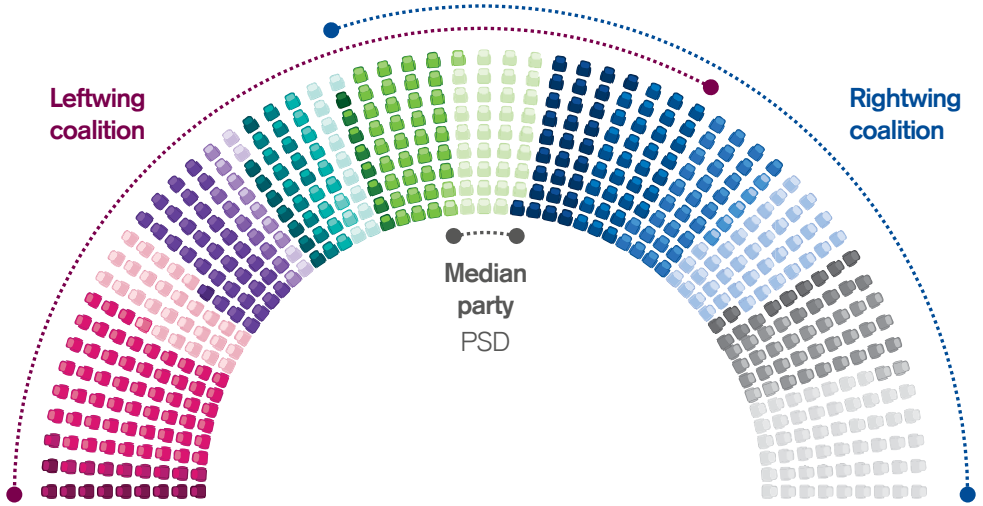
Minimum number of parties needed to approve a PEC[1]

Leftwing coalition
Parties needed to approve a PEC | 22

PSOL	PSB	PTB	PMN
PCdoB	PHS	PTC	PSD
PT	PPS	PODE	PSDB
REDE	PV	PSDC	PR
PDT	PROS	AVANTE	
PPL	SD	MDB	

Rightwing coalition
Parties needed to approve a PEC | 13

MDB	PRB	DEM
PMN	PEN	PRP
PSD	PP	PSL
PSDB	PSC	
PR	NOVO	



	1995	1999	2003	2007	2011	2015	2019
Rightwing coalition							
Parties needed to approve a PEC	9	9	9	11	13	17	13
Pivotal party	MDB	MDB	MDB	PTB	PTB	PTB	MDB
Leftwing coalition							
Parties needed to approve a PEC	12	11	13	14	14	18	22
Pivotal party	PSDB	PSDB	PSDB	PSDB	PSDB	PSD	PR
Excluding PSDB	13	14	14	14	14	18	21
Pivotal party excluding PSDB	PP	DEM	PP	PR	PR	PSD	PR
Median party	**MDB**	**PSD**	**MDB**	**MDB**	**MDB**	**MDB**	**PSD**

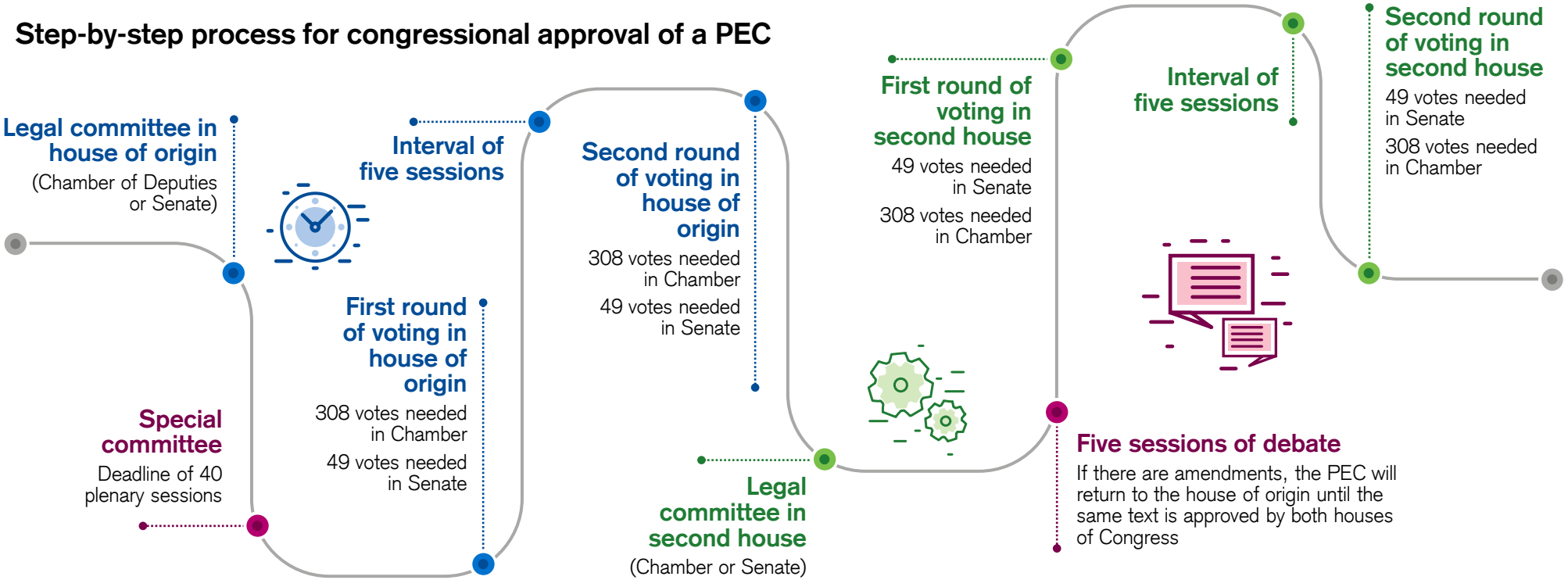
[1]Counting from the right- or leftmost party, the amount of parties needed to get to a majority

Source: Superior Electoral Court (TSE), Credit Suisse

Approval of PECs is a lengthy process

- To be enacted into law, a bill for constitution amendment (PEC) needs to be approved by four special committees and in a floor vote by 60% of representatives in each house, in two rounds of voting.
- For PECs drafted by the executive branch, the average time from submission to enactment is 388 days. The fastest this process has ever taken is 183 days and the slowest, 1352 days.

Step-by-step process for congressional approval of a PEC



Average time for processing PECs drafted by executive branch: 388 days | standard deviation: 163 days

Source: Chamber of Deputies, Credit Suisse

First draft of pension reform met opposition in Congress

- President Michel Temer's economics team drafted an austere pension reform in 2016. Many members of Congress were opposed to it, which led to the proposal of a substitute bill.
- The substitute, currently awaiting a floor vote at the Chamber of Deputies, has a much more limited impact than the original draft.

Main points of Temer's social security reform and the Substitute proposal

	Original draft	Substitute	Fiscal impact of the change
Minimum age	65 years	65 years for men, 62 for women	**High**
Transition rule	Rapid	Gradual	**High**
Calculation method	51% of average salary plus 1% per year of contribution, up to 100% Minimum of 1 MW	70% of average salary plus 1.5% per each year of contribution, from 25 to 30 years, or 2% per year, from 30 to 40 years	**Low**
Retirement benefit for farm workers	Equal retirement regimes for workers, with tough transition rule. Change in calculation method established by law.	Slight lower in minimum age for women. Benefit amount established according to RGPS.	**High**
Survivor's pension	Cumulative pensions not allowed. Benefit amount was reduced.	Cumulative payment of pension and retirement benefit allowed up to 2 MW. Benefit amount was reduced.	**High**
Continuous Cash Benefits (BPC)	Increase in minimum age for benefit entitlement, de-indexation from MW	Lesser increase in minimum age for benefit entitlement.	**Medium**

Source: Chamber of Deputies, Secretariat of Social Security, Credit Suisse

Tax reform proposed by federal deputy Hauly is broad

- The two tax reforms under consideration in the Chamber of Deputies (one proposed by federal deputy Luiz Carlos Hauly (PSDB) and the other by Centro de Cidadania Fiscal) require a constitutional amendment, as they make changes to multiple taxes and create new ones.

Main points of the two tax reforms being debated at Chamber of Deputies

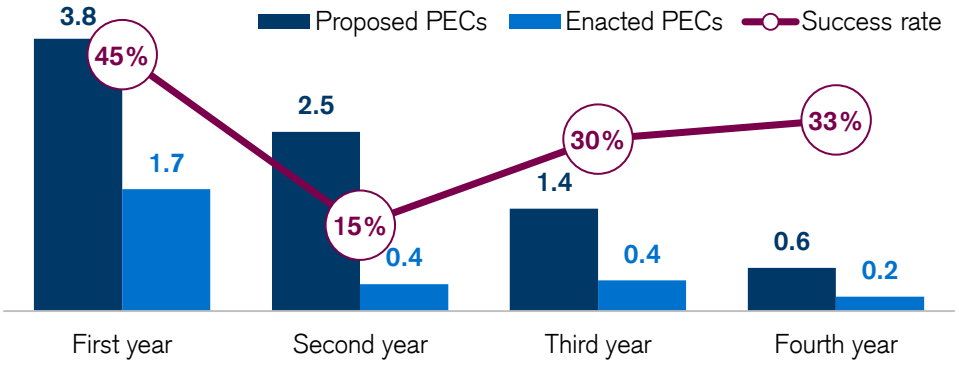
Tax reform proposed by Luiz Carlos Hauly (PSDB)	States	Creation of value-added tax (VAT) to substitute the Tax on Industrialized Products (IPI), the Contribution to the Social Integration Program (PIS)/Social Security Financing Contribution (Cofins) (both currently levied by the federal government), the State Tax on the Circulation of Goods and the Provision of Services (ICMS) (currently levied by the state of origin), and the Municipal Service Tax (ISS) (levied by municipalities).
		Levied at destination.
		Double taxation prohibited.
		Not levied on imported goods
		Established at federal level to avoid tax war.
		Rate reduced for medications and food.
		Selective tax on oil, fuels, and other products established by a supplemental law.
	Municipalities	State Motor Vehicle Ownership Tax (IPVA) and Rural Property Tax (ITR) to be levied on municipal level.
		No exemptions allowed.
		IPTU kept and estate tax may be kept.
	Federal government	Progressive income tax, with new rates established in bill of law. Incorporates the Social Contribution on Net Profit (CSLL).
		Regulatory taxes (such as Cide fuels tax) are kept.
		Tax on Financial Transactions (IOF) abolished.
		Possible creation of a tax equivalent to the Provisional Contribution on Financial Transfers (CPMF).
	Keeps total tax burden at 35% of GDP	
	Creation of new body combining all state tax authorities, under joint competence of states.	
	Broad sharing of income tax and VAT.	
	"Simples" regime and education allowance maintained.	
Tax reform proposed by Centro de Cidadania Fiscal	States	VAT combining the following taxes: ICMS, PIS/Cofins, IPI, and ISS.
		Levied at destination.
		Double taxation prohibited.
		Established by states.
	Municipalities	Tax on goods and services at point of sale.
		Double taxation on VAT prohibited.
	Regulatory taxes on federal level.	
	Transition period of 50 years.	

Source: Chamber of Deputies, Center for Fiscal Citizenship, Credit Suisse

First year of a new term is much more effective

- The first year of a new term is usually more active and productive for debating and implementing reforms. Benefiting from his "honeymoon period," the new president will have more sway over Congress to win approval of his measures.
- Of the 71 Bills for Constitutional Amendment (PEC) authored by the executive branch, 38 were submitted in the first year of the term. Approval of PECs are even more concentrated in this period: 13 of all 24 executive-originated PECs enacted were approved in the first year.

Average PECs submitted and approved, by year of term



Source: Chamber of Deputies, Credit Suisse

PECs authored by executive branch

		Proposed	Enacted by year of proposition	Enacted by year of enactment
	Sarney	1989	0	0
		1990	0	0
	Collor	1991	6	0
		1992	0	0
		1993	3	0
	Itamar Franco	1994	0	0
		1995	16	9
	FHC I	1996	5	1
		1997	3	2
		1998	3	1
		1999	4	1
	FHC II	2000	3	2
		2001	4	1
		2002	0	0
		2003	2	2
	Lula I	2004	4	0
		2005	2	0
		2006	0	0
		2007	5	2
	Lula II	2008	2	0
		2009	1	0
		2010	0	0
		2011	2	2
	Rousseff I	2012	0	0
		2013	0	0
		2014	0	1
	Rousseff II	2015	4	0
		2016	2	1
	Temer	2017	0	0
		2018	0	0

Most presidents won approval of at least one PEC

- More PECs were drafted and enacted in former president Fernando Henrique Cardoso's two terms than in those of all subsequent presidents combined. President Lula won approval of constitutional amendments only in the first year of both of his terms.
- The average approval time is long due to the increased requirements for approval of such legislation. The Temer administration managed the fastest approval of a constitutional amendment: 183 days for approval of the New Fiscal Regime.

Overview of PECs drafted by executive branch, by administration

President	Proposed	Enacted during term	Overall enacted	Average time of approval	Rate of approval
FHC I	27	11	13	432	48%
FHC II	11	6	4	394	36%
Lula I	8	2	2	233	25%
Lula II	8	2	2	188	25%
Rousseff I	2	2	2	546	100%
Rousseff II	4	0	0	-	0%
Temer	2	1	1	183	50%

Source: Chamber of Deputies, Credit Suisse

FHC administration drove major constitutional reforms

- In his eight years in power, FHC spearheaded changes into many parts of the Constitution.
- Some of the most economically significant of those reforms were the relaxation of requirements for investment in the energy, mining, and oil sectors, removal of earmarking of government revenues, and the pension reform of 1995.

Approved executive-drafted constitutional amendments during FHC administration (1994–2002)

Year proposed	Directly related to economy	Removes a right/privilege	Explanation
2001	✓	✓	Extension of CPMF tax
2000	✗	✗	Integration of military police from former Federal Territory of Rondônia into body of federal employees
2000	✓	✗	Exonerates export revenues from CIDE tax
1999	✓	✗	Extension of removal of constitutional earmarking of federal revenues (DRU)
1998	✗	✗	Reorganization of the Ministry of Defense and the Joint Chiefs of Staff
1997	✗	✗	Granted Federal Appeals Court (STJ) power to adjudge petitions for habeas corpus under certain situations and established that federal government can create small-claims courts by means of a federal law
1997	✓	✗	Extension of FEF and FSE
1996	✗	✗	Makes provision on the constitutional regime of military personnel
1995	✗	✗	Defines responsibilities of each level of government regarding education and creates development fund
1995	✓	✓	Established ceiling on compensation for public-sector employees; created more flexible regime for some of them
1995	✓	✗	Extension of Fiscal Stabilization Fund (FEF) and Social Emergency Fund (FSE), predecessors of the DRU
1995	✓	✓	Changed social security, increasing time of contribution and reducing amount of benefits
1995	✓	✓	Relaxed rules requiring predominance of Brazilian vessels for maritime trade
1995	✓	✓	Relaxation of oil monopoly
1995	✓	✓	Relaxation of telecommunications monopoly
1995	✓	✓	Relaxation of piped gas monopoly
1995	✓	✓	Makes Brazilian companies equivalent to Brazilian companies with national capital. Also allowed Brazilian companies with foreign capital to invest in mineral resources and hydropower

Source: Chamber of Deputies, Credit Suisse

Since 2002, the pace of reforms has been slower

- President Lula supported a tax reform to make the overall tax system less regressive and a pension reform reducing expenditures related to the social security reform for public-sector employees (RPPS).
- President Temer approved the New Fiscal Regime, which imposes a spending limit on federal government spending for the next 10 years.

Approved executive-drafted constitutional amendments since FHC administration (2002–2018)

President in office	Year proposed	Directly related to economy	Removes a right/privilege	Explanation
 **Temer**	**2016**	✓	✓	Instituted New Fiscal Regime, which imposes a rule prohibiting real growth in federal government expenditures over the next ten years
 **Rousseff**	**2011**	✓	✗	Extends for another 50 years the validity period of the Manaus Free Trade Zone
 **Rousseff**	**2011**	✓	✗	Extension of removal of constitutional earmarking of federal revenues (DRU)
 **Lula**	**2007**	✓	✗	Increased delivery of funds by federal government to Municipality Participation Fund (FPM)
 **Lula**	**2007**	✓	✗	Extension of removal of constitutional earmarking of federal revenues (DRU)
 **Lula**	**2003**	✓	✓	Tax reform with intention to achieve neutrality by, among other things, simplifying the ICMS, exempting a standard box of food staples from taxes, increasing the federalization of funds, and extending the Provisional Contribution on Financial Transfers (CPMF) and the removal of constitutional earmarking of federal revenues (DRU)
 **Lula**	**2003**	✓	✓	Social security reform. Granted the Federal Supreme Court (STF) power to determine the salary of its judges, which will serve as the ceiling for public-sector employees and public agents. Changed the Social Security Regime for Public-Sector Employees (RPPS), reducing benefit amounts

Source: Chamber of Deputies, Credit Suisse

Many unpopular measures approved in first year of new term

- Not only is the "honeymoon" the period in which a president's legislative agenda is the busiest, it is also when Congress is most open to approval of potentially unpopular measures.
- Most presidents have taken advantage of this period to submit bills for fighting inflation or for fiscal consolidation.

Unpopular measures approved in first year of presidential term[1]

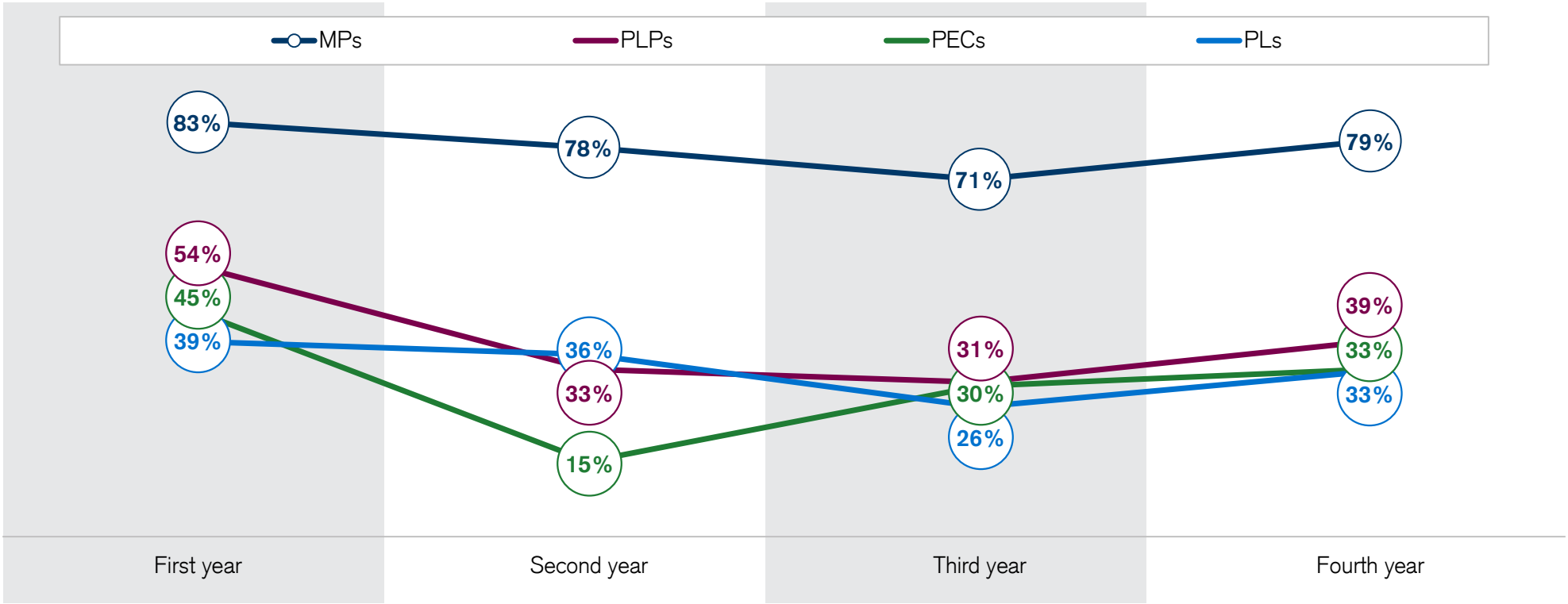
President	Measures	Date submitted	Date approved	Deputies in favor	Senators in favor
 **Collor**	Savings confiscated by federal government	15-Mar-1990	13-Apr-1990	249	55
 **Lula**	Tax reform	30-Apr-2003	31-Dec-2003	346	55
	Reform of Social Security Regime for Public-Sector Employees (RPPS)	30-Apr-2003	31-Dec-2003	357	51
 **Rousseff**	Much lower adjustment in minimum wage than the usual	10-Feb-2011	25-Feb-2011	361	55
 **Temer**	Spending cap	15-Jun-2016	15-Dec-2016	359	53

Note: In 1990 there were 503 federal deputies and 72 senators, less than the current 513 federal deputies and 81 senators.
Source: Chamber of Deputies, Credit Suisse

“Honeymoon” also impacts approval of other laws

- Bills of supplemental law (PLP), which contain implementing regulations for provisions of the Constitution, also have a high threshold for congressional approval, requiring 50% + 1 of votes in each full house of Congress.
- The average success rate of a PLP is significantly higher in the first term of a new administration. This “honeymoon” effect is more muted for Provisional Decrees (MP) and bills of ordinary law (PL).

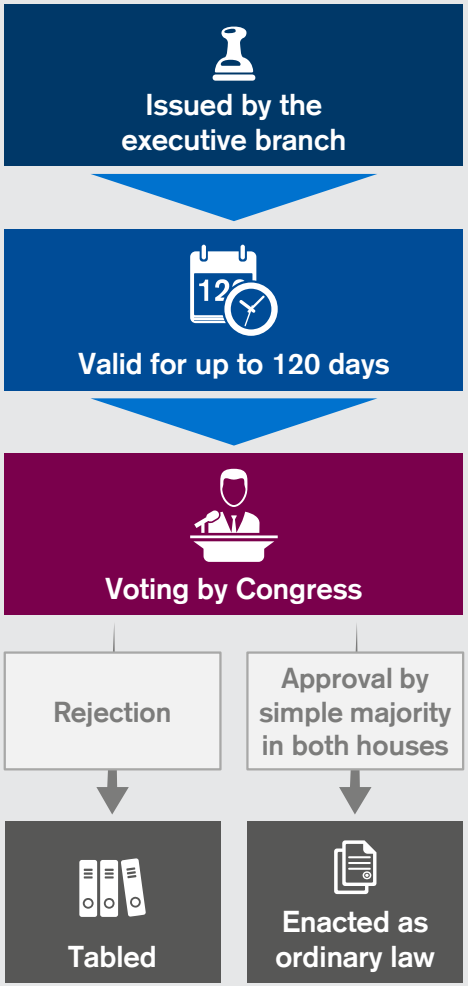
Average success rate of measures authored by executive branch



Source: Chamber of Deputies, Credit Suisse

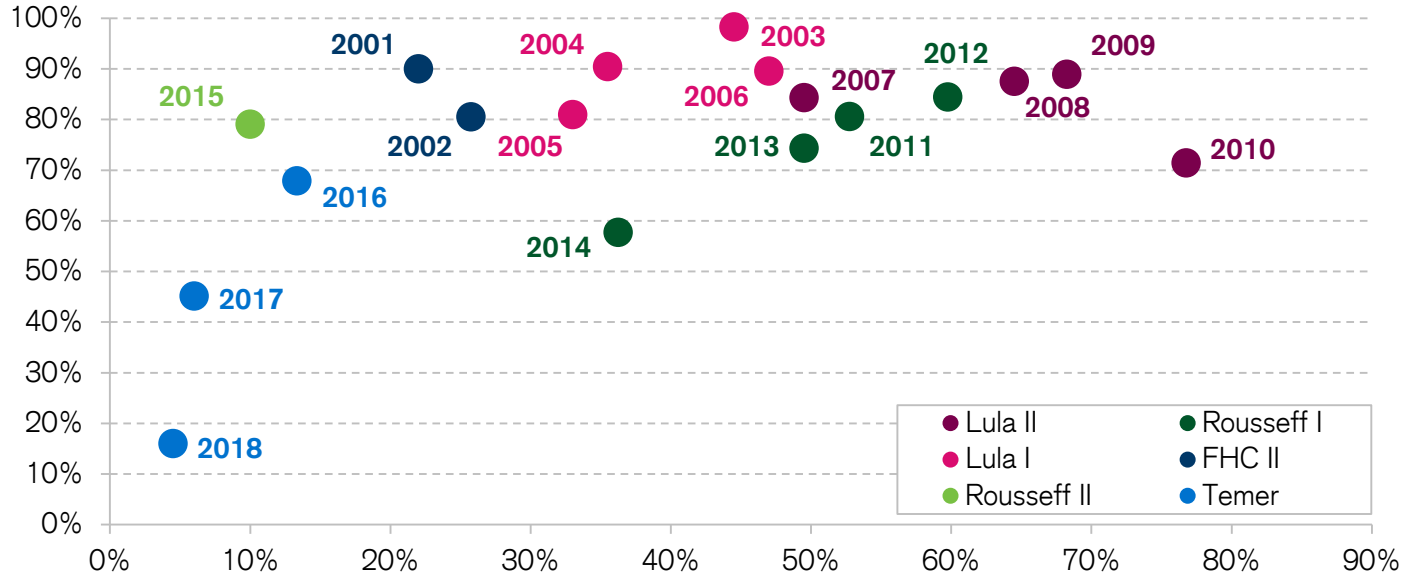
Popularity has little impact on conversion of decrees into law

Legislative process of an MP



- Much of a president's day-to-day governing is achieved through provisional decrees (MPs), which are issued by the executive branch, take effect immediately, and remain valid for up to 120 days. If their conversion into law is not approved by Congress before this period, they expire and are no longer enforceable.
- The success rate of MPs is usually well above 70%, no matter how unpopular the president is. One notable exception was the 16% success rate of MPs under the Temer (MDB) administration in 2018.

Success rate of MPs vs. president's approval rating

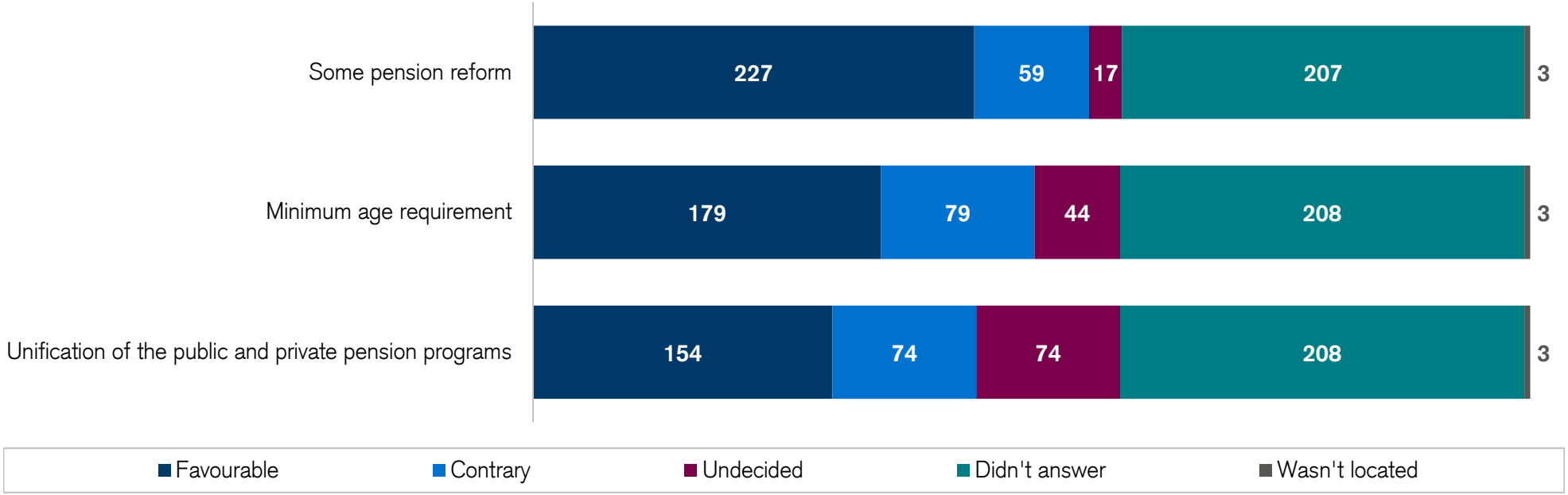


Source: Chamber of Deputies, Credit Suisse

New Congress favors some social security reform

- The newspaper O Estado de São Paulo polled 510 of the newly elected federal deputies on their preferences regarding pension reform, minimum retirement age, and unification of the public- and private-sector systems.
- According to the poll, 227 of them favor some social security reform, while 179 were in favor of a minimum retirement age. These are the highest levels since the beginning of the poll in 2017.
- Although still far from the constitutional majority of 308 votes, the percentage of Congress members in favor to the reform reached 68% among deputies who have made a decision regarding social security reform.

Stance of elected federal deputies on pension reform in latest poll



Source: Estado de S. Paulo, Credit Suisse

Various measures could be approved in short term

- In addition to the social security and tax reforms, the incoming administration will need to win congressional approval of additional measures to limit increases in public spending and to boost the productivity of the economy.
- Some of these measures are already being discussed by the executive branch or are already being debated in Congress and will likely be approved within the next months. For example, the regulatory agency act, central bank autonomy, and enhancements to positive credit reporting are all proposals defended by the executive branch with high chances of approval early in the next presidential term.

Fiscal adjustments and improvement of business environment being debated by executive branch or Congress

Fiscal adjustments and improvement of business environment	Type of legislation
Change in rules for unemployment insurance	Bill of law
Review of unemployment benefits for artisanal fishermen	Decree or directive
New Fund for Support and Development of K-12 Education (Fundeb) with conditions for efficient use of funds	Bill for Constitutional Amendment (PEC)
Review of rules for determining, regionalizing, and adjusting for inflation starting salaries for teachers	Bill of law
Reform of National Employment System (Sine) to provide incentives for private intermediation	Bill of law
Regulatory Agency Act	Bill of law
Enhancement of positive credit reporting	Bill of law
Regulatory framework for telecommunications	Bill of law
Privatization of Eletrobras	Bill of law
Central bank autonomy	Bill of supplemental law

Source: Ministry of Planning, Credit Suisse

Privatization agenda very likely to advance in next years

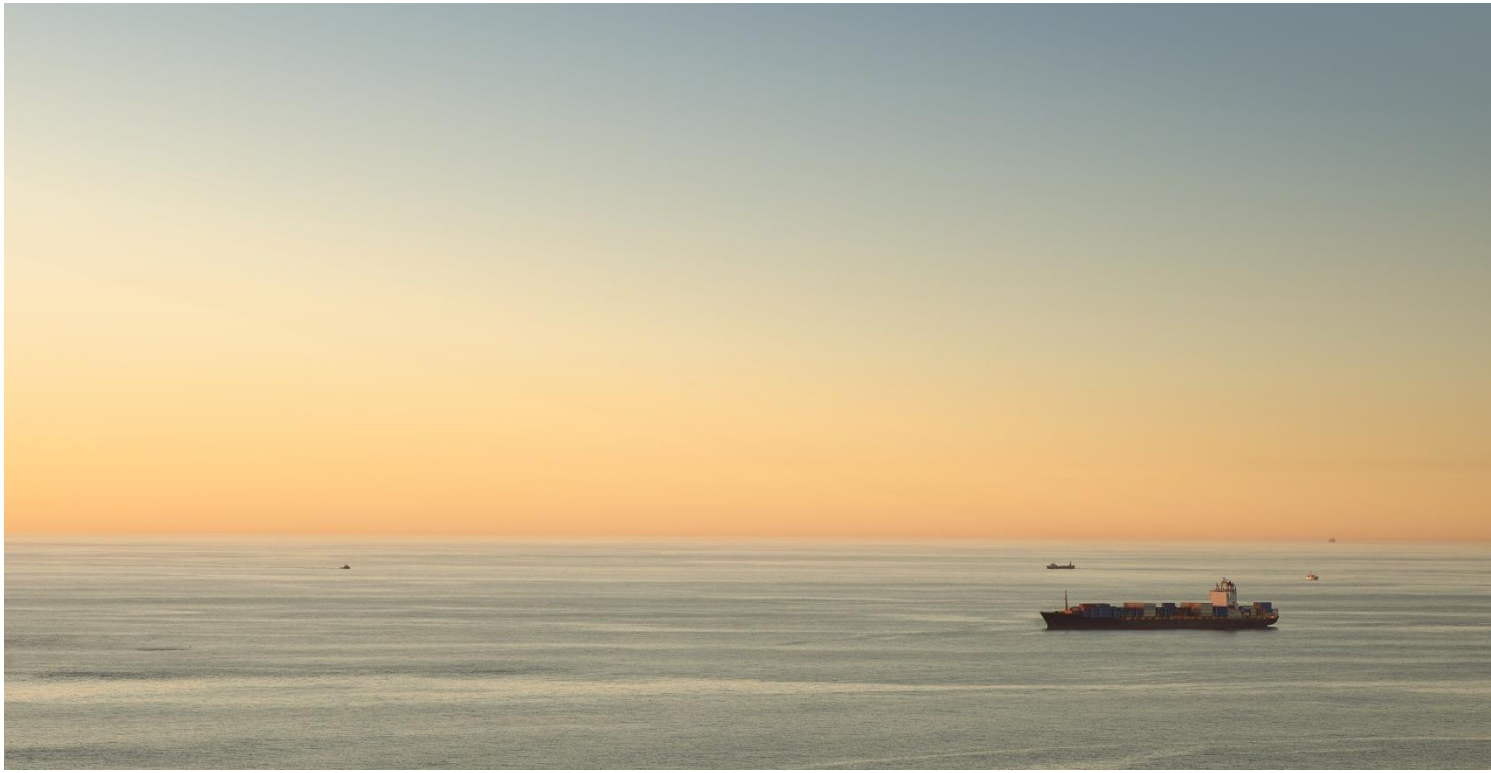
- The government has been advocating a broad agenda of privatizations. Although the privatization of some important assets (e.g., Petrobras, BNDES) is unlikely, the government may succeed in privatizing other assets (e.g., airports, BR Distribuidora). Not only would the privatizations improve the short-term dynamics of public accounts, they could also increase the long-term efficiency of the economy.

Government's main assets and state-owned enterprises

Sector	Asset	Probability of approval
Infrastructure	Various airports	High
Communications	Telebras	High
Communications	Postal service	High
Infrastructure	North-South railroad (FNS)	High
Infrastructure	Grains railroad (Ferrogrão)	High
Other	LOTEX	High
Oil	BR Distribuidora	High
Infrastructure	Port authorities of various states (MA, SP, ES, RN, BA)	High
Infrastructure	Various toll roads (Nova Dutra, BR- 116/ RJ - CRT , BR - 040/MG/RJ - CONCER , BR-153 GO/TO , BR-364/365/MG/GO , BR 364/RO/MT, BR 101 SC , Rodovia de Integração do Sul (RIS) BR-101/290/386/448/RS)	High
Infrastructure	Sale of Infraero's stake in concessionaires of Brasília, Confins, Galeão, and Guarulhos airports	Medium
Communications	Empresa Construtora Brasil – ECB	Medium
Infrastructure	Eletrobras	Medium
Infrastructure	West–East Integration Railroad (FIOL)	Medium
Finance	BNDES Participações	Medium
Finance	Brazilian Mint	Medium
Oil	Petrobras refineries	Medium
Infrastructure	Furnas	Low
Infrastructure	Transnordestina	Low
Finance	Caixa	Low
Finance	Banco do Brasil	Low
Finance	BNDES	Low
Finance	Regional banks (Banco do Nordeste, Banco da Amazônia)	Low
Mining	Various mineral deposits (Carvão de Candiota - RS, Miriri - PE/PB, Bom Jardim - GO , Palmeirópolis - TO)	Low
Oil	Petrobras	Low

Source: Credit Suisse

External sector



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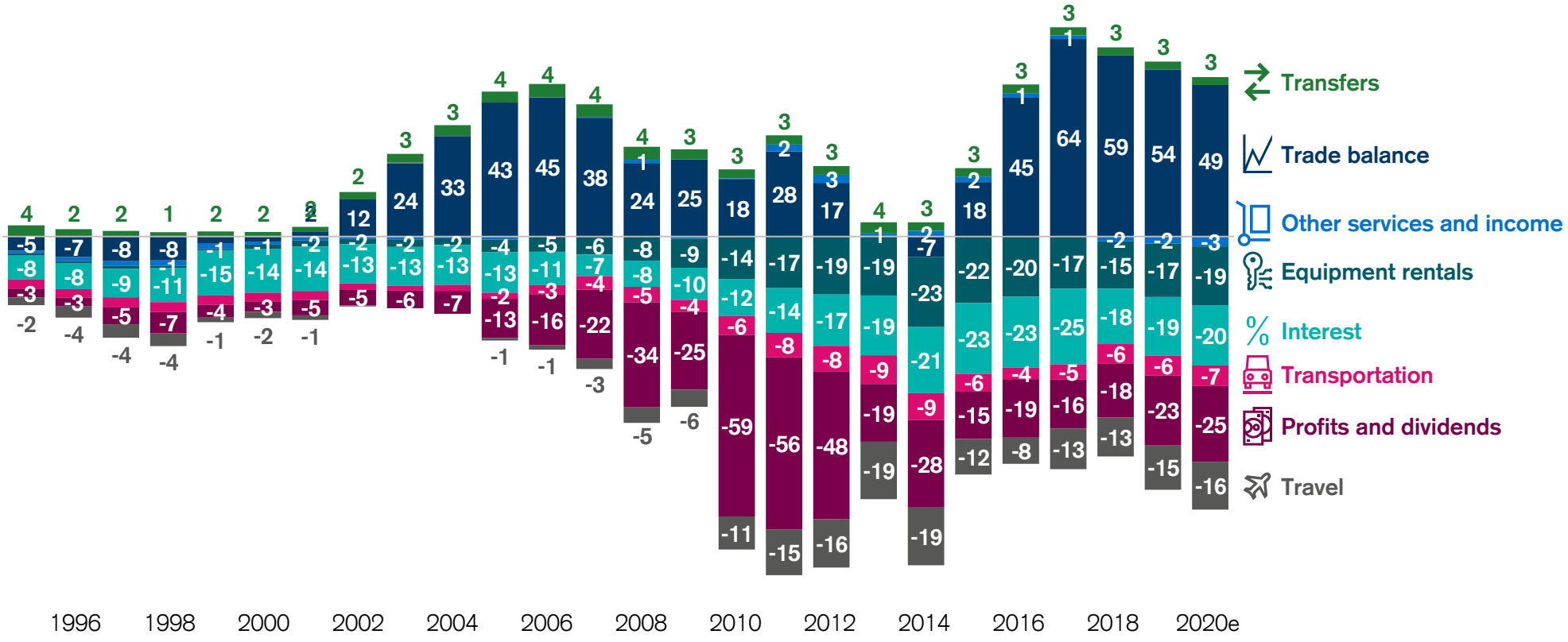
Current-account deficit to increase to USD25bn in 2019

- Resumption of domestic demand is expected to lower the trade balance and increase remittances of profits and dividends in the coming years. As a result, the current-account deficit would increase from USD9.9bn (0.8% of GDP) in 2018 to USD25bn (1.2% of GDP) in 2019 and USD37bn (1.7% of GDP) in 2020.

Breakdown of current-account deficit
(USD billion)

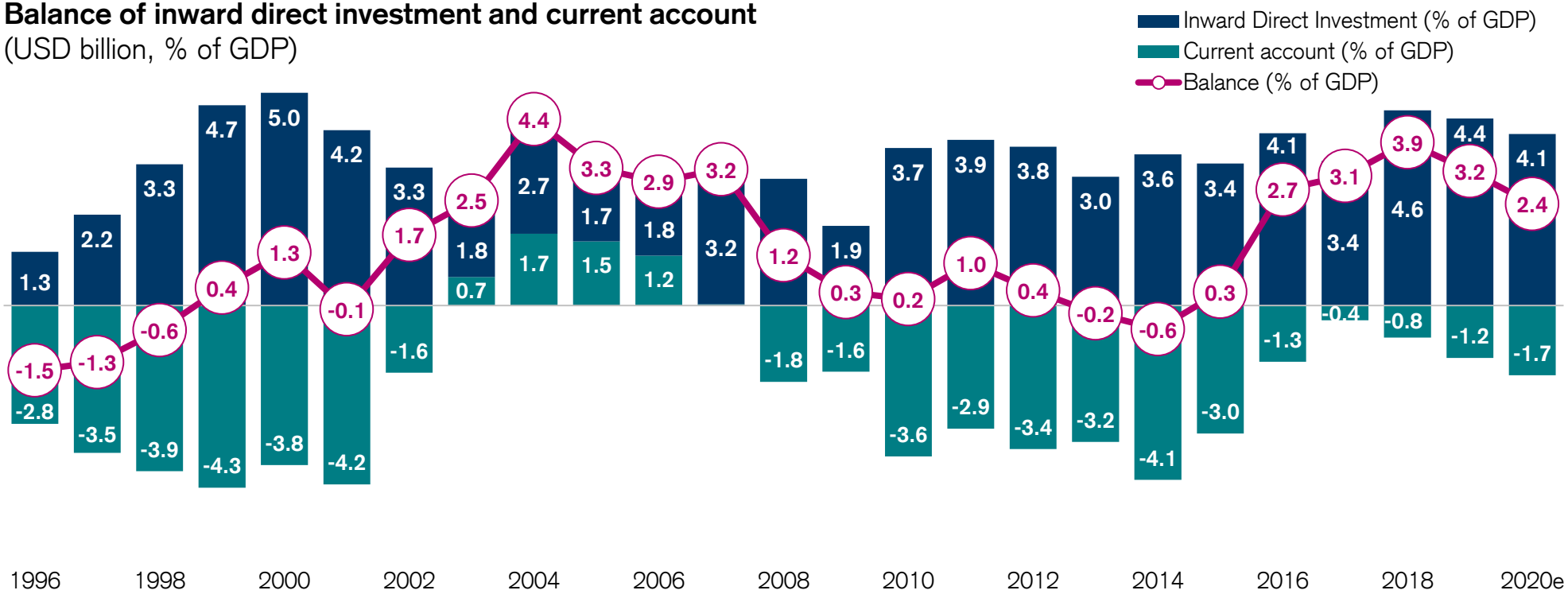


Source: Central Bank of Brazil, Credit Suisse

IDI to continue to finance current-account deficit

- Despite the higher current-account deficit expected for the next years, inward direct investment (IDI) will remain sufficiently high to finance it.
- IDI is characterized as a less volatile type of investment and more closely associated with the fundamentals of the economy. The privatization and infrastructure agenda of the incoming administration could boost IDI in the coming years. We expect IDI to increase from USD83bn in 2018 to USD90bn in 2019 and 2020.

Balance of inward direct investment and current account
(USD billion, % of GDP)

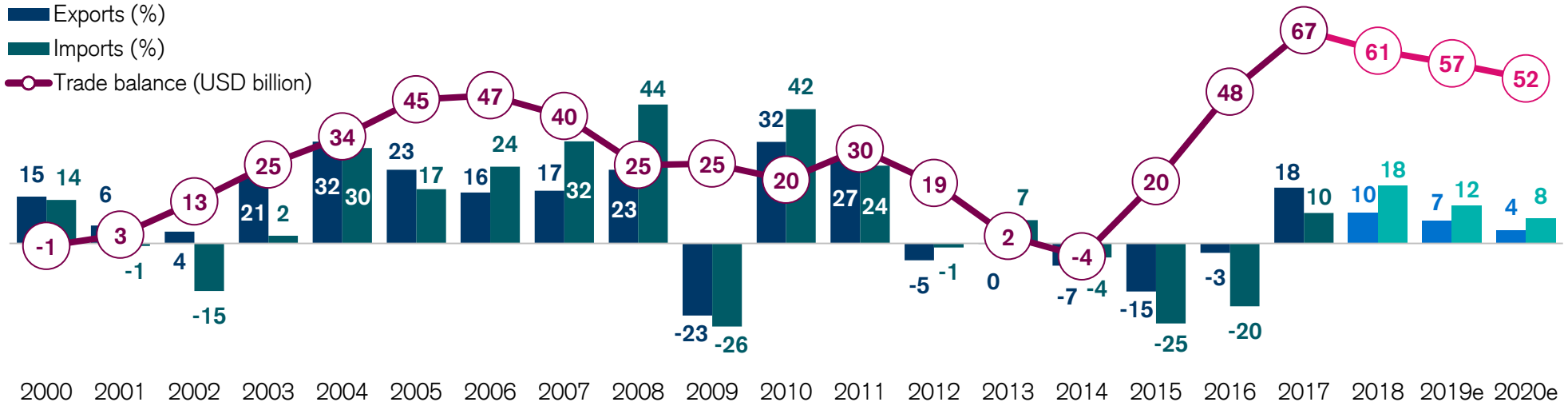


Source: Central Bank of Brazil, Credit Suisse

Imports should keep increasing in 2019

- The trade balance declined to USD61bn in 2018, after three consecutive years of marked increases. The 18% yoy increase in imports in the period more than offset the more modest growth of 10% yoy in exports. Resumption of economic activity was the main driver behind the more robust growth in imports this year.
- Imports will likely continue to grow at high rates in 2019 and 2020 despite the more depreciated BRL, as a result of an acceleration in GDP growth in the next few years. On the other hand, exports are expected to increase because of the more depreciated level of the local currency.
- Our scenario does not assume a significant impact from the government's agenda of greater trade openness in 2019 and 2020. More meaningful impacts would occur in the medium and long terms.

Trade balance and growth in exports and imports (USD billion, % year-on-year change)

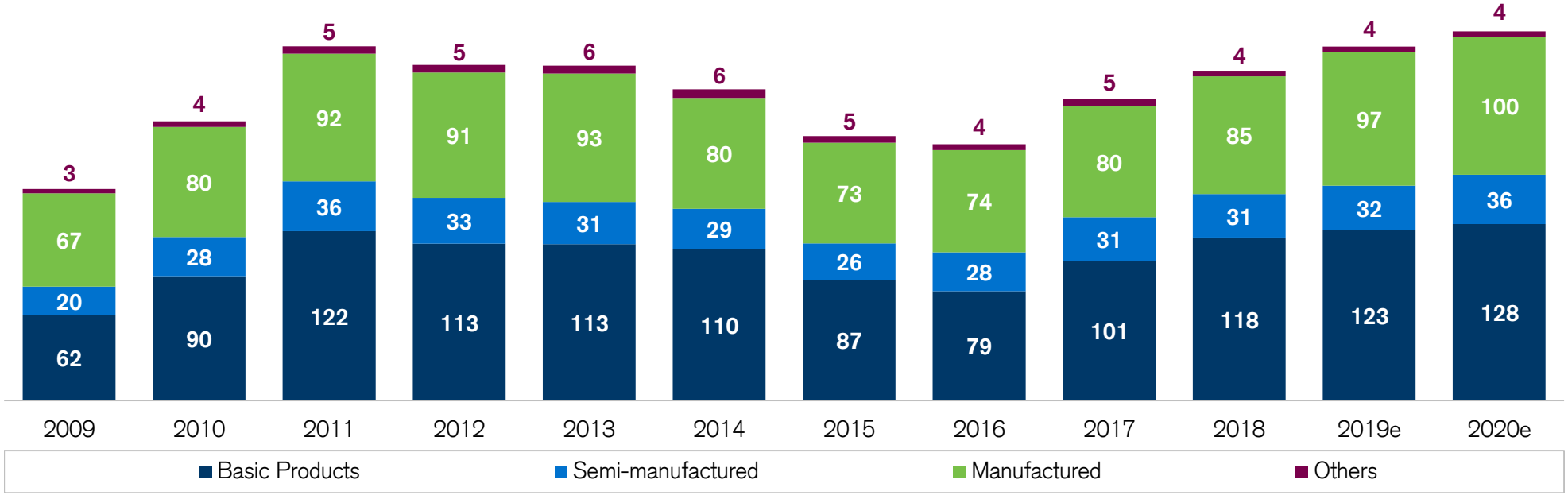


Source: Ministry of Development, Industry, and Commerce (MDIC), Credit Suisse

Exports to increase to USD256bn in 2019

- Exports grew for the second straight year, totaling USD238bn in 2018. The higher exports in the year were driven by basic and manufactured goods, the former influenced by the dynamics of prices and volumes and the latter, by higher prices.
- We expect higher growth in exports of manufactured and basic goods in 2019 and 2020, due to the more depreciated BRL and despite the lower GDP growth in Brazil's main trading partners. Total exports are expected to rise from USD238bn in 2018 to USD256bn in 2019 and USD267bn in 2020.

Total exports, by product (USD billion)

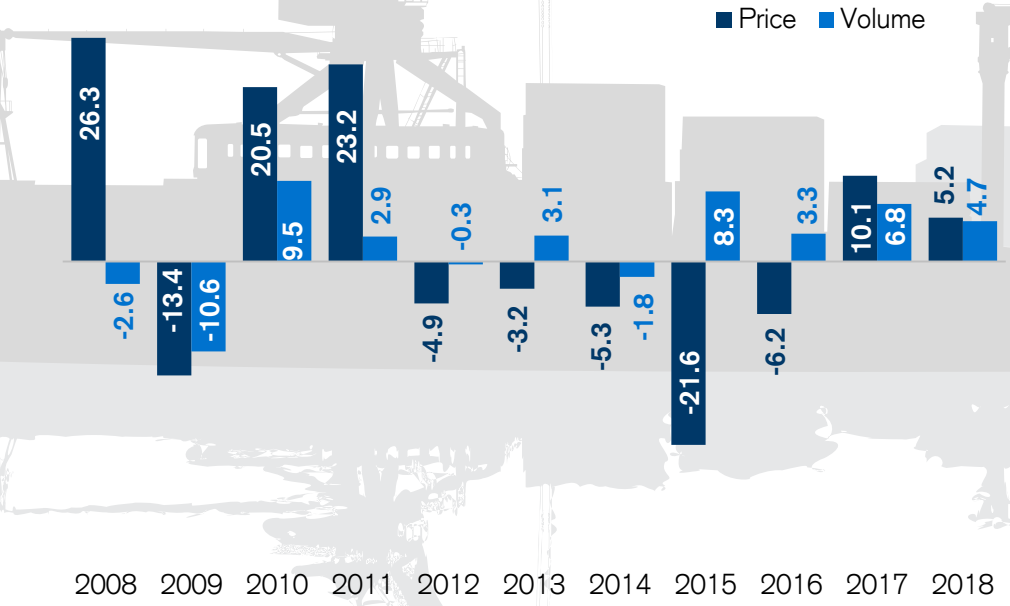


Source: Ministry of Development, Industry, and Commerce (MDIC), FUNCEX, Credit Suisse

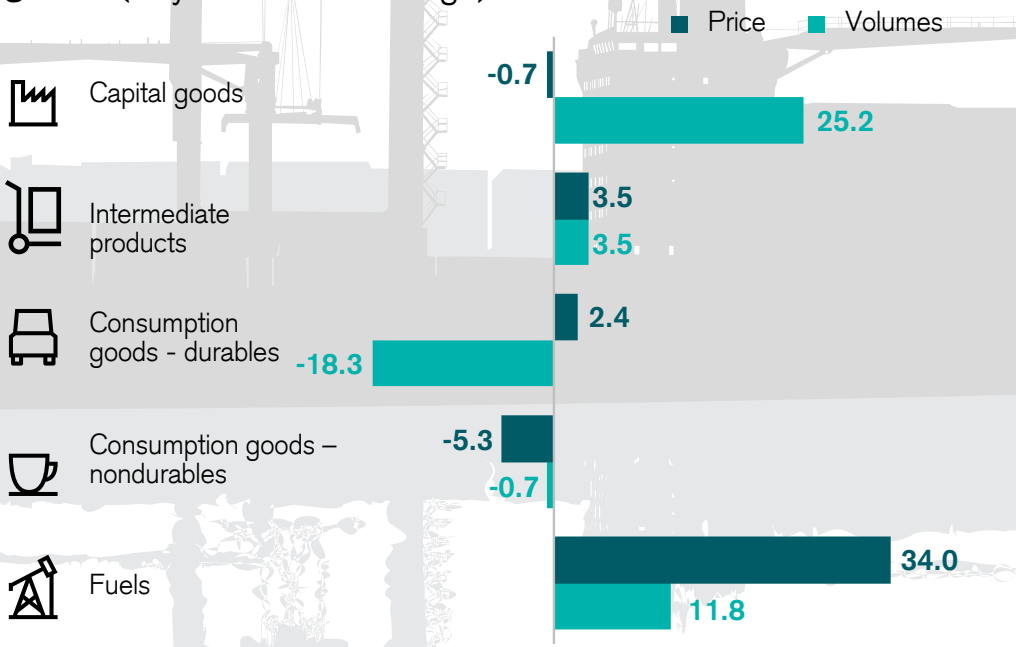
Exports strongly influenced by higher fuel prices

- The growth in total exports of 9% in 2018 was explained by an increase in both volumes and prices, the same dynamics observed in 2017. The growth of 5.2% yoy in export prices was significantly driven by an acceleration in fuel prices in 2018 (25.2% yoy).
- Volume increase, on the other hand, was driven by the expansion in capital goods exports (21.8%).

Growth in export prices and volumes
(% year-on-year change)



Growth in export prices and volumes in 2018, by class of goods (% year-to-date change)

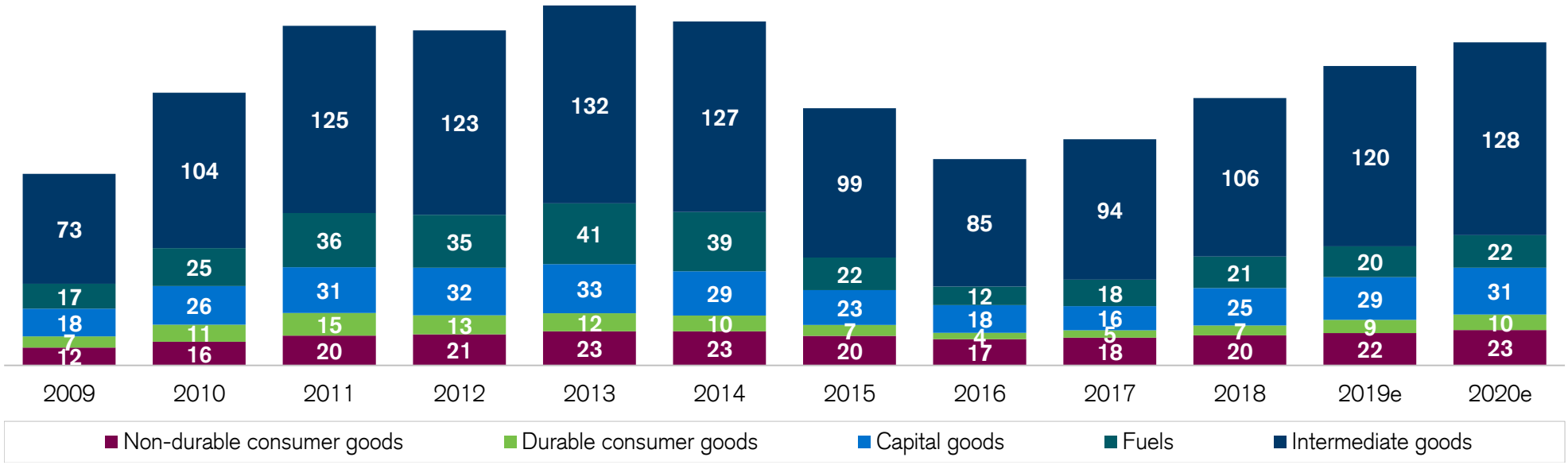


Source: Ministry of Development, Industry, and Commerce (MDIC), FUNCEX, Credit Suisse

Imports to increase by 12% in 2019

- Imports posted strong growth of 18% in 2018. The positive performance of imports was widespread among all main five classes of goods.
- The acceleration of economic activity should continue to boost imports in the coming quarters, despite the more depreciated local currency. We expect imports to increase from USD178bn in 2018 to USD199bn in 2019 and USD215bn in 2020. We expect the good performance to be widespread among all main groups, the only exception being fuels in 2019.

Total imports, by class of goods (USD billion)

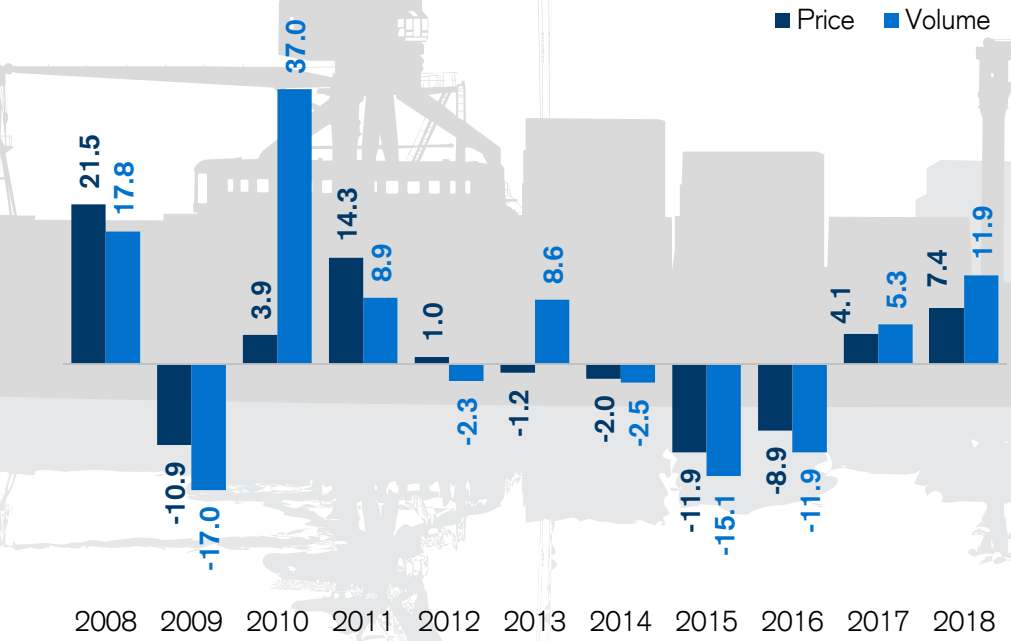


Source: Ministry of Development, Industry, and Commerce (MDIC), Credit Suisse

Domestic demand boosted import volumes in 2018

- The growth of 11.9% yoy in import volumes was the strongest since 2010. Despite the more depreciated exchange rate, resumption of domestic demand boosted purchases of goods abroad. Capital and durable consumption goods posted the highest growth in volume in 2018. Prices showed an acceleration in the year, mostly due to the higher prices of fuel.
- We expect further increases in imports in 2019 and 2020, due to stronger growth in domestic demand.

Growth in import prices and volumes[1]
(% year-on-year change)



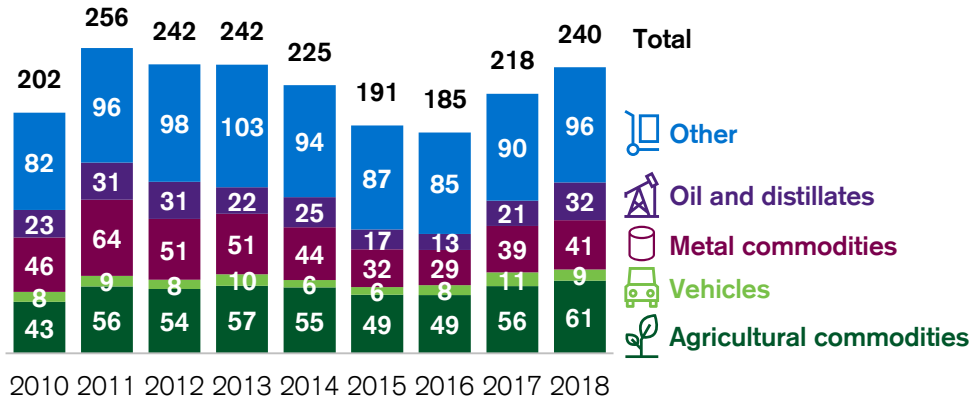
Growth in import prices and volumes in 2018, by class of goods (% year-to-date change)

[1]Year-to-date change for 2018.
Source: Ministry of Development, Industry, and Commerce (MDIC), FUNCEX, Credit Suisse

Commodities represent 67% of all exports

- The share of commodities in total exports increased from 52.3% in 2000 to 67.7% in 2018. Three of the main commodities (soybeans, oil, and iron ore) totaled 38.7% of all exports in 2018.
- The increase of the share of commodities in total exports is explained partly by the lower competitiveness of the economy. The low growth in productivity compared to other economies reduced Brazil's capacity to compete in global trade, especially with emerging economies in Asia.

Exports (USD billion)



Breakdown of exports (USD billion, % of total)

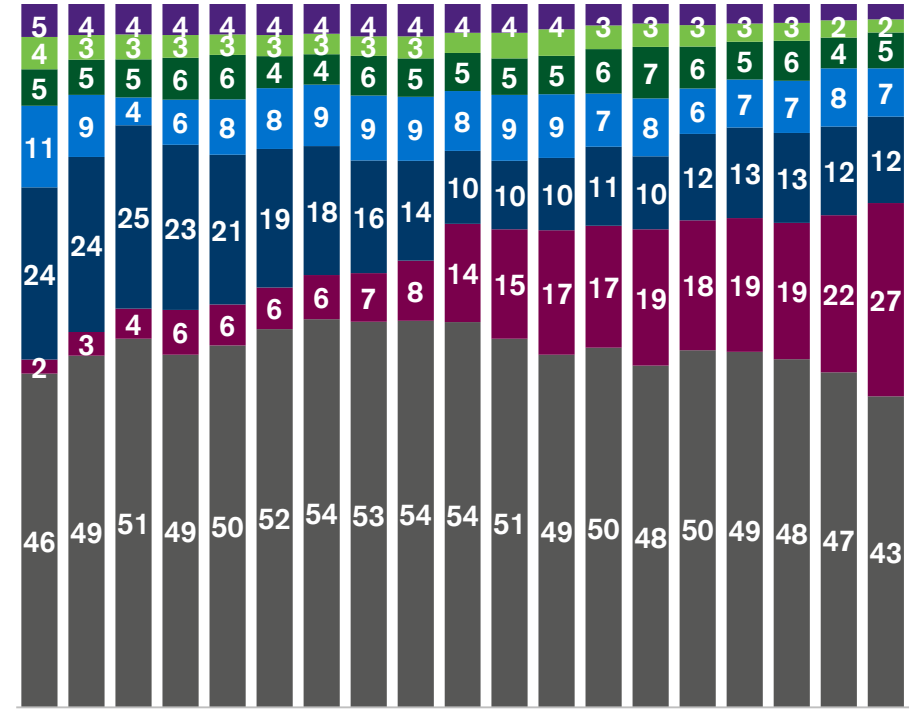
	USD bn				% of total			
Year	2000	2005	2010	2018	2000	2005	2010	2018
Commodities	**28.8**	**69.3**	**135.8**	**162.3**	**52.3**	**58.4**	**67.3**	**67.7**
Main commodities	**22.5**	**57.0**	**121.2**	**147.4**	**40.9**	**48.0**	**60.1**	**61.5**
Soy complex	4.2	9.4	17.1	40.9	7.6	8.0	8.5	17.1
Oil and distillates	1.9	9.1	23.0	31.7	3.4	7.6	11.4	13.2
Iron ore	3.0	7.3	28.9	20.2	5.5	6.1	14.3	8.4
Steel and metal products	5.9	12.6	13.1	15.9	10.7	10.6	6.5	6.6
Paper and pulp	2.5	3.4	6.8	10.4	4.6	2.9	3.3	4.3
Sugar	1.2	3.9	12.8	6.5	2.2	3.3	6.3	2.7
Chicken	0.8	3.5	6.2	6.2	1.5	3.0	3.1	2.6
Beef	0.8	3.0	4.5	6.1	1.4	2.6	2.2	2.6
Coffee	1.8	2.9	5.7	4.9	3.2	2.4	2.8	2.0
Non-ferrous metals	0.2	0.7	1.9	3.4	0.4	0.6	1.0	1.4
Pork	0.2	1.1	1.2	1.1	0.3	0.9	0.6	0.4
Other commodities	**6.3**	**12.3**	**14.5**	**14.9**	**11.4**	**10.3**	**7.2**	**6.2**
Non-commodities	**24.3**	**46.0**	**56.6**	**65.0**	**44.1**	**38.8**	**28.1**	**27.1**
Main non commodities	**21.3**	**39.9**	**48.7**	**52.9**	**38.7**	**33.6**	**24.1**	**22.0**
Chemicals	3.9	7.0	12.2	13.0	7.0	5.9	6.1	5.4
Auto parts	3.4	6.6	8.4	12.2	6.1	5.6	4.1	5.1
Heavy machinery	3.1	7.0	8.2	9.1	5.6	5.9	4.1	3.8
Automobiles and motorcycles	1.8	4.7	4.6	5.3	3.3	3.9	2.3	2.2
Transportation vehicles	1.0	3.6	3.6	4.2	1.8	3.1	1.8	1.7
Aircraft	3.4	3.2	4.0	3.5	6.2	2.7	2.0	1.5
Electrical and electronics	2.8	5.3	4.8	3.2	5.2	4.5	2.4	1.3
Pharmaceuticals	0.2	0.5	1.3	1.2	0.4	0.4	0.6	0.5
Footwear	1.6	2.0	1.6	1.1	2.9	1.7	0.8	0.5
Ex-commodities and non-commodities	**2.0**	**3.4**	**9.4**	**12.6**	**3.6**	**2.9**	**4.7**	**5.2**
Total	**55.0**	**118.7**	**201.8**	**239.9**				

Source: Central Bank of Brazil, Credit Suisse

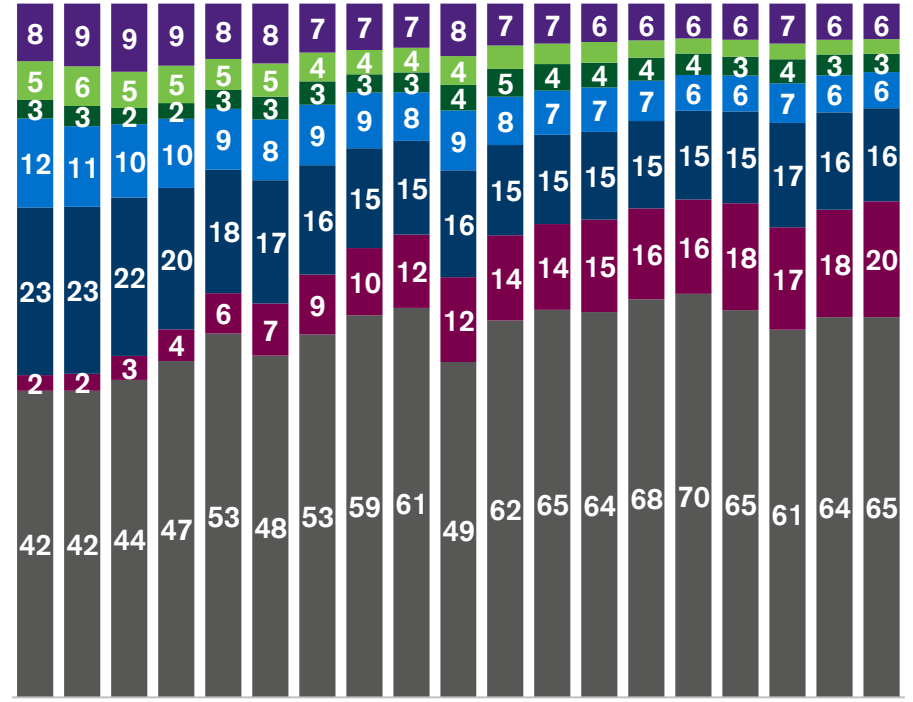
China accounts for 27% of Brazil's exports

- China is Brazil's main trading partner, accounting for 27% of its exports and 20% of its imports. Trade with the Asian country has been increasing steadily since 2000. The United States, Argentina, and the European Union are also important trading partners.

Total exports, by partner (%)



Total imports, by partner (%)



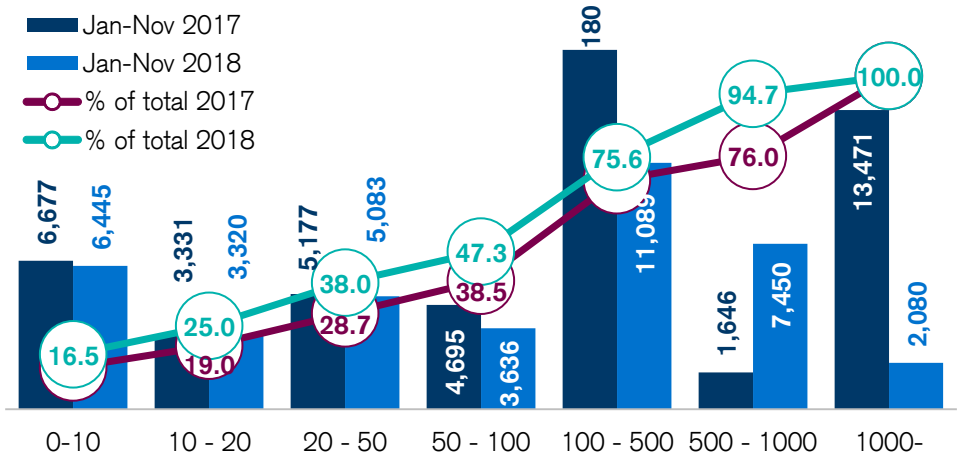
Others China United States Argentina Netherlands Japan Germany

Source: MDIC, Credit Suisse

IDI was more widespread among sectors and volumes

- IDI in 2018 was widespread among sectors. The highest share of IDI went to oil and natural gas (USD5.3bn), followed by motor vehicles (USD4.5bn) and financial services (USD2.7bn).
- At the same time, IDI was also more diluted in terms of size of operations. Operations worth more than USD1.0bn totaled only USD2.1bn between January and November 2018, much lower than the USD13.4bn in the same period last year. Less concentrated IDI both in terms of volume and sectors suggests a less volatile flow of investments.

Inward direct investment, by transaction volume
(USD million, % of total)



Inward direct investments, by sector
(USD billion, % of total)

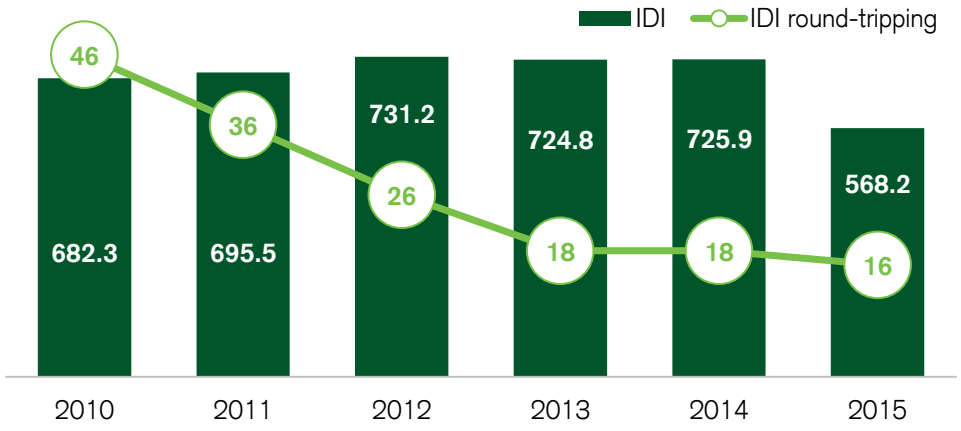
	USD bn			% of total		
	2016	2017	2018	2016	2017	2018
Agriculture, cattle raising, and mineral extraction	**8.7**	**5.9**	**8.5**	**16.3**	**9.7**	**18.4**
Oil and natural gas	4.3	3.7	5.3	8.0	6.2	11.4
Extraction of metallic minerals	2.5	1.0	1.2	4.6	1.6	2.6
Agriculture	0.9	0.6	0.2	1.7	0.9	0.4
Other agriculture	1.1	0.6	1.8	2.0	1.0	4.0
Industry	**20.2**	**18.6**	**16.7**	**37.9**	**30.9**	**36.2**
Chemicals	2.2	3.1	2.4	4.1	5.2	5.1
Food products	1.3	2.6	1.6	2.4	4.3	3.5
Motor vehicles and flatbeds	6.6	4.0	4.5	12.3	6.5	9.8
Information technology, electronic products, and optical	0.6	0.5	0.4	1.0	0.8	0.8
Machinery and equipment	1.6	0.8	0.8	2.9	1.3	1.8
Machinery, devices, and electrical material	1.1	0.5	0.4	2.0	0.8	0.9
Rubber and plastic products	0.4	0.4	0.6	0.8	0.6	1.2
Metallurgy	1.4	3.2	0.9	2.7	5.3	2.0
Pharmaceuticals	0.8	0.6	0.6	1.5	1.0	1.2
Pulp and paper	0.3	0.6	2.0	0.6	1.0	4.3
Non-metallic minerals	1.3	0.6	1.1	2.4	0.9	2.3
Other industries	2.8	1.8	1.4	5.3	2.9	3.1
Services	**24.2**	**35.7**	**20.8**	**45.4**	**59.1**	**45.1**
Telecommunications	0.6	0.3	0.2	1.2	0.5	0.3
Commerce, except vehicles	5.7	5.5	3.1	10.7	9.1	6.8
Real estate activities	1.9	1.5	1.0	3.6	2.4	2.2
Electricity and gas	3.0	12.6	2.5	5.6	20.9	5.4
Financial services	2.0	1.6	3.5	3.8	2.7	7.6
Insurance, retirement, and healthcare plans	0.5	0.4	0.8	0.9	0.6	1.7
IT services	0.5	0.7	1.9	1.0	1.2	4.1
Infrastructure works	0.4	0.1	0.4	0.8	0.1	0.8
Financial services	0.8	0.3	0.8	1.5	0.6	1.8
Transportation	0.3	4.2	1.1	0.6	7.0	2.3
Storage and transportation activities	1.5	2.5	1.6	2.9	4.1	3.5
Advertising and market research	0.6	0.4	0.2	1.1	0.7	0.3
Building construction	0.5	0.5	0.7	0.9	0.8	1.5
Non-real estate rents	0.6	0.2	0.2	1.1	0.3	0.4
Architecture and engineering	0.3	0.4	0.3	0.5	0.6	0.6
Vehicle trade and repairs	0.6	0.4	0.2	1.1	0.7	0.3
Other services	4.3	4.1	2.6	8.0	6.9	5.5
Purchase and sale of real estate	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Total	**53.3**	**60.3**	**46.2**	**100**	**100**	**100**

Source: Central Bank of Brazil, Credit Suisse

Higher number of companies using IDI round-tripping

- IDI statistics in Brazil overestimate foreign investments made in the country because Brazilian companies use subsidiaries located abroad (in countries with a lower tax burden) to make IDI in Brazil, using financial transactions known as round-tripping, which result in lower tax payments by the companies. According to the Central Bank of Brazil, round-tripping of IDI totaled USD16bn in 2015 (or 4% of total IDI), lower than the USD46bn in 2010 (8% of total). Despite the lower level, more companies engaged in round-tripping in 2015 (1506) than in 2010 (732).
- Foreign companies also use third countries to invest in Brazil. For example, the stock of IDI made by the Netherlands totaled USD90bn in 2015, much higher than the stock of IDI made by a final controller located in the Netherlands of USD13bn.

Stock of inward direct investment and round-tripping
(USD billion)



Source: Central Bank of Brazil, Credit Suisse

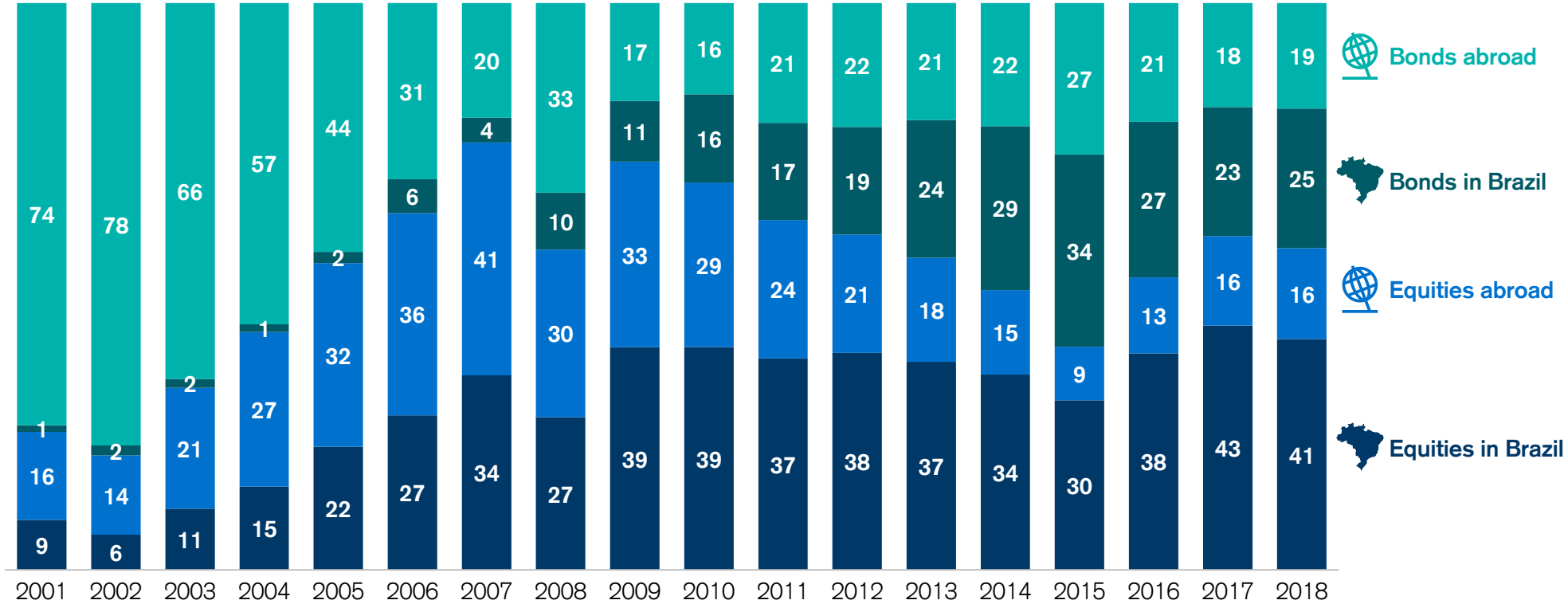
Stock of inward direct investment
(USD billion)

	2010		2015	
	Immediate investor	Final controller	Immediate investor	Final controller
Netherlands	163	15	90	13
Belgium	4	50	4	40
Luxembourg	30	13	27	11
United States	108	110	69	77
China	1	8	1	9
Italy	5	18	4	11
United Kingdom	16	42	16	22
Germany	14	30	8	12
Switzerland	10	13	11	15
France	29	31	18	21
Bermuda	8	9	3	5
Chile	7	4	7	5
Spain	72	85	39	37

Portfolio investments now concentrated in equities

- The sharp deterioration of economic fundamentals in recent years, leading to the loss of investment grade in December 2015, triggered a strong outflow of bond investments in Brazil and lower bond investments abroad. As a result, in recent years portfolio investments have become more concentrated in equities, which represent 59% of the total in 2018.

Stock of external liabilities, portfolio investments[1] (% of total)



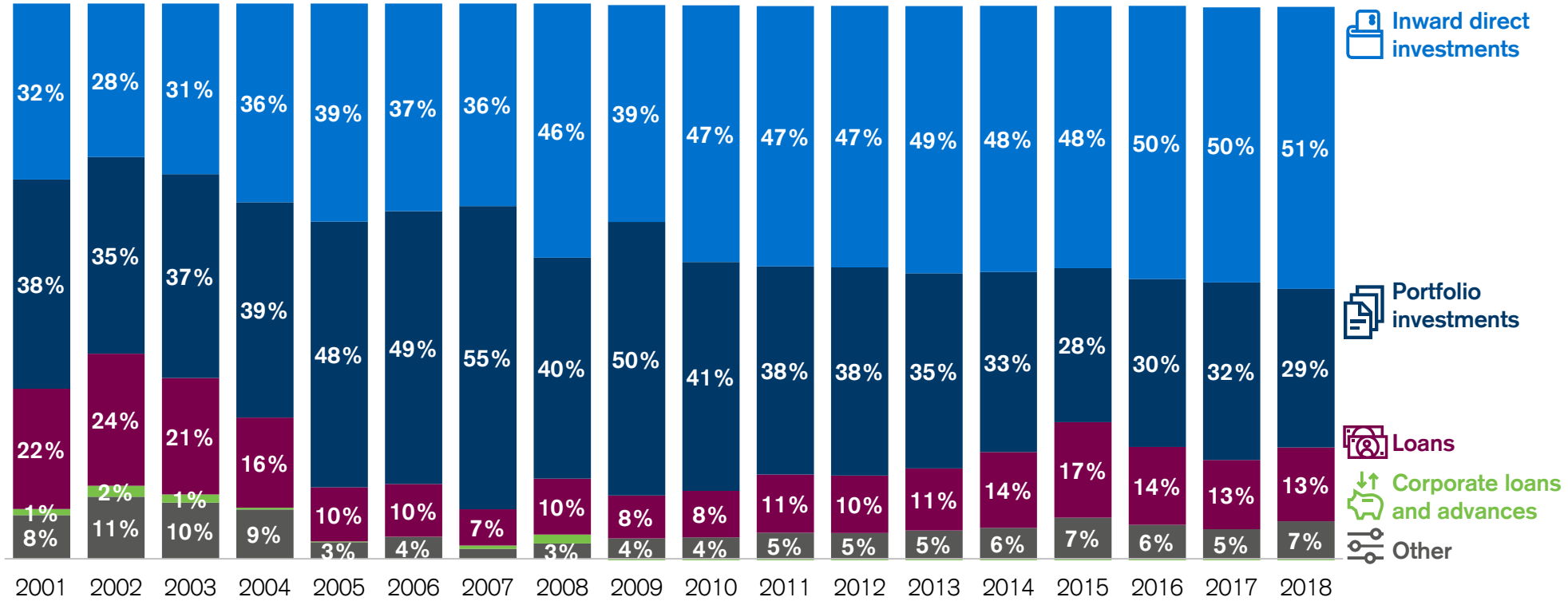
[1]Year-to-date value for 2018.

Source: Central Bank of Brazil, Credit Suisse

Less volatile investments in total external liabilities

- The heavy outflow of portfolio investments in recent years and the resilient high level of inward direct investments has made the position in external liabilities more concentrated in less volatile investments. For example, IDI represented 50% of external liabilities in 2018, much higher than the 39% in 2009. On the other hand, portfolio investments represent just 30% of all external liabilities.

Total stock of external liabilities[1] (% of total)



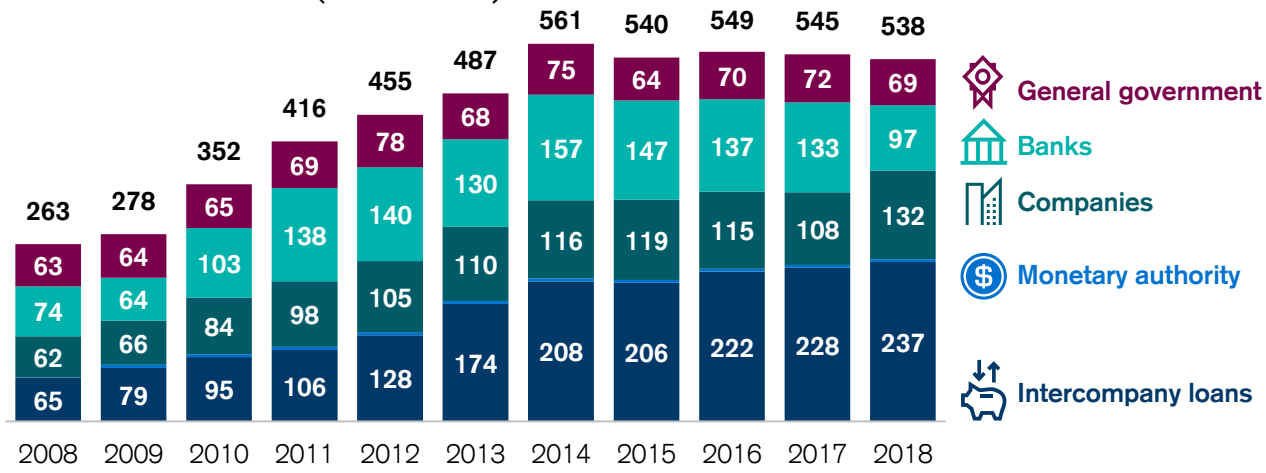
[1]Year-to-date value for 2018.

Source: Central Bank of Brazil, Credit Suisse

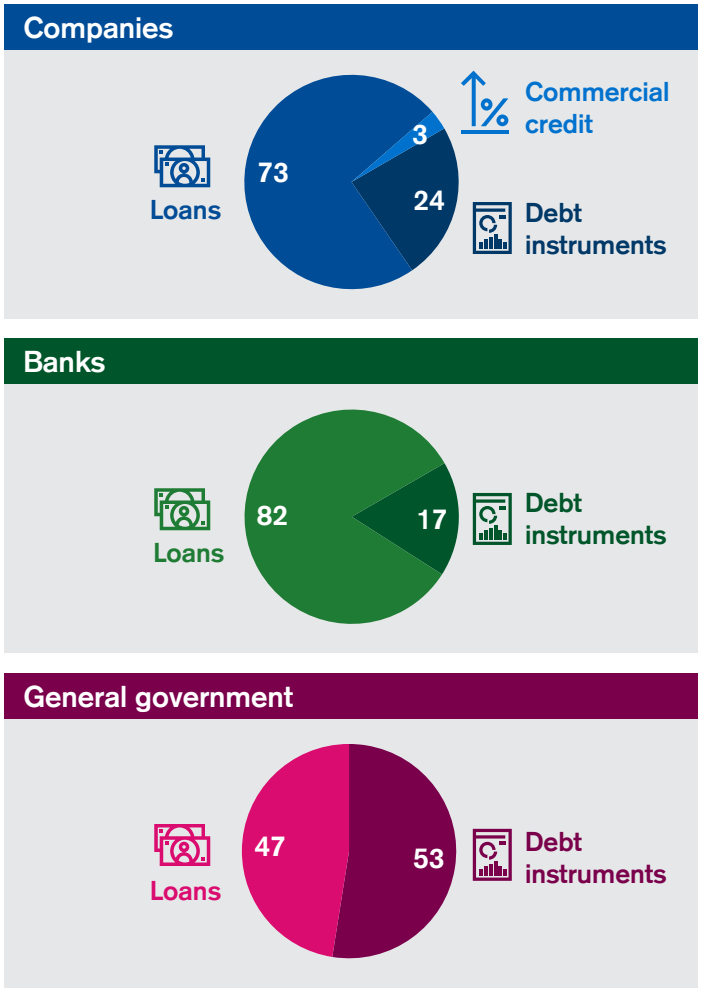
Government's external debt remained stable in 2018

- Brazil's total external debt remained relatively stable at USD538bn from 2017 to 2018. While the government's external debt remained relatively stable, the composition of private external debt changed significantly.
- Companies' debt increased from USD336bn in 2017 to USD369bn in 2018, while banks' liabilities declined from USD133bn to USD97bn in the period.
- Overall, government external debt remains relatively low compared to the FX reserves, and total private external debt declined in the period.

Total external debt (USD billion)



Composition of external debt, by holder
(% of total)

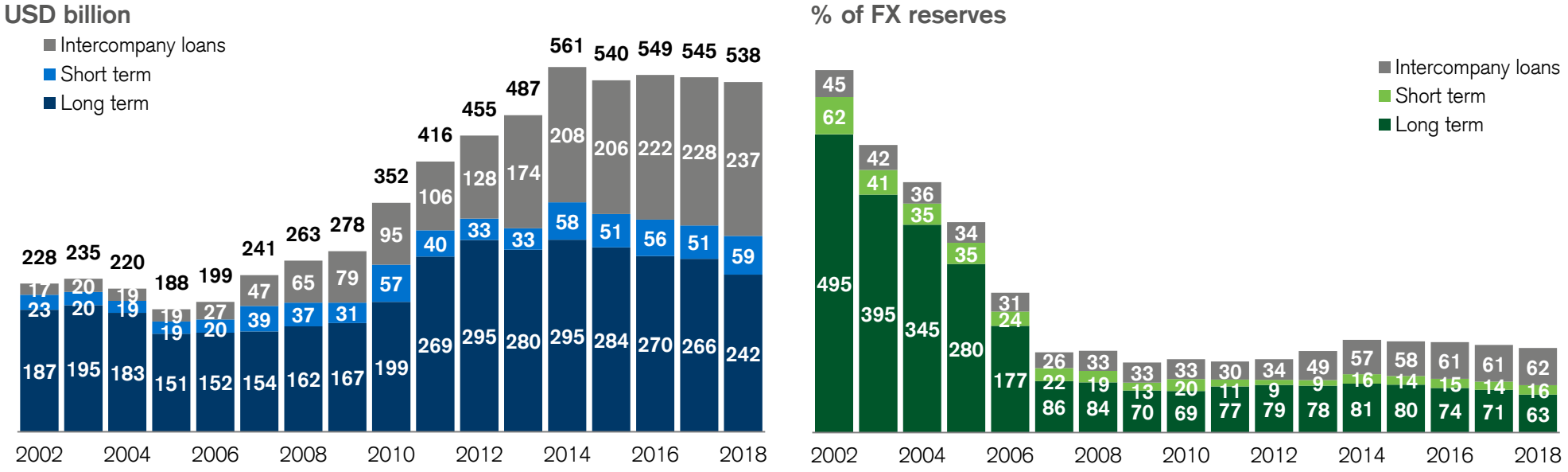


Source: Central Bank of Brazil, Credit Suisse

Short-term external debt represents just 11% of total

- Total external debt remained highly concentrated in long-term debt and intercompany loans. Both components totaled 89% of total external debt. Short-term debt totaled USD59bn in 2018.
- Contrary to the early 2000s, the prospects for external accounts remain favorable. Total external debt, which reached 600% of FX reserves in 2002, represents only 142% of FX reserves in 2018: 16% is short term, 63% long term, and 62% intercompany loans.
- The high level of FX reserves significantly reduces the country's external vulnerability.

Total external debt by time to maturity[1]



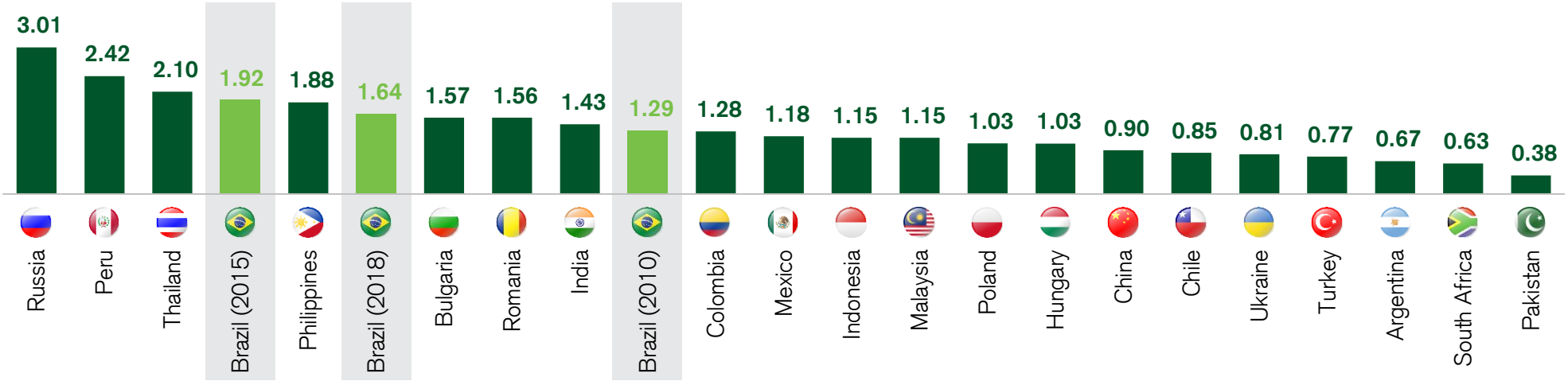
[1]Year-to-date value for 2018.

Source: Central Bank of Brazil, Credit Suisse

FX reserves strongly reduce external vulnerability

- The level of FX reserves accumulated in previous years make the country much less vulnerable to balance-of-payment crises and capital outflows.
- The IMF's indicator of the adequate level of international reserves (Assessing Reserve Adequacy – ARA) points to a more-than-sufficient level of FX reserves in Brazil. The ARA metric evaluates: (i) exports, to reflect the potential loss from a reduction in external demand and terms of trade; (ii) expanded payment solutions, to capture the capital flight risk of residents through liquidation of domestic assets; (iii) short-term external debt, to consider the risk of rolling over this liability; and (iv) other obligations, to capture other channels of capital loss, especially investments in securities and equities of non-resident investors.

Reserves compared with Assessing Reserve Adequacy (ARA) **index in 2018** (%)



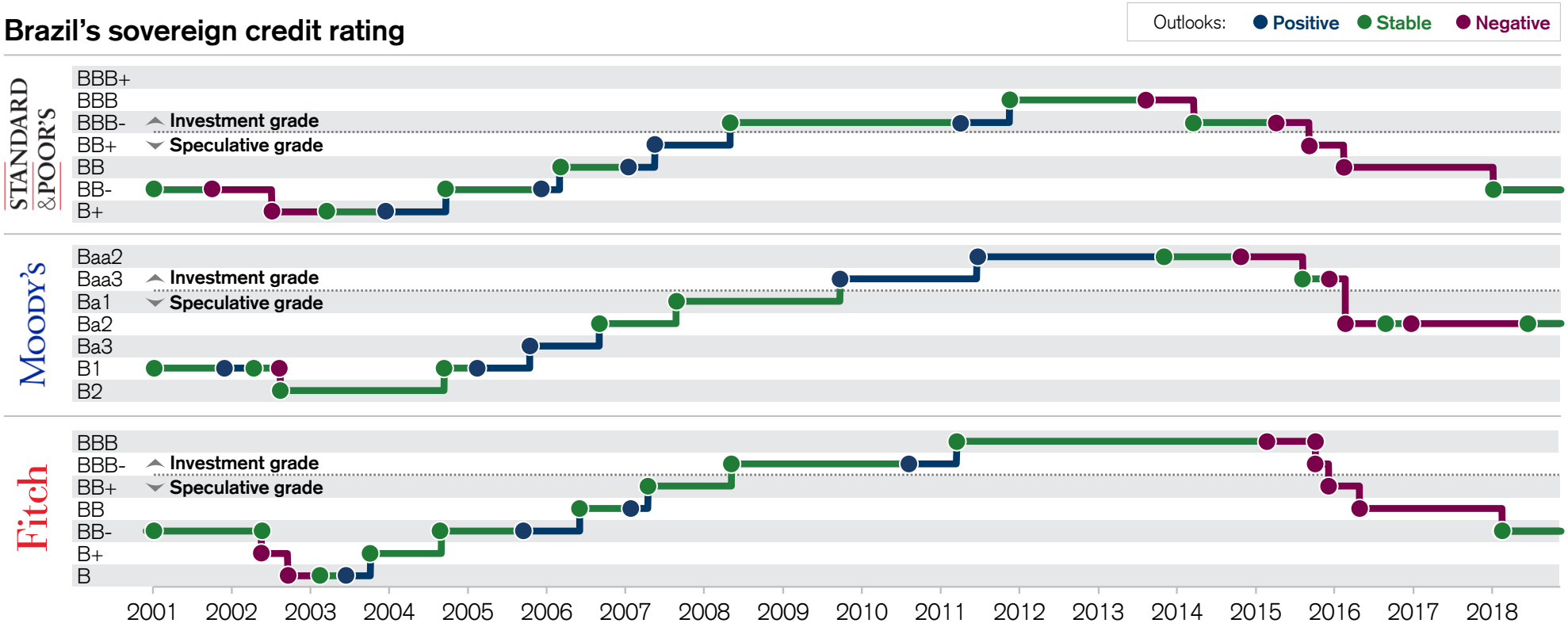
ARA intervals from 1.0 to 1.5 point to adequate international reserves according to the IMF

Source: IMF, Credit Suisse

Rating agencies likely to upgrade Brazil in 2019

- Of the main credit rating agencies, S&P and Fitch rate Brazil three notches below investment grade and Moody's, two. In their reports, the agencies have been emphasizing the need for approval of structural reforms to solve the unsustainable path of the public debt.
- Approval of social security reform in 2019 would probably lead S&P and Fitch to increase Brazil's rating from BB- to BB.

Brazil's sovereign credit rating

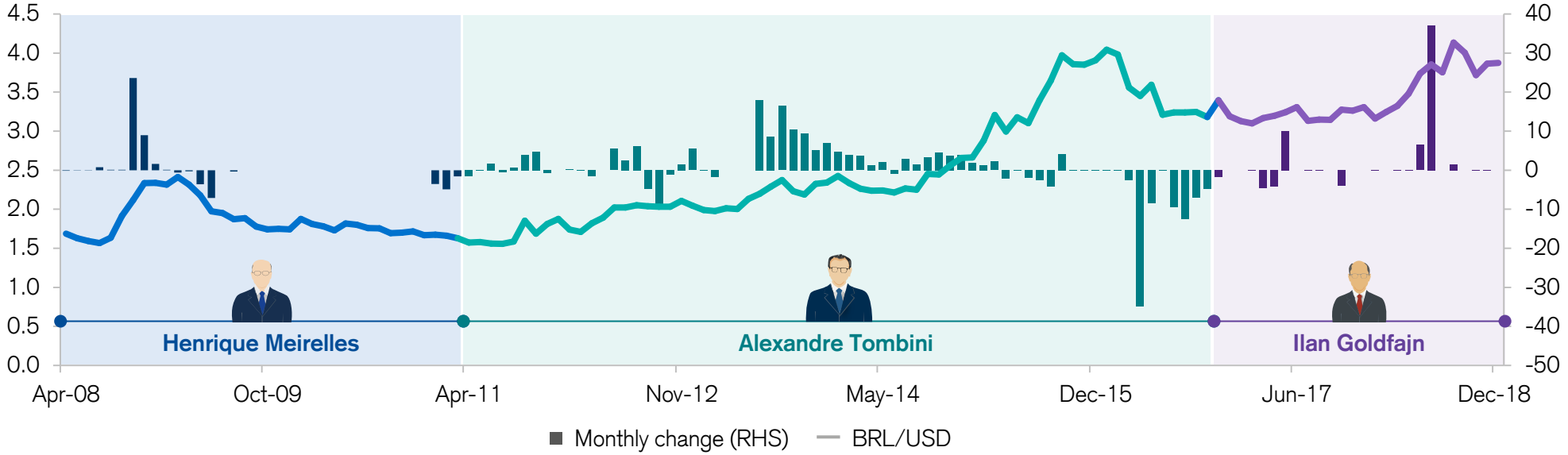


Source: S&P, Moody's, Fitch, Credit Suisse

Central bank more discretionary in use of swaps

- The Central Bank of Brazil actively engaged in FX swaps from 2011 to 2016, claiming that this could smoothen the path of FX and interest rates. The central bank's current policy, however, advocates stronger but more discretionary FX interventions. For example, after six months of negligible interventions between November 2017 and April 2018, the central bank injected USD7bn in May and USD37bn in June, the strongest intervention in history.
- Despite the heavy intervention in 2018, the volume of swaps of USD69bn in October is lower than the peak of USD115bn in March 2015, a period of active management of FX swaps.

BRL/USD exchange rate and change in central bank's position in swaps (BRL/USD, USD billion)

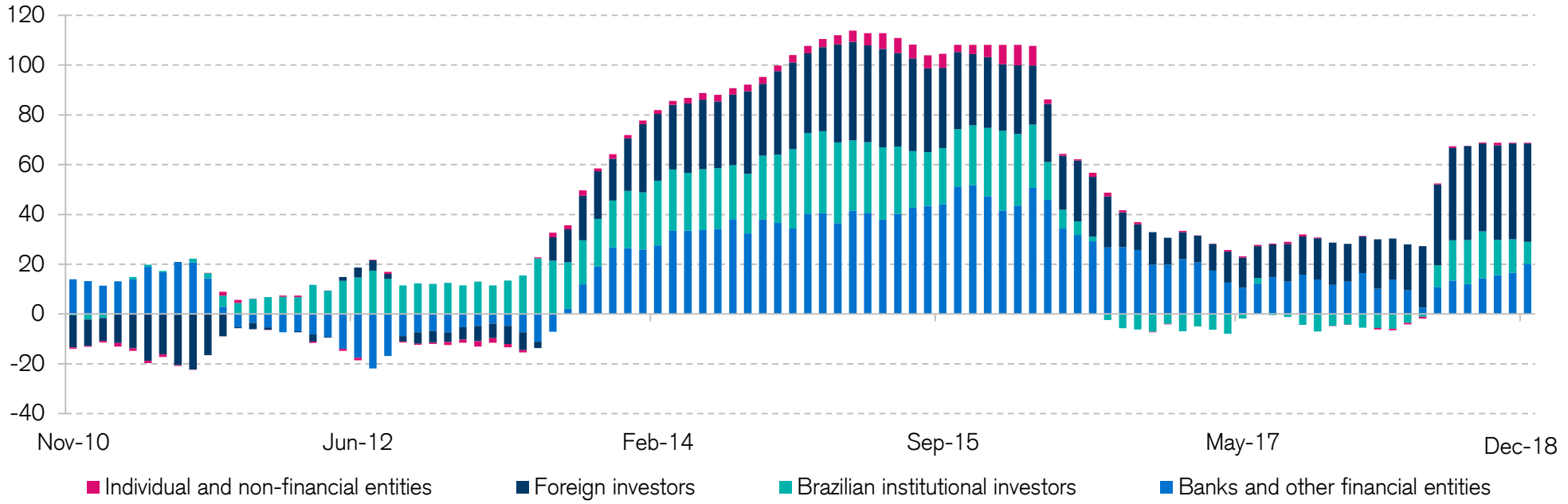


Source: Central Bank of Brazil, Credit Suisse

Sharp rise in USD exposure of domestic investors

- At the beginning of the year, domestic investors (banks and domestic institutional investors) reduced their USD exposure to USD2bn in May, the lowest level observed since August 2012. The strong deterioration of the financial conditions caused by the truckers' strike reversed this trend, and domestic investors increased their USD position to USD31bn in October.
- Also in October, foreign investors increased their USD exposure in the period to its highest level since July 2015: USD37bn.

USD position, by type of investor (USD billion)

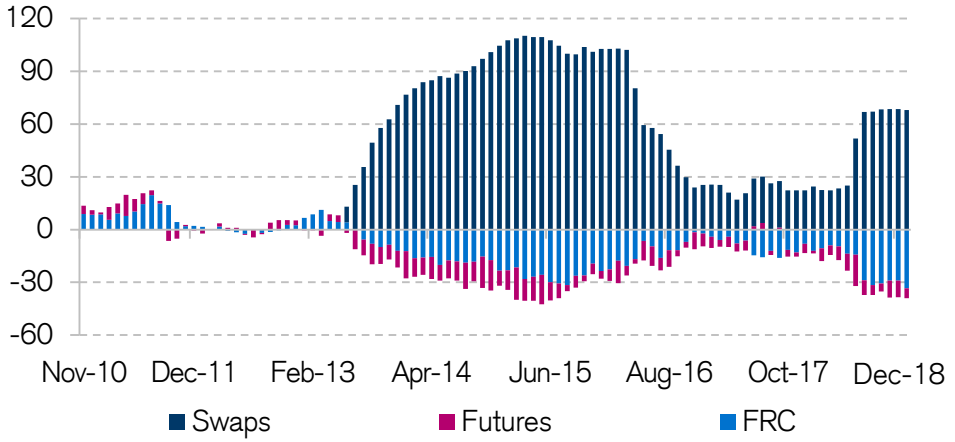


Source: B3, Credit Suisse

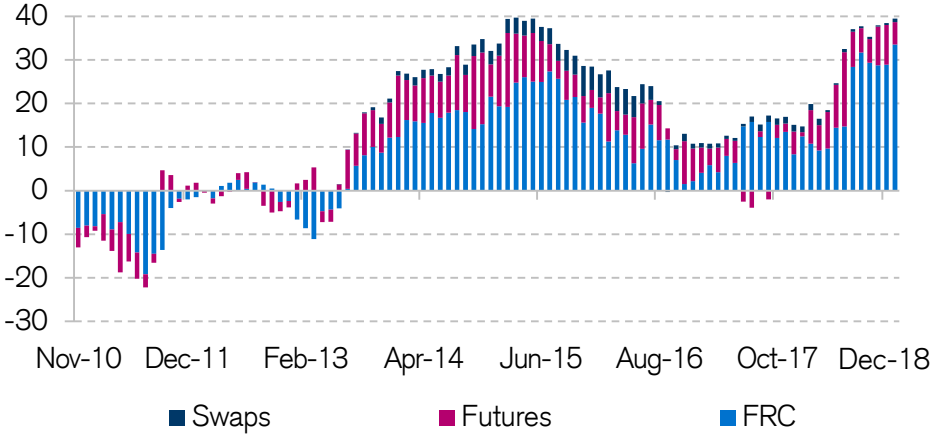
Domestic USD exposure concentrated in swaps

- The strong deterioration of financial conditions caused by the truckers' strike led the central bank to increase its stock of swaps by USD44bn to USD69bn from May to September. The higher supply of the FX derivative was absorbed by domestic investors.
- Foreign investors increased their USD exposure through onshore dollar bonds and future exchange rate contracts. From May to October, foreign investors increased their position in onshore dollar bonds from USD15bn to USD28bn.
- In the event of upward pressure on the BRL/USD exchange rate, we expect the central bank to increase its exposure to the USD (e.g., by selling reverse swaps), thus reducing the exposure of domestic investors to USD.

USD position of domestic investors
(USD billion)



USD position of foreign investors
(USD billion)

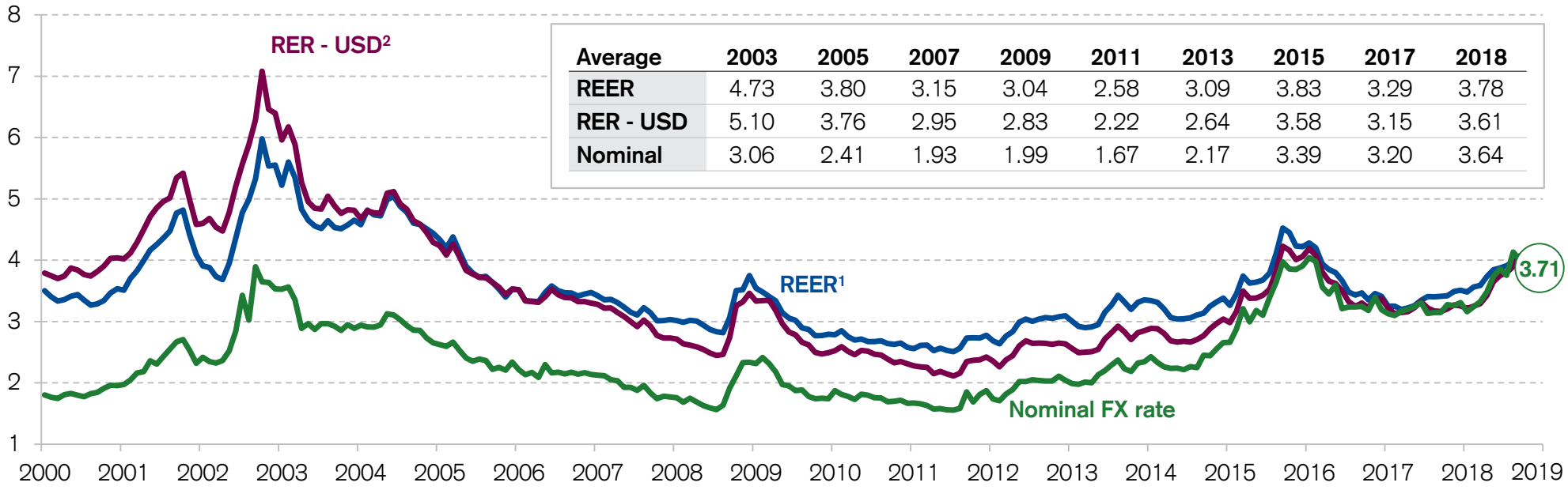


Source: B3, Credit Suisse

Exchange rate of BRL3.60/USD in 2019

- The exchange rate depreciation from BRL3.29/USD at year-end 2017 to BRL3.78/USD in November is explained mostly by external factors, such as higher interest rates in the USA and higher risk aversion in emerging markets. In 2019, we expect the benign effects of domestic factors to offset any negative effects on the external side. The agenda of reforms to be approved by Congress (e.g., social security and tax reform) would improve the prospects of the domestic economy in the coming years.

Nominal real effective BRL/USD exchange rate and real rate in relation to USD[3] (BRL/USD)



Average	2003	2005	2007	2009	2011	2013	2015	2017	2018
REER	4.73	3.80	3.15	3.04	2.58	3.09	3.83	3.29	3.78
RER - USD	5.10	3.76	2.95	2.83	2.22	2.64	3.58	3.15	3.61
Nominal	3.06	2.41	1.93	1.99	1.67	2.17	3.39	3.20	3.64

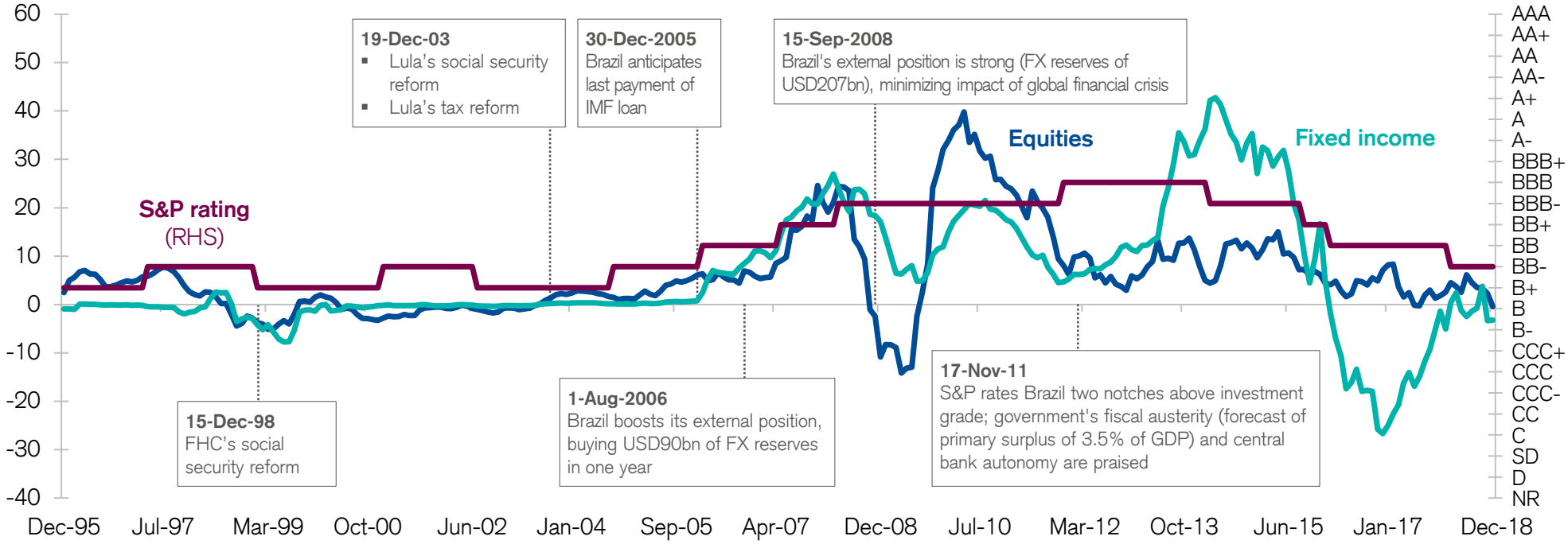
[1] Real effective exchange rate: real exchange rate weighted by share of various countries in Brazil's total exports.
[2] Real BRL/USD exchange rate: exchange rate less the difference between inflation in Brazil and in the USA.
[3] Year to date through October 31.

Source: Central Bank of Brazil, Credit Suisse

Few periods of strong inflows of portfolio investments

- The country saw three periods of strong inflows of portfolio investments: May-07 to Sep-08, Oct-09 to Sep-11, and March-13 to Aug-15. The two first periods were characterized by strong economic growth, healthy public accounts, and a historically high sovereign credit rating. Approval of important structural reforms (e.g., social security reforms in 1998 and 2003) were not sufficient to trigger inflows despite being necessary to improve the fundamentals of the economy and the country's credit rating.

Inflow of portfolio investments and Brazil's credit rating (USD billion, cumulative 12 months)



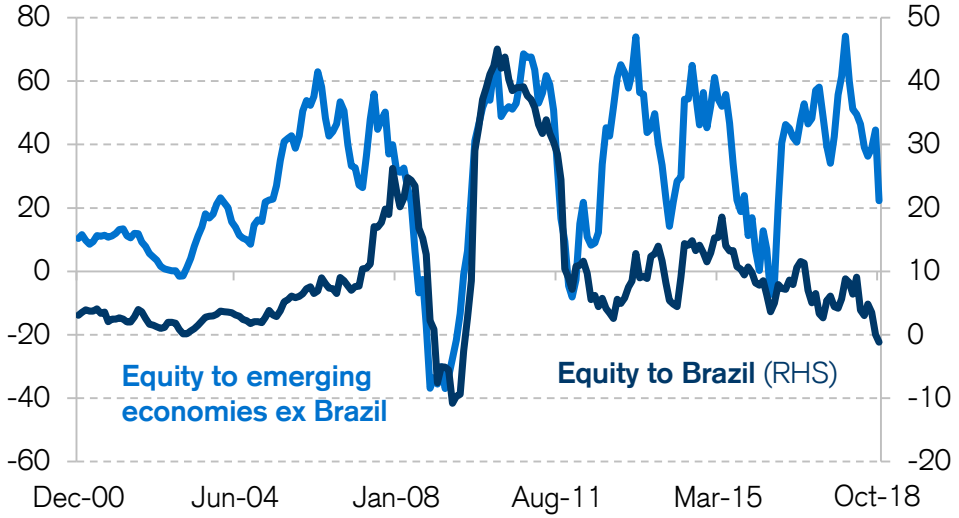
[1] Period of strong inflows into fixed income and equities, totaling more than USD20bn.

Source: Credit Suisse

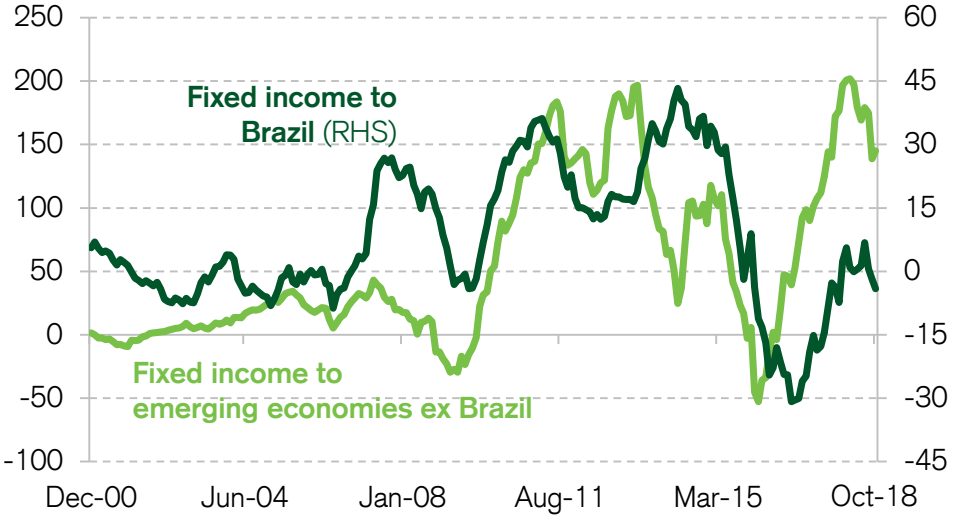
Weak correlation of inflows to Brazil and to peers

- There is a weak correlation between inflows of portfolio investments to Brazil and inflows to other emerging markets. For example, in two of the three episodes of strong inflows of portfolio investments to Brazil, inflows of investments to emerging markets decelerated (May 2007 to September 2008 and March 2013 to August 2015).
- Furthermore, periods of high liquidity in emerging economies do not necessarily guarantee inflows to the country. For example, while fixed-income investments in emerging markets excluding Brazil reached USD145bn in the 12 months through October 2018, fixed-income investments in Brazil saw an outflow of USD4bn in the same period.

Equities inflows to Brazil and to other emerging economies (USD billion, cum. 12 months)



Fixed-income inflows to Brazil and to other emerging economies (USD billion, cum. 12 months)

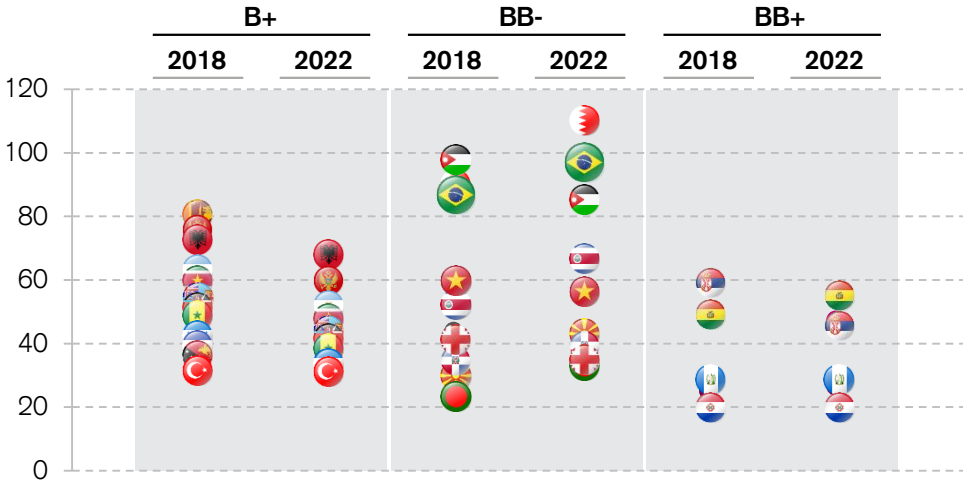


[1]Here we considered the following emerging markets: China, India, Indonesia, Malaysia, Philippines, Taiwan, Vietnam, Chile, Mexico, Bulgaria, Czech Republic, Hungary, Poland, Turkey, Ukraine, Lebanon, South Africa.
Source: Institute of International Finance, Credit Suisse

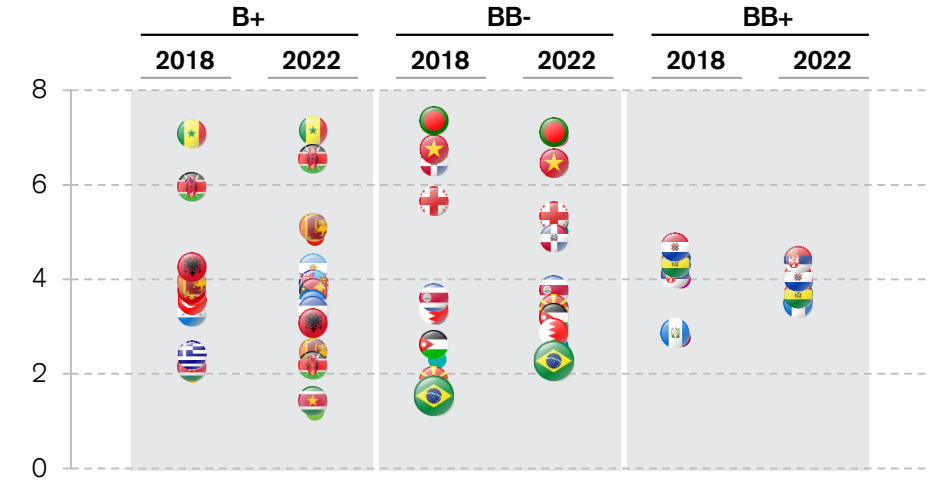
Brazil has high debt and low growth compared to peers

- The IMF expects Brazil's gross debt as a percentage of GDP to increase 11pps to 97% in 2022, the second highest for countries with ratings from one notch higher to one lower than Brazil's (BB-).
- The IMF's expectation for Brazil's GDP growth in the coming years is also less positive than the forecast for its peers. Brazil has the lowest forecast for GDP growth in four years (2.2%) among countries with a BB- rating, the second lowest among countries rated B+, and the lowest among those rated BB+. The reformist agenda of the new administration could make a positive change in the dynamics for both gross debt and GDP growth in the next few years.

Gross debt in 2018 and 2022 for countries rated B+, BB-, or BB+ by S&P (% of GDP)



GDP growth in 2018 and 2022 for countries rated B+, BB-, or BB+ by S&P (%)



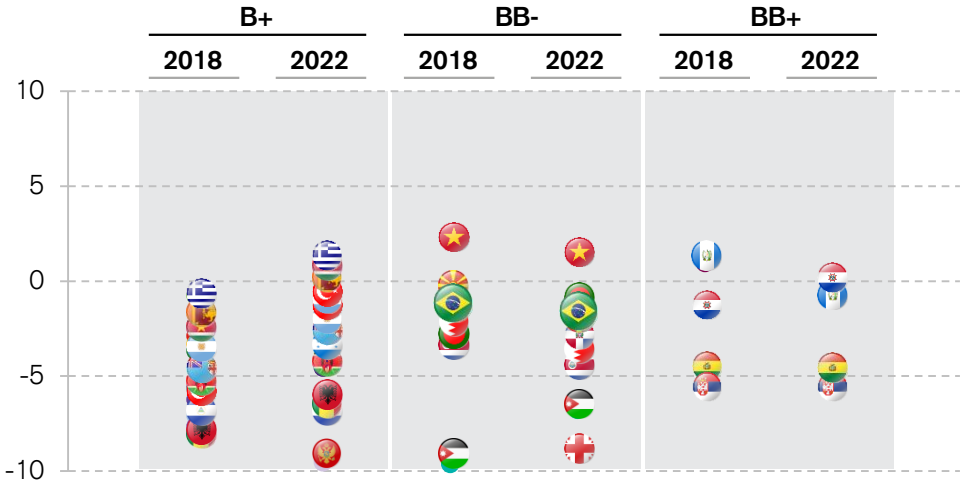
Albania Argentina Bahrain Bangladesh Bolivia Brazil Costa Rica Dominican Rep. Fiji FYR Macedonia Georgia Greece Guatemala
Honduras Jordan Kenya Montenegro Nicaragua New Guinea Paraguay Senegal Serbia Sri Lanka Suriname Turkey Vietnam

Source: S&P, World Bank, IMF, Credit Suisse

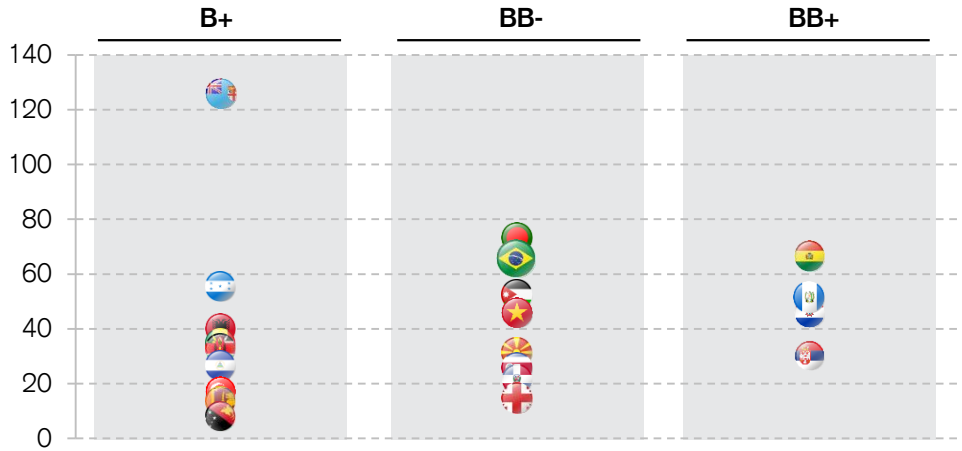
Fundamentals of external sector are solid

- Despite the expected unfavorable path for gross debt and GDP growth in the coming years, the fundamentals of the external sector of the economy are solid. Brazil is expected to have low current account deficits in 2018 and 2022 both compared with its peers and from a historical perspective.
- Its international reserves as a percentage of external debt is the third highest for a country rated B+, BB-, or BB+. The high level of reserves substantially reduces the risk of the government not being able to pay off its liabilities in hard currency.

Current account balance in 2018 and 2022 for countries rated B+, BB-, or BB+ by S&P (% of GDP)



International reserves to external debt ratio in 2018 for countries rated B+, BB-, or BB+ by S&P (%)



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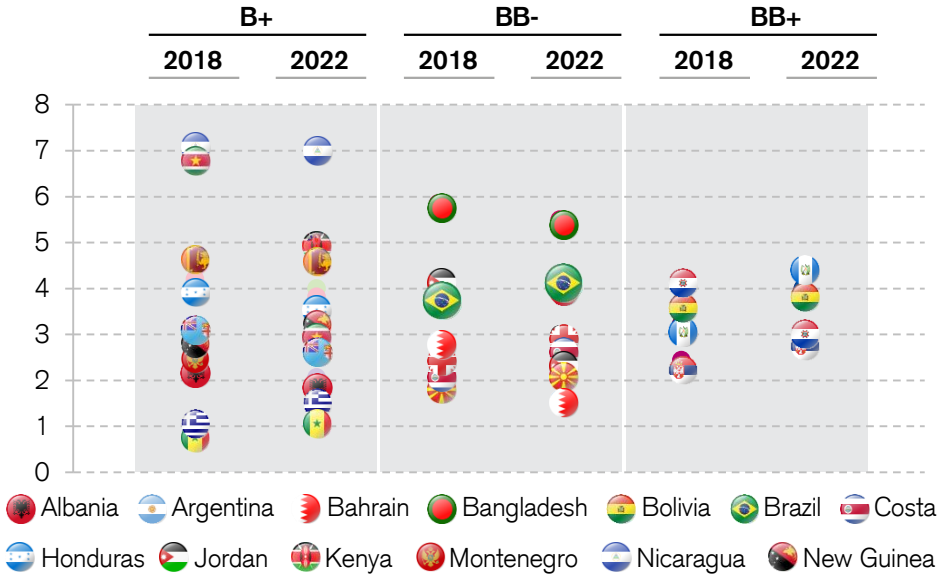
Honduras Jordan Kenya Montenegro Nicaragua New Guinea Paraguay Senegal Serbia Sri Lanka Suriname Turkey Vietnam

Source: S&P, World Bank, IMF, Credit Suisse

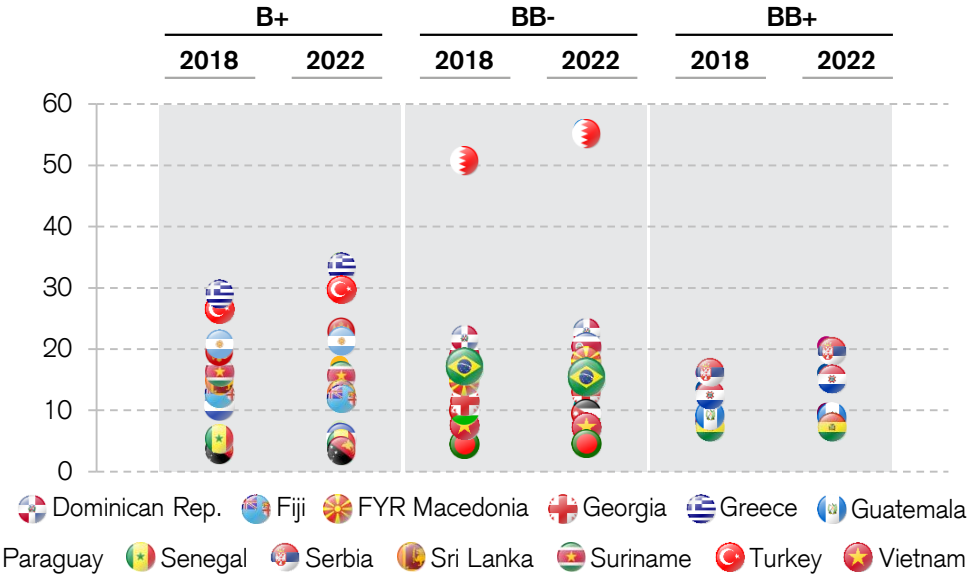
Inflation and GDP per capita close to those of peers

- The lower inflation in Brazil in previous years and the prospects for this level to be maintained over the next few years has improved the country's standing among peers in terms of inflation.
- The country's GDP per capita is close to the median of countries with a BB- rating and higher than the median of countries rated B+ or BB+.
- Overall, approval of the reforms proposed by the government would reduce the structural weakness of the economy (e.g., public accounts, low growth) and consolidate recent improvements (e.g., stable inflation).

Inflation in 2018 and 2022 for countries rated B+, BB-, or BB+ by S&P (%)



GDP per capita in 2018 and 2022 for countries rated B+, BB-, or BB+ by S&P (USD thousands PPP)



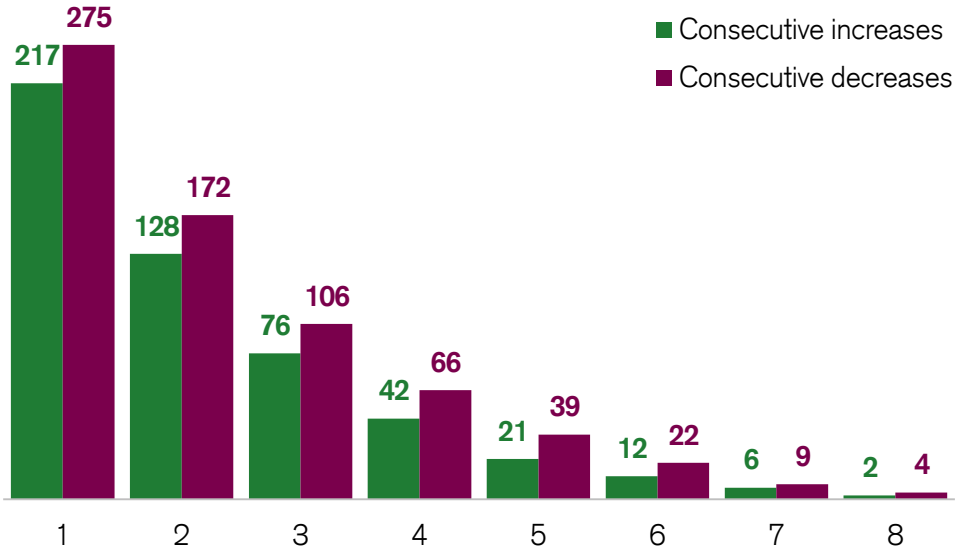
Albania Argentina Bahrain Bangladesh Bolivia Brazil Costa Rica Dominican Rep. Fiji FYR Macedonia Georgia Greece Guatemala
Honduras Jordan Kenya Montenegro Nicaragua New Guinea Paraguay Senegal Serbia Sri Lanka Suriname Turkey Vietnam

Source: S&P, World Bank, IMF, Credit Suisse

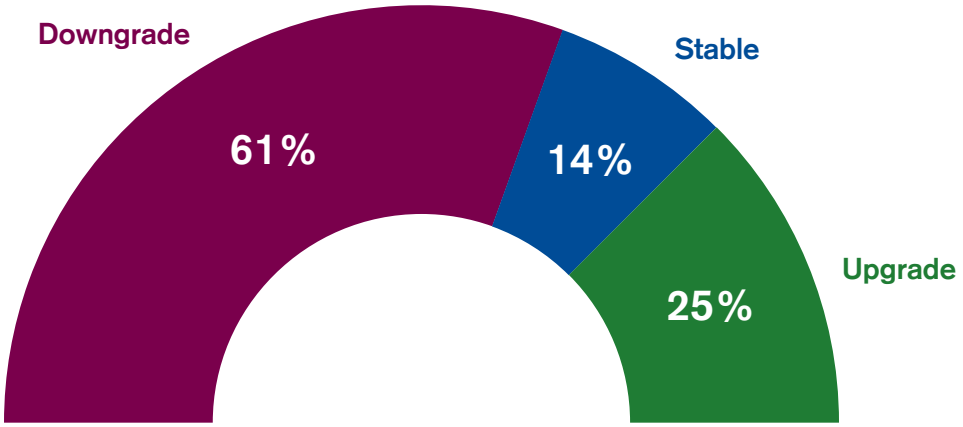
Changes in a country's rating are highly persistent

- When a country has been downgraded, there is a 61% chance it will be downgraded again and a 38% chance of a third downgrade.
- Following a downgrade, the chances of a country's rating being upgraded are low. This has happened in only 25% of all episodes.
- Odds are slightly lower for consecutive upgrades: after an upgrade, the country has 56% and 33% chances of receiving one or two additional upgrades.

Consecutives downgrade and upgrades
(amount of consecutive changes)



Percentage of changes after a downgrade
(%)

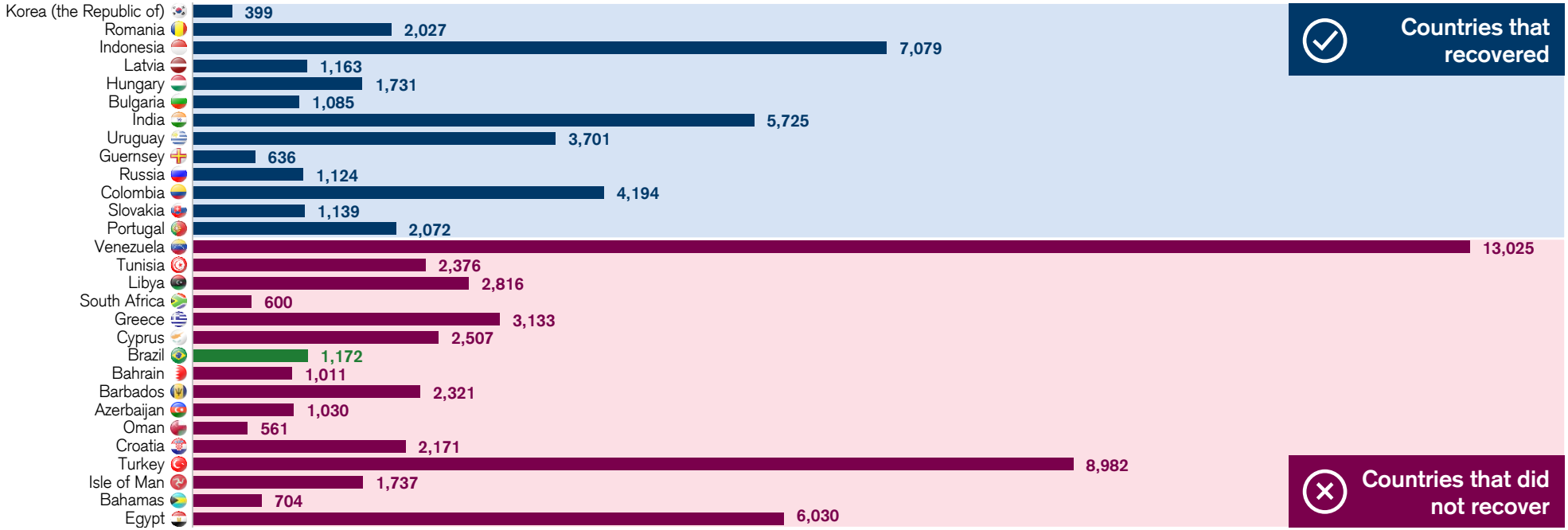


Source: Standard and Poor's (S&P), Credit Suisse

Time is not driver of recovery of investment grade

- In a broad set of data on 142 countries, 29 economies lost investment grade. Of these, 45% managed to regain it. The time to regain the investment grade varies greatly, with countries such as South Korea regaining it in just one year and two months, but countries such as Indonesia taking more time (19 years).
- Venezuela and Turkey are the countries that lost investment grade the longest time ago without recovering it. Brazil lost its investment grade three years and two months ago. Although six countries had already won investment grade in this period, we expect it to take more time for Brazil to regain investment grade.

Time to regain investment grade (days)

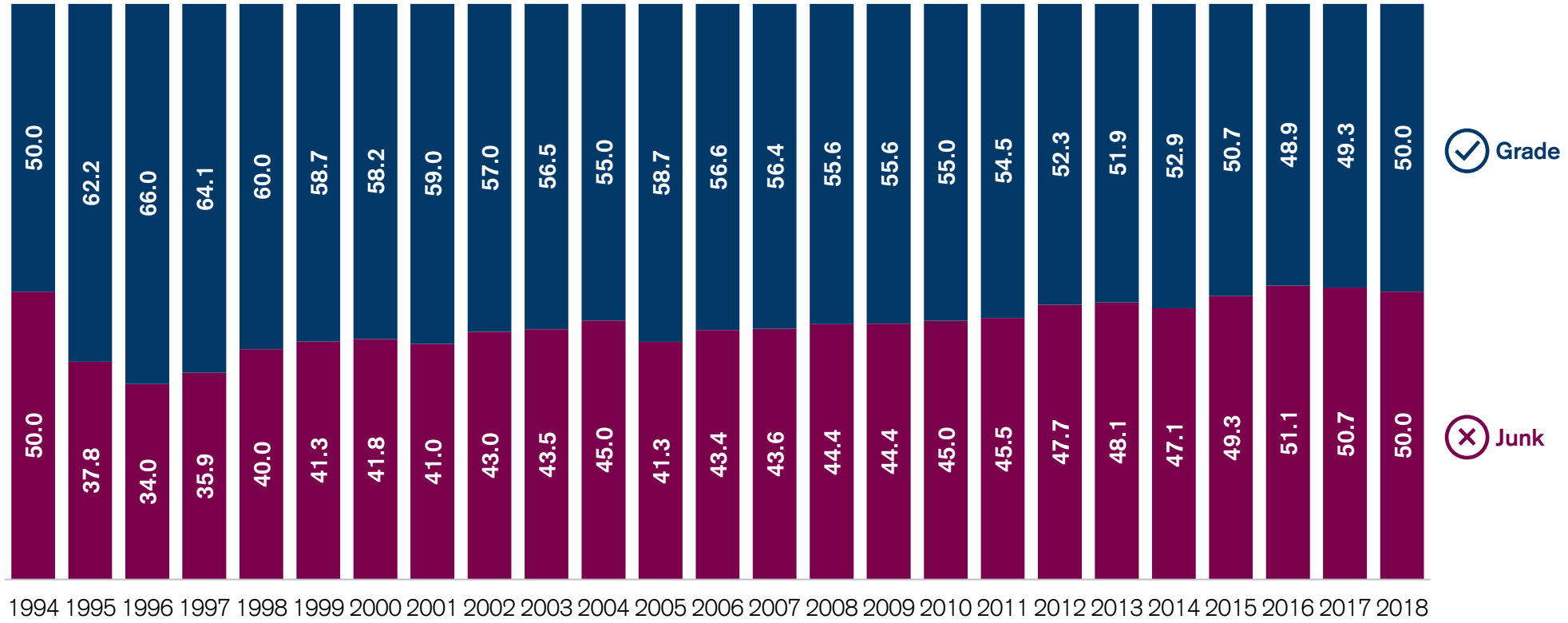


Source: Standard and Poor's (S&P), Credit Suisse

Share of countries rated junk has increased since 1996

- S&P has rated countries more negatively than positively since 1996. The share of countries rated as junk increased from its lowest level of 34% in 1996 to the peak of 51% in 2016.
- In 2018, the proportion remained relatively stable, with half of the countries being rated investment grade.

Share of countries with and without investment grade[1] (%)



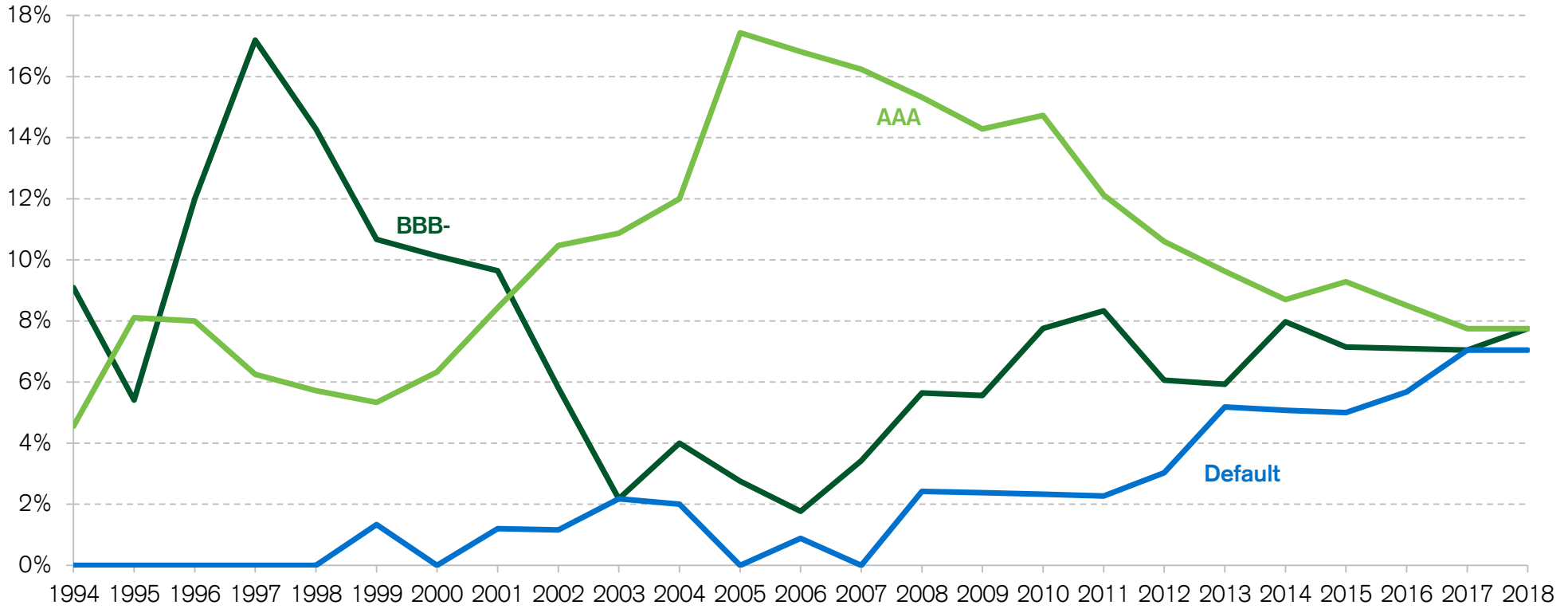
[1]Year-to-date value for 2018.

Source: Central Bank of Brazil, Credit Suisse

Triple-A ratings on the decline since 2005

- After peaking in 2005, the share of countries with the highest score (AAA) has plunged. In the same year, no country was rated in the default category. Now, more countries than ever are rated default.
- This more negative view of countries was partially offset by the slightly higher share of countries with the lowest rating within investment grade (i.e., BBB-).

Share of countries rated AAA, BBB-, and default (%)

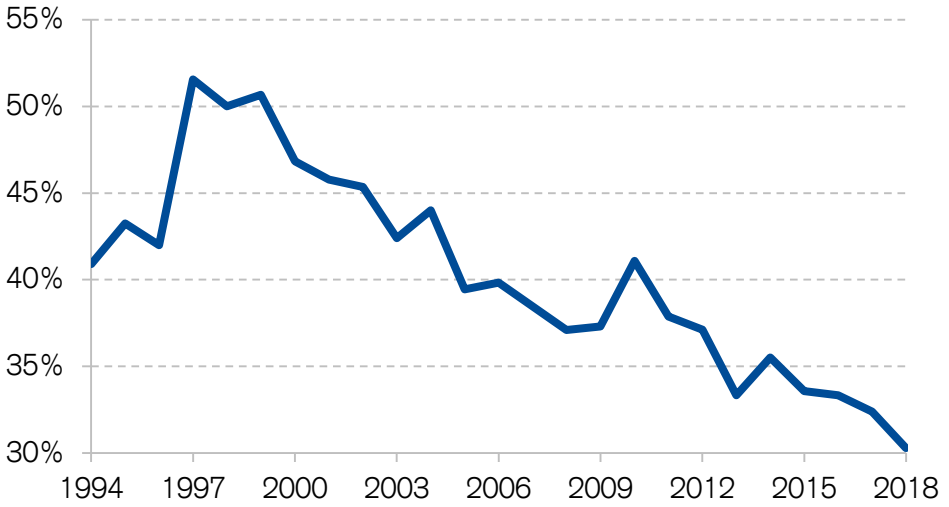


Source: Standard and Poor's (S&P), Credit Suisse

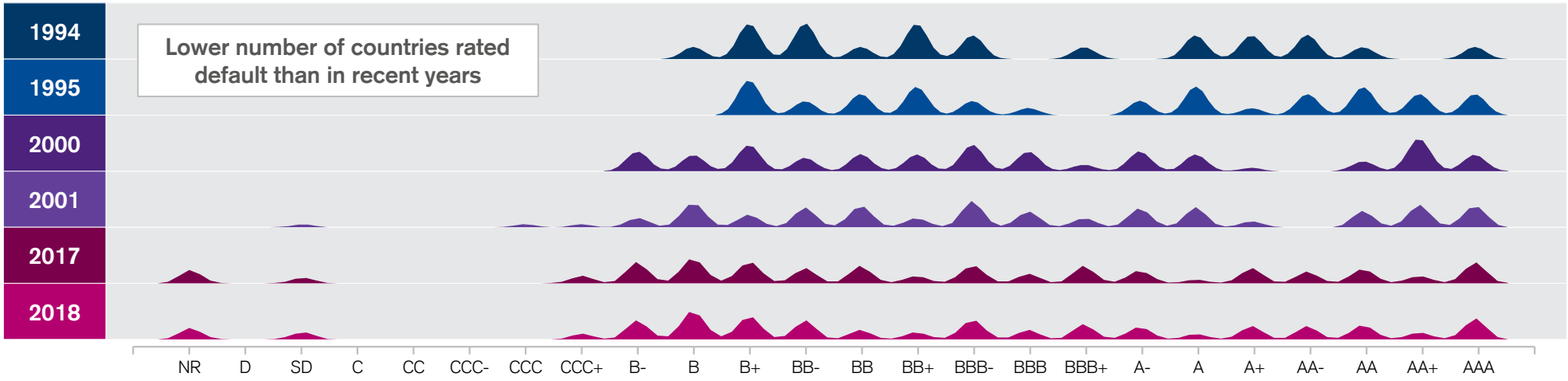
Distribution of ratings has become more disperse

- Since 1994, countries ratings' have become more disperse. The proportion of countries with mid-scale ratings has declined, while the number with extreme ratings (e.g., default rates) has increased.
- This can be seen by the diminishing proportion of countries rated between A- and BB-. In 2018, the figure declined to its lowest level ever: 30%.
- For instance, the median rating of the countries declined from BBB+ in 1997 to BB+ in 2018.

Share of countries with rates between A- and BB- (%)



Distribution of country ratings from 1994 to 2018 (%)

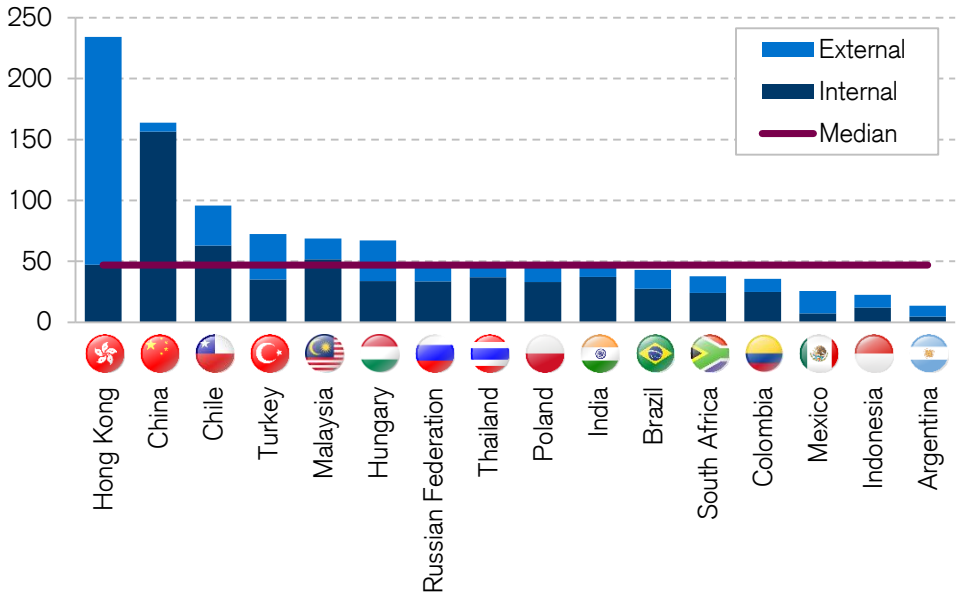


Source: Standard and Poor's (S&P), Credit Suisse

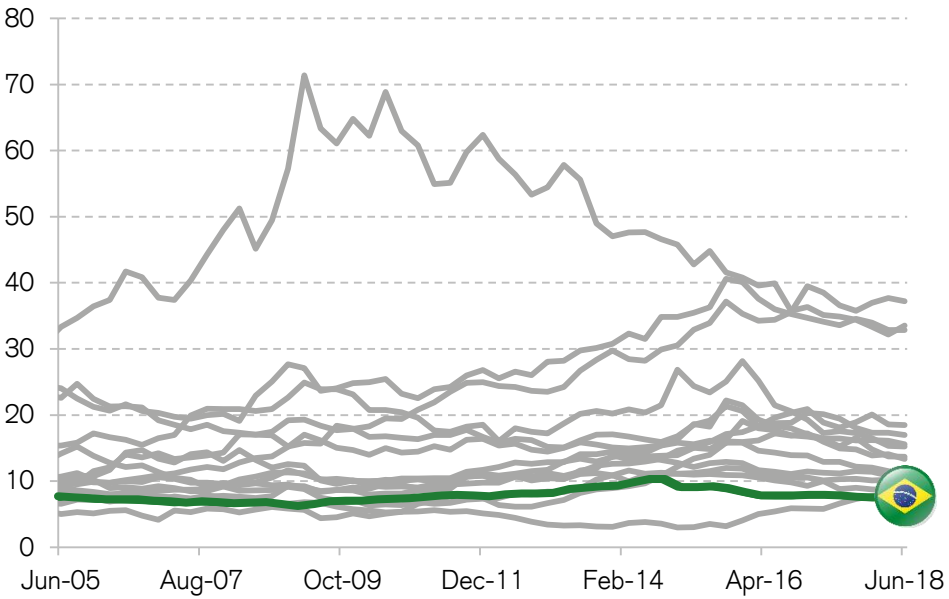
Low external vulnerability in corporate sector

- Brazil's nonfinancial corporate debt totaled 43% of GDP in 2Q18, lower than the median of emerging markets debt of 49% of GDP.
- The share of the debt denominated in foreign currency totaled 16% of GDP, in line with the median observed in emerging markets but much lower than in some economies such as Hong Kong, Mexico, Argentina, and Singapore.
- Household debt in foreign currency in Brazil is negligible.

Total nonfinancial corporate debt, by currency, in emerging economies (% of GDP, 2Q18)



Nonfinancial corporate debt denominated in foreign currency in emerging markets[1] (% of GDP, 2Q18)



[1] Not including Hong Kong.

Source: Institute of International Finance, Credit Suisse

IDI of USD 90bn in 2019 and 2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018e	2019e	2020e
Current account	**-79.0**	**-76.3**	**-83.8**	**-79.8**	**-101.4**	**-54.1**	***-23.2***	***-5.5***	***-14.5***	***-25.3***	***-36.7***
Trade balance	18.5	27.6	17.4	0.4	-6.6	17.7	*45.0*	*64.0*	*53.6*	*54.1*	*49.1*
Travel	-10.7	-14.7	-15.7	-18.6	-18.7	-11.5	*-8.5*	*-13.2*	*-12.3*	*-14.5*	*-15.5*
Transportation	-6.1	-8.0	-8.4	-9.4	-8.7	-5.7	*-3.7*	*-5.0*	*-6.2*	*-6.4*	*-6.7*
Equipment rentals	-13.7	-16.7	-18.7	-19.1	-22.6	-21.5	*-19.5*	*-16.8*	*-15.0*	*-17.3*	*-19.0*
Profits and dividends	-58.8	-55.8	-47.8	-18.7	-28.4	-15.5	*-18.9*	*-15.8*	*-16.9*	*-22.5*	*-24.5*
Interest payments	-12.0	-14.4	-16.6	-19.3	-21.4	-22.5	*-22.1*	*-22.8*	*-20.0*	*-19.0*	*-19.5*
Others	3.8	5.7	6.0	4.8	5.0	4.9	*4.5*	*4.1*	*2.3*	*0.3*	*-0.6*
Capital and financial account	**69.7**	**80.3**	**82.8**	**78.3**	**96.3**	**50.3**	***9.1***	***-1.7***	***8.9***	***25.3***	***36.7***
Investments (liabilities)	**30.7**	**37.0**	**38.8**	**38.0**	**40.0**	**33.8**	***33.3***	***72.7***	***82.3***	***100.3***	***115.7***
Inward direct investment	82.4	102.4	92.6	75.2	87.7	59.9	*72.5*	*68.5*	*88.3*	*90.0*	*90.0*
Total equities	37.7	7.2	5.6	11.1	11.5	9.8	*11.0*	*5.7*	*-5.6*	*12.0*	*15.0*
Securities in Brazil	17.5	5.3	11.4	31.0	27.1	16.7	*-26.7*	*-5.1*	*-4.3*	*-4.0*	*9.0*
Medium- and long-term loans and securities abroad	30.1	47.7	18.7	2.5	21.6	-3.6	*-15.7*	*-5.7*	*-7.4*	*-2.4*	*-10.0*
Inflows	60.6	82.1	56.3	60.5	71.2	72.9	*55.2*	*58.7*	*63.6*	*62.5*	*61.0*
Amortizations	-30.6	-34.5	-37.6	-58.0	-49.6	-76.5	*-70.9*	*-64.3*	*-70.9*	*-64.9*	*-71.0*
Short-term loans and securities abroad	27.4	-3.9	-4.1	-0.1	24.9	-6.3	*4.4*	*-5.3*	*0.6*	*-4.5*	*0.0*
Other Brazilian liabilities	-164.4	-121.6	-85.3	-81.6	-132.7	-42.8	*-12.3*	*14.6*	*10.7*	*9.2*	*11.7*
Investments (assets)	**-71.8**	**-35.0**	**-33.3**	**-62.9**	**-74.1**	**-43.5**	***-47.3***	***-68.2***	***-67.3***	***-70.0***	***-75.0***
Outward direct investment	-26.8	-16.1	-2.1	-15.6	-20.6	-3.1	*-14.7*	*-19.4*	*-14.1*	*-19.0*	*-20.0*
Other Brazilian assets	-45.1	-18.9	-31.2	-47.3	-53.5	-40.4	*-32.6*	*-48.9*	*-53.3*	*-51.0*	*-55.0*
Derivatives	**0.1**	**0.0**	**0.0**	**-0.1**	**1.6**	**3.4**	***-1.0***	***0.7***	***2.8***	***0.0***	***0.0***
Errors and omissions	**3.6**	**4.4**	**4.3**	**4.6**	**4.4**	**2.8**	***13.5***	***6.4***	***4.8***	***0.0***	***0.0***
Reserve assets	-49.1	-58.6	-18.9	5.9	-10.8	-1.6	*-9.2*	*-5.1*	*-2.9*	*-5.0*	*-4.0*

Source: Central Bank of Brazil, Credit Suisse

Inflation

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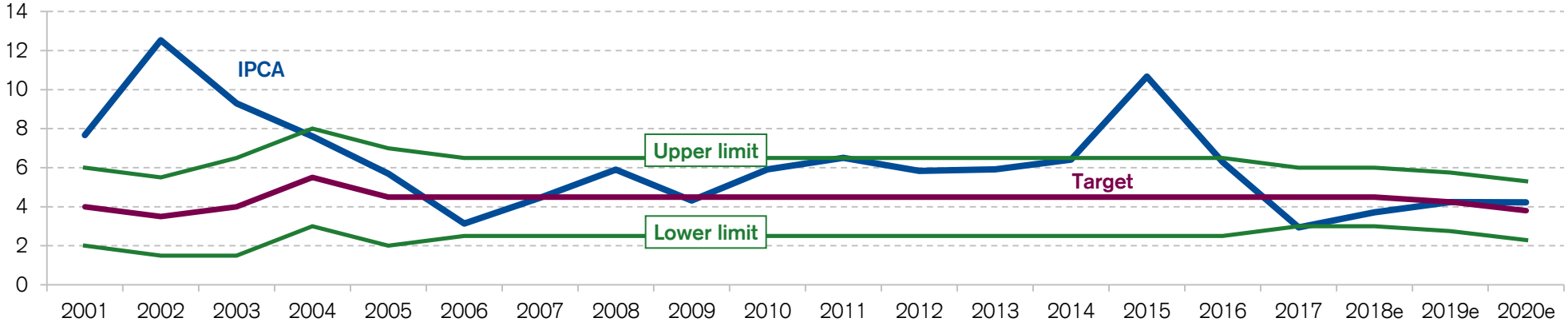
IPCA inflation of 4.2% in 2019

- IPCA inflation is expected to increase from 3.7% in 2018 to 4.2% in 2019 and 2020. The lower inflation of administered prices in the coming year will be offset by the higher inflation in market prices.

IPCA inflation and central bank's inflation target (%, year-on-year change)



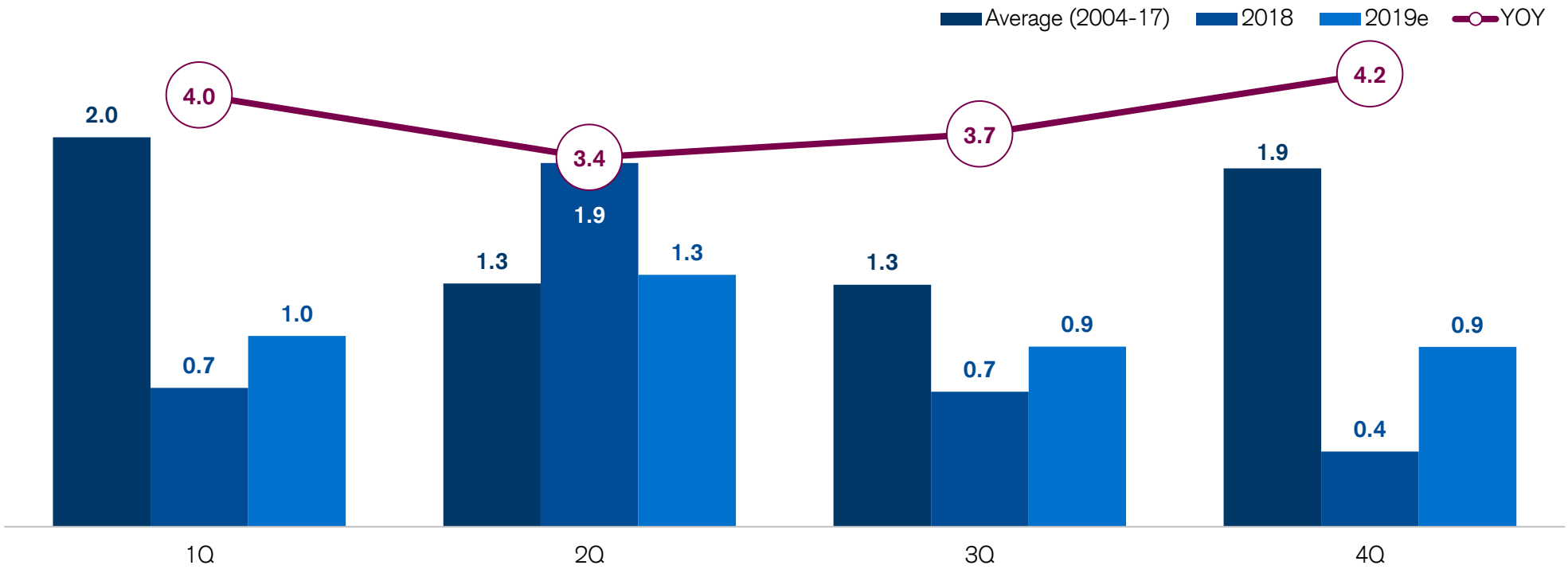
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019e	2020e
100	IPCA	7.7	12.5	9.3	7.6	5.7	3.1	4.5	5.9	4.3	5.9	6.5	5.8	5.9	6.4	10.7	6.3	2.9	3.7	4.2	4.2
26	Monitored	10.1	14.2	14.0	9.2	8.7	4.3	1.5	3.5	4.5	3.2	5.6	3.7	1.5	5.3	18.1	5.5	8.0	6.2	5.2	4.5
74	Market	6.6	11.8	7.2	6.9	4.2	2.6	5.7	7.0	4.2	7.1	6.6	6.5	7.3	6.7	8.5	6.6	1.3	2.9	3.9	4.1
16	Food	9.6	21.6	6.7	2.6	0.6	-0.1	12.4	10.7	0.9	10.7	5.4	10.0	7.6	7.1	12.9	9.4	-4.9	4.5	4.3	4.0
35	Services	4.8	5.5	7.1	6.8	6.8	5.5	5.2	6.4	6.4	7.6	9.0	8.7	8.7	8.3	8.1	6.5	4.5	3.3	4.2	4.4
23	Industrial	5.5	10.5	6.9	10.0	4.2	1.4	2.1	4.0	2.9	3.5	3.6	1.8	5.2	4.3	6.2	4.8	1.0	1.1	3.2	3.8

Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

IPCA inflation to remain low throughout 2019

- The low inflation of 0.4% in 4Q18 will have a strong base effect through 2019. Inflation in 2Q19 and 3Q19 will remain far below the inflation target of 4.25%.
- Inflation should increase moderately to close to the center of the target only in the last quarter of 2019, when the base effect will be eliminated.

IPCA inflation (%, year-on-year change and quarter-on-quarter change)

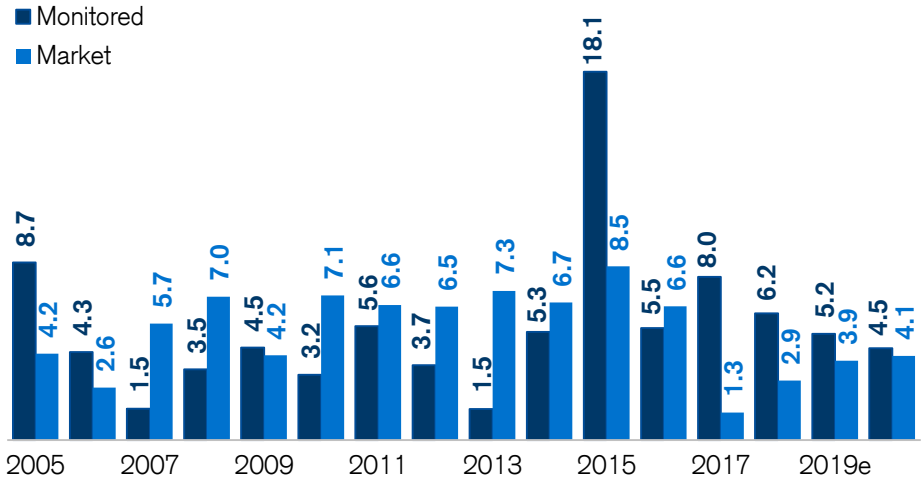


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

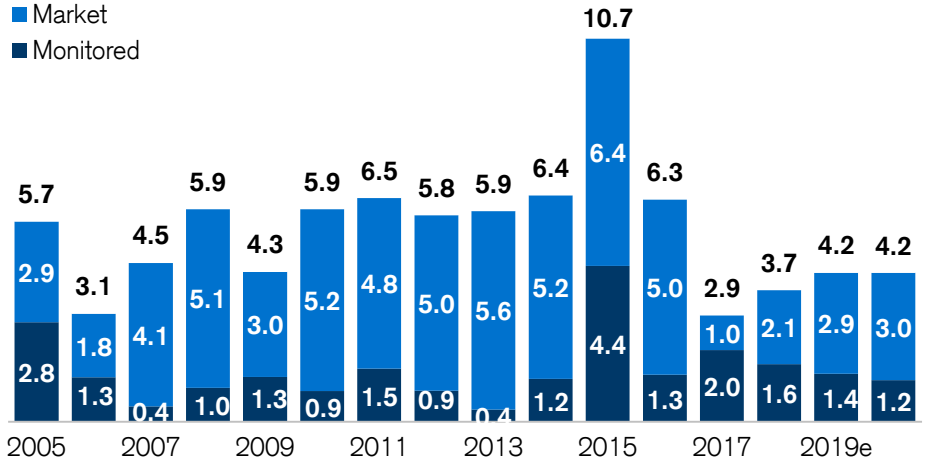
Market prices to increase in 2019 and 2020

- Inflation in market prices was much lower than its historical average in 2017 and 2018. Several factors explained this dynamic: (i) low food inflation due to the increase in the supply of food items; (ii) a reduction in demand pressure on services and industrial prices due to the deep recession; (iii) exchange rate appreciation in 2017; and (iv) low inertia due to the low IPCA inflation in 2017.
- For the coming years, most of these factors will either contribute less to lower inflation or even have the opposite effect: The depreciation of the BRL/USD rate in 2018 will likely put pressure on costs in 2019, economic slack will be less favorable than it has been in recent years, and food supply is not likely to increase. As a result, we expect inflation in market prices to increase from 2.9% in 2018 to 3.9% in 2019 and 4.1% in 2020.

Inflation in market prices and in administered prices
(%, year-on-year change)



Breakdown of IPCA inflation by market prices and administered prices (%, year-on-year change)

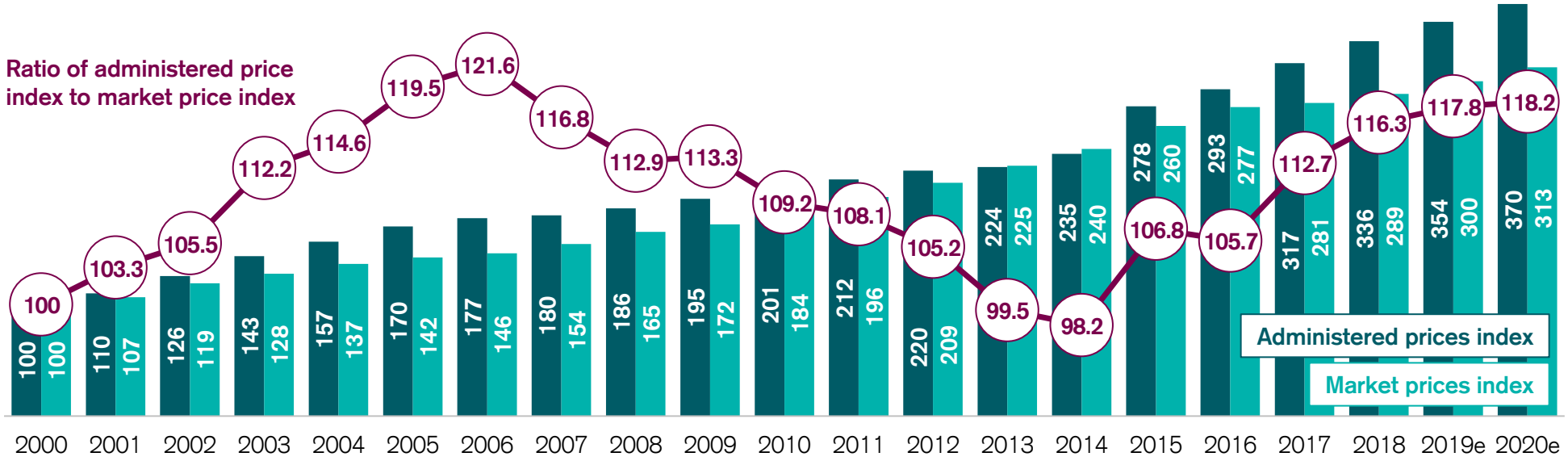


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Market prices inflation to remain below monitored inflation

- Administered prices continued to pressure inflation in 2018 due to supply constraints: (i) inefficient and high-cost power production; (ii) higher healthcare costs; and (iii) lower global supply of oil, putting upward pressure on gasoline prices for most of the year. Except for the last supply constraint, all other factors should keep pressuring inflation in the short term.
- We expect inflation in administered prices to remain higher than in market prices in 2019 and 2020, which would further widen the price differential in both groups. We forecast inflation in administered prices of 5.2% in 2019 and 4.5% in 2020.

Inflation in market prices and in administered prices (index number)

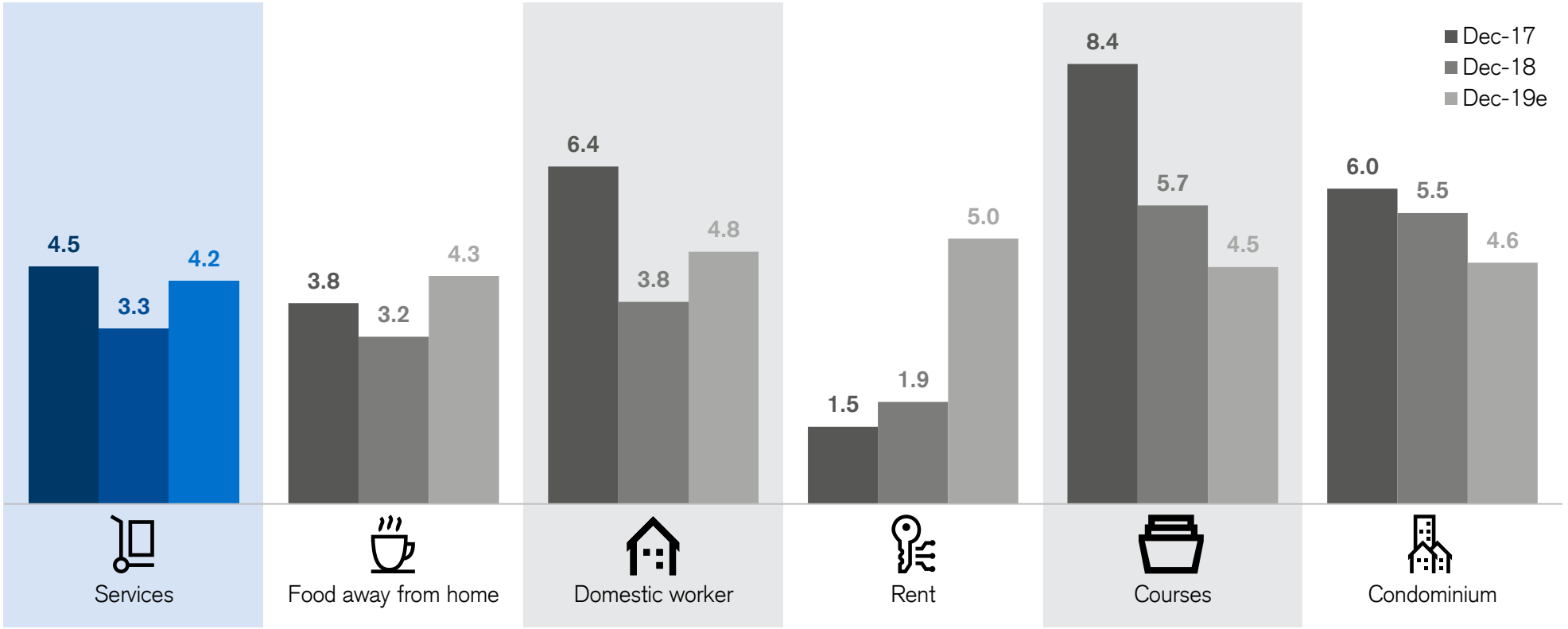


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Services inflation to rise to 4.2% in 2019

- Services inflation is expected to increase from 3.3% in 2018 to 4.2% in 2019. The higher inflation in the group would be explained by more pronounced inflation in food away from home, domestic workers, and rents. These components should be pressured by the higher adjustment of the minimum wage in 2019, higher past inflation (e.g., costs linked to IGP inflation will accelerate), and the lower contribution from the slackness of the economy.

Inflation in services (%, year-on-year change)

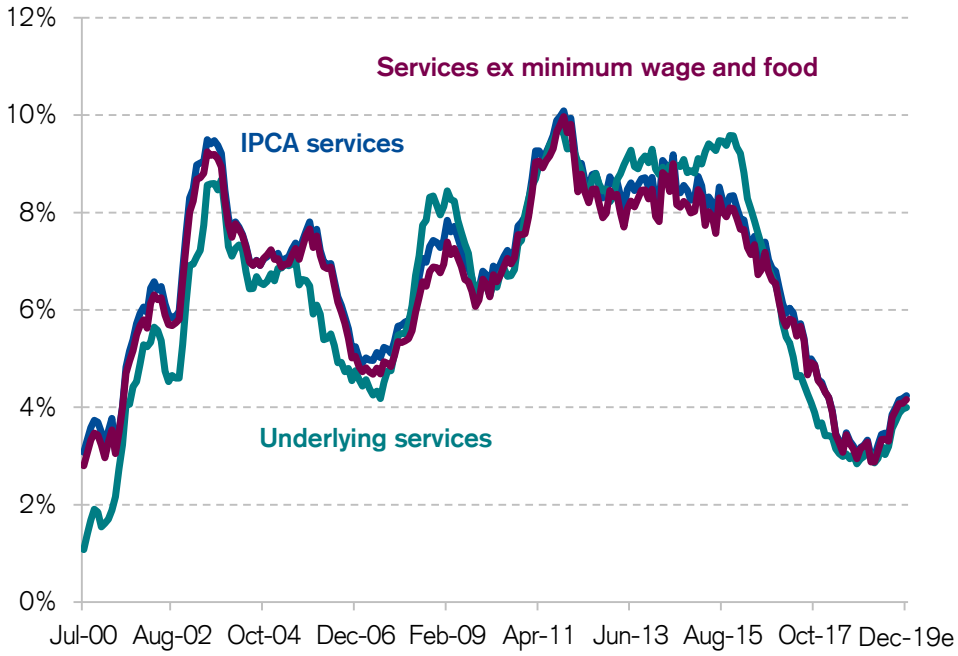


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

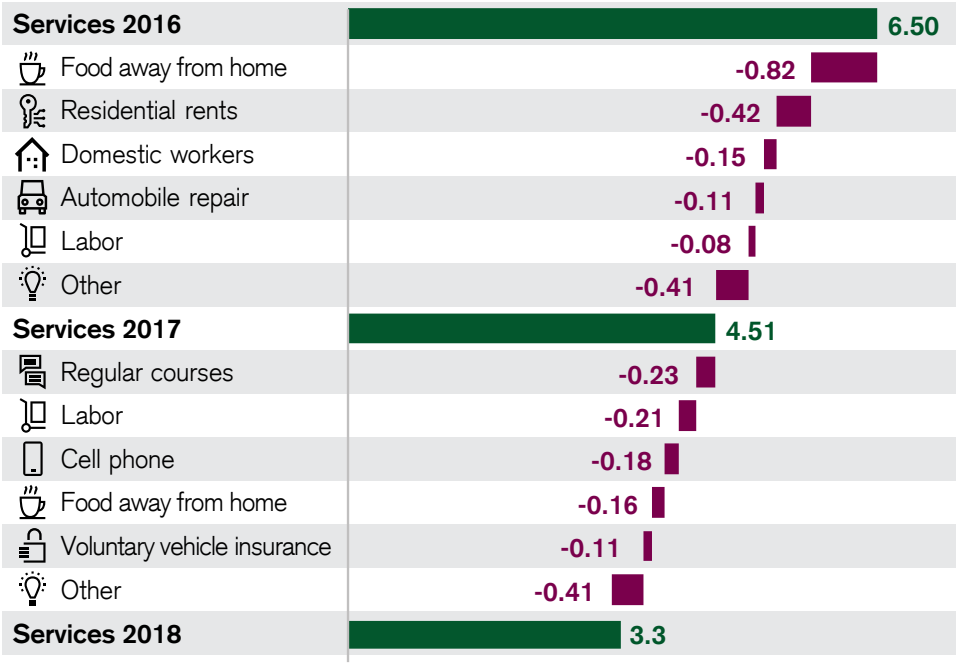
Services inflation reached its lowest level in 17 years in 2018

- Services inflation reached its lowest level (3.0% yoy) in more than 17 years in October 2018. This benign dynamics of services inflation has been in place since early 2016. The decrease in services inflation is widespread among its components, with all subgroups showing very low inflation.
- The high inertia of the group and its high weight in the IPCA index suggest that consumer inflation will increase only gradually in the coming months.

Dynamics of services, underlying services, and services ex food and minimum wage increase (%, year-on-year change)



Breakdown of the decline in services inflation
(%, percentage points)

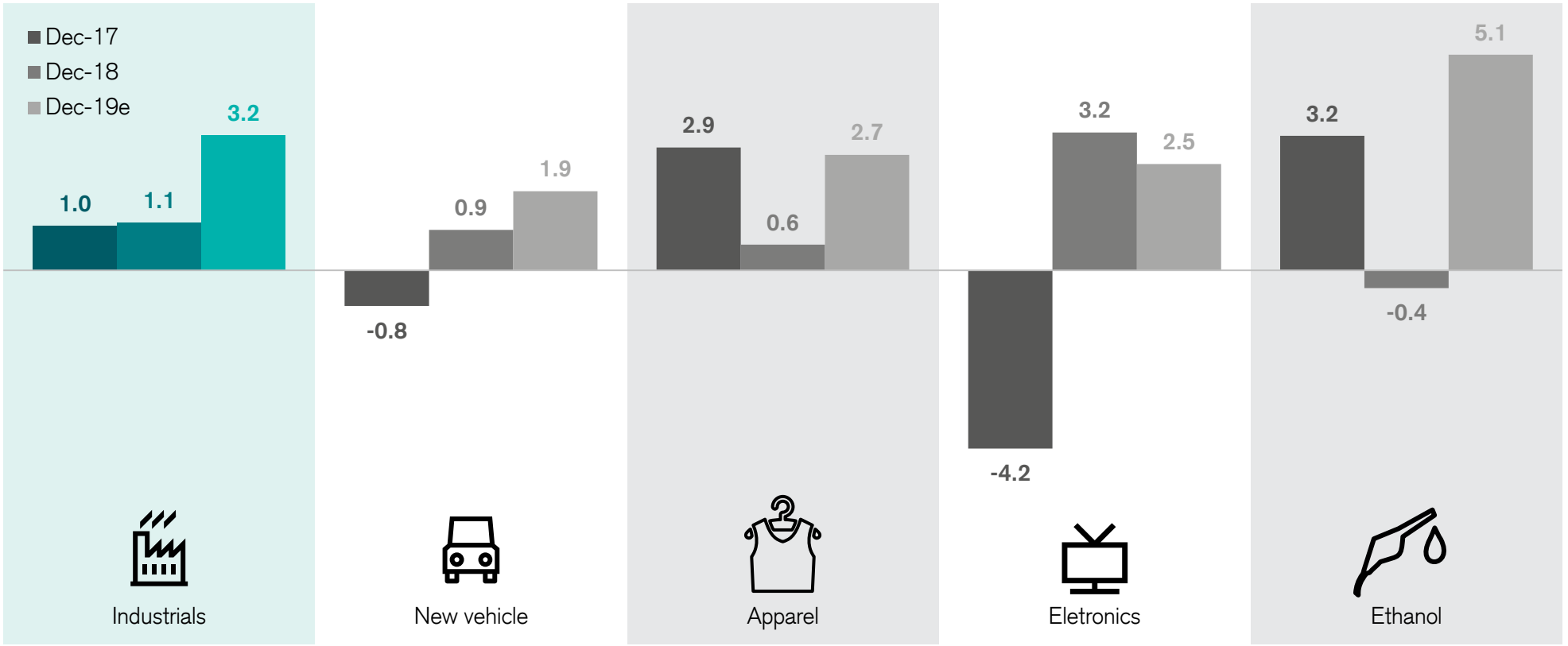


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Inflation in industrial goods to rise to 3.2% in 2019

- Inflation of industrial goods should increase from 1.1% in 2018 to 3.2% in 2019.
- The increase in inflation in industrial goods would be explained by the more depreciated exchange rate and the resumption of economic activity.

Inflation in industrial goods (%, year-on-year change)



Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Widespread deflation in industrial goods in 2018

- In recent years, the industrial group observed some of the most benign dynamics since 2000. The share of items posting positive inflation reached its lowest level in November 2017 (61%) and remained at this level throughout the first quarter of 2018.
- We expect industrial inflation to gradually increase to 3.2% in 2019, as the proportion of items with deflation should decline as a result of the more depreciated exchange rate and higher domestic demand.

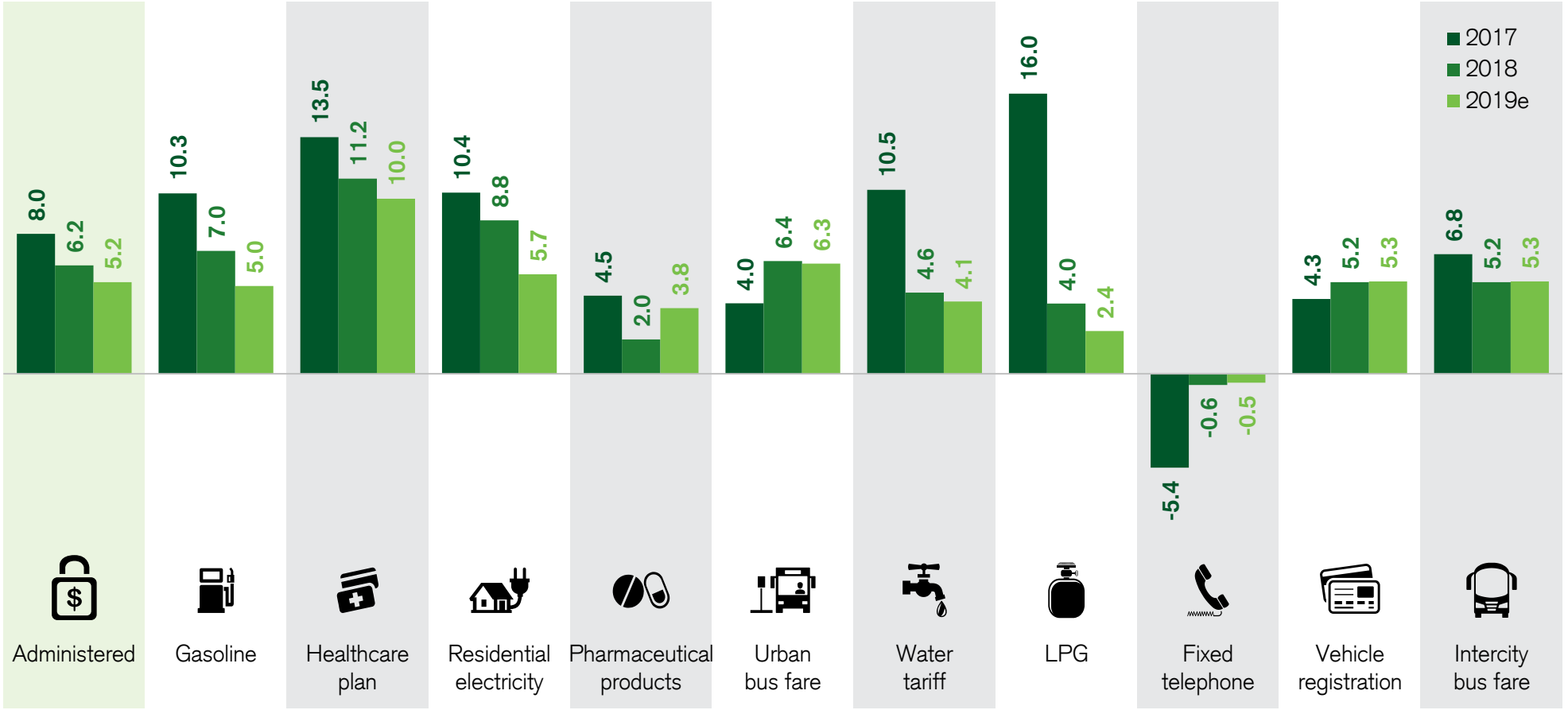
Inflation in industrial goods and proportion of items with year-on-year inflation (%, year-on-year change)

Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Inflation in administered prices to drop to 5.2% in 2019

- We project a decline in inflation in administered prices, from 6.2% in 2018 to 5.2% in 2019. Lower inflation in electricity and gasoline would be the main drivers of this movement.

Inflation in administered prices (%, year-on-year change)

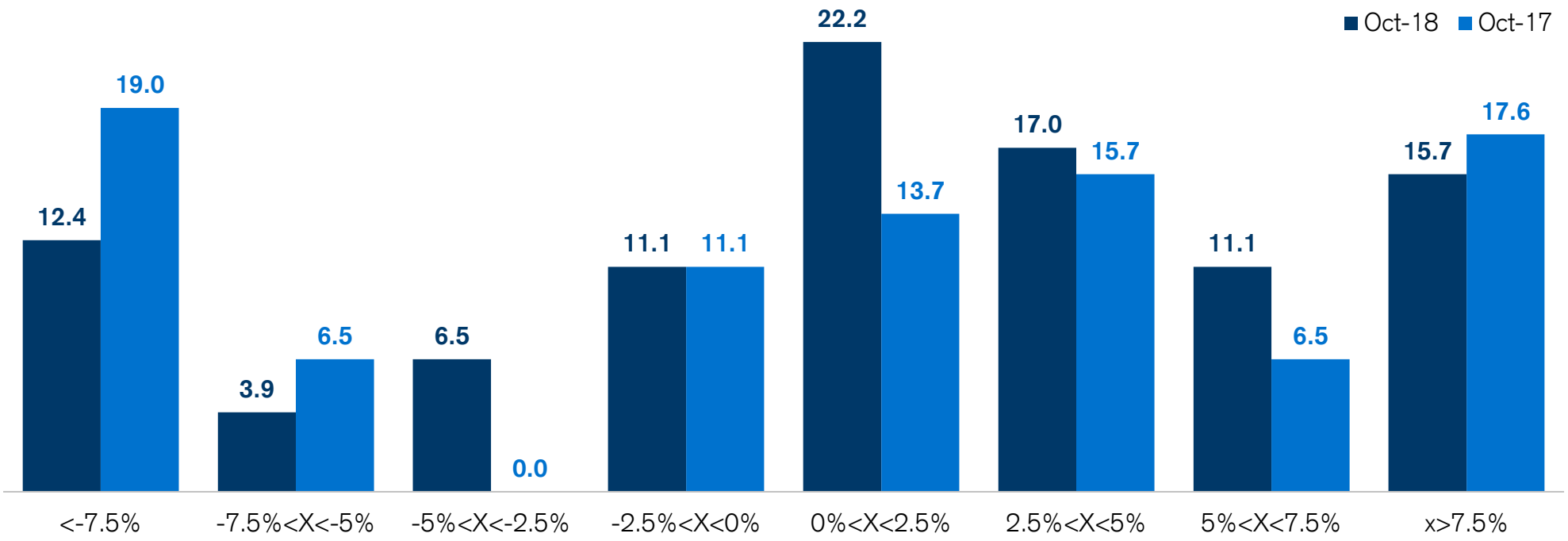


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Distribution of food inflation now less extreme

- Food items showed a distribution with heavy tails in 2017, with many items posting either low inflation (e.g., lower than -7.5%) or high inflation (e.g., higher than 7.5%). In 2018, this dispersion was reverted, with a higher share of items concentrated in intermediate values.
- For example, the number of items with inflation between -5% and 5% increased from 41% in October 2017 to 57% in October 2018.

Distribution of food inflation in 2017 and 2018 (%, year-on-year change)



Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Balance of risks for inflation in 2019

Trade

A reduction of non-tariff barriers and import tariffs would increase the competitiveness of the economy and reduce inflationary pressures.

Exchange Rate

Deterioration in financial conditions (triggered by absence of reforms or faster-than-expected tightening in developed markets) could depreciate the Brazilian currency.

US market

Slower-than-expected tightening of financial conditions in the USA and other developed markets would lead to an appreciation of Brazilian currency.

Oil

Lower supply of oil products (e.g., sanctions on main exporters or cuts in oil production by them) could raise oil prices from their currently low level.

Inertia

Given the low inflation in several items, inertia could be more benign than we assumed in our scenario.

Weather

Bad weather could trigger two negative impacts on prices: (i) food products, due to shortages; and (ii) higher electricity rates (hydropower plants have been operating at peak capacity. Therefore, less rain would trigger the use of more expensive sources, namely thermal power).

Fiscal reform

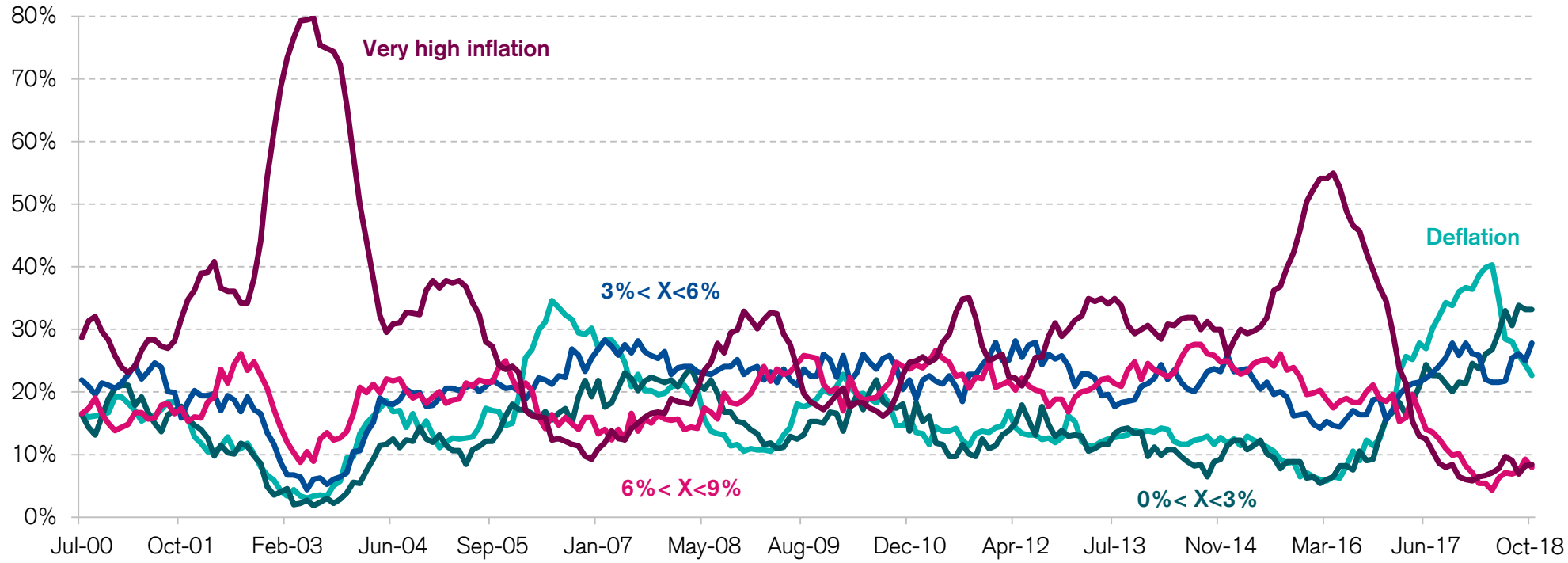
Fiscal reforms could contribute to a more appreciated local currency, resulting in a favorable pass-through to domestic prices.

Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Stable share of items with inflation within target range

- The share of items with year-on-year inflation inside of the central bank's target inflation range (between 3% and 6%) remained stable at 28% in October 2018 compared with December 2017.
- On the other hand, the number of items with deflation declined to 23% in October, after reaching the highest level in the data series in April 2018 of 40%. The lower proportion of items with deflation was offset by the higher share of items with low inflation (i.e., year-on-year inflation between 0% and 3%).

Percentage of items by level of year-on-year inflation (%)

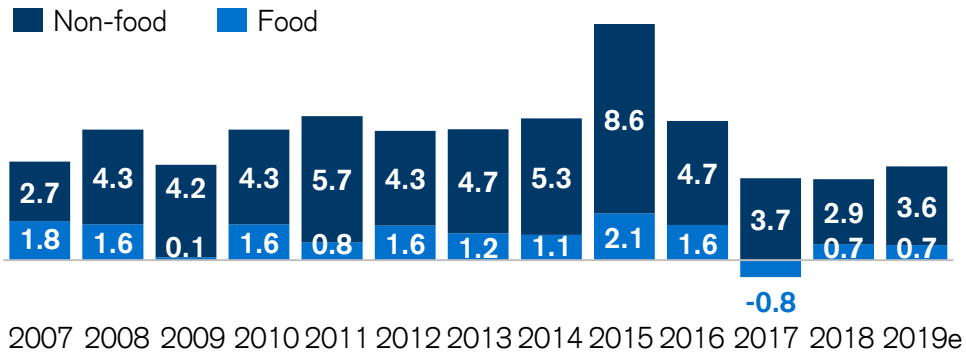


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

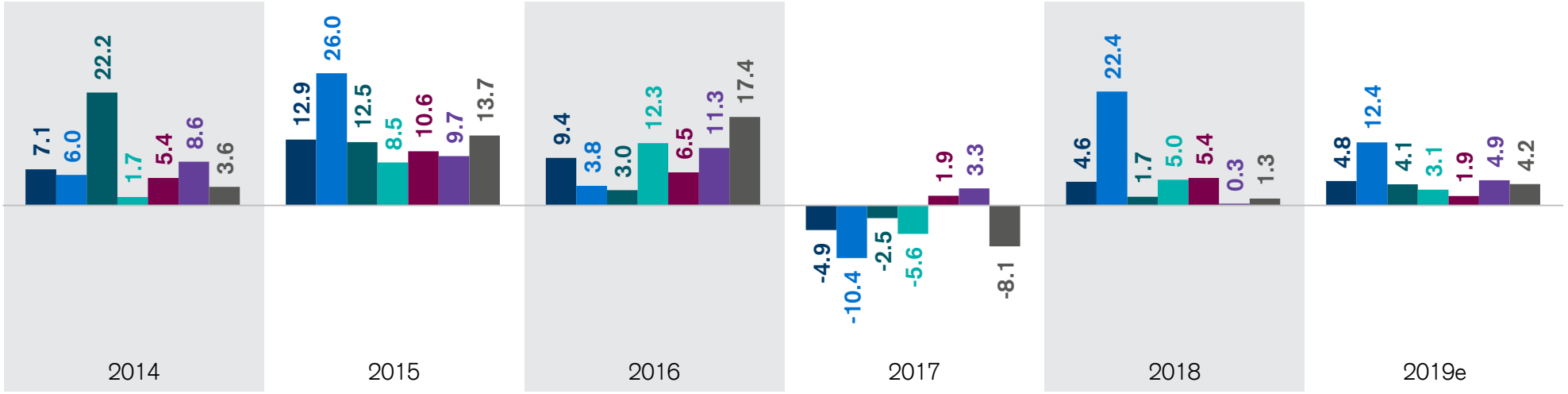
Inflation in food at home of 4.3% in 2019

- Inflation in food at home will likely to remain relatively stable at 4.3% between 2018 and 2019. This low level food inflation in historical terms will contribute to a gradual increase in IPCA inflation.
- The main risk to our scenario is a worse than expected weather condition at the beginning of the year due to a strong El Niño phenomenon.

Contribution of food to IPCA inflation (pps, %)



Breakdown of food inflation (%)

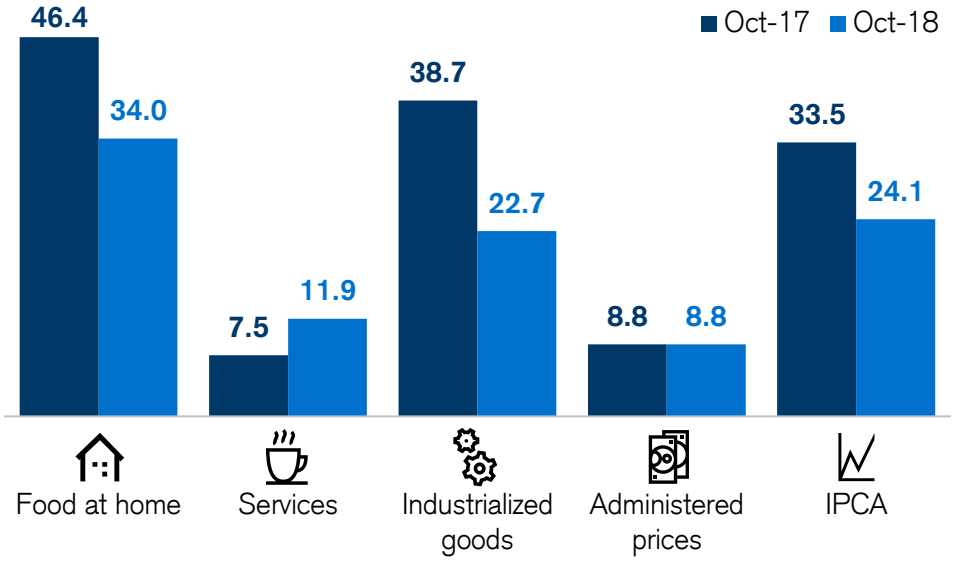


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

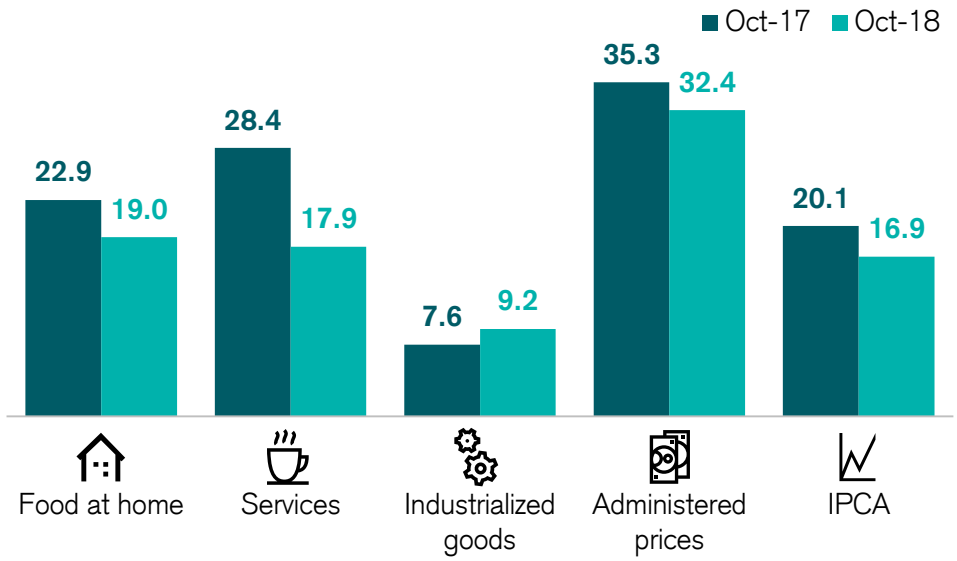
Lower proportion of food items with deflation in 2018

- The high share of items posting deflation in 2017 was concentrated in food and industrial items, with the former being strongly affected by the sharp increase in the supply of food items and the latter by the recession and FX appreciation. In 2018, the percentage of items posting deflation declined in all groups, except the services group, which is very inertial.
- Despite the lower proportion of items with deflation in 2018, the share of items with high inflation did not increase. Items with inflation higher than 6% declined from 20% in October 2017 to 17% in October 2018.

Percentage of items with year-on-year deflation in each group (%)



Percentage of items with year-on-year inflation higher than 6% in each group (%)

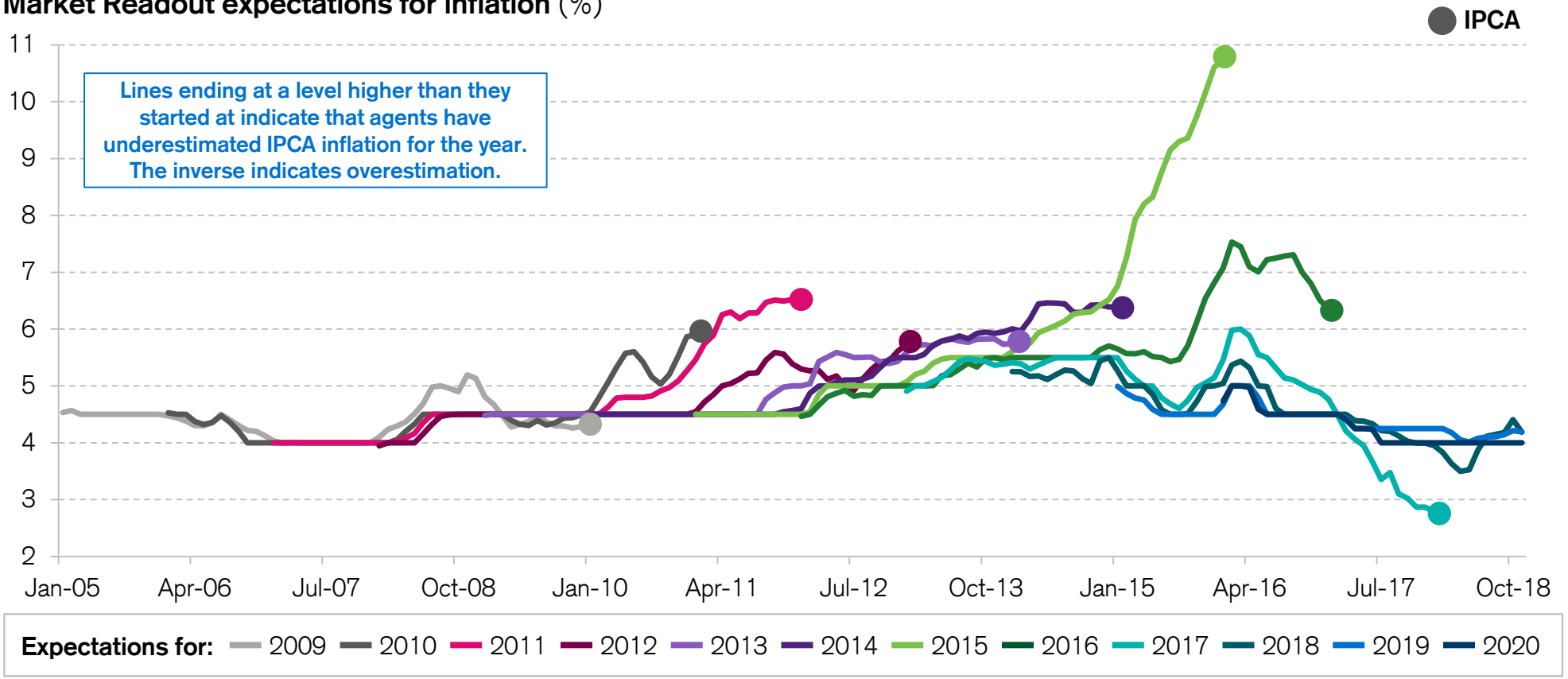


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Inflation expectations remain anchored for coming years

- Inflation expectations in Focus Market Readout are 4.06% for year-end 2019, 4.0% for year-end 2020, and 3.78% for year-end 2021, in line with the center of the inflation targets of 4.25%, 4.0%, and 3.75%, respectively. However, inflation expectations underestimate IPCA inflation one year ahead, with exceptions in 2017 and 2018.

Market Readout expectations for inflation (%)



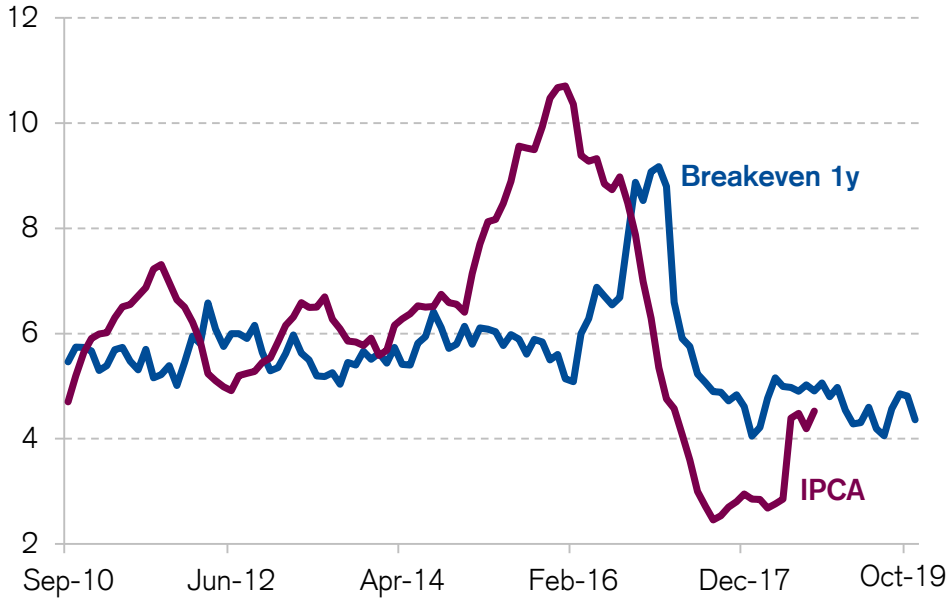
[1]Market Readout of November 30.

Source: Brazilian Association of Financial and Capital Market Entities (Anbima), Market Readout, Credit Suisse

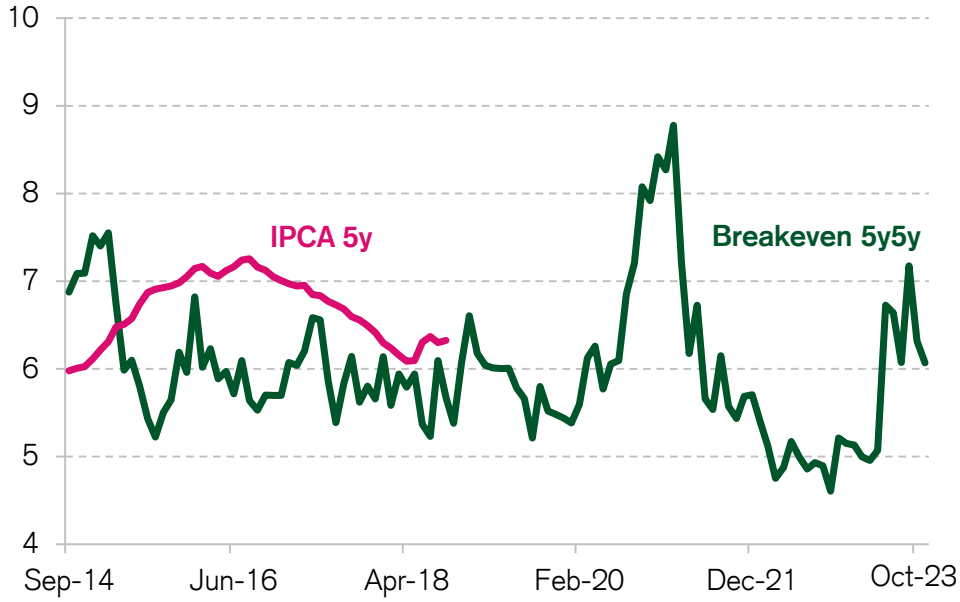
Long-term inflation expectations highly de-anchored

- Inflation expectations can be measured by the implicit inflation embedded in the government bonds (i.e., breakeven inflation). One-year breakeven inflation forecasts inflation of 4.4% in October 2019, slightly higher than the central bank's inflation target of 4.25% for the next year.
- On the other hand, the five-year forward inflation (5Y5Y breakeven inflation) predicts inflation of 6.1% yoy in the long run, much higher than the central bank's longest inflation target of 3.75% for 2021.

IPCA inflation and one-year forward breakeven inflation[1]
(%, year-on-year change)



Average IPCA inflation over five years and five-year forward breakeven 5y5y inflation[2] (%, year-on-year change)



[1] We shifted to one and five years ahead the forward breakeven inflation and breakeven 5y5y rates, respectively.
[2] Forward breakeven inflation is calculated as the forward rate of inflation implied by fixed-rate (PRE) and inflation-linked bonds (NTN-B), and the breakeven 5y5y is calculated as the five-year forward inflation rate implied by the PRE versus the NTN-B.
Source: Brazilian Statistics Bureau (IBGE), National Treasury, Credit Suisse.

Robust measures for output gap

- The main drawback of statistical filters to estimate the potential output of an economy is the high sensitivity of such estimates to final observations. To minimize this problem, we used a methodology to estimate potential GDP by incorporating forecasts for the unemployment rate and the Capacity Utilization Rate (CUR).

Phase 1 — **The relationship of GDP to the change in the unemployment rate and the CUR from 1Q00 to 2Q18 was estimated using a Vector Autoregressive (VAR) model. This model was adopted to project three scenarios for the paths of GDP growth, the unemployment rate, and the CUR, based on the median forecast and the minimum and maximum confidence interval for projecting each variable[1,2].**

Phase 2 — **Based on these three scenarios, the CUR and the equilibrium unemployment rate are estimated using a model that applies a Kalman filter[3], which produces three estimates for the equilibrium CUR and three estimates for the equilibrium unemployment rate.**

Phase 3 — **Three different specifications of the production function are used to estimate potential GDP, resulting in nine estimates of potential GDP for the economy.**

$$Y = A(\mathrm{K} \times CUR)^{\alpha}(L \times (1-U) \times H)^{(1-\propto)}$$

$$Y = (\mathrm{K} \times CUR)^{\alpha}(\mathrm{A} \times L \times (1-U) \times H)^{(1-\propto)}$$

$$Y = A(\mathrm{K} \times CUR)^{\alpha}\left(L \times (1-U)\right)^{(1-\propto)}$$

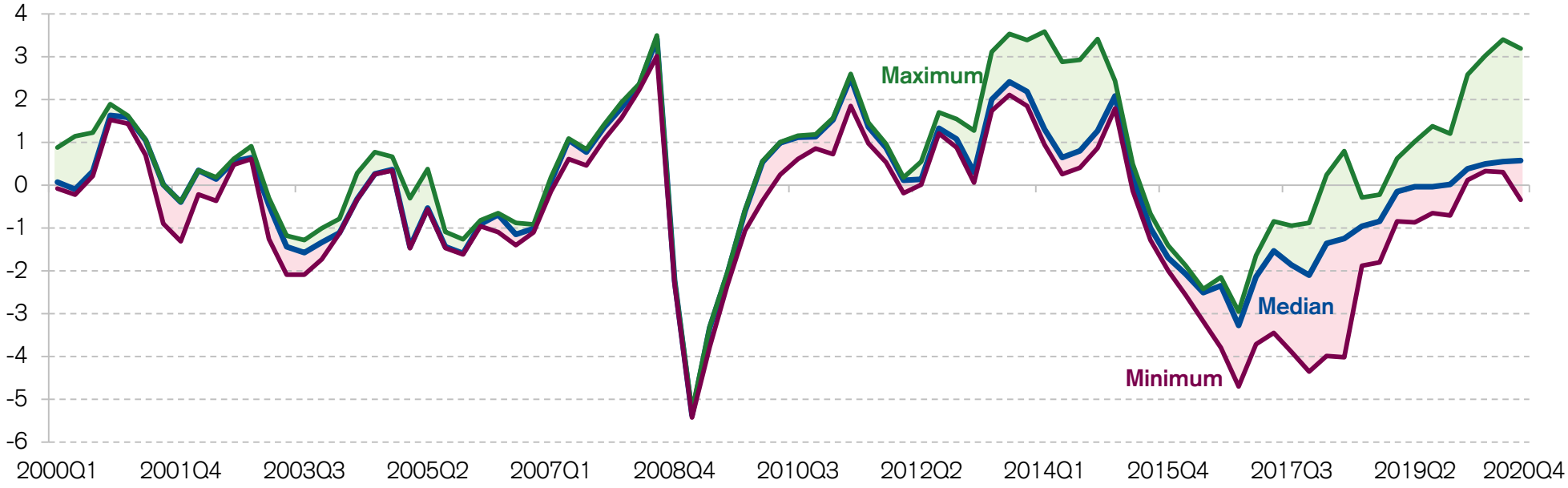
In addition, three other estimates are calculated for potential GDP using a Hodrick-Prescott filter for the path of GDP growth based on the scenarios of phase 1.

[1] The VAR estimation considers only one lag in variables, due to the low number of snapshots and the fact that this choice produced non-autocorrelated errors. A dummy variable was also used to capture crisis periods.
[2] The median scenario estimated by the VAR model does not represent our baseline scenario. Recovery in activity according to this model is much quicker than in our baseline scenario, since the VAR model does not consider interactions of GDP with other variables (e.g., credit). Despite the simplicity of the VAR, its use in the current context produces consistent and non-arbitrary paths for the GDP, CUR, and unemployment rate.
[3] Areosa, M. (2008): "Combining Hodrick-Prescott Filtering with a Production Function Approach to Estimate Output Gap," Central Bank of Brazil Working Paper, Series 172. Source: Credit Suisse

Output gap expected to close in 2019

- The economy has been working with high idle capacity since 2015. The median of the output gap estimates using several different models reached -3.3% in 4Q16 and has been closing since then. The slackness of the economy contributed to a reduction in demand pressures on inflation in the period.
- Our models suggest that the output gap will close in 3Q19. As a result, the favorable effect of the demand on inflation will be much smaller in 2019.

Median, maximum, and minimum of 13 estimates for output gap[1] (%)



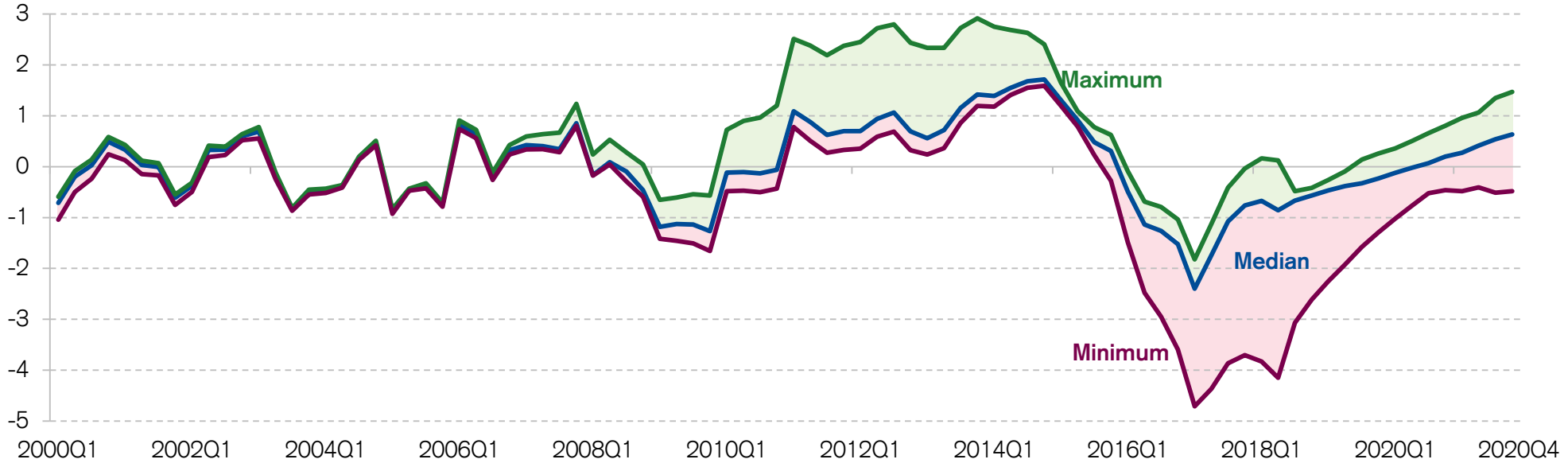
[1] We estimated potential GDP using three production functions and the Hodrick-Prescott filter. To reduce dependence on the last observations (i.e., forecasts), we considered three different scenarios: a baseline scenario, a negative scenario (based on the lowest 95 intervals of a VAR forecast of GDP, capacity utilization, and unemployment), and a positive scenario (based on the highest 95 intervals of a VAR forecast of GDP, capacity utilization, and unemployment). For more details on the filtering procedure, see: Areosa, M. (2008): "Combining Hodrick-Prescott Filtering with a Production Function Approach to Estimate Output Gap," Central Bank of Brazil Working Paper, Series 172.

Source: Central Bank of Brazil, Brazilian Statistics Bureau (IBGE), Credit Suisse

Labor market indicates more favorable inflation dynamics

- Another measure of slackness in the economy is calculated as the difference between the non-accelerating inflation rate of unemployment (NAIRU) and the unemployment rate. We use the same methodology as the output gap to estimate a range of gaps for the unemployment rate.
- The estimates point to higher slackness in labor market conditions than in capital conditions. This is a result of the sharp increase in the unemployment rate and a much more gradual recovery in employment.
- The median estimate of the gap in the unemployment rate was -0.9% in 2Q18 and suggests that the gap will not close until in 2Q20.

Median, maximum, and minimum of six estimates for gap of unemployment rate[1] (%)

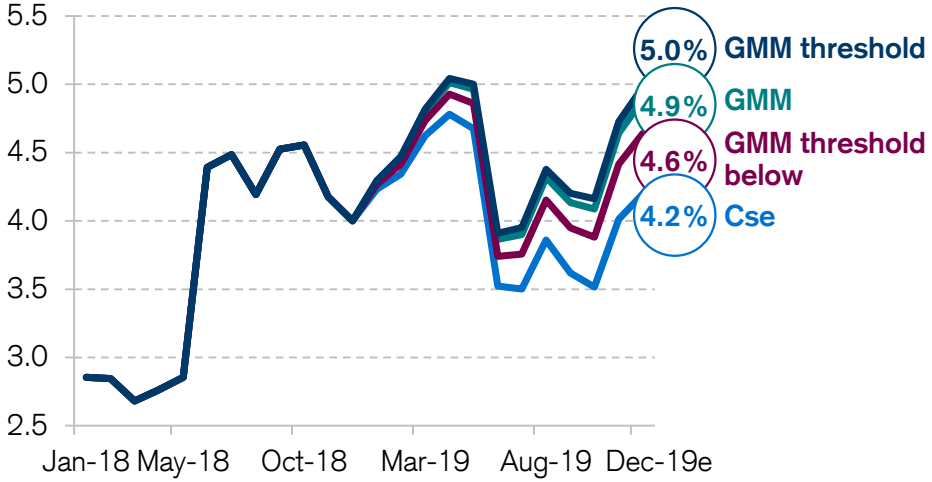


Source: Central Bank of Brazil, Brazilian Statistics Bureau (IBGE), Credit Suisse

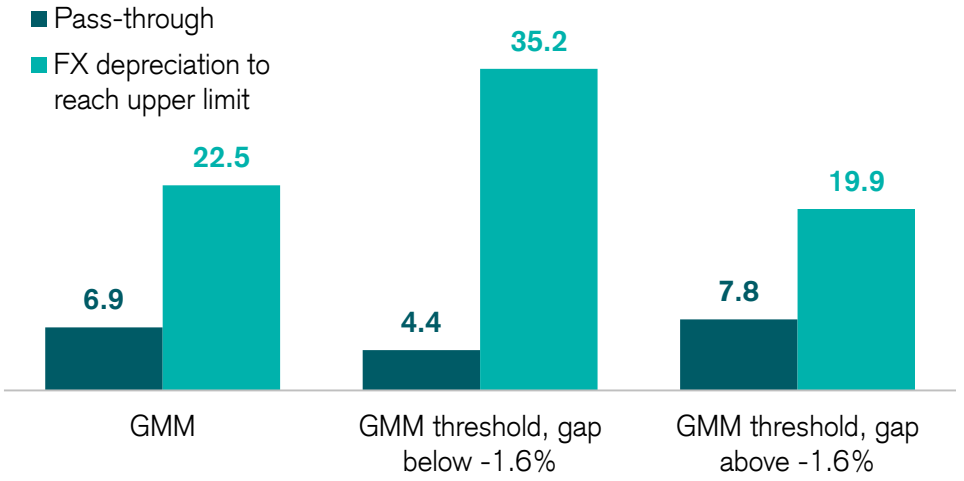
Failure to meet target presupposes sharp FX depreciation

- We built some models to calculate the impact of FX depreciation on IPCA inflation:
  - The benchmark Phillips curve estimates a pass-through of 6.9%;
  - The Phillips curve, which considers the slackness of the economy, yields 4.4% when idle capacity is high and 7.8% when it is low.
- The models suggest that the central bank would need to see sharp FX depreciation before failing to meet the inflation target. Considering our forecast of 4.2% for 2019, the FX rate would need to depreciate further by 20%–35% for inflation to reach the upper limit of 5.75% in 2019.

Simulation of dynamics of IPCA inflation after BRL depreciation of 10% (%, year-on-year)



Pass-through of FX depreciation to inflation, level necessary for non-fulfillment of central bank's target (%)



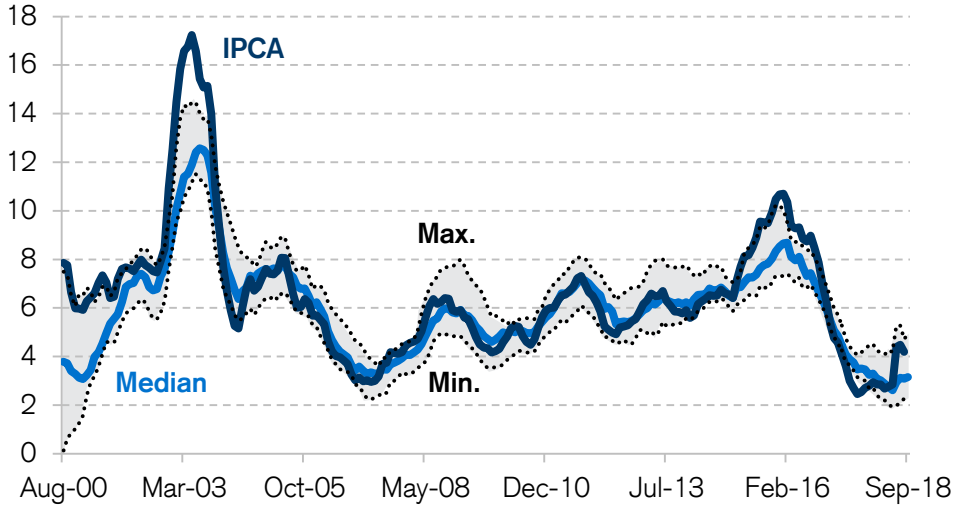
The GMM specification is based on Blachard, Olivier and Jordi Galí (2007): "Real wage rigidities and the new Keynesian model", Journal of Money and Banking, 35–66. A GMM model was built with restricted coefficients (inertia and expectations totaling the unit) with instruments provided by lags in the endogenous variables. The second estimate considers the same specification as that presented previously, but with the coefficients dependent on the threshold variable (in this case, the output gap). The methodology uses the same instruments and the previous equality constraint. For more details, see Carner, Mehmet and Bruce Hansen (2004) "Instrumental variable estimation of a threshold model," Econometric Theory, 20.

Source: Brazilian Statistics Bureau (IBGE), Central Bank of Brazil, Credit Suisse

Core inflation measures have low predictive power

- The median of all the central bank's core indicators has been showing a much more favorable dynamic for inflation than the headline indicator in the short term. Statistical tests show that core indicators do not have good predictive power to forecast IPCA inflation one year ahead. On the other hand, IPCA inflation has good predictive power to forecast the core measures.
- These results reinforce our view that IPCA inflation will remain close to the central bank's targets for 2019 and 2020 and will not converge to the median of all core indicators of 3.1%.

Median, minimum, and maximum of core inflation measures and IPCA inflation[1] (%, year-on-year change)



Predictive accuracy of core measures to forecast one-year forward IPCA and mean square of forecast error[2]

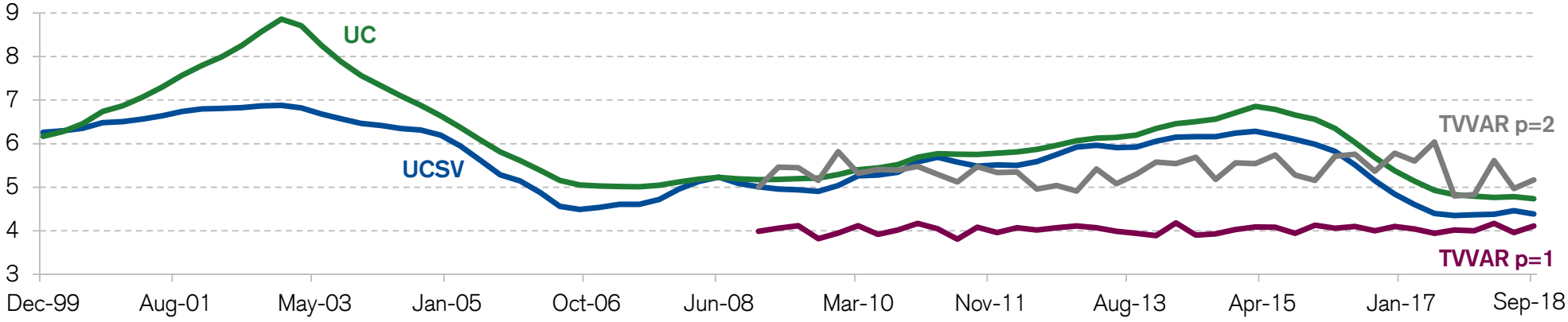
	Predictive accuracy test	Prediction error ratio
IPCA EX-food	0.22	1.33
IPCA EX0	0.24	1.06
IPCA EX1	0.12	1.00
IPCA EX2	0.29	1.71
IPCA EX3	0.26	1.48
IPCA DP	0.29	1.39
IPCA MS	0.36	1.21
Random Walk	N.A.	1.00

[1] Core measures built as described in: "Relatório Trimestral de Inflação," Central Bank of Brazil, June 2018.
[2] The predictive accuracy of each core measure to forecast IPCA inflation is calculated by the p-value of the Diebold Mariano test. Values higher than the significance level of 10% suggest that the core has lower forecasting power than the random walk forecast. The MSE of each core measure is normalized by the MSE calculated using the random walk model.
Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Models point to long-term of 4.1% to 5.2% in 2019

- Inflation in 2017 and 2018 was much more benign than in previous years. The dynamics of inflation in these years was mostly attributed to the strong supply of food items and the high level of slackness in the economy. As these factors did not change the economic fundamentals, it is reasonable to expect no change in long-term inflation.
- We built three models used in economic literature to assess long-term inflation (the trend inflation measure of Beveridge-Nelson)[1]: the unobservable components (UC) model, the unobservable components model with stochastic volatility (UCSV), and the autoregressive vector model with coefficients that vary over time (TVVAR).
- Estimates for trend inflation vary between 4.1% and 5.2%, above core inflation and inflation for 2018.[2]
- Approval of the reforms proposed by the government[3] could fundamentally change the long-term level of inflation in the country, making convergence of inflation to a lower level more sustainable in the long run.

Estimate of average, maximum, and minimum trend inflation (%, year-on-year change)



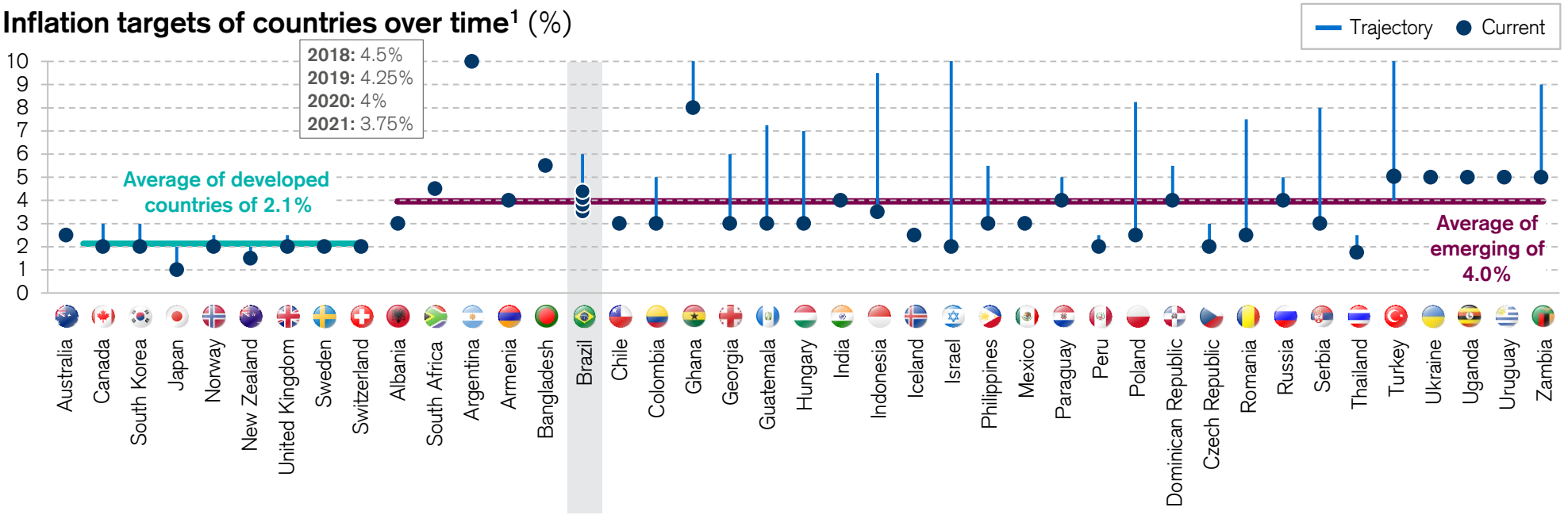
[1]The Beveridge-Nelson inflation measure is calculated as: $\pi_t^* = \lim_{h\to\infty} E_t[\pi_{t+h}]$.[2] Such measures have better predictive power than the usual core measures; for more details see: Outlook for 2018 and 2019 better but still uncertain, December 2017. [3] The main reforms that could change the level of inflation in the coming years are social security reform, increase of openness of the economy, agenda of productivity, autonomy of the Central Bank of Brazil, de-indexation of the economy, and privatization of state-owned companies.

Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Brazil's inflation target converging to its peers' targets

- The central bank had reduced the inflation target from 4.5% in 2018 to 4.25% in 2019, 4.0% in 2020, 3.75% in 2021. The lower center of the inflation target range is compatible with the average midpoint of inflation target ranges observed in emerging economies (4.0%) and represents a structural improvement for a country with a history of high inflation.
- The main risk to meeting the new targets is non-advancement of the fiscal consolidation process. The maintenance of high fiscal deficits would eventually lead the country to fiscal dominance, preventing the monetary authority from meeting the lower inflation targets.

Inflation targets of countries over time[1] (%)



[1] Blue line represents the path of inflation target center of each central bank of each inflation targeting over time

Source: Central Banks, Credit Suisse

Monetary policy

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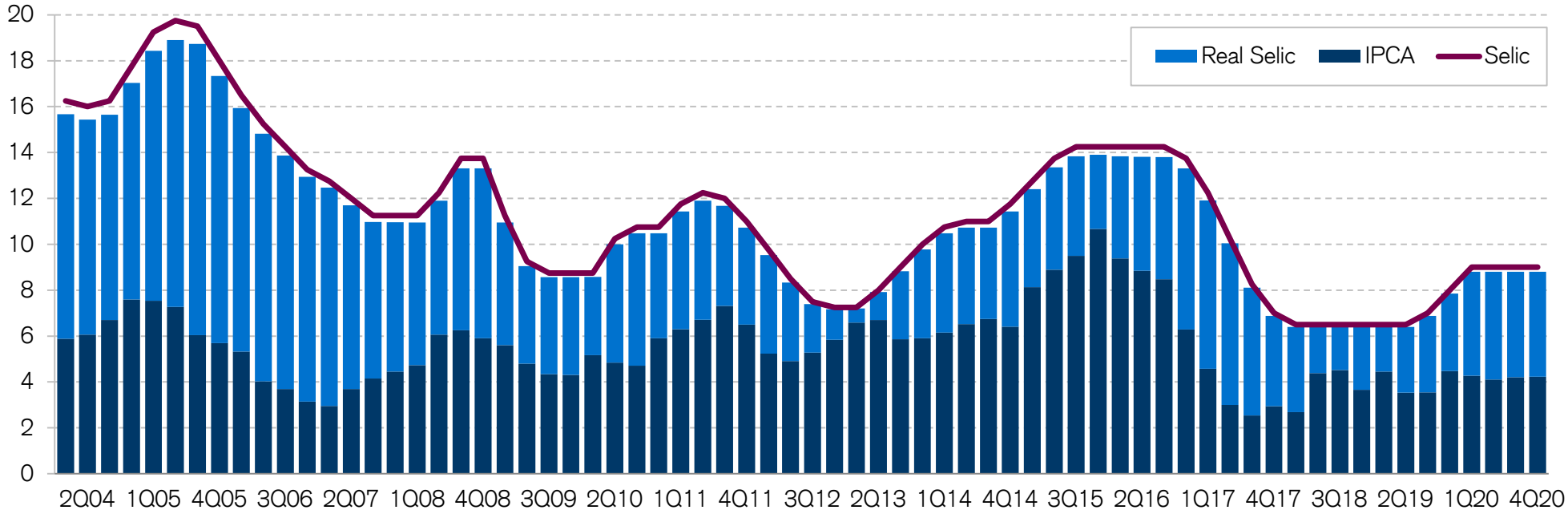
Selic rate to increase to 8.0% and 9.0% by YE19 and YE20

- The central bank is expected to initiate a gradual tightening cycle in 3Q19 to keep inflation below the center of the target range in 2019 and 2020.
- The closing of the output gap in 3Q19, the low differential between domestic and foreign interest rates, and the lower inflation targets in 2019, 2020, and 2021 would require the central bank to remove the expansionist effect of its monetary policy. We expect the central bank to implement a gradual approach, with increases of 50 basis points at each meeting, starting in September.

Selic interest rate, real Selic rate, and IPCA inflation (%, p.a.)

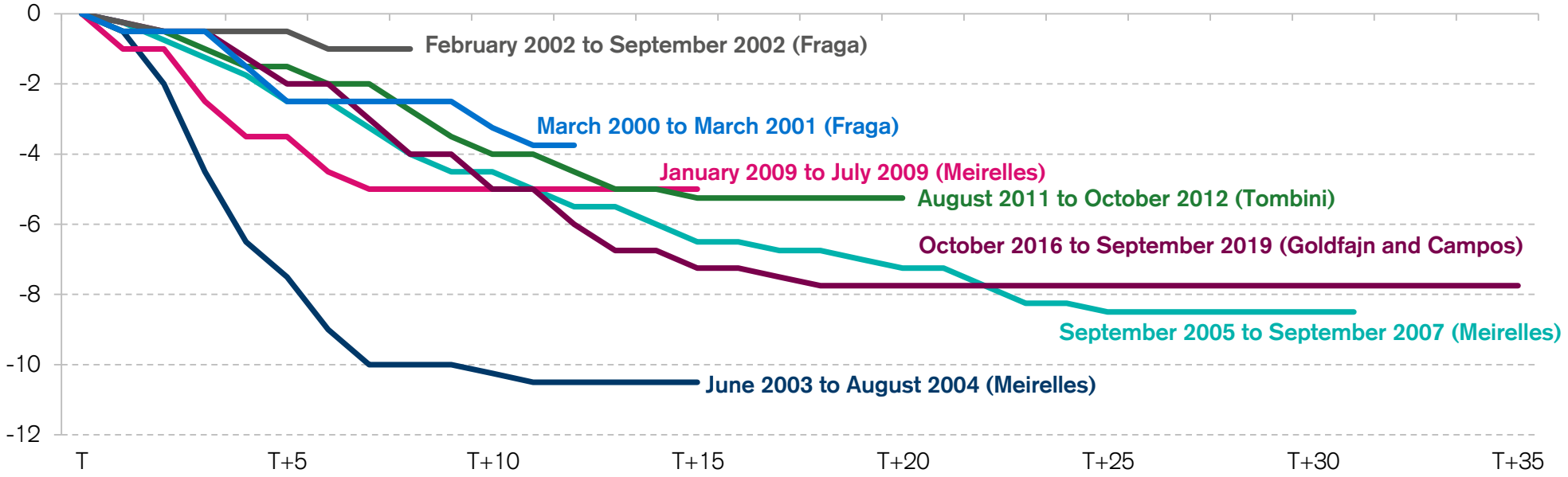


Source: Central Bank of Brazil, Credit Suisse

Current monetary easing cycle will be longest since 2000

- The central bank started the current easing cycle on October 2016 with a 25bps cut. The cumulative change in the Selic rate reached 775pps on March 2018, the third highest since 2000.
- Based on our forecast for the Selic rate in 2019, the current easing cycle will be the longest since 2000. The number of months would total 35 after the first cut in the Selic rate, three months more than the easing cycle initiated in September 2005. The current easing cycle was also one of the most gradual. The final level of the policy rate in the current cycle was achieved only 18 months after the first cut.

Cumulative change in Selic interest rate in easing cycles
(percentage points)



Source: Central Bank of Brazil, Credit Suisse

Effect of easing cycle to be one of the strongest

- The expansionist effect of monetary policy (calculated as the difference between the real Selic rate and natural interest rate) reached -3.7 and -3.4pps in September and October, the second strongest of easing cycles since 2003.[1]
- Considering best international practices, the normalization of the monetary policy to a non-expansionist level should be gradual, which suggests that the expansionist effect will last long. For example, a tightening cycle with 50bps hikes starting in 3Q19 would not eliminate the monetary easing effect until 3Q20.

Difference between the real Selic rate and the natural interest rate (percentage points)

Summary of previous monetary easing cycles[2]

Easing Cycles	Start	End	Duration (Days)	Median differential (pp)	Maximum differential (pp)
1	18-Jun-2003	15-Sep-2004	455	-0.3	-4.9
2	14-Sep-2005	16-Apr-2008	945	1.1	-1.3
3	21-Jan-2009	28-Apr-2010	462	-0.9	-2.1
4	31-Aug-2011	17-Apr-2013	595	-0.7	-3.4
5	19-Oct-2016	18-Sep-2019	1064	0.1	-3.7

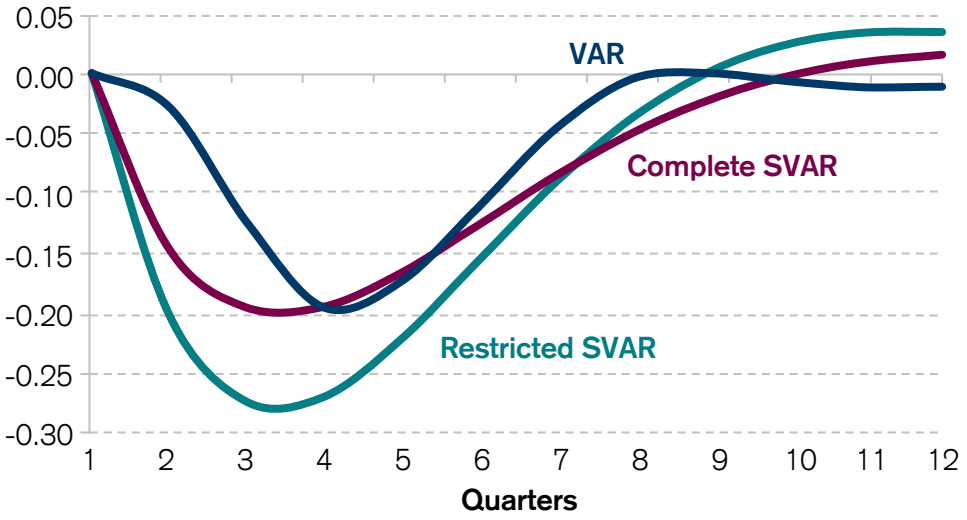
[1] Period in which our estimates of natural interest rates start.[2] To calculate median and maximum differential we used the values for October 2018.

Source: Bloomberg, Brazilian Association of Financial and Capital Market Entities (Anbima), US Federal Reserve, IpeaData, Central Bank of Brazil, B3, Credit Suisse

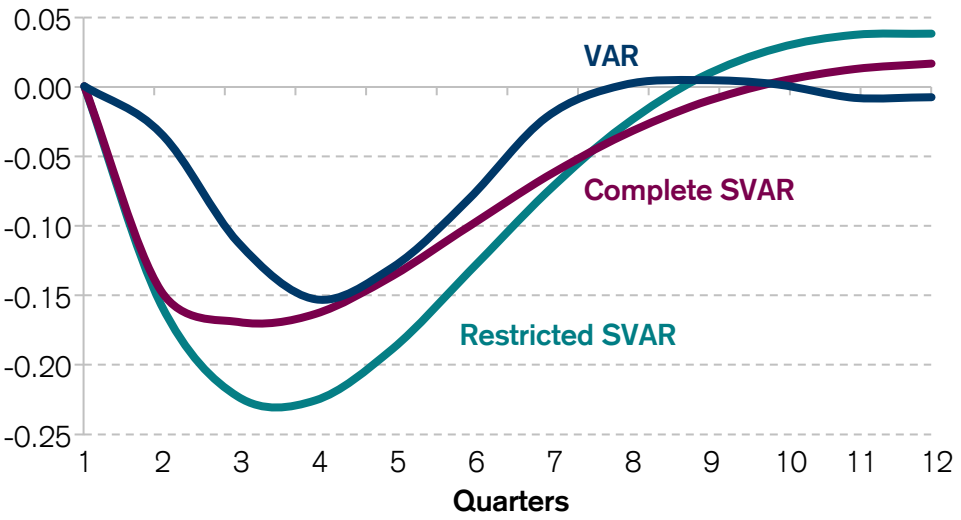
Monetary easing cycle to continue to fuel economy in 2019

- The low Selic rate will continue to stimulate the economy throughout 2019. Our models—Structural Vector Autoregressive (SVAR) models and one Vector Autoregressive (VAR) model for Brazil[1]—indicate that cuts in the Selic rate had a strong impact on the subsequent quarters. The cumulative effect of keeping the rate low for a prolonged period will likely accelerate the economy in the coming quarters.
- At same time, monetary policy normalization should start before the emergence of demand pressures on inflation, taking into account its lagged effect.

Response of output gap to 100bps rise in Selic rate (pps)



Response of domestic absorption gap to 100bps rise in Selic rate (pps)



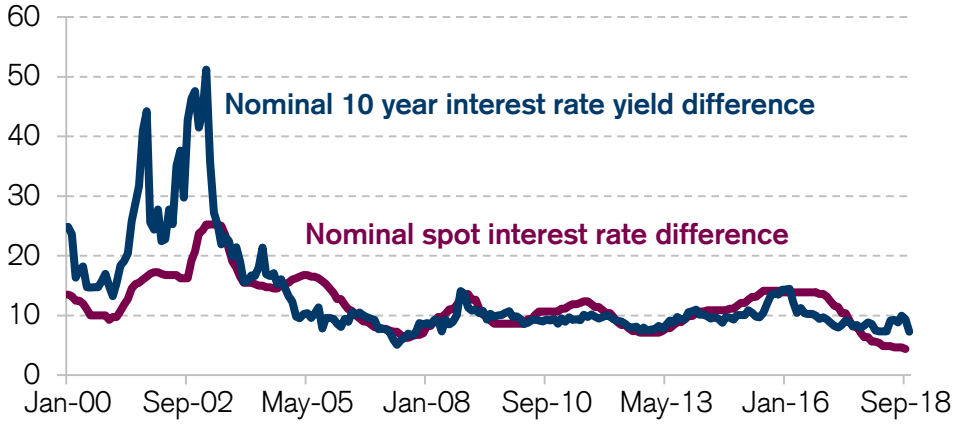
[1] The models follow the methodology of Ouliaris, S., Pagam, A.R., and Restrepo, J. (2016), "Quantitative Macroeconomic Modeling with Structural Vector Autoregressions," Working Paper, IMF. The models relate the variables: output gap, domestic absorption gap, inflation, interest rate, and real effective exchange rate, and two exogenous variables to capture interactions with the global economy (i.e., global trade gap and Fed funds rate). The output gap and domestic absorption measures were obtained using the Beveridge-Nelson decomposition and were based on AR (4) models and a time horizon of 12 quarters for the out-of-sample forecast. Domestic absorption is composed of consumption and investments.

Source: Central Bank of Brazil, Brazilian Statistics Bureau (IBGE), Credit Suisse

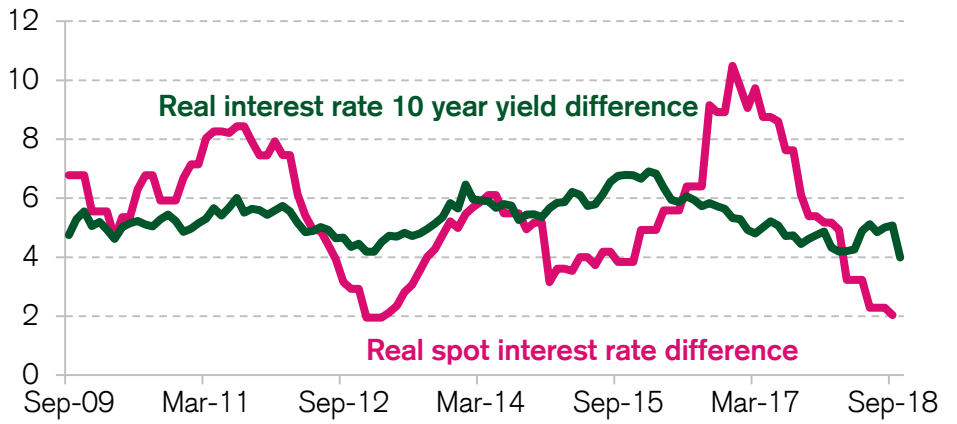
Interest rate differential reached the lowest level ever

- The strong monetary easing cycle implemented since 2016 drove the differential of domestic interest rate and foreign interest rate to the lowest level ever. The difference between the Selic interest rate and the fed fund rate reduced from 13.9pp in September 2016 to 4.6pp in September 2018. For the 10 year maturity, the difference declined from 9.6pp to 7.2pp in the same period.
- The same happened with real rates. The differential of the 10 year real interest rates reached the lowest level of 4.0pp in September 2018 while short-term differential reduced by 8.5pp since December 2016. The expected continuation of the tightening cycle in US throughout 2019 suggest that the stability of the Selic rate at the current level is unsustainable in the medium term.

Difference between domestic and foreign nominal interest rate [1] (%, p.a.)



Difference between domestic and foreign real interest rate [1] (%, p.a.)



[1] Real Fed funds and Selic interest rates are obtained by subtracting the nominal rate by the current inflation. The nominal 10 year were obtained by the term structure of interest rate of each country, and the real 10 year rates are the TIPS and NTNB interest rates for US and Brazil, respectively.

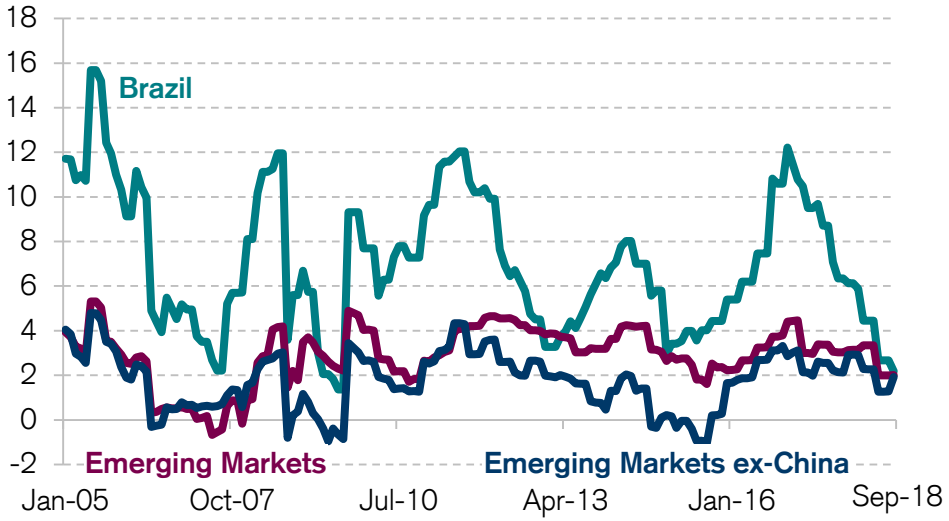
Source: FRED, National Treasury, Credit Suisse

Interest differential is low in comparison to emerging markets

- The reduction of the differential of Selic and Fed funds rates was strong even when compared to the dynamics of interest rate differentials in emerging markets. For the first time since 2005, the interest rate differential in Brazil is lower than the one observed for emerging economies.
- The dynamic for the interest rate differential in real terms was also similar. The differential for Brazil strongly declined from 12.2pp in December 2016 to 1.9pp in September 2018, same level observed in emerging economies in the month. The low level of the interest rates reduces the attractiveness of foreign investments and increase capital outflows to economies with higher returns.

Difference between domestic policy rate and Fed funds in Brazil and emerging economies[1] (pp, p.a.)

Difference between real domestic policy rate and real Fed funds in Brazil and emerging economies[2] (pp, p.a.)



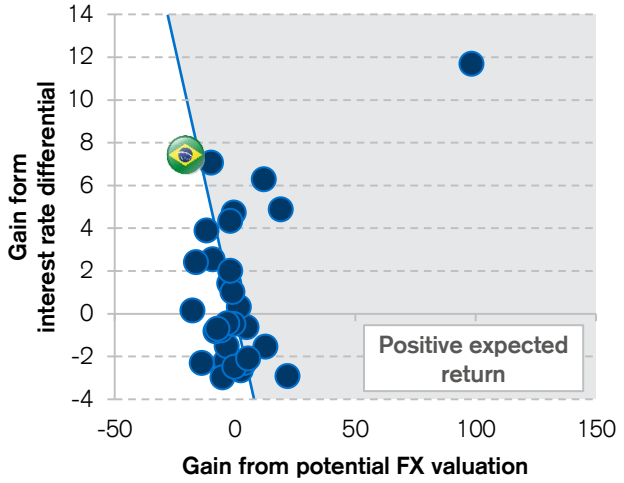
[1] In emerging economies, Brazil was not included. [2] Real interests rate obtained by subtracting the nominal rate by current inflation of each country. Developed and emerging indexes were calculated using the current GDPs of the countries.
Source: IMF, Credit Suisse

Attractiveness of carry trade in Brazil has declined

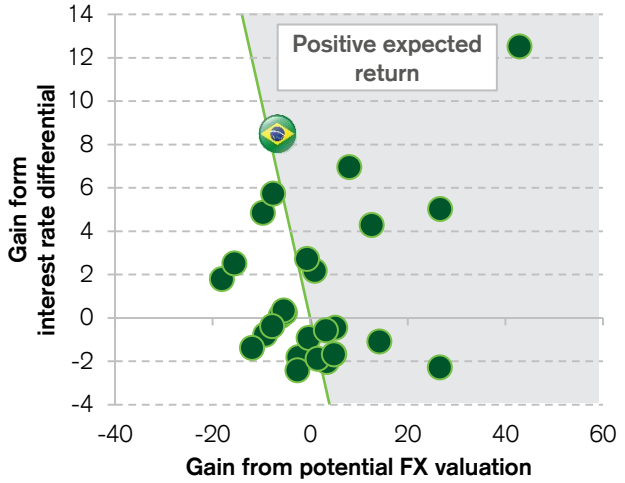
- For many years, Brazil's high interest rates had attracted foreign investors with low cost of funding to invest in long-term securities (known as carry trade). One of the main risks embedded in this type of transaction is FX depreciation. As a result, investors compare the yield with any long-term imbalance in the FX rate.[1]
- The decline in the basic interest rate in Brazil and the higher rates in other countries, despite the expectation of a less depreciated BRL, have made the carry trade less attractive since 2016. The country now has the fourth-highest FX-adjusted carry trade within a sample of 29 countries (vs. second-highest in 2016).

Differential of 10-year US and domestic rates and between real exchange rate and historical average

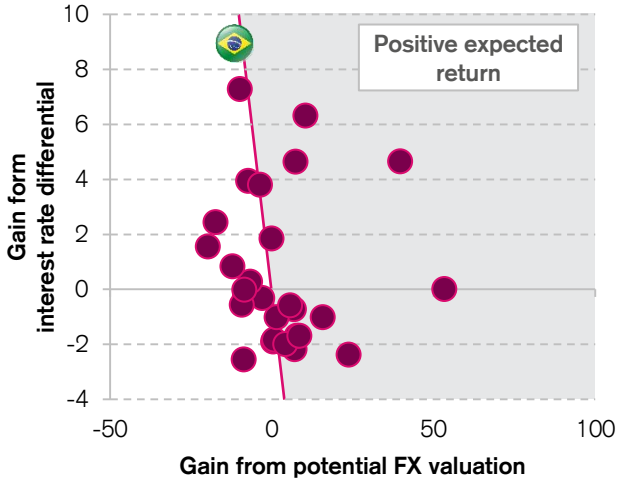
October 2018 (%)



December 2017 (%)



December 2016 (%)

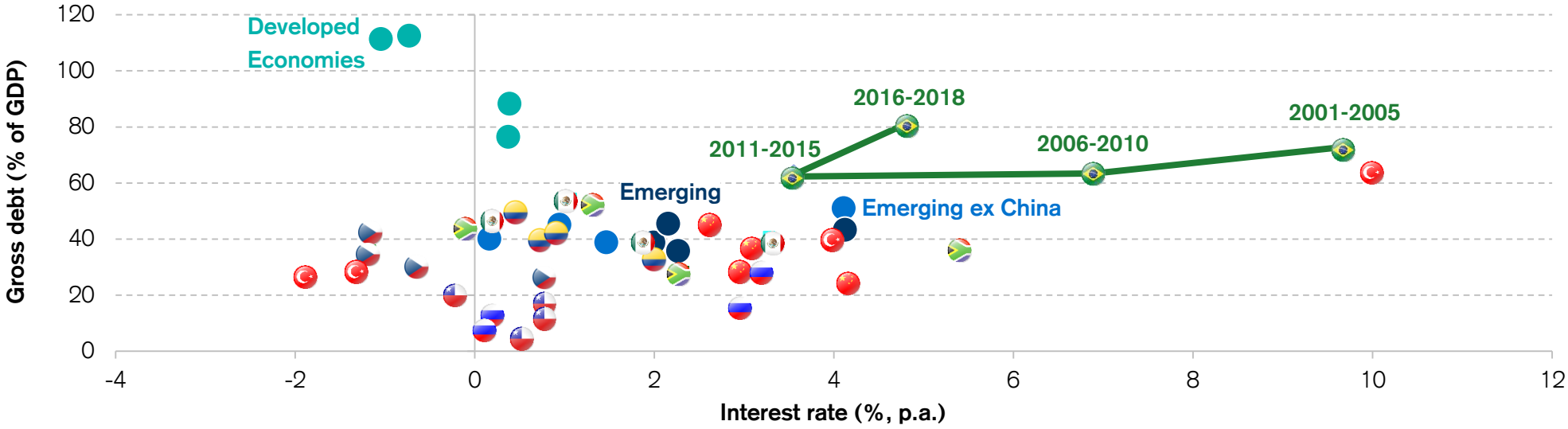


[1] We used the difference between the real exchange rate and its historical average as the long-term imbalance of a currency. To calculate the uncovered carry trade, we calculated the difference between the yield of ten-year public securities in the USA vs. other countries. The countries used were Colombia, India, Austria, Belgium, Canada, Switzerland, Chile, Germany, Spain, France, the United Kingdom, Israel, Italy, Japan, Korea, Mexico, Netherlands, Russia, South Africa, Brazil, Argentina, Australia, Bulgaria, China, Iceland, Ireland, New Zealand, Peru, and Singapore.

Brazilian public debt to continue to pressure interest rate

- The high gross debt of the government and its expected upward trajectory make investments indexed by domestic interest rates even less attractive. The gross debt increased from an average of 63% between 2011 and 2015 to 80.1% between 2016 and 2018, reverting the strong performance of the fiscal accounts between 2001 and 2015.
- The strong demand for private savings caused by the high fiscal deficits will continue to pressure interest rates in the coming years. Additional deterioration regarding the dynamics of fiscal accounts would trigger a strong exchange-rate depreciation forcing the Central Bank to start a tightening cycle earlier than our expectation.

Gross debt and real interest rate of selected countries(1,2,3)



[1] Real interests rate were obtained by subtracting the nominal rate from current inflation of each country. Developed and Emerging indexes were calculated using the current GDPs of the countries in the groups as weight in the index.
[2] "Emerging" does not include Brazil. [3] The data for public debt are from the IMF, whose methodology is different from that of the Central Bank of Brazil.

Source: IMF, Credit Suisse

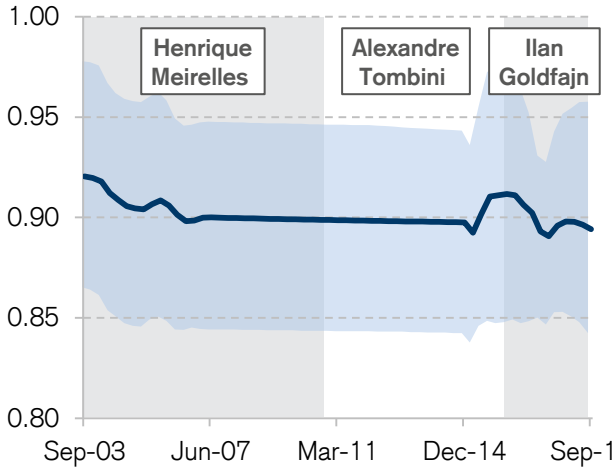
Central bank has become more sensitive to inflation

- To capture changes in the reaction function of the Central Bank of Brazil, we used a time-varying Taylor rule for the Selic interest rate. The monetary policy rate set by the central bank is a function of the neutral interest rate, the deviation of inflation to its target, and the output gap[1,2].
- The results of the estimates suggest that the central bank has become more sensitive to inflation over time and less sensitive to the output gap.

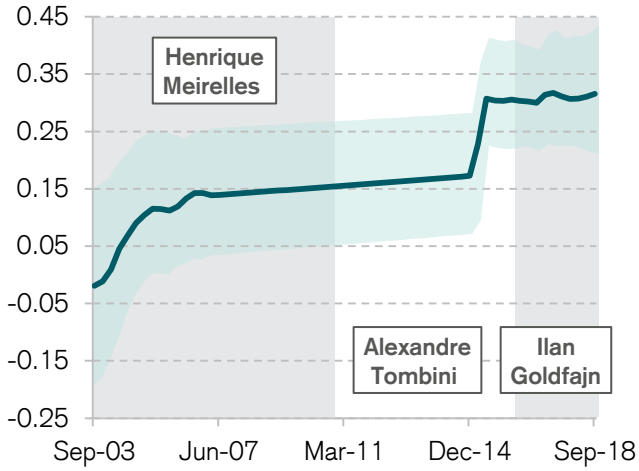
$$S = S^* + \rho(S_{t-1} - S^*) + \alpha(\pi - \pi^*) + \beta\,(GDP^*),$$

where S is the Selic rate, S* is the neutral interest rate, π* is the inflation target, and GDP* is the output gap.

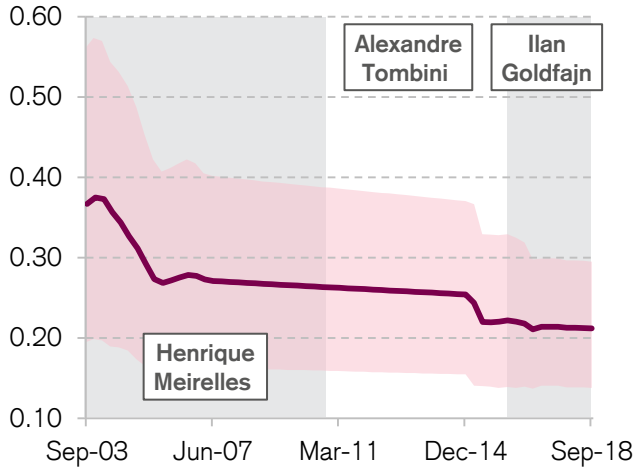
Coefficient of differential between past Selic rate and natural rate



Coefficient of deviation of inflation to target



Coefficient of output gap

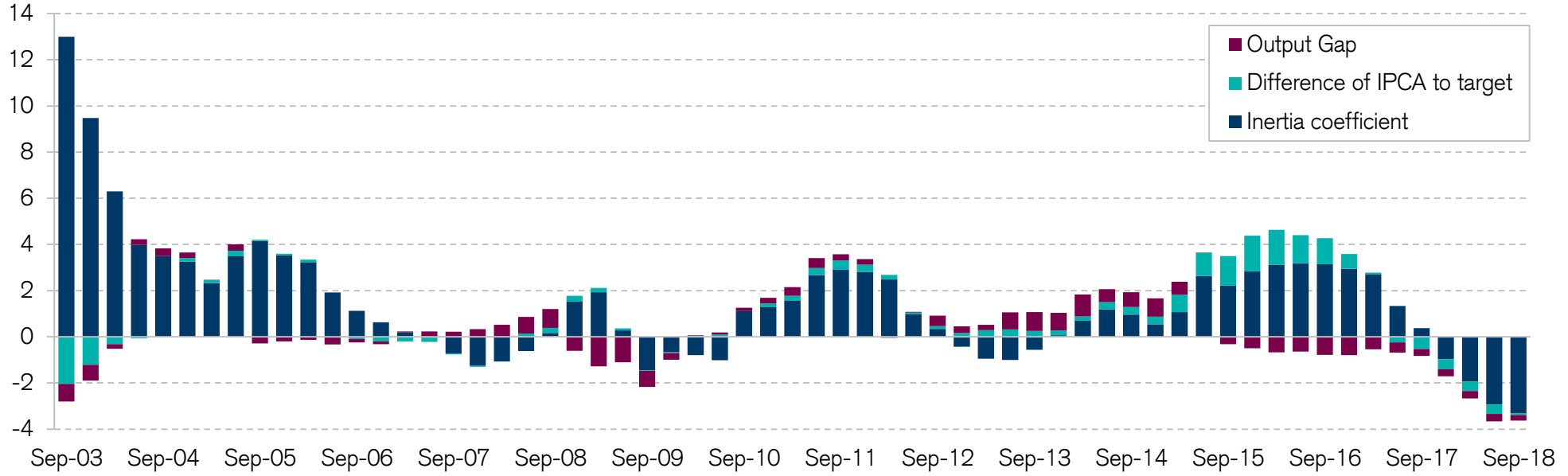


[1] The GDP gap and the neutral interest rate were calculated using the Hodrick-Prescott filter. For more details, see Areosa, M. (2008): "Combining Hodrick-Prescott Filtering with a Production Function Approach to Estimate Output Gap," Central Bank of Brazil Working Paper, Series 172. [2] The model uses a Epanechnikov kernel smoothing nonparametric technique for a linear model and estimates the best fit for each observation, allowing for shifts to be identified when the institution changes its sensitivity to the parameters. See Epanechnikov, V. A. (2008): "Non-Parametric Estimation of a Multivariate Probability Density" for more details. Source: Credit Suisse

Expansionist cycle driven by both inflation and slackness

- The difference between the Selic rate and the natural interest rate measures how expansionist or contractionist monetary policy is. A breakdown of this difference shows that the central bank's decision was based on the low rate of inflation and negative output gap of the economy. This combination of a negative output gap and inflation below target was observed in only two periods: 4Q03–1Q04 and 3Q17–3Q18.
- A reduction of the output gap in the coming quarters, the current level of inflation close to the central bank's target for 2019, and the central bank's lower inflation targets for 2021 and 2022 would leave less room for the monetary policy to remain expansionist.

Breakdown of difference between Selic rate and natural interest rate (percentage points)

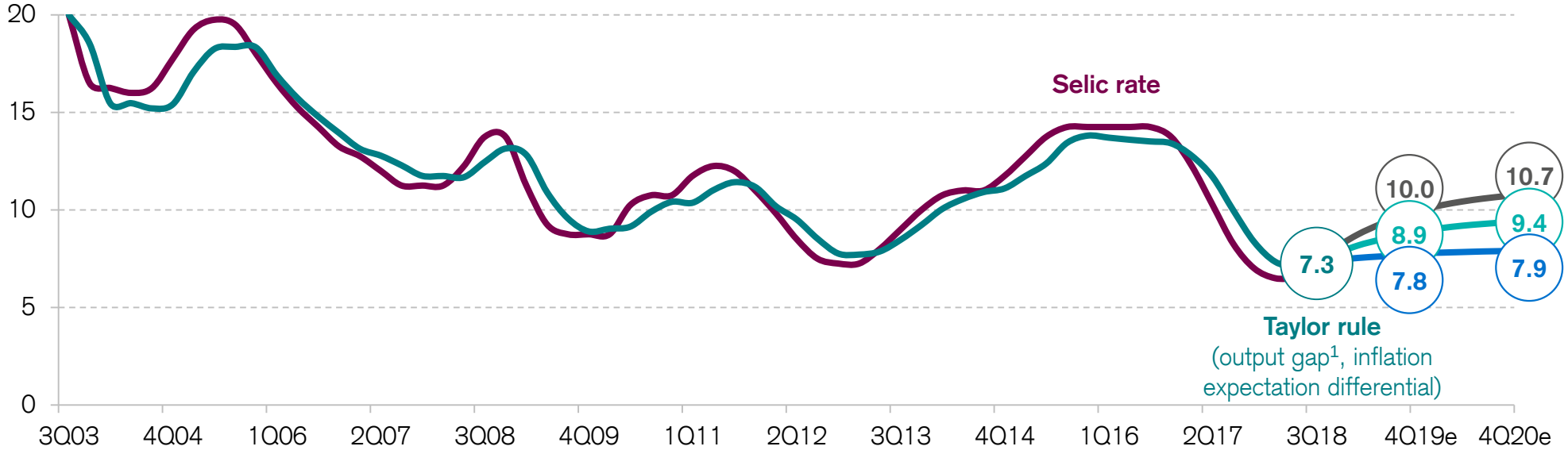


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Taylor rule projects Selic interest rate at 9.4% in 2020

- Under our base case scenario for inflation and output gap, the Taylor Rule equation prescribes the current level of Selic interest rate at 7.3%, and an increase to 9.4% in the year end 2020. The closing of the output gap in the end of 3Q19 and inflation close to the Central Bank's target throughout 2019 should trigger a tightening cycle in the coming quarters. According to the Taylor rule, the policy rate should increase to:
  - 7.8% in 2020, in an alternative scenario in which inflation declines to 3.8% and GDP growth remains close to 2.0%.
  - 10.7% in 2020, assuming inflation reaching 4.75% and GDP growth of 3.5%.

Scenarios for the Selic interest rate implied by the Taylor rule (%, p.a.)



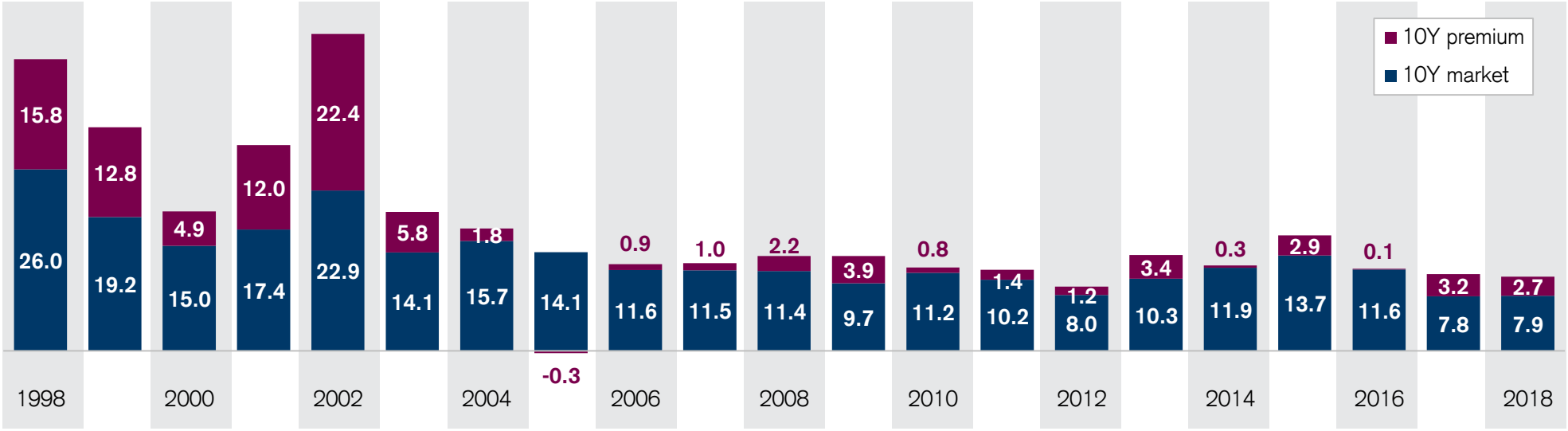
[1] Potential GDP calculated using a Hodrick-Prescott filter, with expansion of our GDP growth forecast until 2023 to minimize the risk of overestimation at tails. For more details, see Areosa, M. (2008): "Combining Hodrick-Prescott Filtering with a Production Function Approach to Estimate Output Gap," Central Bank of Brazil Working Paper, Series 172. The 12-month forward inflation forecast as of 2019 is based on our long-term inflation projections.

Source: Central Bank of Brazil (BCB), Credit Suisse

Term premium remained low in recent years

- The treasury interest rates can be decomposed in market forecast for the future path of short term yield and a premium for the uncertainty regarding this forecast (term premium). We replicated the Fed's methodology to decompose the 10 year yield of the Brazilian treasuries[1].
- The dynamics for the model-based market expectations and term premium has changed significantly over the years. Before 2004, investors required a high term premium given the more volatile monetary policy rate. In recent years, the term premium and market forecast for interest rates have declined significantly. Even in periods of strong financial stress, as in 2015, the market forecast remained close to 14% and the term premium at 3%.

Breakdown of ten-year yield in model-based market expectation and term premium[2] (%, p.a.)



[1] The methodology decomposes the interest rate in the risk neutral measure assuming an affine representation of the factors. For more details see: Adrian, T., Richard Crump, Emanuel Moench: "Pricing the term structure with linear regressions", Journal of Financial Economics, Volume 110, Issue 1, October 2013.2 Estimated through October 2018.
Source: B3, Credit Suisse

Term premium model projects Selic rate of 8.0% in ten years

- The model-based market expectations for the Selic rate in ten years has declined sharply since reaching the peak of 13.7% in December 2015. In October 2018, they were at 8.0%, close to the median expectation of 8.0% in the Market Readout survey for the Selic rate in two years.
- On the other hand, the term premium saw an increase between March 2017 and August 2018, when it reached the peak of 4.4%. After that, it declined sharply to 2.7% in October, in line with the less uncertain political scenario.

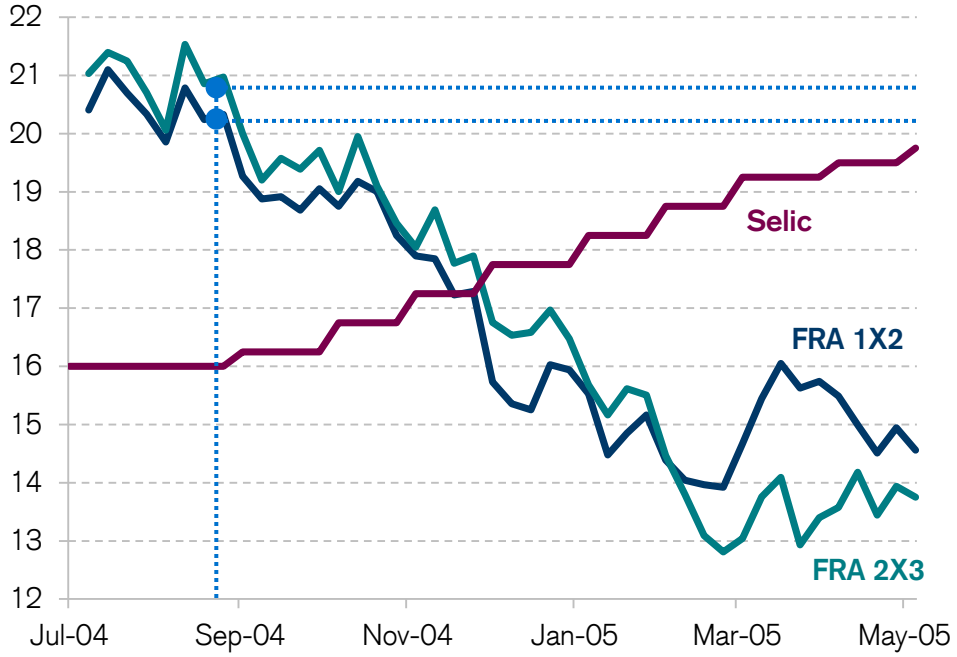
Breakdown of ten-year treasury yield in market expectations and term premium (%, p.a.)

Source: B3, Credit Suisse

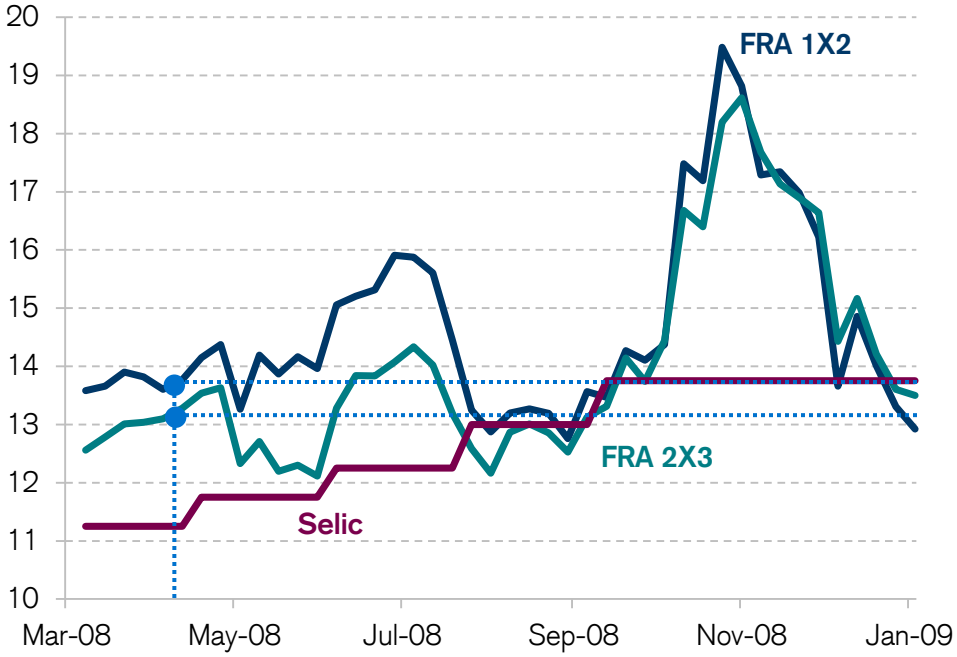
Tightening cycles of 2004 and 2008 were predicted by FRAs

- Market expectations regarding monetary policy can also be inferred from forward rates (FRA) for years ahead. For example, the tightening cycles in 2004 and 2008 were predicted by the FRA at the beginning of each cycle. One week before the tightening cycle of 2004, the forward rates for one and two years were 13.8% and 13.3%, respectively, close to the Selic rate of 13.75% at the end of the tightening cycle. In 2008, FRAs of one and two years were only 45 and 43 basis points higher than the end-level Selic rate one week before the start of the tightening cycle.

Selic, FRA 1x2 interest rates (%, p.a.)



Selic, FRA 2x3 interest rates (%, p.a.)

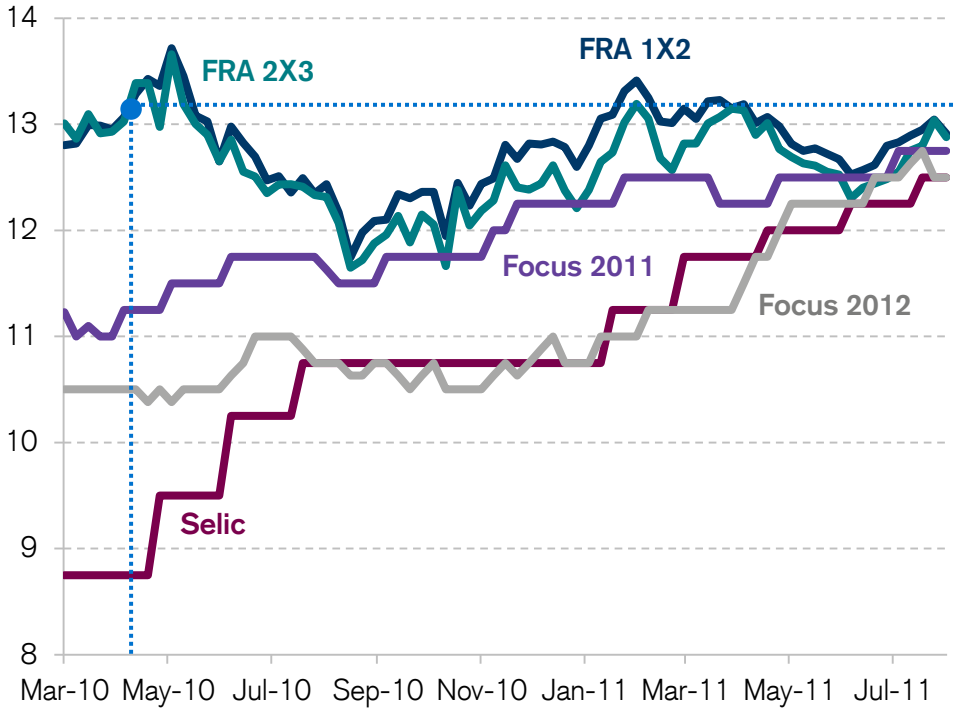


Source: B3, Central Bank of Brazil, Credit Suisse

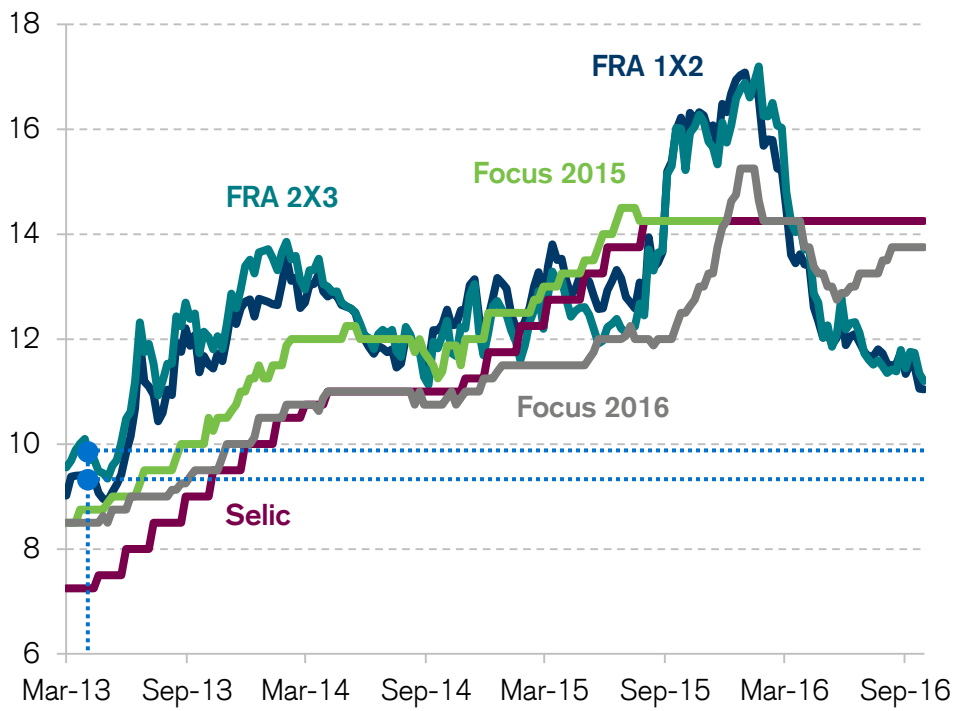
Tightening cycle of 2013 was not predicted by markets

- The tightening cycle in 2010 was also anticipated by FRAs, but the cycle in 2013 cycle was not. In 2010, the FRAs of one and two years were pricing in a Selic rate of 13.0% and 12.9%, in line with the terminal Selic rate of 12.5%. On the other hand, FRAs did not predict the 2013 tightening cycle, the differences being 493bps and 453bps. The forecasts in the Focus Market Readout did not accurately forecast either tightening cycles, the forecasts being 150bps and 700bps lower than the terminal Selic rate.

Selic, FRA 1x2 interest rates (%, p.a.)



Selic, FRA 2x3 interest rates (%, p.a.)

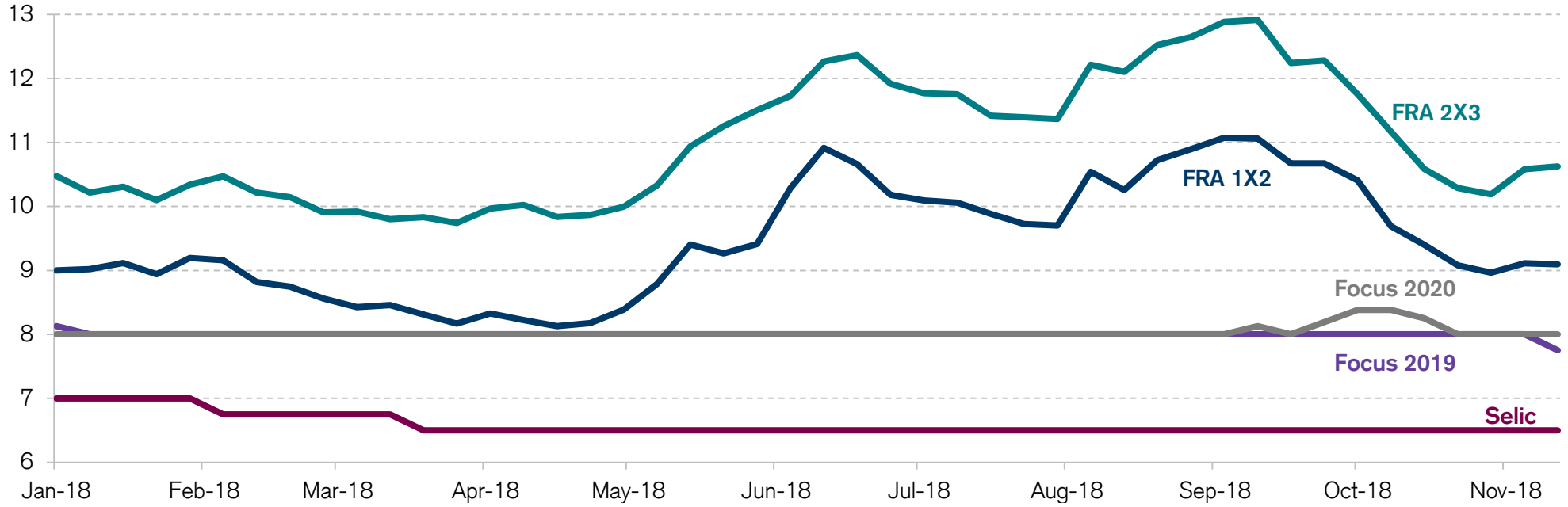


Source: B3, Central Bank of Brazil, Credit Suisse

Market survey forecasts point to more gradual tightening

- The median expectation in the Focus Market Readout survey projects the Selic rate at 7.75% at year-end 2019 and 8.0% at year-end 2020, lower than our forecast of 8.0% and 9.0% and the FRA 1x2 of 9.1% and FRA 2x3 of 10.6% for the period.
- Interestingly, the FRA interest rates remained higher than the Market Readout expectation throughout the year. The market's expectations of 8.0% for the Selic rate and 4.0% for inflation for next years suggest a median market forecast for the natural interest rate of 4.0%, much lower than our estimates.

Selic, FRA 1x2, FRA 2x3 interest rates (%, p.a.)

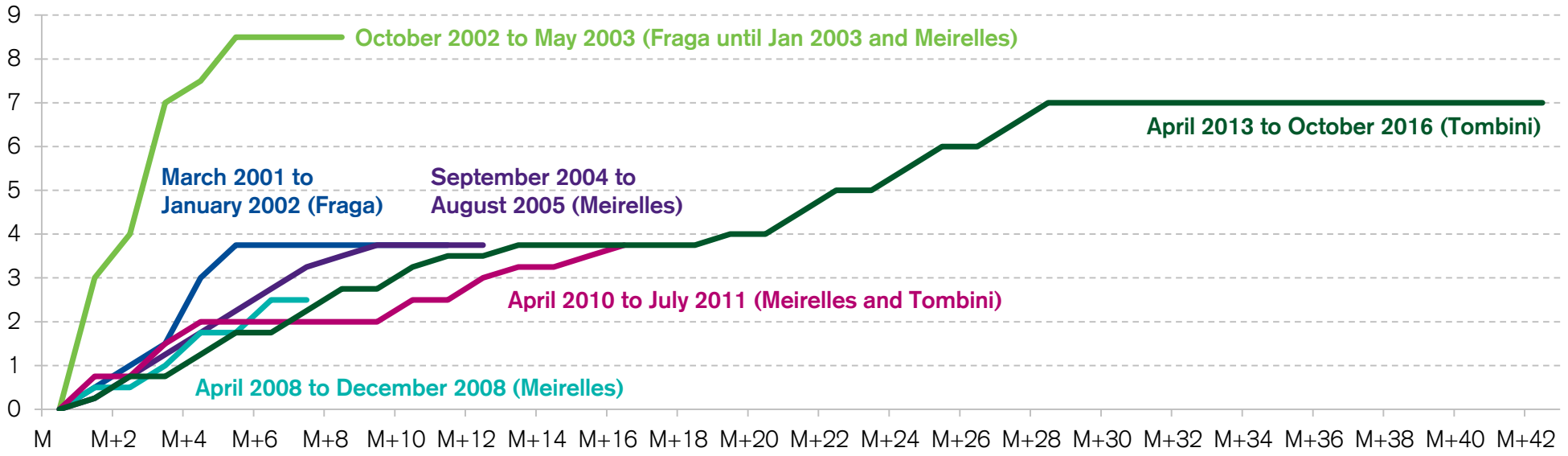


Source: B3, Central Bank of Brazil, Credit Suisse.

Monetary tightening cycles in Brazil are strong and fast

- Previous monetary tightening cycles[1] in Brazil were characterized by sharp increases in interest rates. In five of the past six tightening cycles, the Selic rate increased by more than 350 basis points.
- All tightening cycles lasted no more than 16 months, with the exception of the cycle from April 2013 to October 2016.
- Of all tightening cycles since 2000, two started with a 25bps increase (2004 and 2013), two with 50bps (2001 and 2008), one with 75bps (2010), and one with 300bps (2002).

Cumulative change in Selic interest rate in tightening cycles
(percentage points)



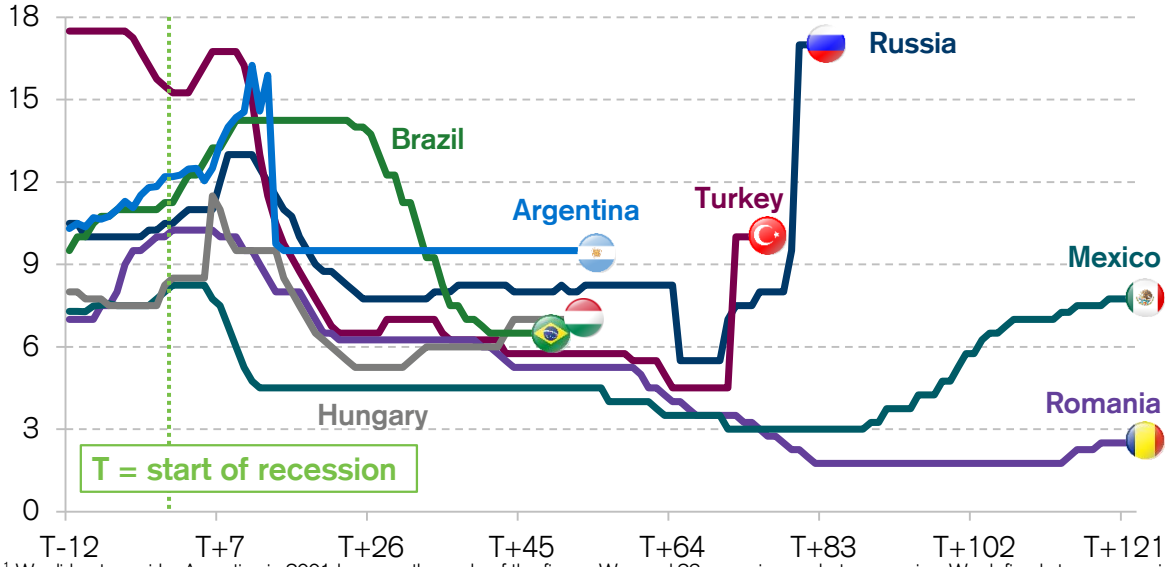
[1]A monetary tightening cycle is defined as the starting on the month of the first hike and ending on the month before the first reduction in interest rate.

Source: Central Bank of Brazil, Credit Suisse

Prolonged easing cycles require anchored expectations

- The high idle capacity is not a sufficient condition for the central bank to keep interest rates at low levels for a prolonged period of time. Fiscal and external vulnerabilities need to be solved to sustain a policy rate at low levels.
- Since 2000, there were eight episodes of emerging markets posting strong recessions[1]. As expected, these countries implemented strong easing cycles and, in certain cases, for a prolonged period of time. Despite the high idle capacity, some countries (Argentina, Russia, Turkey, Hungary) had to anticipate the tightening cycle, most of whom had strong fiscal vulnerabilities.

Monetary interest rate before and after episodes of strong recessions (%, p.a.)



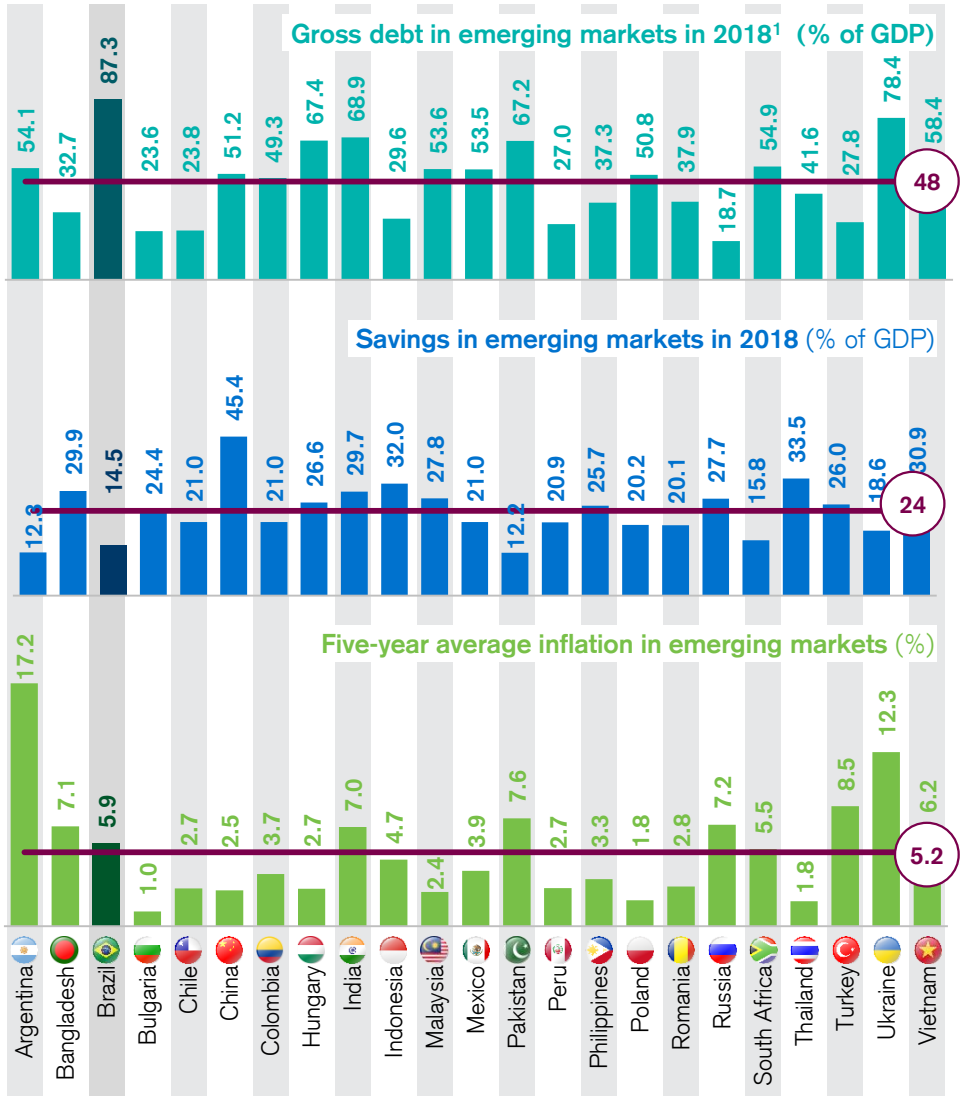
	Start of recession	Total contraction	Policy rate: Before easing	Policy rate: After easing	Length of easing (months)
Argentina	2Q01	-18%	76.1	1.2	**13**
Argentina	3Q08	-10%	15.9	9.5	**52**
Brazil[2]	4Q14	-8%	14.3	6.5	**27**
Hungary	2Q08	-8%	11.5	5.3	**24**
Mexico	3Q08	-8%	8.3	3.0	**83**
Romania	3Q08	-9%	10.3	1.8	**107**
Russia	2Q08	-11%	13.0	7.8	**22**
Turkey	1Q08	-13%	16.8	6.5	**18**

[1] We did not consider Argentina in 2001 because the scale of the figure. We used 23 emerging market economies. We defined strong recession as episodes of two consecutive contractions in quarterly GDP growth and with a total GDP contraction of 7%, in line with the strong contraction in Brazil's GDP from 2Q14 to 4Q16. In the two episodes of deep recessions, Argentina had high fiscal vulnerability and defaulted on its sovereign debt in 2001. The Central Bank of Hungary stated that the "unorthodox fiscal" measures increased inflation and that the hikes would start in December 2000. Turkey has historically high deficits, combined with IMF loans. [2] Due to the use of the general definition of recession in this exercise, the start of the recession in Brazil was in 4Q14, not in 2Q14.

Source: BIS, Credit Suisse

Broader reforms could reduce size of tightening cycle

- One upside risk to our scenario of a 250bps increase in the Selic rate in coming years is the possible reduction in the natural interest rate due to the approval of broad structural reforms.
- Several factors explain the high natural interest in Brazil: (i) high gross debt; (ii) high primary and nominal deficits; (iii) low level of private savings; (iv) low level of openness of the economy; (v) past history of defaults; and (vi) high inflation. Hence, addressing some of these factors could reduce the natural rate.
- Overall, both the micro reforms and the fiscal consolidation process would reduce the natural interest rate, diminishing the size of the tightening cycle necessary to reach the inflation target in the coming years.



[1] IMF's gross debt definition, which differs from that of the Central Bank of Brazil.

Source: IMF, Credit Suisse

Formal autonomy of central bank could be approved

- Congress has been discussing supplemental bill of law No. 32/03, which establishes fixed mandates for the governors and the chairman of the Central Bank of Brazil that do not coincide with the President's mandate. The bill would reduce uncertainty regarding the new governors during the transition to a new administration and contribute to reduce political pressures on the monetary authority to spur short-term returns (e.g., higher growth) to the detriment of long-term benefits (e.g., lower inflation, higher growth). The new administration is in favor of the proposal and could put its proposal forward in the coming quarters.

Benefits of granting formal autonomy to Central Bank of Brazil

Robust monetary policy

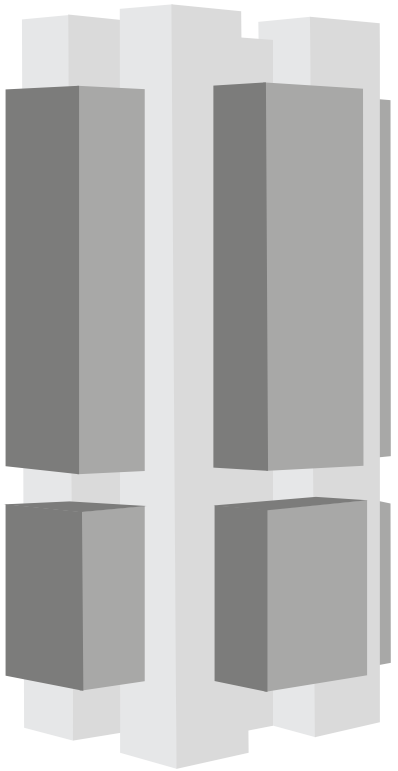
Formal autonomy of the monetary authority would make monetary policy more robust and, consequently, would increase the society's well-being.

Anchoring of inflation expectations

Formal autonomy would reduce uncertainty regarding the perception that certain monetary policy decisions were influenced by the federal government in recent decades. Even if this has never been the case, such uncertainty would hinder inflation control. Such autonomy would anchor inflation expectations more solidly around the center of the target range and increase the power of monetary policy.

Fiscal adjustment stimulus

Formal autonomy of the monetary authority would make it difficult for the government to finance public debt via seigniorage.

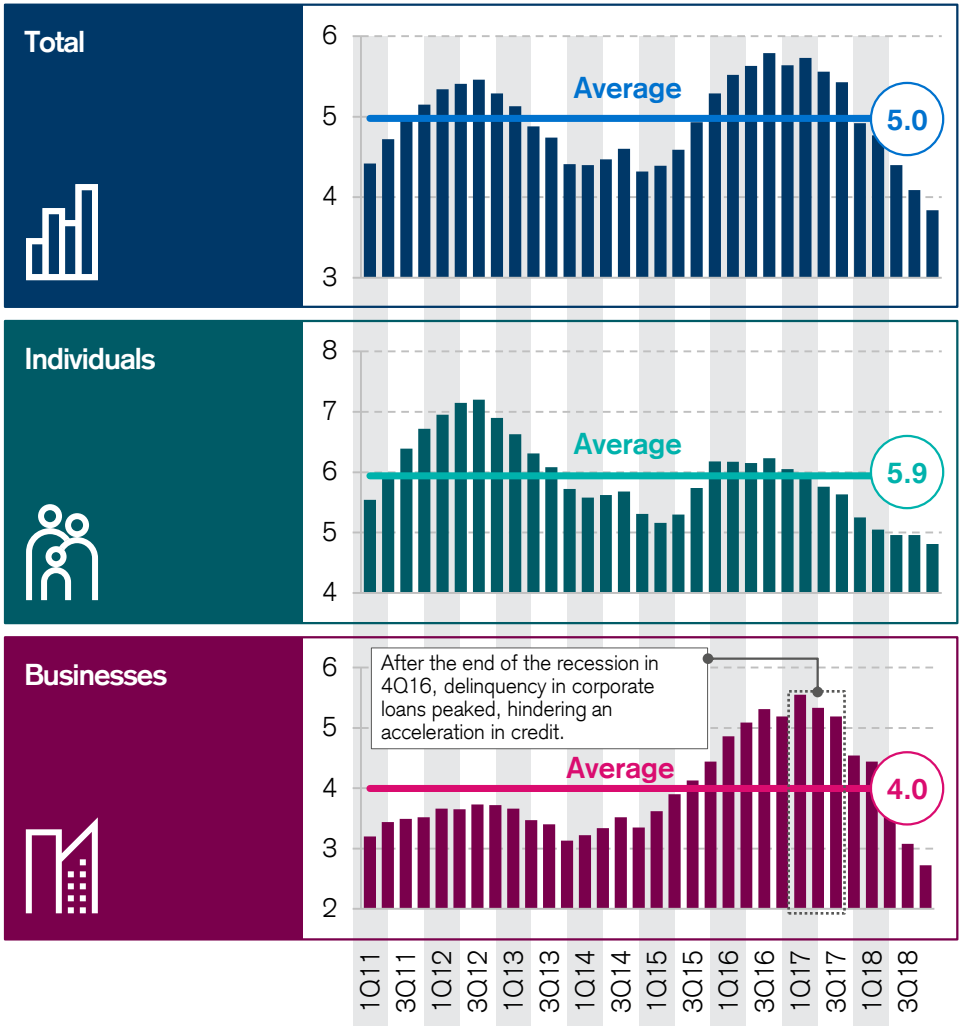


Source: Credit Suisse

Conditions for credit expansion are favorable

- The continuity of more favorable financial conditions owing to the postponement of the monetary policy normalization process will likely result in more significant expansion of non-earmarked bank lending in the next few quarters. The current starting point for the credit cycle is favorable:
  - Supply conditions: Following the sharp rise in the post-recession period, the delinquency rate in non-earmarked bank loans to both individuals and corporations is at its lowest level of the past few months. This situation will likely stimulate private banks to supply credit.
  - Demand conditions: Both households and corporations have gone through a deleveraging process for the past few years, which makes it easier for both segments to take out loans.

Dynamics of delinquency in non-earmarked bank loans
(% of stock of credit)

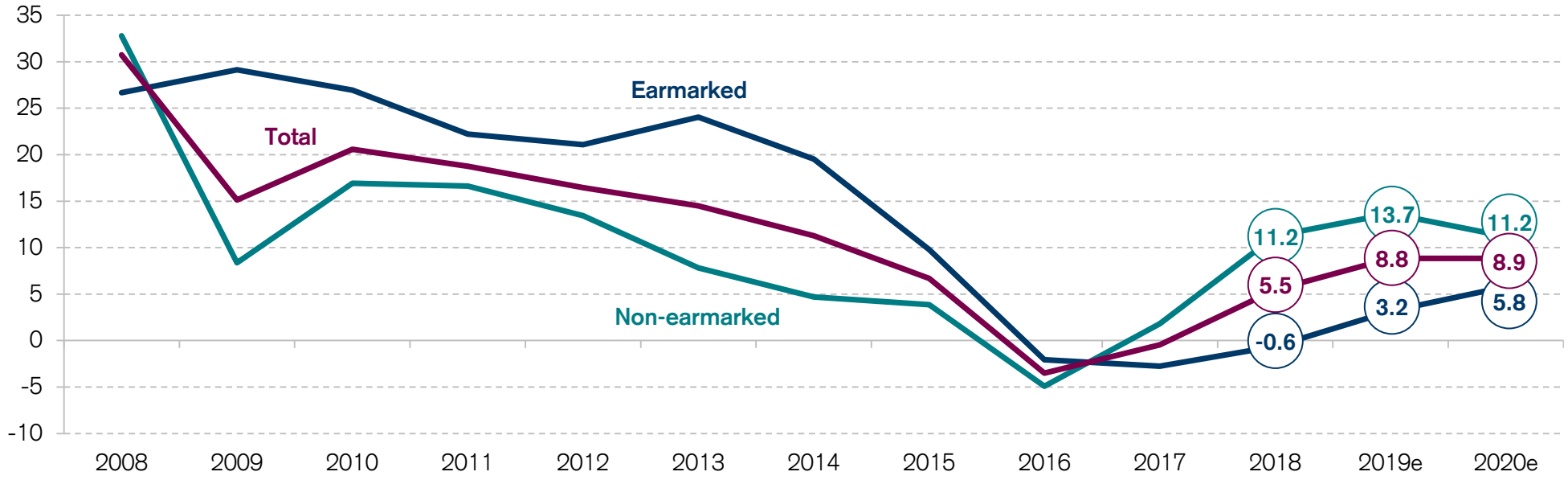


Source: Central Bank of Brazil, Credit Suisse

Total bank lending to rise 8.8% in 2019 and 2020

- Maintenance of the Selic basic interest rate below its neutral level should keep growth in bank lending on a positive trend in the coming quarters.
- Growth in total lending should increase from 5.5% in 2018 to 8.8% in 2019 and 8.9% 2020, a movement that should be driven by non-earmarked lending, which is more responsive to the effects of monetary policy.
- Earmarked lending should resume, although at a more moderate pace, after three consecutive contractions between 2016 and 2018.

Growth in bank lending (%, p.a.)

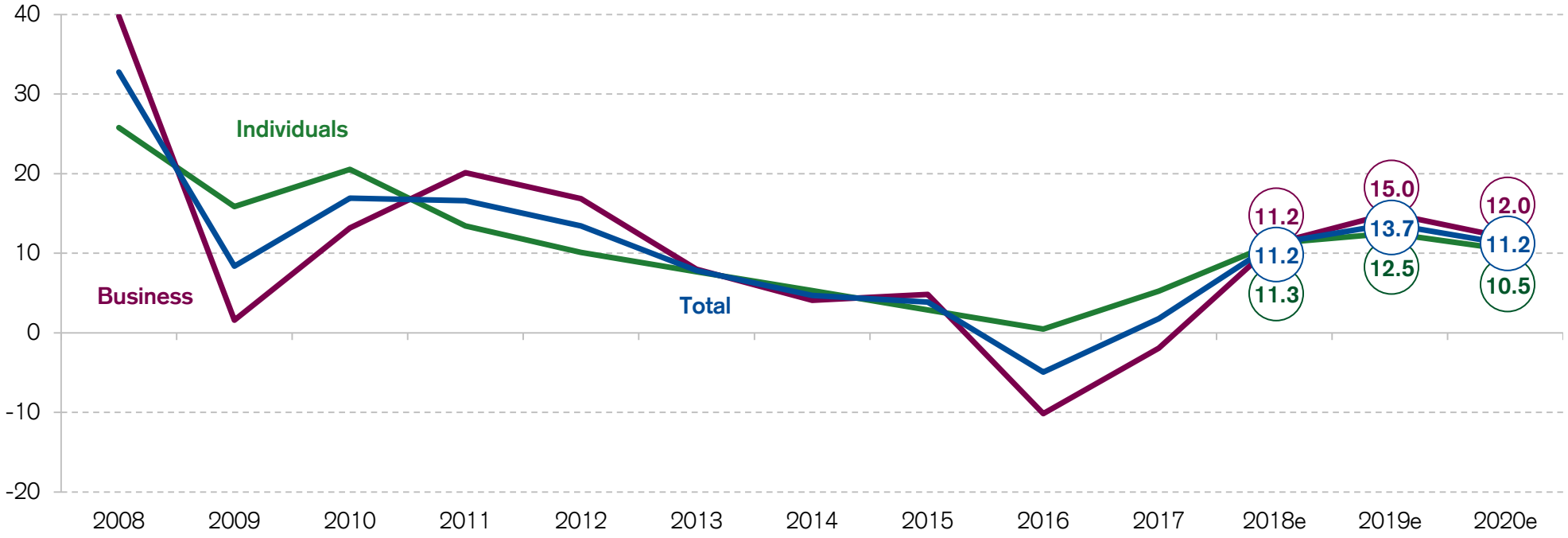


Source: Central Bank of Brazil, Credit Suisse

Non-earmarked lending should continue to recover

- The main driver of the acceleration in bank lending will be the non-earmarked portfolio, for both households and businesses.
- Our base-case scenario assumes that the more favorable financial conditions seen in recent months should continue to contribute to a resumption in non-earmarked lending in the next two years.
- This environment will favor an increase in private institutions' share of the credit market in the next few years.

Growth in non-earmarked lending (%, p.a.)

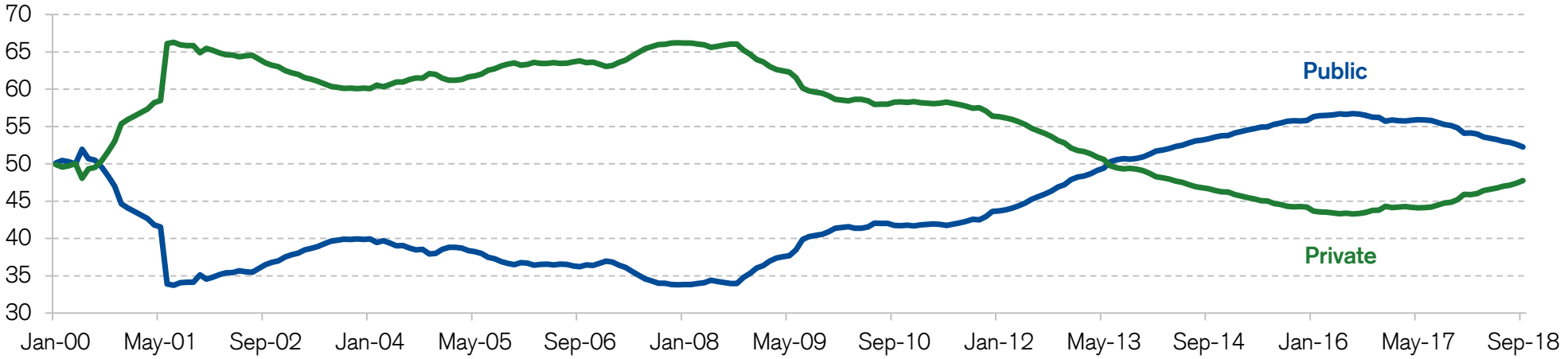


Source: Central Bank of Brazil, Credit Suisse

Private banks' share in credit market to continue rising

- After many years in which public-sector banks drove the dynamics of bank lending, the last two years saw a reversal of this process, with private banks increasing their share in total lending, from the low of 43% of the total in mid-2006 to nearly 48% in September 2018.
- The shrinking of the share of public banks is explained by the repayments of loans from the Brazilian Development Bank (BNDES) to the National Treasury and the change in the methodology for calculating the long-term interest rate (TLP), which made subsidized loans less attractive to the corporate segment by making the TLP higher and closer to the monetary policy rate (Selic).
- The incoming administration has promised to maintain the current restructuring policy, which would boost private banks' share of total lending in the next few years.

Share of public and private banks in total bank lending (%)

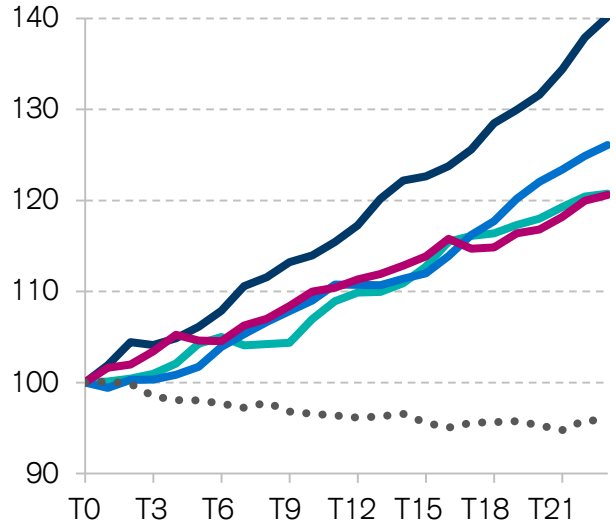


Source: Central Bank of Brazil, Credit Suisse

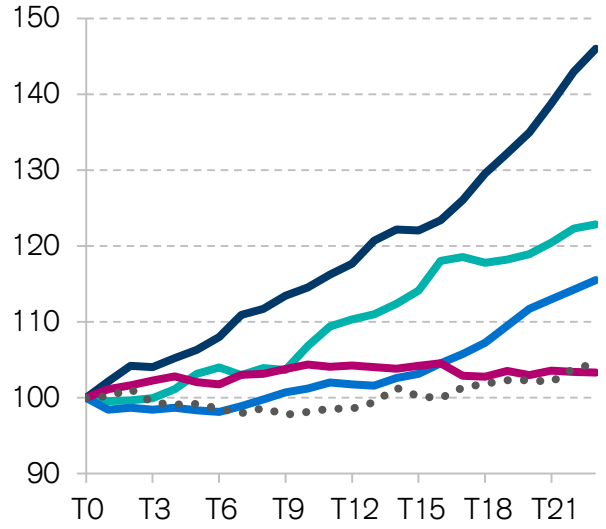
Public banks preventing resumption of lending

- The central bank has implemented five monetary easing cycles since 2002: cycle 1 from June 2003 to August 2004 (1000 basis points), cycle 2 from September 2005 to September 2007 (850bps), cycle 3 from January 2009 to July 2009 (500bps), cycle 4 from August 2011 to October 2012 (525bps), and cycle 5 from October 2016 to March 2018 (775bps).
- Despite the strong decline in the policy rate in the current cycle, recovery in bank lending has been slower than in other cycles, especially for lending by public-sector banks.

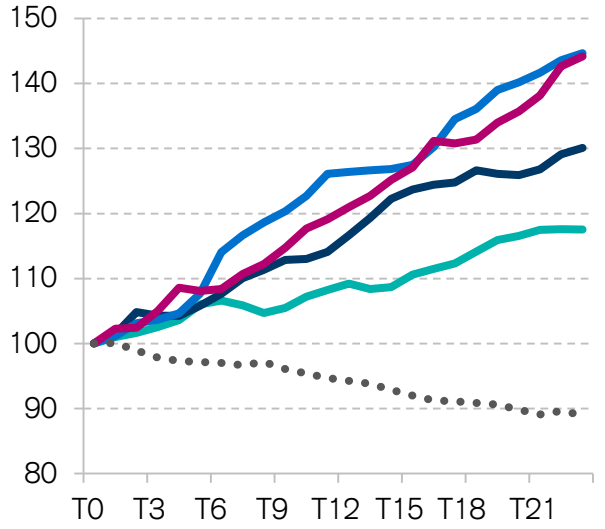
Dynamics of real total bank lending in easing cycles (100=start of cycle)



Dynamics of real private bank lending in easing cycles (100=start of cycle)



Dynamics of real public bank lending in easing cycles (100=start of cycle)



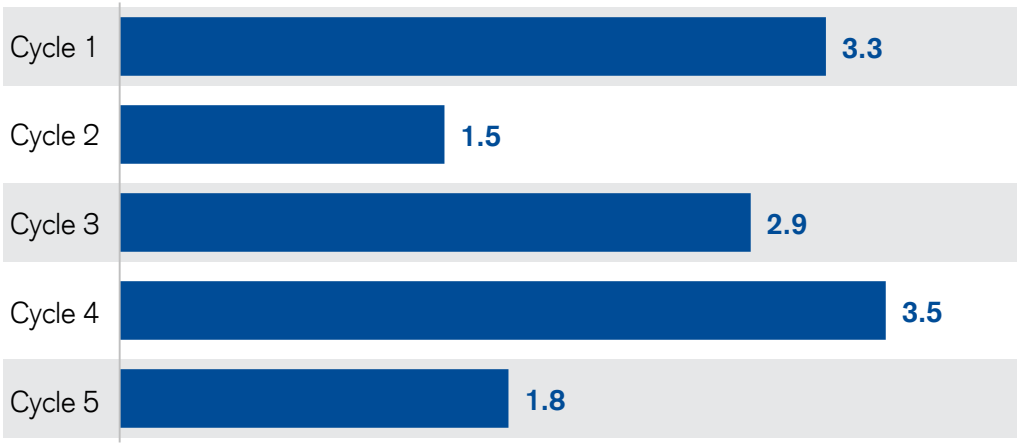
Cycle 1 Cycle 2 Cycle 3 Cycle 4 Cycle 5

Source: Central Bank of Brazil, Credit Suisse

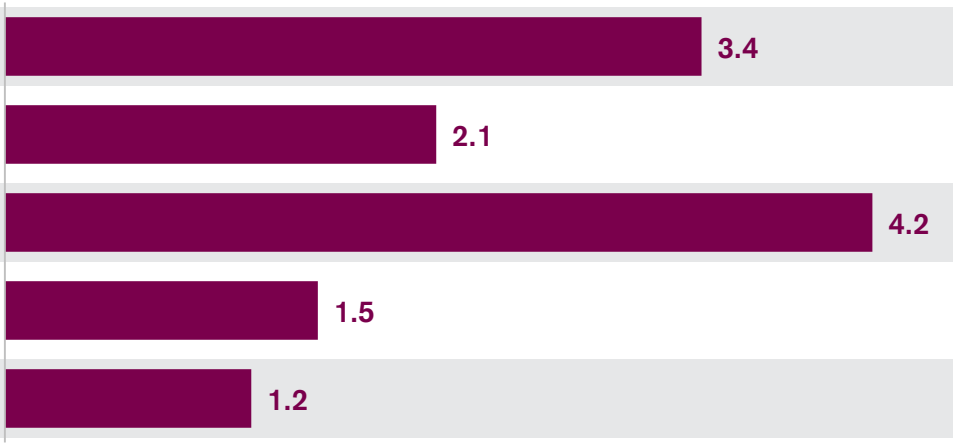
Decline in lending rates for individuals has been small

- Despite being one of the strongest monetary easing cycles in recent past, the current cycle has not been completely transmitted to the lending rates charged on non-earmarked loans to individuals.
- Comparing the current cycle with the last four easing cycles, the pass-through of the decline in the Selic rate to interest rates charged by banks on the portfolio of individuals was the lowest when we weight each transaction by its share in total lending.
- The pass-through was much higher in other cycles, reaching a ratio of 4.20 in the cycle implemented from January 2009 to July 2009, for example.

Pass-through of Selic cuts to lending rates for non-earmarked loans to individuals[1]
(simple average)



Pass-through of Selic cuts to lending rates for non-earmarked loans to individuals[1]
(weighted average by share of each segment)



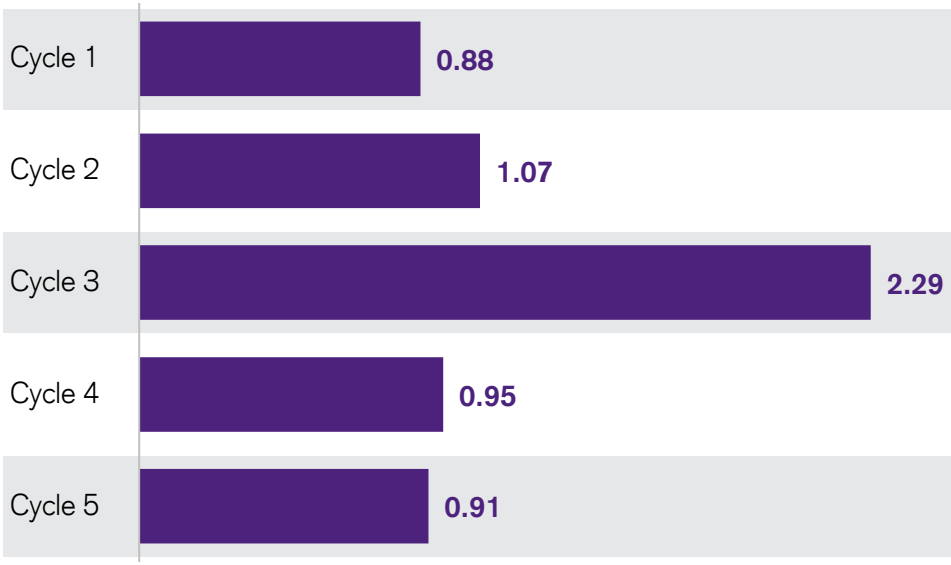
[1] We divided the magnitude of the decline of interest rate during the easing cycle by the magnitude of the decline of interest rate charged on the portfolio of non-earmarked loans to individuals. For non-earmarked lending to individuals, the series are reported for the following transactions: overdraft loans (2.9% of the balance of non-earmarked loans to businesses), personal credit (48.8%), auto loans (17.7%).

Source: Central Bank of Brazil, Credit Suisse

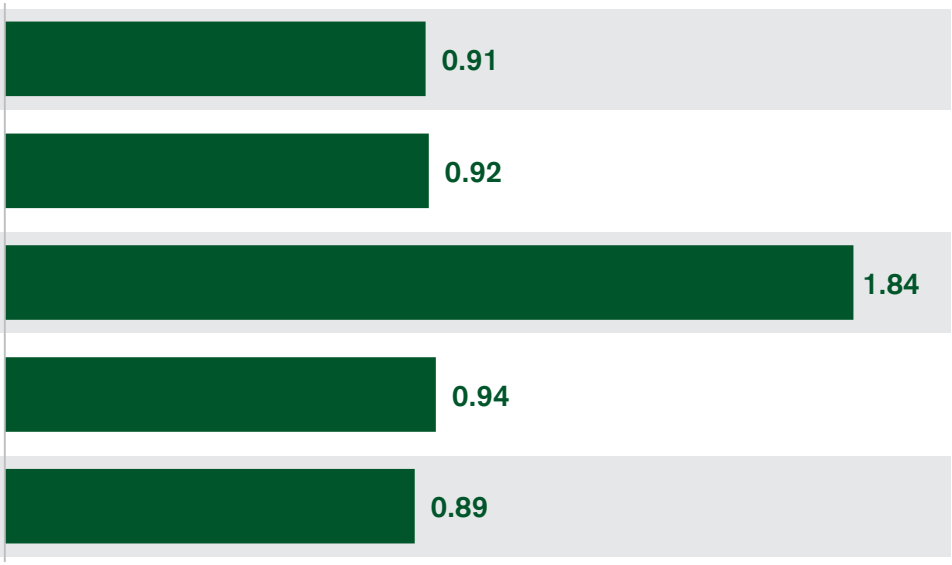
Pass through in the corporate lines equal to other cycles

- Despite the lower pass-through from the decline in the policy rate to operations for individuals, the pass-through to corporate segments has been very close to the one observed during other monetary easing cycles.
- For example, weighting the decline in interest rate of each operation by its share in the total non-earmarked lending for corporates, the pass-through was 89% of the decline in the policy rate, not very different from what happened during the fourth, the second and the first cycles analyzed.

Pass-through of Selic cuts to interest rates in non-earmarked lending for corporates[1]
(simple average)



Pass-through of Selic cuts to interest rates in non-earmarked lending for corporates[1]
(average weighted by share of each segment)



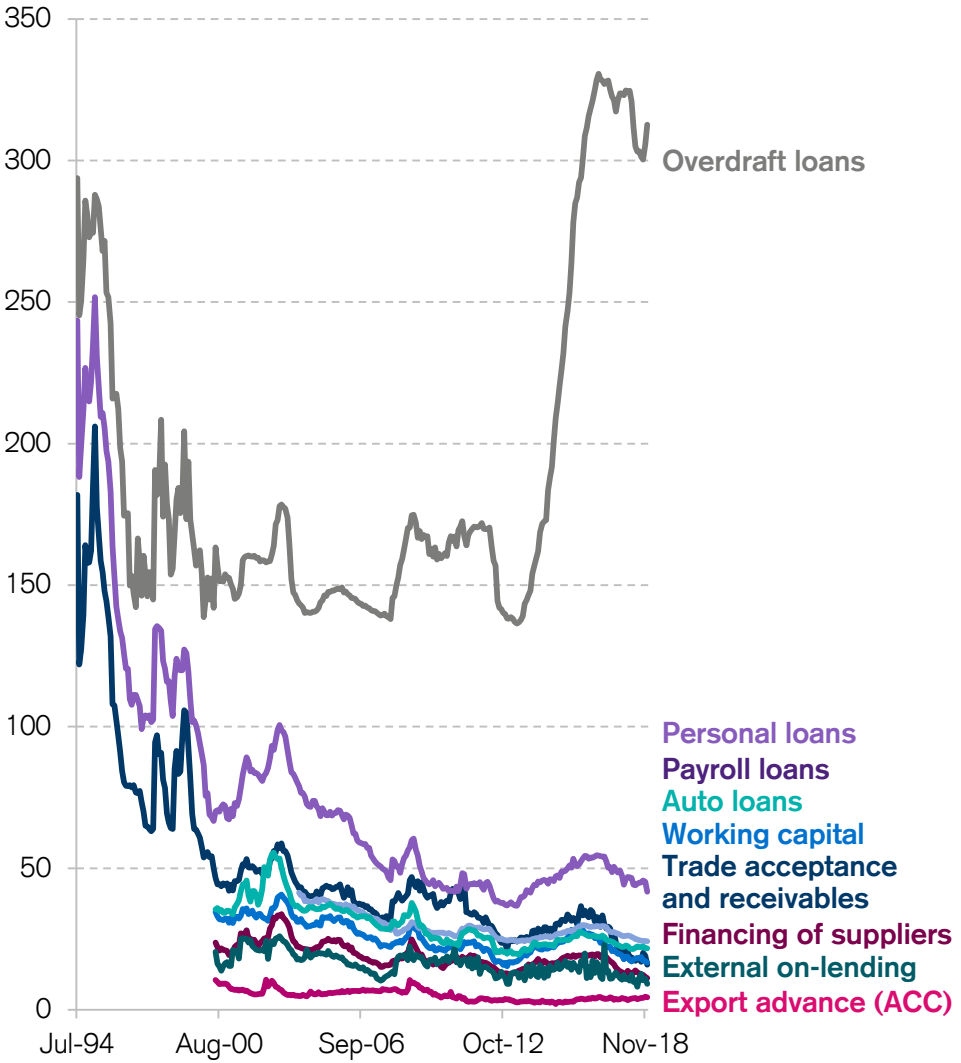
[1] We divided the magnitude of the decline of interest rate during the easing cycle by the magnitude of the decline of interest rate charged on the portfolio of non-earmarked loans to individuals. For the portfolio of non-earmarked loans to businesses, the following transactions are reported: discount of receivables (7.6% of the balance of non-earmarked loans to businesses), working capital (40.7%), vendor (0.5%), ACC (8.0%), and external pass-through (4.2%).

Source: Central Bank of Brazil, Credit Suisse

Interest rates remain high in some segments of credit

- Despite the recent decline in interest rates charged in the main segments of the non-earmarked portfolio, there is still much room for additional declines in other segments, especially the portfolio of loans to individuals.
- For example, the lending rate charged on overdraft loans remains higher than 300% p.a., the highest level in the data series. Considering that the policy rate is at its lowest historical level, there is much room for this lending rate to converge to lower levels in the coming quarters. Many other segments of the non-earmarked portfolio have followed the strong decline in the Selic rate in the last quarters.
- The reduction in risk aversion and the benign dynamics of delinquency rates also suggest that lending rates for non-earmarked loans to individuals should remain on a downward trend in the quarters ahead.

Dynamics of interest rates in some credit lines (%, p.a.)

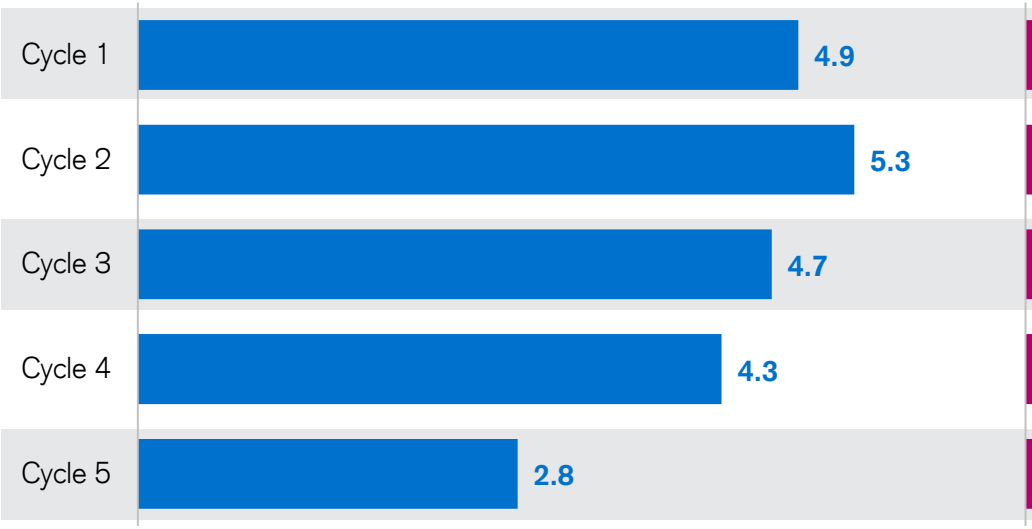


Source: Central Bank of Brazil, Credit Suisse

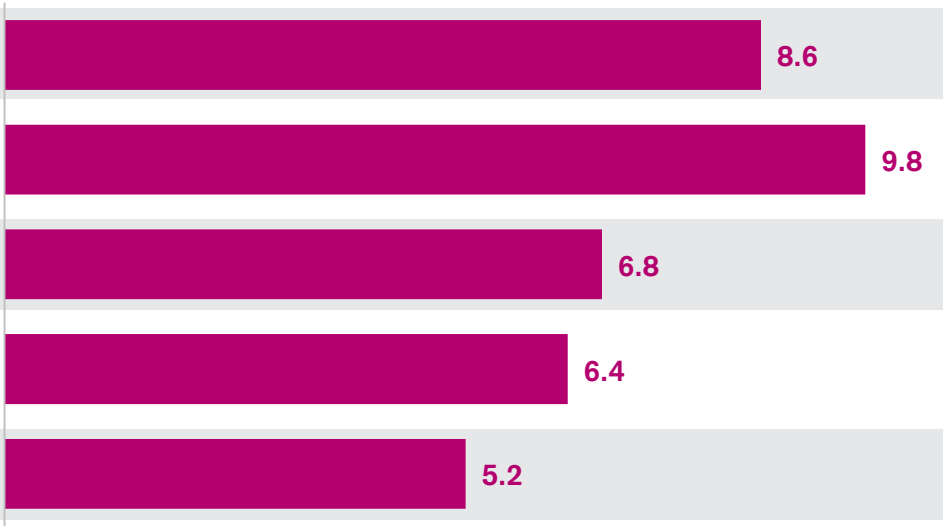
Credit origination was low at start of current cycle

- Despite the acceleration of credit originations in recent months, the impact of the improvement in bank lending conditions on the real economy has been lower than in other monetary easing cycles.
- This is explained by the fact that the size of credit originations in the economy at the start of the current easing cycle was much lower than at the start of previous monetary easing cycles.
- For example, credit originations as percentage of GDP were 2.8% at the start of the current cycle, much lower than the 5.3% observed in the second cycle, implemented from September 2005 to September 2007.

Ratio of originations of reference loans to GDP at start of monetary easing cycles
(%, three month moving average)



Ratio of origination of reference loans to total lending at start of monetary easing cycles
(%, three month moving average)

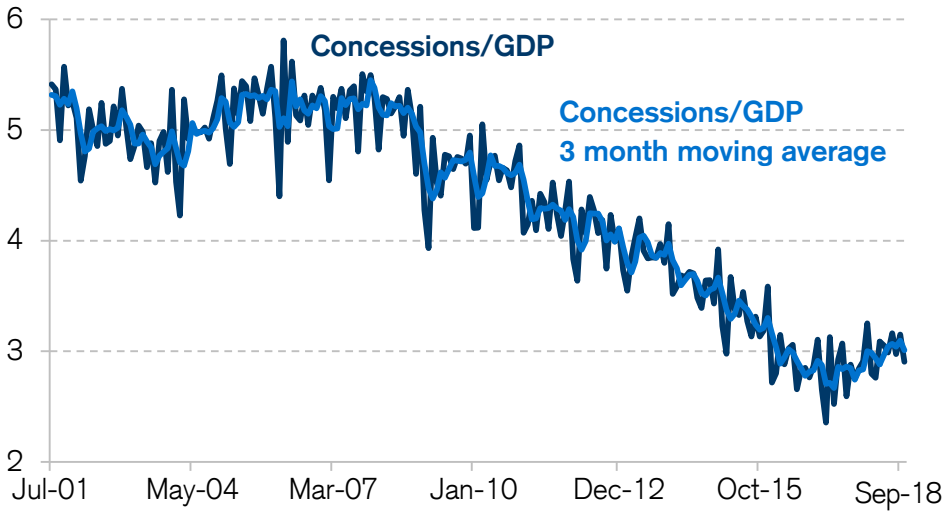


Source: Central Bank of Brazil, Credit Suisse

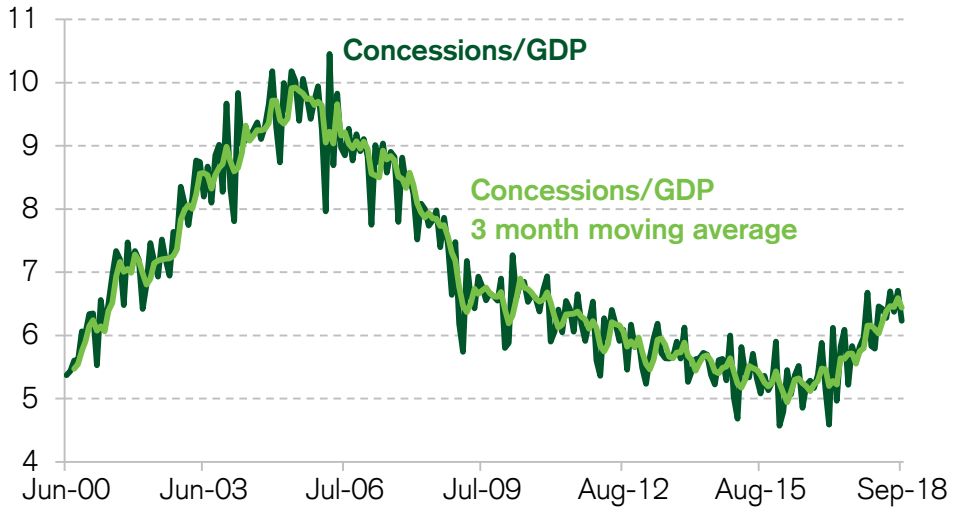
Credit originations have started to resume

- As a result of the low base of credit originations, the impact of the improvement in credit conditions should take more time than in previous periods of monetary easing.
- Maintenance of the Selic rate at the current level of 6.5% p.a. for a prolonged period should keep credit originations as percentage of GDP on an upward trend, reversing the strong decline in this ratio observed during the recession from 2Q14 to 4Q16.
- Monetary easing should be one of the main drivers of the resumption of economic activity in the coming quarters.

Dynamics of ratio of originations of reference loans to GDP (%)



Dynamics of ratio of originations of reference loans to total stock of loans (%)



Source: Central Bank of Brazil, Credit Suisse

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Economic activity

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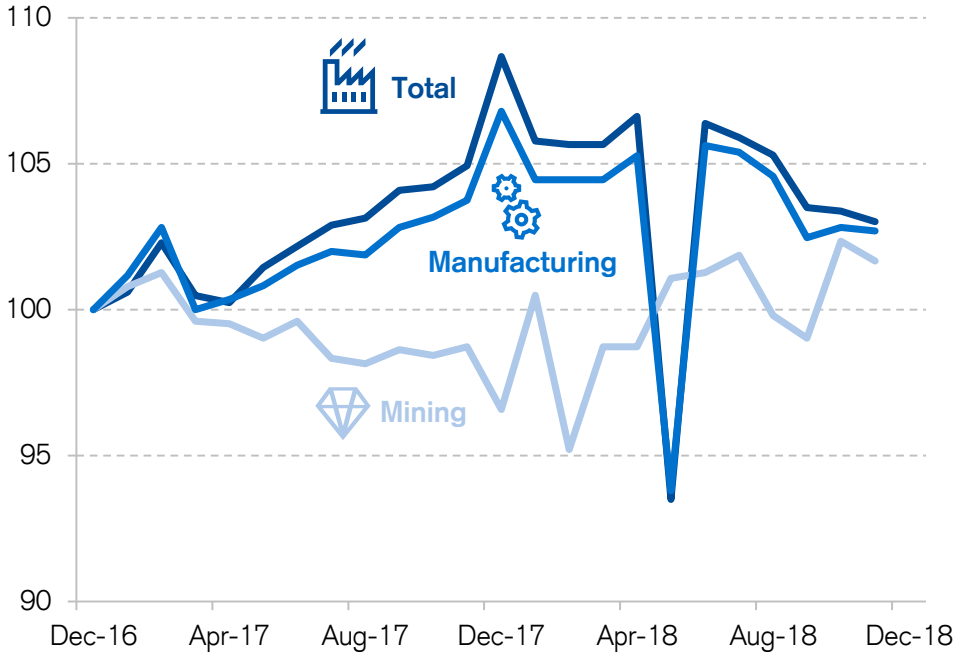
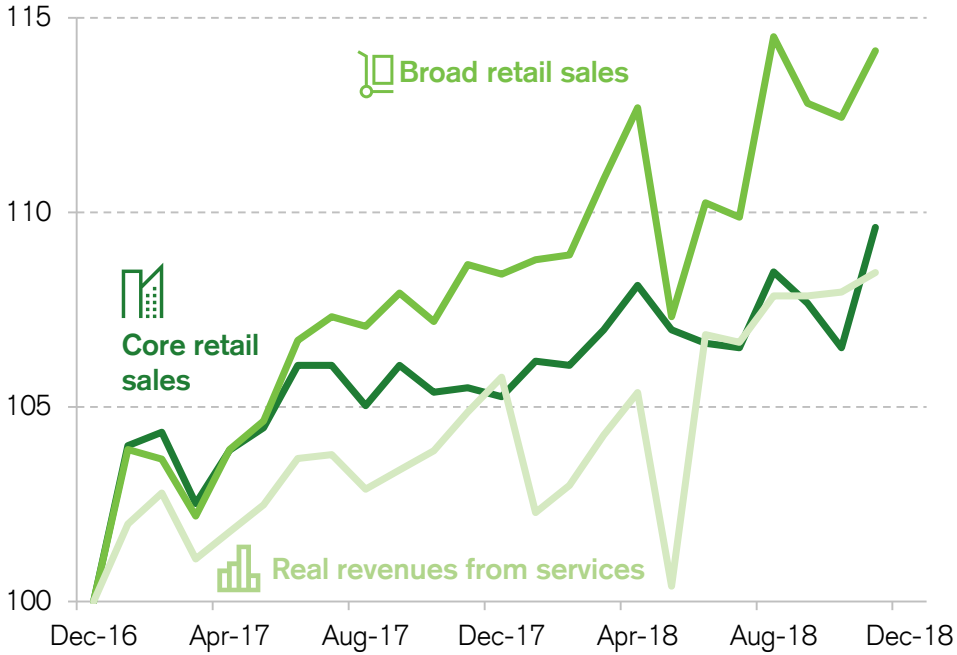
Truckers' strike reversed positive momentum of indicators

- After the end of recession in 4Q16, the main economic activity indicators (i.e., industrial production, broad real retail sales, and core real retail sales) started an upward trend, showing robust acceleration until 1Q18.
- However, the tightening of financial conditions due to the high uncertainty regarding the outcome of the elections and the truckers' strike reversed the trend of industrial production in 2Q18 and 3Q18. Despite these events, real retail sales continued to see positive momentum.

Dynamics of industrial production
(Index number, seasonally adjusted, Dec-16=100)



Dynamics of retail sales and real revenues from services
(Index number, seasonally adjusted, Dec-16=100)



Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Positive dynamics of economic activity in 2019 and 2020

More robust economic recovery

The more robust recovery of economic activity will be driven by:

- Greater impact of monetary easing cycle on economy
- Improvement in balance sheet of households and businesses, due to strong deleveraging cycle
- Lower uncertainty regarding government's fiscal agenda
- More favorable labor market conditions

Some constraints prevent greater acceleration in demand

A few restrictions prevent greater acceleration in demand:

- Lower government consumption than in the past
- Lower expansion in exports than in period of strong growth of main trading partners

Main risk is the implementation of fiscal consolidation process

The main risks are:

- Implementation of fiscal agenda with Social security reform as primary item on agenda
- Path of interest rates in main developed economies
- Dynamics of GDP growth of Brazil's main trading partners (e.g., China)

Increase in long-term growth requires reforms in coming years

The necessary adjustments are:

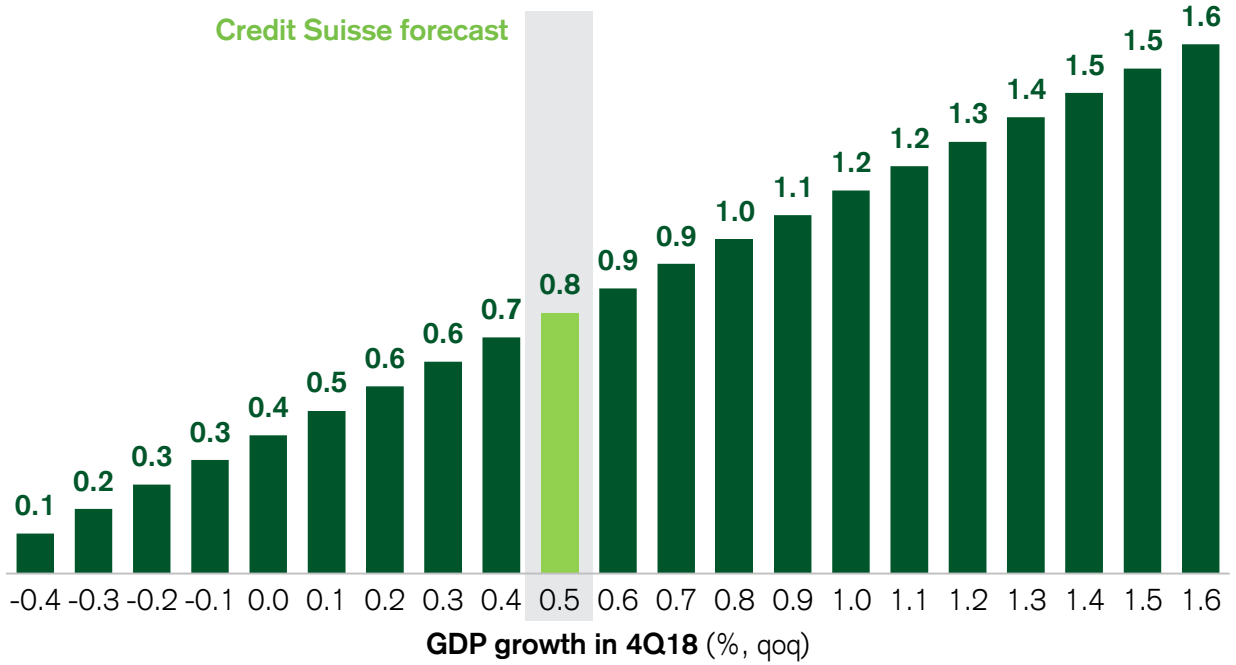
- Increase in economy's trade openness
- Measures that improve the business environment in the country
- Improvement in quality of institutions
- Tax reform
- Privatization of state-owned enterprises

Source: Credit Suisse

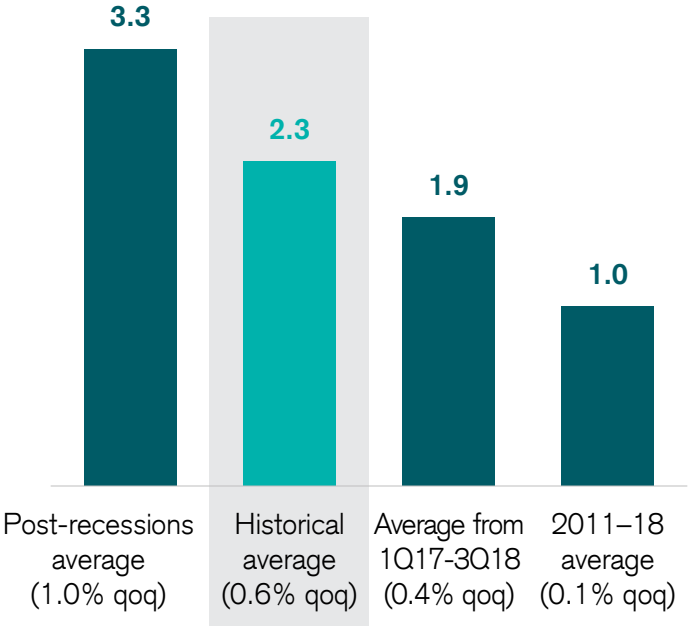
Carryover of 0.8% for GDP growth in 2019

- Assuming our forecast of 0.5% qoq for GDP growth in 4Q18, the carryover for GDP growth in 2019 will be 0.8%. In other words, if GDP remains stable during all quarters of 2019, GDP growth in 2019 will be 0.8%.
- GDP growth in 2019 will be much higher than in 2018 in the absence of negative shocks. Assuming the post-recessions average quarterly GDP growth, GDP growth would reach 3.3% in 2019. Considering the historical average (1Q96-3Q18) pace of growth, GDP growth would be 2.3% in 2019.

Carryover for GDP growth in 2019 conditioned on GDP growth in 4Q18 (%)



Alternative scenarios for GDP growth in 2019 (%, p.a.)

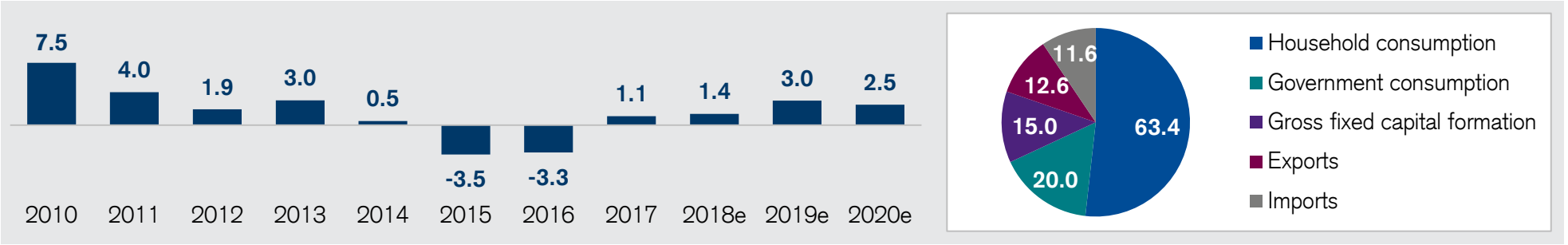


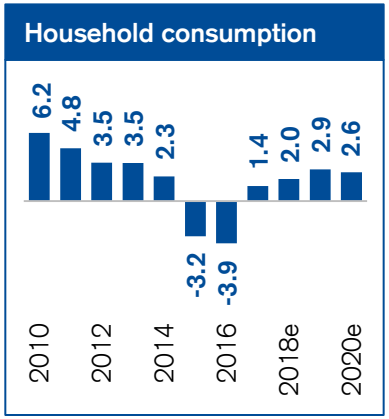
Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

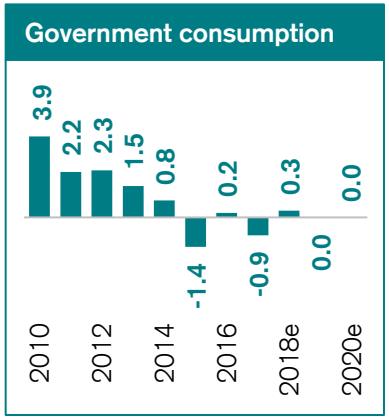
Household consumption to explain higher GDP growth in 2019

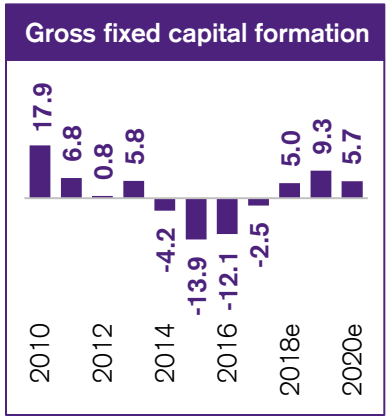
- Higher GDP growth in 2019 would be explained mainly by greater expansion in household consumption and in investments. A sharp improvement in financial conditions driven by an anchoring of expectations regarding the fiscal consolidation process should maintain the positive outlook for the credit market. Labor market conditions should also continue to improve in 2019. As a result, domestic demand should lead to acceleration in economic activity in the coming quarters.

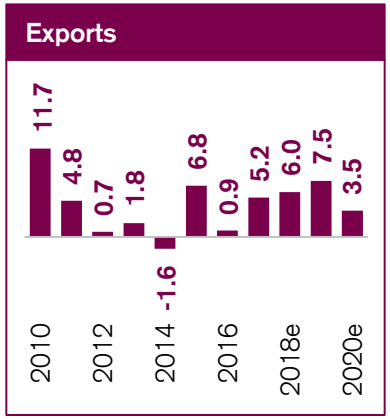
GDP growth on demand side (%, p.a.)

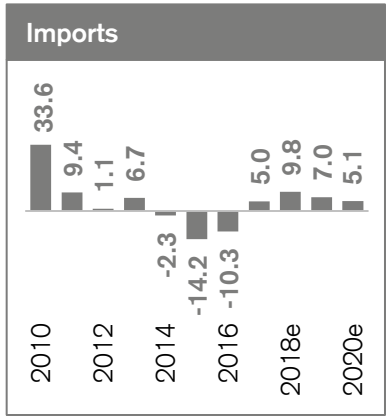










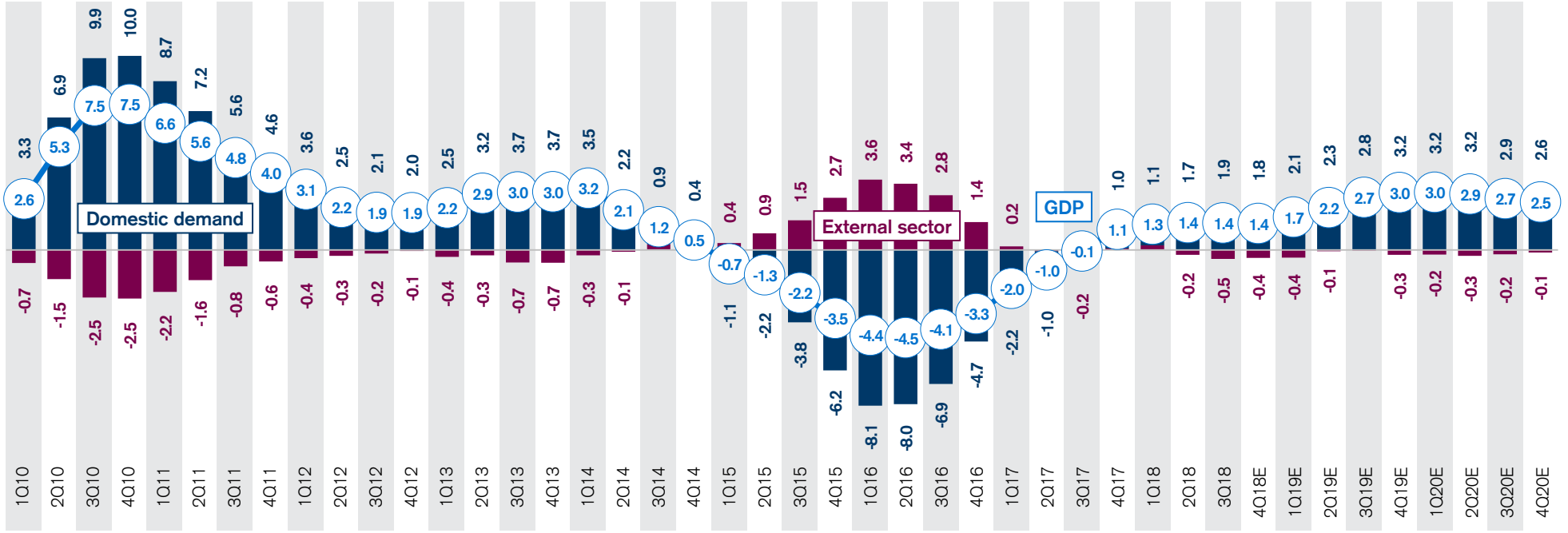


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Domestic demand to lead acceleration in GDP growth in 2019

- Domestic demand should prompt acceleration in economic activity in 2019 and 2020. Despite the lower contribution expected from government consumption, solid household consumption growth and an acceleration in investments should prompt a higher contribution from domestic demand.
- This environment is compatible with an acceleration in imports, which would weigh on the positive momentum coming from domestic demand. Exports should continue to grow at a reasonable pace but probably not fast enough to ensure a high contribution from the external sector to GDP growth in 2019 and 2020.

Breakdown of GDP growth by domestic demand and external sector (%, pps, p.a.)

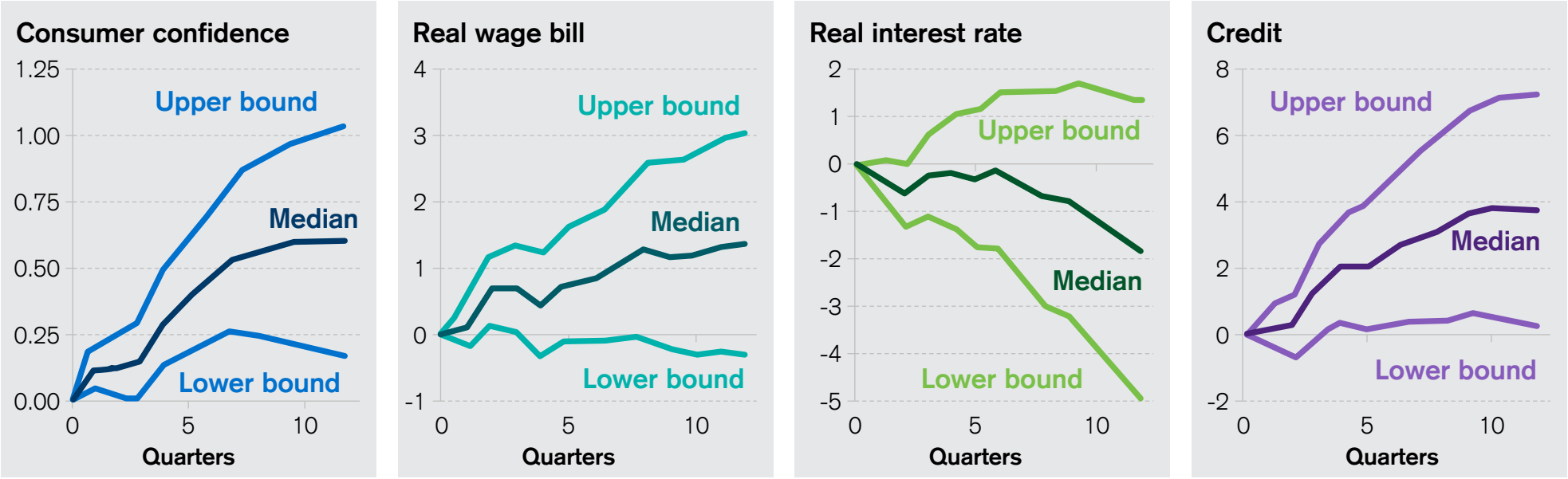


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Household consumption to accelerate in coming quarters

- Our expectation of an acceleration in household consumption in 2019 and 2020 is due to the following factors:
  - Rise in consumer confidence in a scenario of lower domestic aversion to risk in light of expectation of implementation of fiscal consolidation agenda.
  - Greater expansion in bank lending, due to postponement of monetary tightening cycle.
  - Higher growth in wage bill as a result of faster job creation.

Response of growth in household consumption to one percentage point change in its drivers[1] (%)



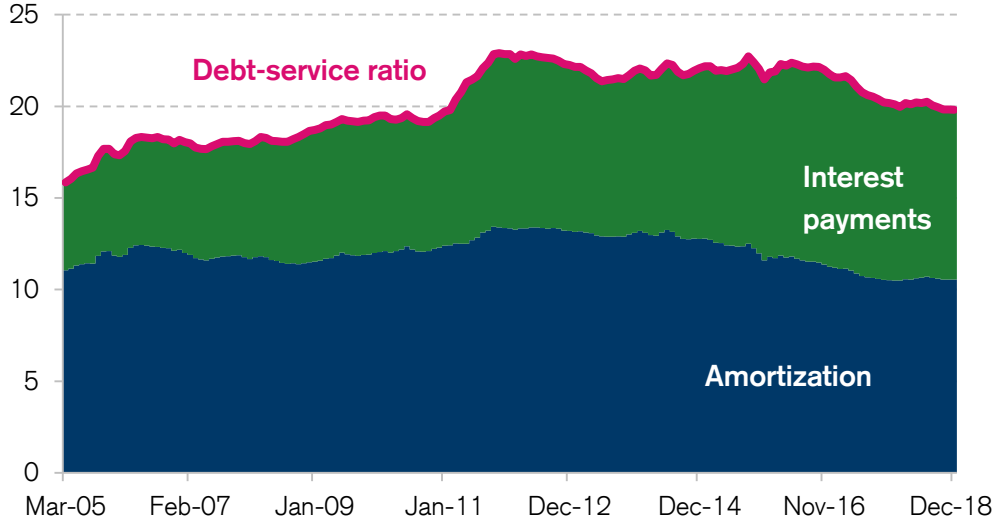
[1] The impulse-response functions presented are calculated using a model that co-integrates household consumption, consumer confidence, real expanded wage bill, real interest rate, and total credit as a proportion of GDP.

Source: Brazilian Statistics Bureau (IBGE), Getulio Vargas Foundation (FGV), Central Bank of Brazil, Credit Suisse

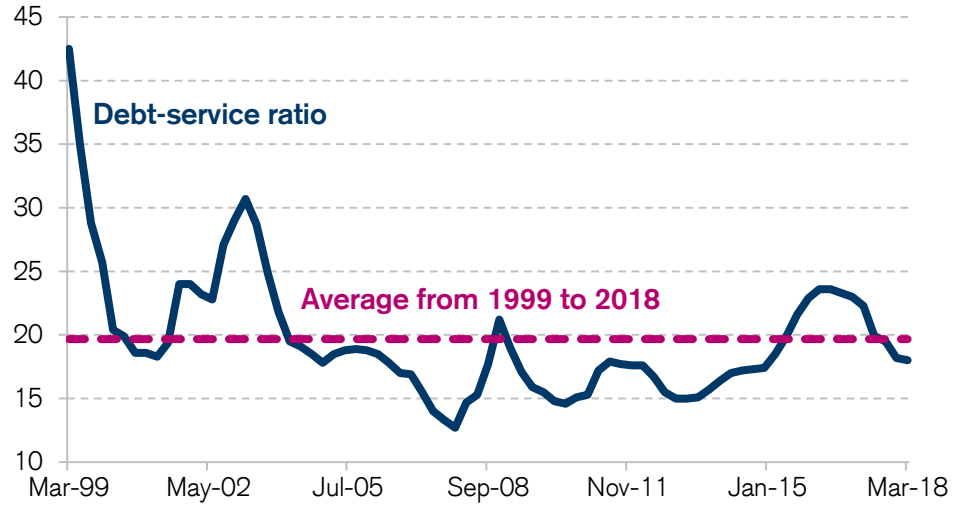
Deleveraging of households and companies in 2016-2018

- Sharp decline in interest rates from 2016 to 2018 favored a process of household and corporate deleveraging in the period.
- The debt-service ratio of households declined from a level close to 23% at the end of 2015 to below 20% in August 2018. In the case of the non-financial private sector, which includes companies and households, the movement was similar, with a sharp decline in the debt-service ratio in recent quarters.
- Maintenance of the interest rate at a low level for a prolonged period will tend to keep the debt-service ratio of companies and households at a moderate level.

Debt-service ratio of households with amortization and interest on debt (% of total wage bill)



Debt-service ratio of non-financial private sector (% of GDP)



Source: Bank of International Settlements (BIS), Central Bank of Brazil, Credit Suisse

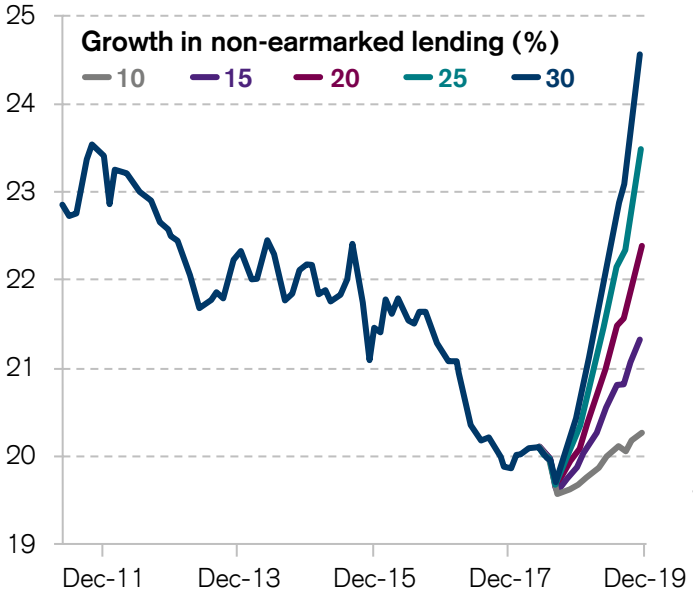
Balance sheet of households will spur a rise in lending

- The deleveraging process of companies and households in recent quarters will allow for a swifter expansion of non-earmarked lending over the next few years.
- Based on our forecast for the Selic interest rate and the extended wage bill, even with strong growth in non-earmarked lending to individuals, the debt-service ratio of households is expected to remain below the levels seen in recent years.
- Accordingly, there is room for growth in household consumption in 2019 and 2020 to be driven by an acceleration of lending.

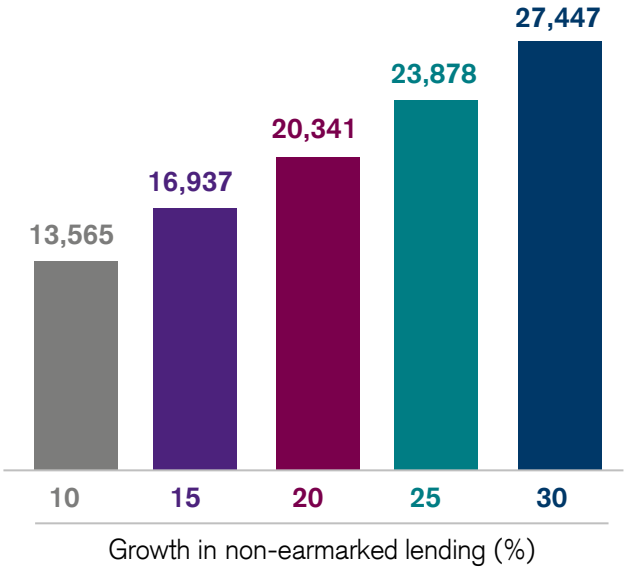
Assumptions used in simulation:

- ✓ Growth in nominal wage bill of 8.3% in 2019.
- ✓ We assumed that growth in non-earmarked lending in each of the scenarios was uniform for each segment of non-earmarked lending to individuals that is part of the calculation of the debt-service ratio.
- ✓ Selic interest rate of 8.0%, compatible with our baseline scenario.
- ✓ The interest rates for each lending segment were projected using an econometric model that used the Selic interest rate and its lags as explicative variables.

Household debt-service ratio
(% of expanded wage bill)



Increase in debt-service ratio
(BRL million)

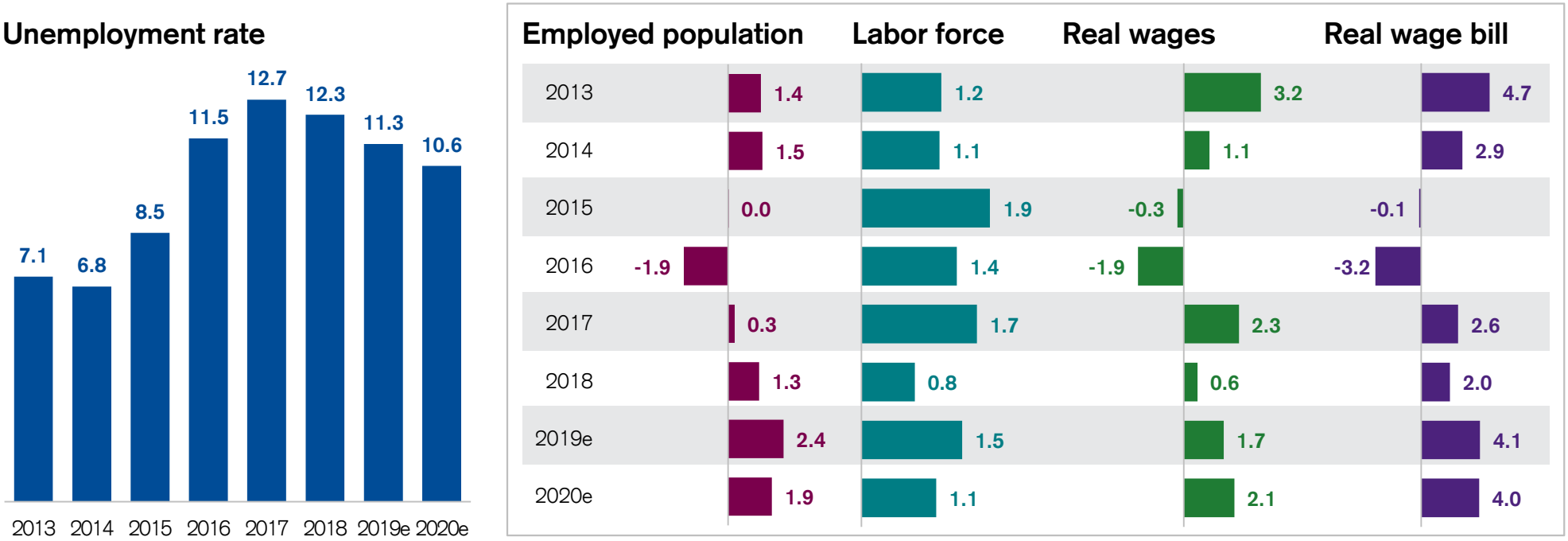


Source: Central Bank of Brazil, Credit Suisse

Unemployment rate to continue to decline in 2019 and 2020

- Labor market conditions will likely continue to improve in 2019 and 2020. The unemployment rate is expected to decline from 12.3% in 2018 to 11.3% in 2019 and 10.6% in 2020. This downward trend would be driven by the resumption of economic activity, which would accelerate job creation in the formal sector. Real wages are expected to accelerate in 2019, after deceleration from 2017 to 2018. The greater increase in real wages and in the working population will contribute to expansion of the real wage bill. The real wage bill is expected to grow from 2.0% in 2018 to 4.1% in 2019 and 4.0% in 2020.

Projections of main variables of labor market (%, p.a.)

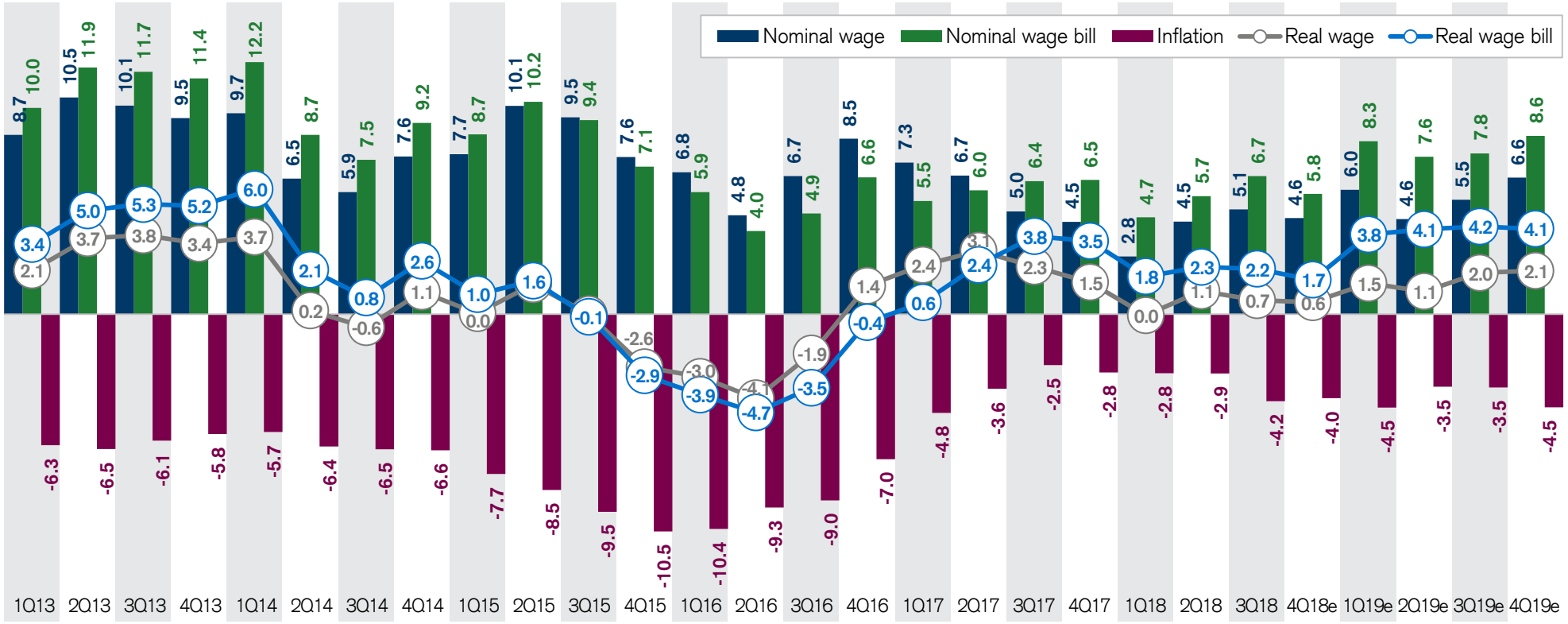


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Higher real wage bill driven by the rise in working population

- The low inflation rate continued to contribute to the growth in real wages in 1H18. However, the deceleration in nominal wages drove the lower growth in real wages during this period.
- The more positive outlook for the dynamics of the unemployment rate in the coming quarters should contribute to an acceleration of nominal wages.

Real habitual earnings (%, year-on-year change, percentage points)

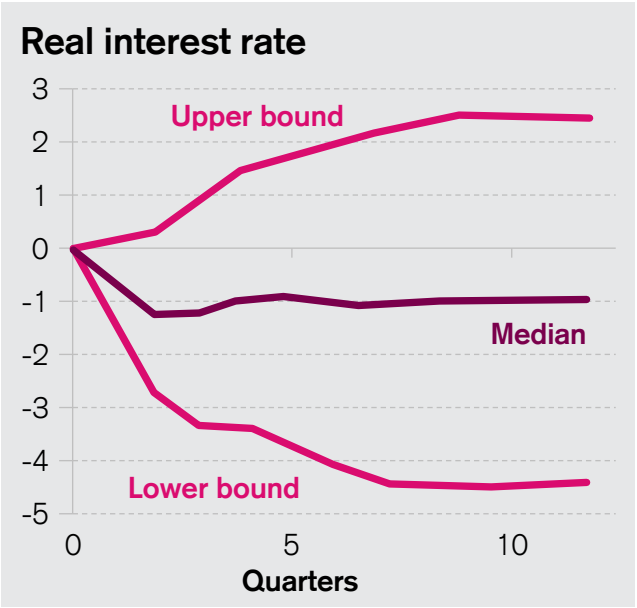


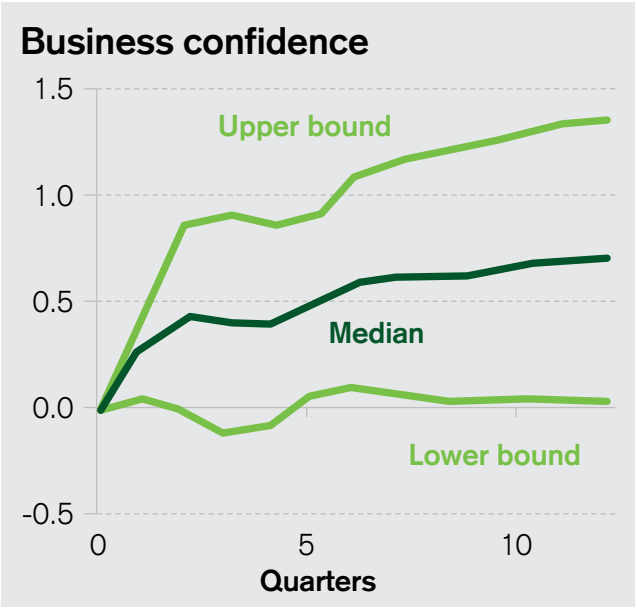
Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

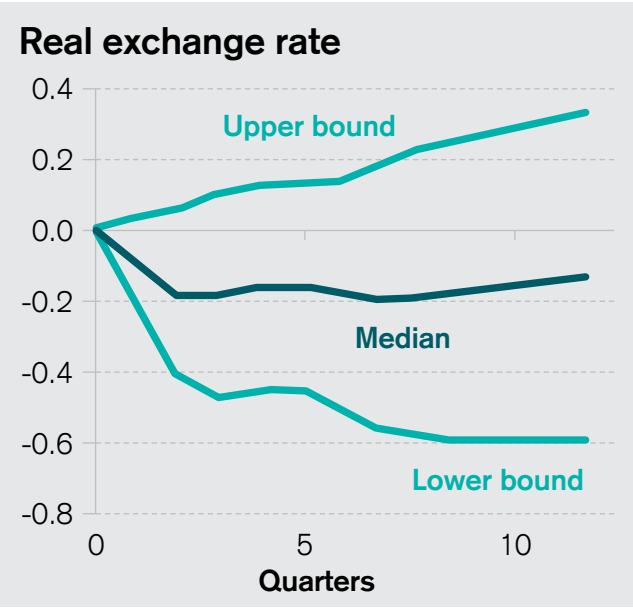
Investments to increase in upcoming quarters

- Investments will also be an important driver of the acceleration of economic activity in 2019 and 2020. The following drivers of investments suggest a more favorable scenario in this period:
  - An improvement in credit conditions, with a likely expansion in non-earmarked lending to businesses.
  - An increase in business confidence in a scenario of lower uncertainty regarding the sustainability of public debt due to the implementation of a fiscal consolidation process.
  - A more appreciated level of local currency, which reduce the price of imported capital goods.

Response of investments to 1 percentage point change in its drivers[1] (%)





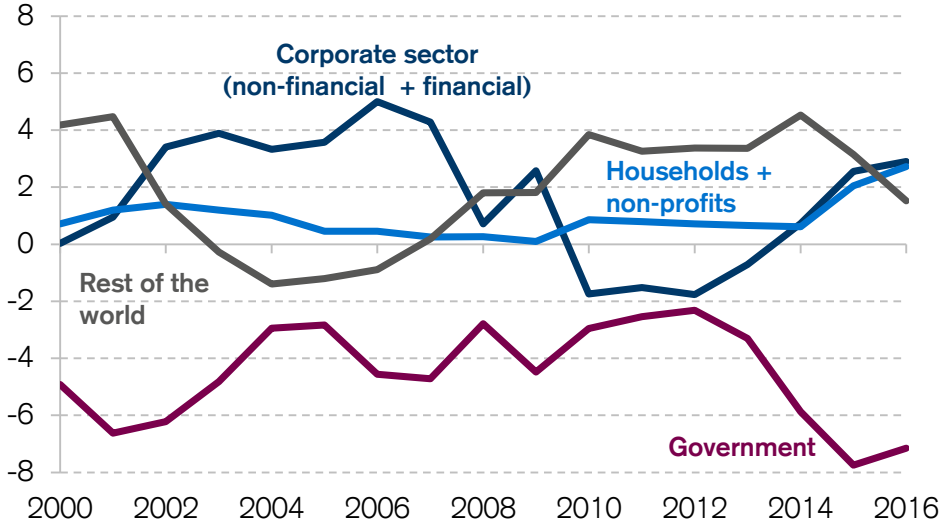


[1] The impulse-response functions presented are calculated using a model that co-integrates investments, real interest rate, business confidence, and real exchange rate.
Source: Brazilian Statistics Bureau (IBGE), Getulio Vargas Foundation (FGV), Central Bank of Brazil, Credit Suisse

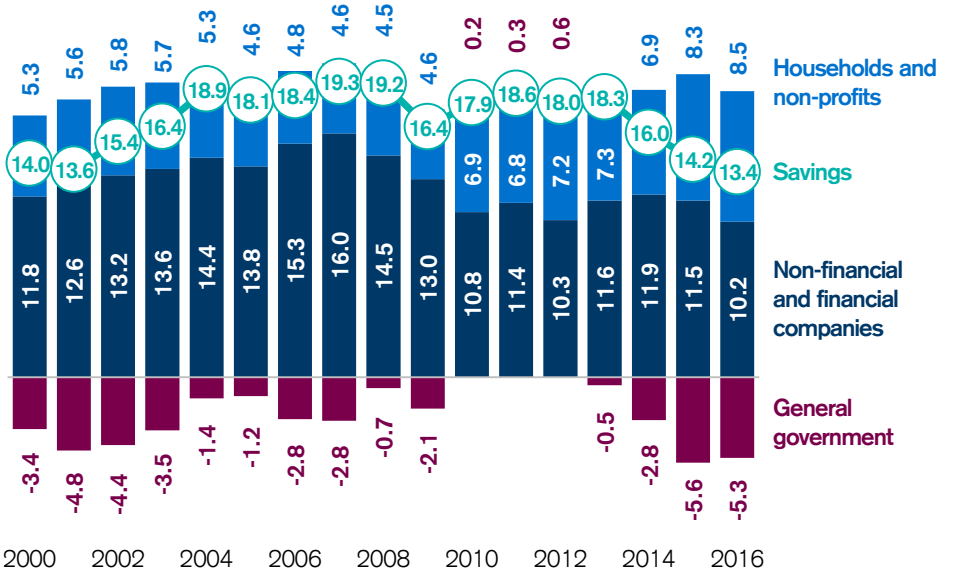
Sharp decline in domestic savings in recent years

- The sharp increase in government size, with a spike in the nominal deficit from 2012 to 2016, changed the financial balance of corporations and households, which then had to finance such deficit. The corporate sector, which posted deficits from 2010 to 2013 due to an increase in investments, have posted surpluses since then to finance the expansion of public expenditures.
- The high dissavings of the public sector in recent years reduced the total savings of the Brazilian economy as a percentage of GDP to an all-time low. If the fiscal deficit is not reversed in the next few years, any increase in investments will need to be financed by a higher current-account deficit (e.g., external savings).

Financial balance (financial capacity/net financial needs) **of institutional sectors** (% of GDP)



Breakdown of savings, by institutional sector (% of GDP)

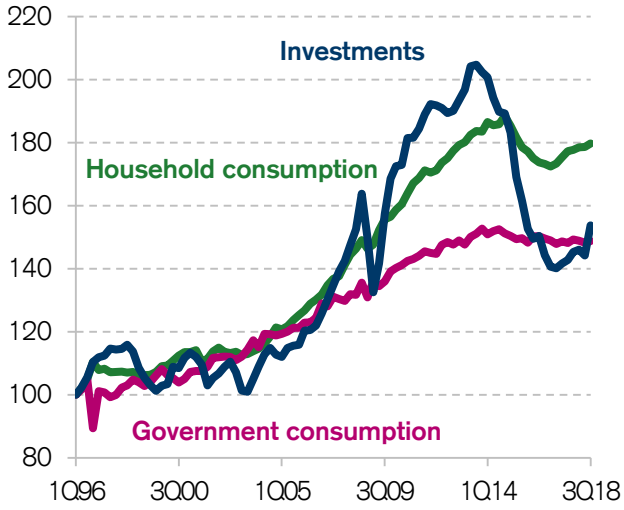


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

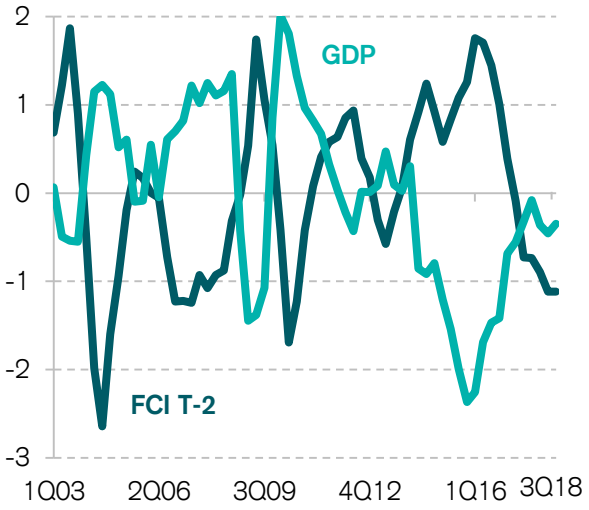
Government consumption should prevent higher GDP growth

- Government consumption has been an important component of domestic demand since 1996. Average growth in government consumption was 2.6% from 1997 to 2017 and 3.4% in the period before the recession of 2Q14–4Q16.
- The need to approve a fiscal consolidation process will likely prevent a strong contribution of government consumption to GDP growth in 2019. However, the fiscal adjustment is not necessarily contractionist, as it helps to anchor agents' expectations regarding the sustainability of public debt and allows financial conditions to remain in expansionist territory.

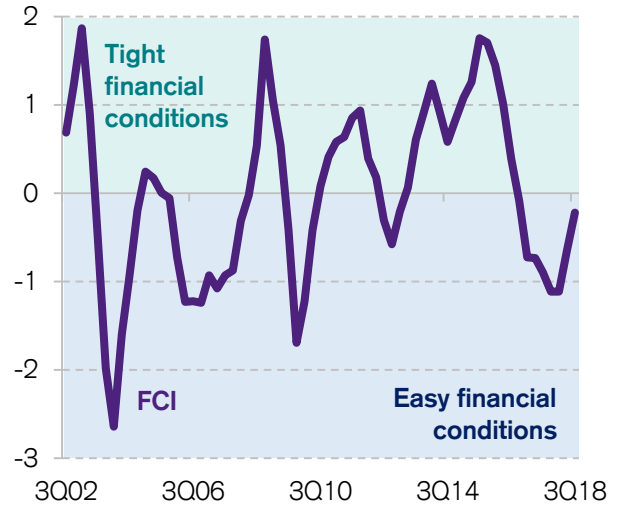
Dynamics of each component of domestic demand
(Index number, 100=1Q96)



Dynamics of GDP and financial conditions indicator
(%, year-on-year change, standardized)



Dynamics of financial conditions indicator (%, year-on-year change, standardized)



Source: Brazilian Statistics Bureau (IBGE), Central Bank of Brazil, Credit Suisse

Acceleration of industrial production in 2019 and 2020

- On the supply side of the economy, the sectors that should benefit the most from acceleration in domestic demand are the industrial and services sectors. Of the industrial sectors, manufacturing should lead this acceleration in production. In the services sector, the most cyclical segments (e.g., commerce, transportation, and financial intermediation) should post the highest output growth in the period.

GDP growth on supply side (%, p.a.)

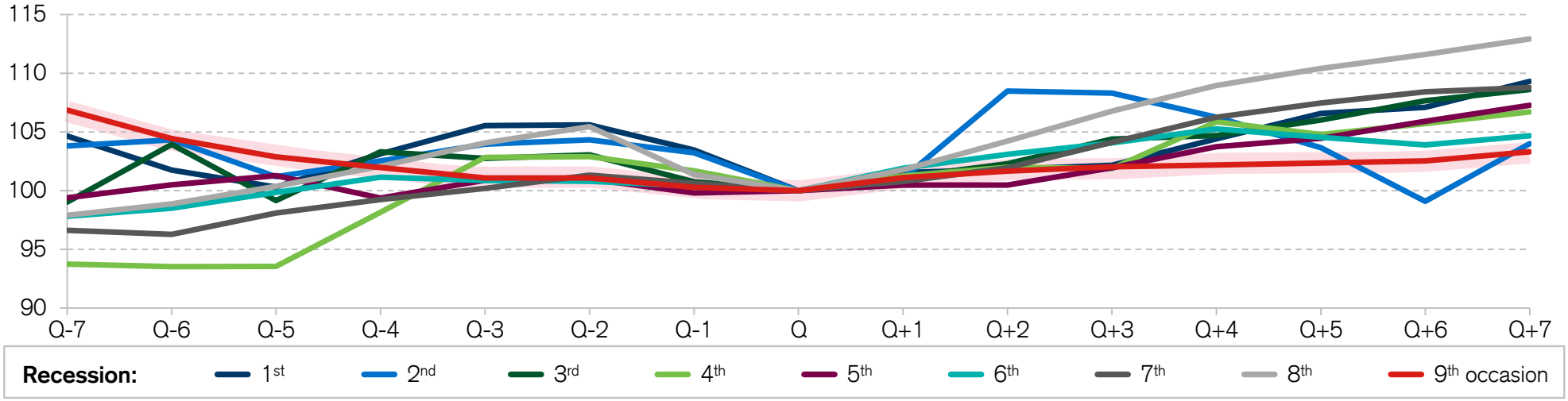
Weights	Components	2010	2011	2012	2013	2014	2015	2016	2017	2018e	2019e	2020e
100	**GDP**	**7.5**	**4.0**	**1.9**	**3.0**	**0.5**	**-3.5**	**-3.3**	**1.1**	**1.4**	**3.0**	**2.5**
14	Net tax on products	10.8	5.3	3.7	3.7	0.8	-6.0	-5.6	1.5	1.9	4.0	3.0
86	Value added at basic prices	7.0	3.7	1.6	2.9	0.5	-3.2	-2.9	1.0	1.3	2.8	2.4
5	**Agriculture**	**6.7**	**5.6**	**-3.1**	**8.4**	**2.8**	**3.3**	**-5.2**	**12.5**	**-0.1**	**0.9**	**2.0**
2	Mineral extraction	14.9	3.5	-1.9	-3.2	9.1	5.7	-1.2	4.2	0.5	3.3	4.0
10	Manufacturing	9.2	2.2	-2.4	3.0	-4.7	-8.5	-4.8	1.7	2.6	4.8	3.2
4	Construction	13.1	8.2	3.2	4.5	-2.1	-9.0	-10.0	-7.5	-2.0	1.8	3.0
2	Production of electricity, gas, and water	6.3	5.6	0.7	1.6	-1.9	-0.4	6.5	1.0	1.5	3.2	2.5
18	**Industry**	**10.2**	**4.1**	**-0.7**	**2.2**	**-1.5**	**-5.8**	**-4.6**	**-0.5**	**1.3**	**3.7**	**3.2**
11	Commerce	11.1	2.3	2.4	3.4	0.6	-7.3	-6.7	2.1	2.9	4.4	3.1
4	Transportation, storage, and mail	11.2	4.3	2.0	2.6	1.5	-4.3	-5.6	1.2	2.5	4.0	3.1
3	Information services	5.4	6.5	7.0	4.0	5.3	-0.9	-2.1	-1.0	0.1	2.6	2.0
15	Public administration, healthcare, and education	2.2	1.9	1.3	2.2	0.1	0.2	0.3	-0.2	0.3	0.5	0.5
15	Other services	3.3	4.6	3.6	1.6	1.9	-3.7	-1.4	0.7	1.0	2.8	2.1
7	Financial intermediation	9.3	6.2	1.5	1.8	-0.6	-1.2	-3.4	-1.6	0.9	2.8	3.5
8	Real estate and rental activities	4.9	1.9	5.1	5.1	0.7	-0.4	0.2	1.2	3.1	3.2	2.5
63	**Services**	**5.8**	**3.5**	**2.9**	**2.8**	**1.0**	**-2.7**	**-2.3**	**0.5**	**1.5**	**2.7**	**2.2**

Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Current recovery is the slowest of recent decades

- The Brazilian economy entered a recession on nine occasions since the early 1980s: (i) 1Q81–1Q83, (ii) 3Q87–4Q88, (iii) 3Q89–1Q92, (iv) 2Q95–3Q95, (v) 1Q98–1Q99, (vi) 2Q01–4Q01, (vii) 1Q03–2Q03, (viii) 4Q08–1Q09, and (ix) 2Q14–4Q16.
- The current process of resumption of activity has been one of the slowest since 1980. The only recovery process that was slower was that of 3Q87–4Q88, since the economy entered another recession in the following quarters.
- The high uncertainty regarding the adjustment of the public accounts and the gradual deleveraging of companies and households explain the slow pace of economic recovery.

GDP dynamics in episodes of resumption of activity
(index number = 100 at end of recession)

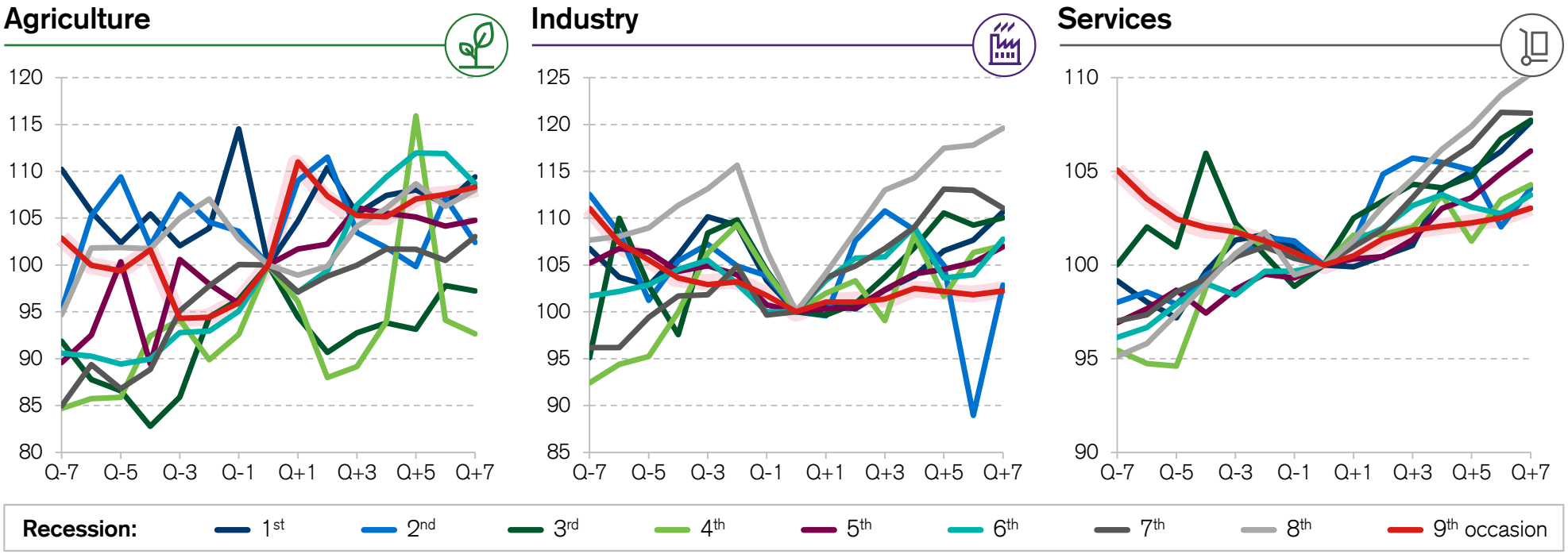


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Stronger recovery only in agricultural sector

- Of the main sectors of economic activity (i.e., agriculture, industry, and services), the recovery in production in the current process of resumption has occurred satisfactorily only in the agricultural sector.
- The recovery in economic activity in industry and services has been much slower in the current episode of resumption than in the other episodes analyzed.

GDP dynamics in episodes of resumption of activity
(index number = 100 at end of recession)

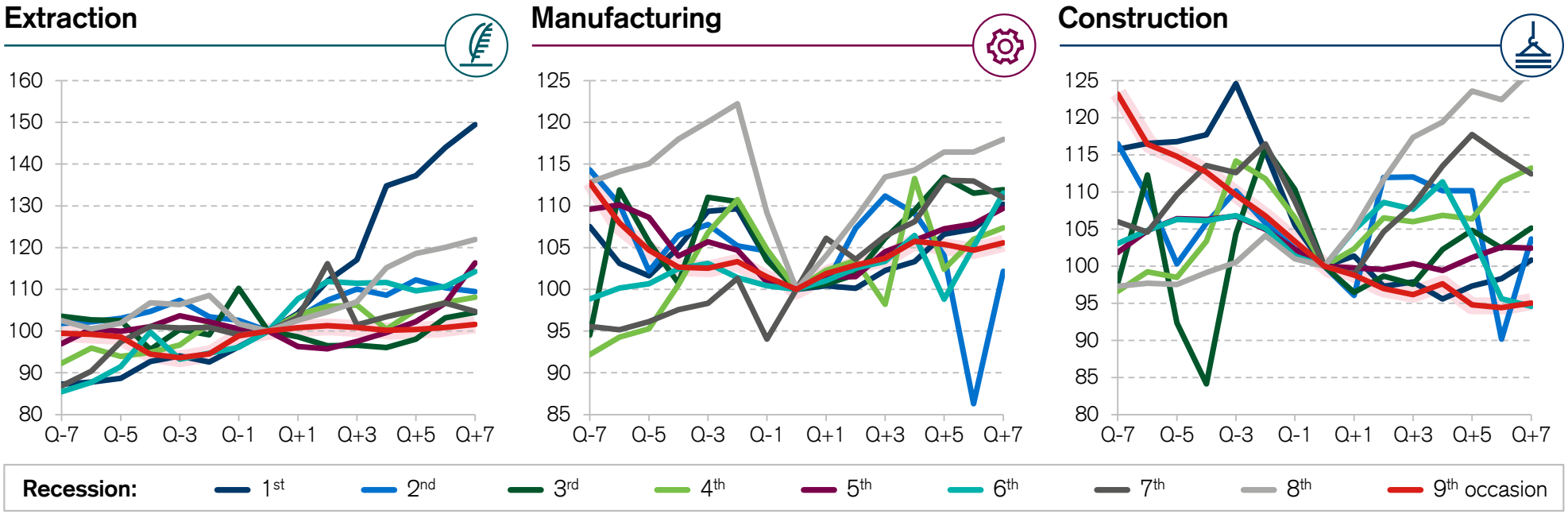


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Very slow resumption of construction activity

- Of the sectors of the economy, industry stands out for its weak performance since the end of the recession.
- Construction has performed more unfavorably since the end of the recession in 4Q16. Mineral extraction GDP has remained relatively stable since the end of the recession of 2Q14–4Q16. Although the manufacturing industry posted a more substantial resumption of activity at the beginning of the recovery process, there was a partial reversal due to the impact of the truckers' strike in 2Q18.

GDP dynamics in episodes of resumption of activity
(index number = 100 at end of recession)

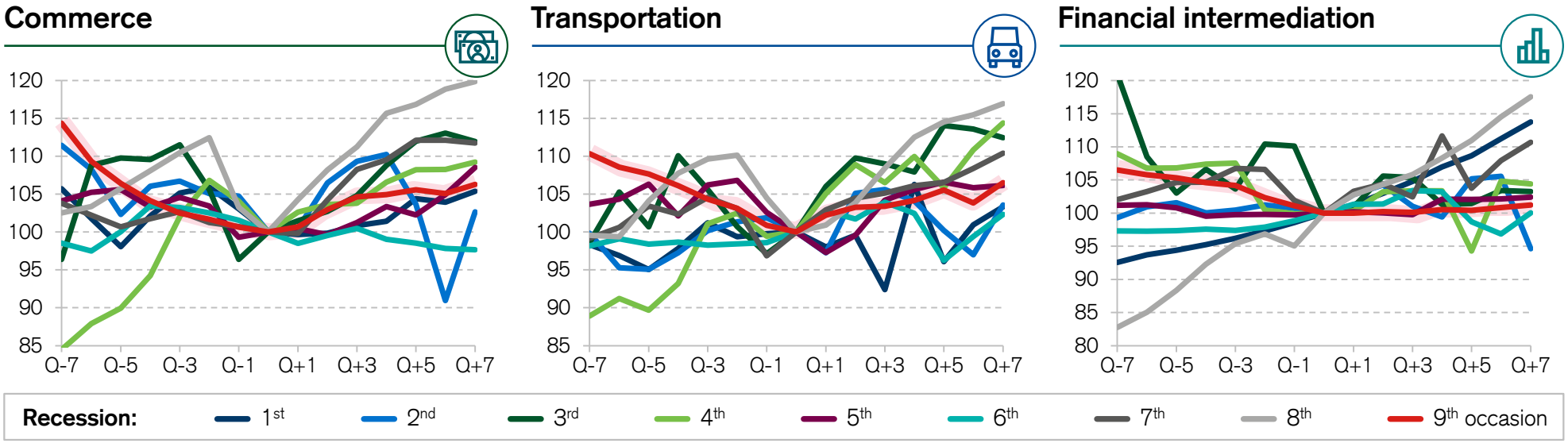


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Dynamics of industry hinder rise in cyclical services

- An important part of the dynamics of activity in the services sector (i.e., commerce, transportation, and financial intermediation) is sensitive to the behavior of industrial production.
- The activities of commerce and transportation declined in 2Q18 with the negative impact of the truckers' strike, after a relatively strong recovery throughout 2017.
- The GDP of financial intermediation services has remained relatively stable since the beginning of the recovery process, due to the gradual resumption of lending in this period.

GDP dynamics in episodes of resumption of activity
(index number = 100 at end of recession)

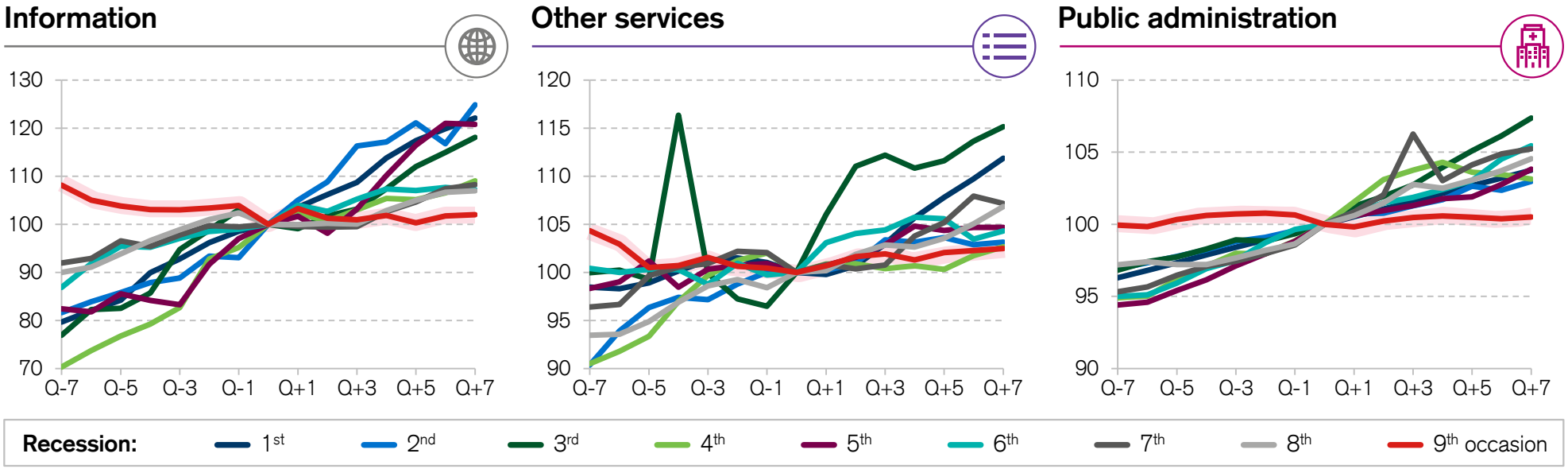


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

Weak recovery in production in public administration

- The recovery of economic activity in services less sensitive to the economic cycle (i.e., information and communication, other services, and public administration, health, and education) has also been slower in the current resumption process than previously.
- The need for a strong adjustment in public accounts both on the federal level and on the state and municipal levels suggests that the dynamics of production of public administration services, which have a weight of 15% in GDP, will hinder a more substantial recovery of the Brazilian economy.

GDP dynamics in episodes of resumption of activity
(index number = 100 at end of recession)

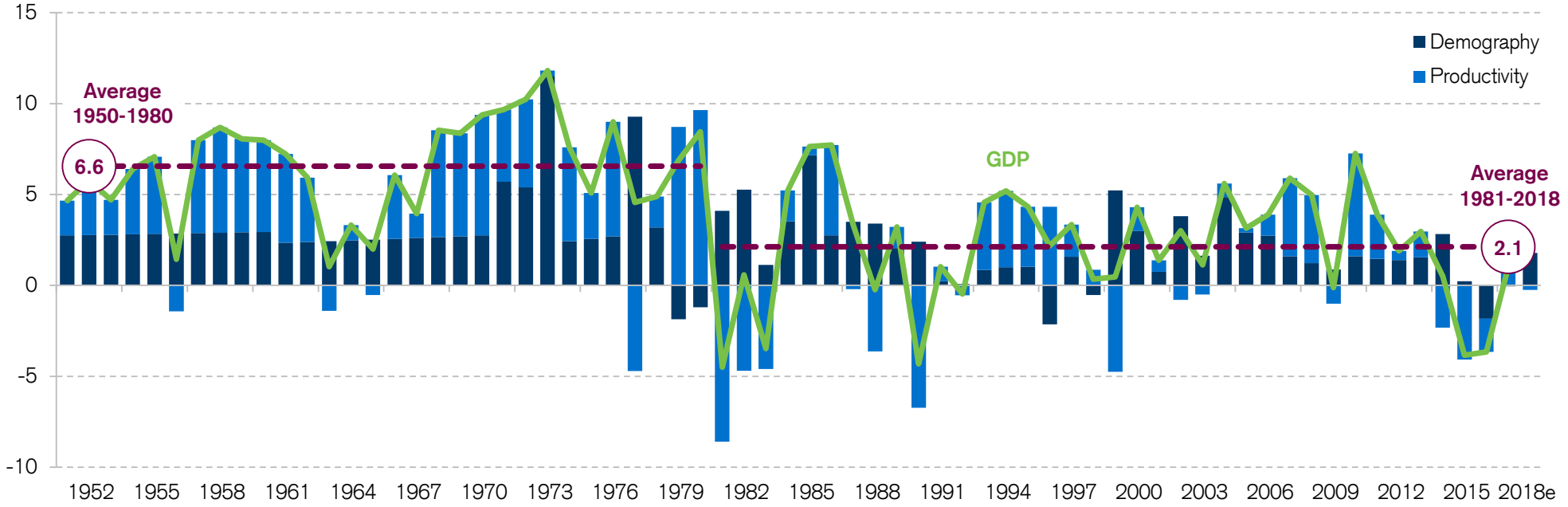


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

GDP growth near 2.0% in recent years

- Brazil's economic growth has declined significantly over the past few decades. GDP growth averaged 6.6% from 1950 to 1980, making the country one of the fastest growing economies in the period.
- As of 1981, however, the Brazilian economy initiated a path of slow growth. Average GDP growth decelerated to around 2.0% from 1981 to 2018. This period was marked by nine recessions; the most recent one, from 2Q14 to 4Q16, brought sharp contraction in economic activity.

Breakdown of GDP growth from 1950 to 2018
(%, pps, p.a.)



Source: The Conference Board, Credit Suisse

Demographics have driven GDP growth since 1980

- GDP growth can be broken down into growth in labor productivity, growth in the rate of employment (working population divided by the total population), and population growth.
- Brazil's economic growth from 1950 to 1980 was explained by both strong growth in labor productivity and by an expansion of demographics.
- However, nearly all GDP growth since 1981 is explained by demographics. Growth in productivity was close to zero in this period.

Breakdown of GDP growth

GDP: $Y = \frac{Y}{PO} \times \frac{PO}{POP} \times POP$

Labor productivity: $\frac{Y}{PO}$

Demographic factors: $\frac{PO}{POP} \times POP$

Rate of employment: $\frac{PO}{POP}$

Population: POP

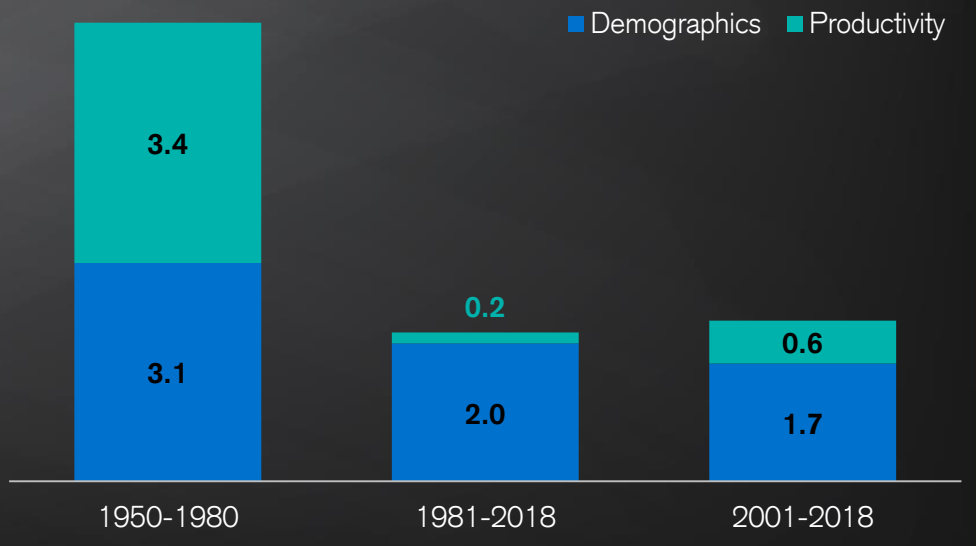
GDP growth: $\Delta Y = \Delta\left(\frac{Y}{PO}\right) + \Delta\left(\frac{PO}{POP}\right) + \Delta POP$

Growth in productivity: $\Delta\left(\frac{Y}{PO}\right)$

Growth in employment rate: $\Delta\left(\frac{PO}{POP}\right)$

Population growth: ΔPOP

Breakdown of GDP growth, by period
(%, pps, p.a.)

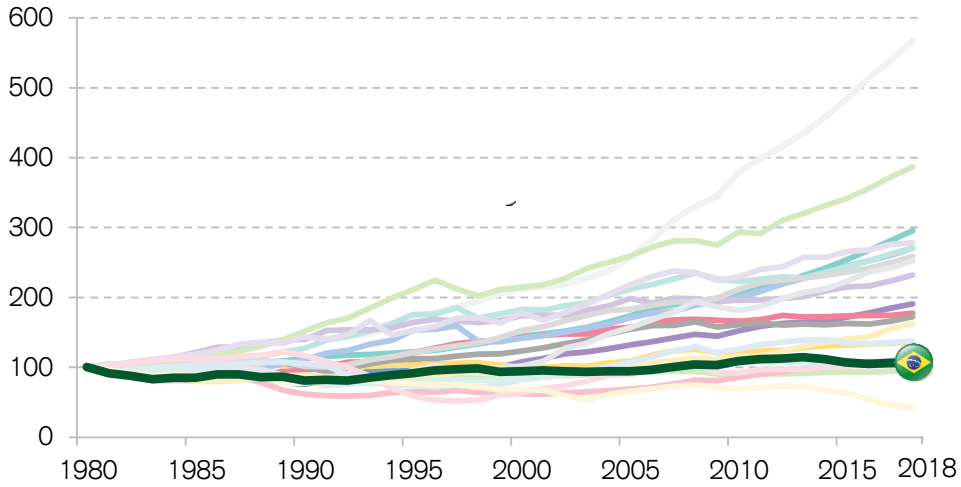


Source: The Conference Board, Credit Suisse

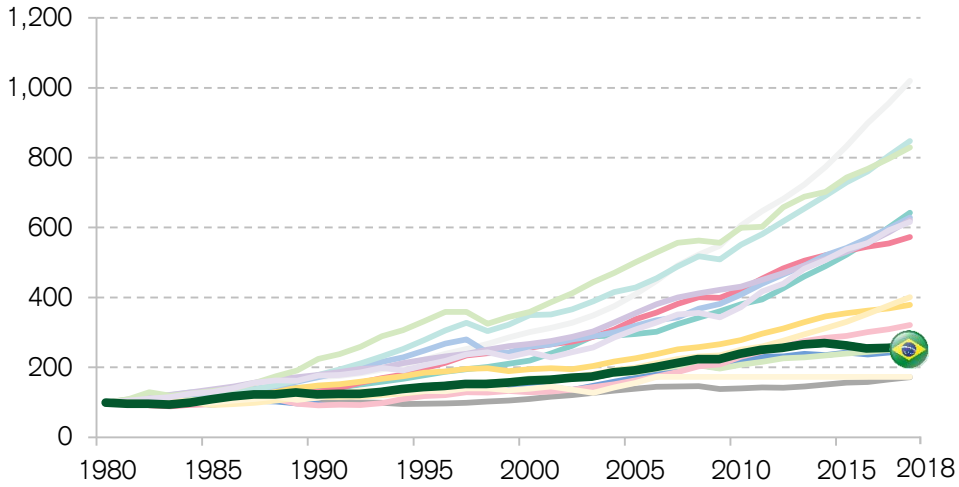
Productivity expanded little for an emerging economy

- Labor productivity is normally measured by two metrics: (i) the ratio of GDP to the total number of employed workers; and (ii) the ratio of GDP to the total number of hours worked by the workers.
- By both measures, the productivity of Brazilian workers from 1980 to 2018 has been very weak compared with that of other emerging economies. For example, growth in productivity of Brazilian workers in this period exceeded only that of countries such as South Africa and Venezuela.

GDP per worker in emerging economies from 1980 to 2018 (1980 = 100)



GDP per hour worked in emerging economies from 1980 to 2018 (1980 = 100)



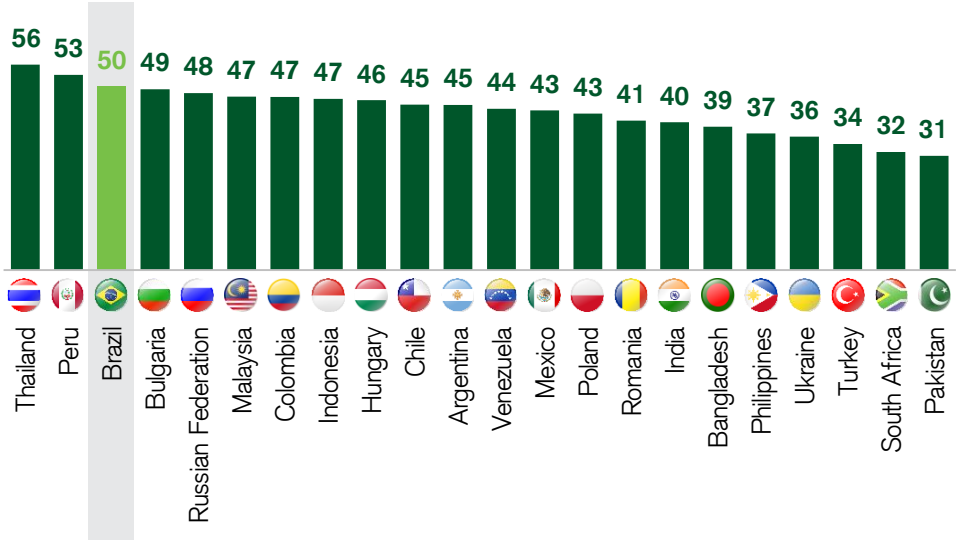
Argentina, Bangladesh, Brazil, Bulgaria, Chile, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Thailand, Turkey, Ukraine, Venezuela, Romania

Source: The Conference Board, Credit Suisse

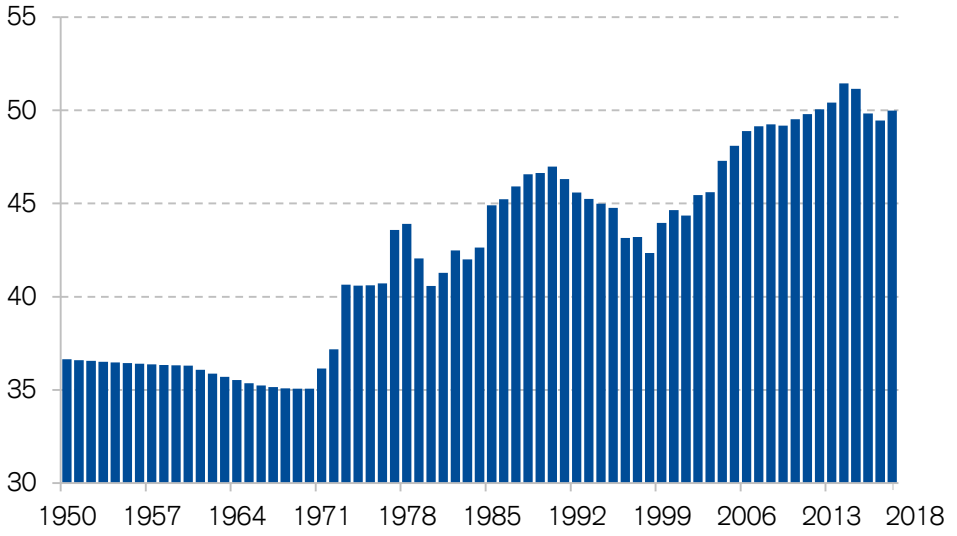
Rate of employment is high in Brazil

- Brazil is unlikely to maintain the current pace of growth of approximately 2.0% based solely on the dynamics of the demographic factors. In addition to the expected reduction in population growth over the next few years, the rate of employment is already at a high level, both by international comparison and historically.
- The recent rise in unemployment suggests that there is some room for an increase in the rate of employment in the near term. However, it is not very likely that this measure will rise in the coming years at a pace similar to that of the past few decades. Factors such as the inclusion of women in the workplace, for example, will probably contribute less over the next few years.

Ratio of working population to total population in emerging economies in 2018 (%)



Ratio of working population to total population in Brazil from 1950 to 2018 (%)

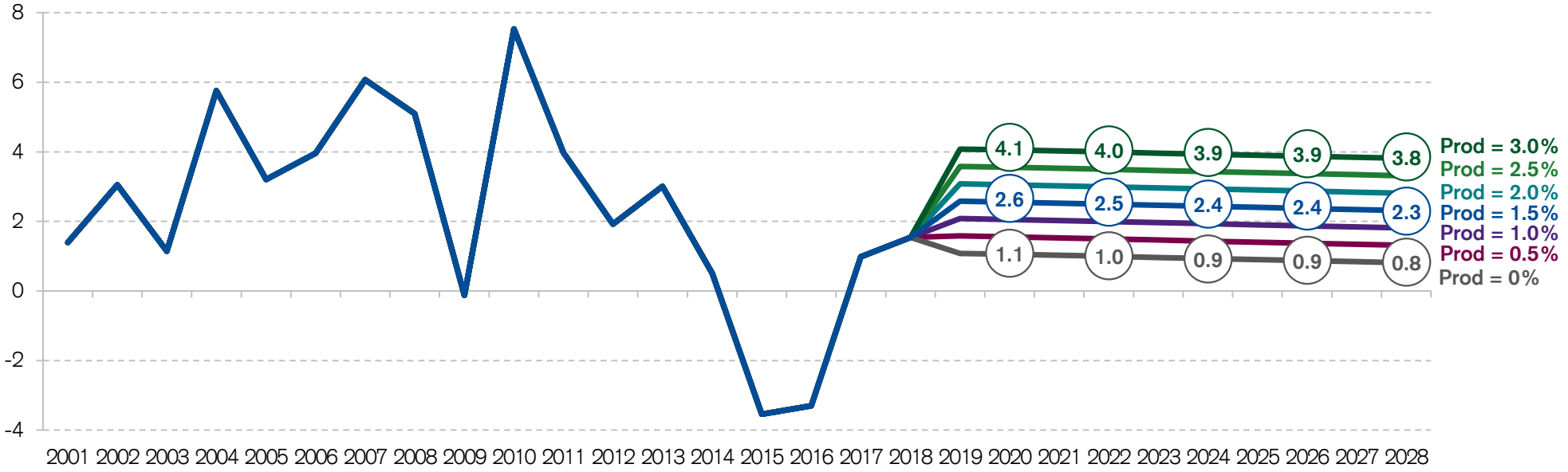


Source: The Conference Board, Credit Suisse

Growth of 3.0% requires sharp rise in productivity

- For annual growth higher than 2.5% in the next few years, Brazil will need to see a sharp rise in labor productivity.
- Based on the forecast of the Brazilian Statistics Bureau (IBGE) for population growth and the return of the rate of employment to its historical peak, growth in productivity will need to increase from the 0.2% seen from 1981 to 2018 to 1.5% per year in the next ten years to keep GDP growth at close to 2.5% in this period. To sustain growth of 4.0% p.a., labor productivity will need to grow at the pace seen from 1950 to 1980.

Simulations for GDP growth under different scenarios for growth in productivity
(%, p.a.)

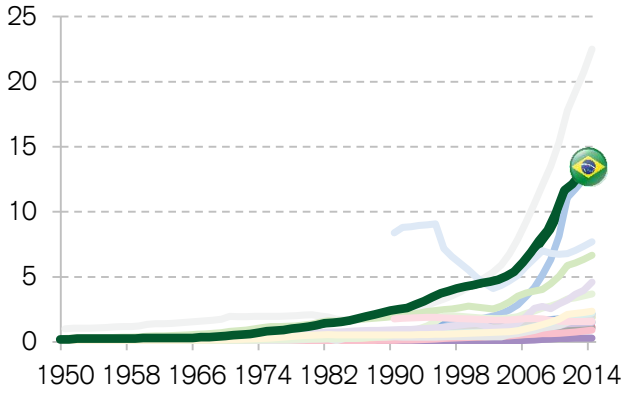


Source: The Conference Board, Credit Suisse

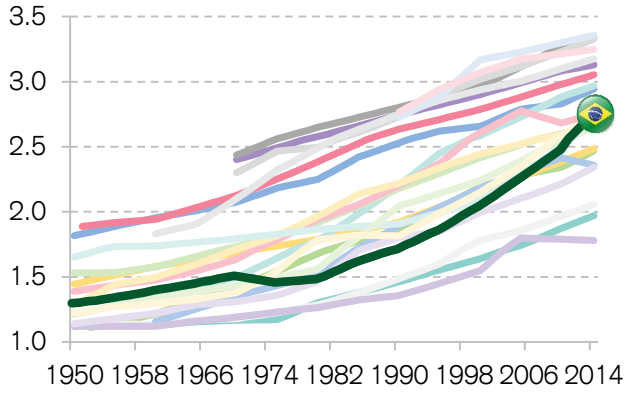
Poor allocation of inputs explains low productivity in Brazil

- If we compare a Brazilian worker with the same level of education and the same amount for investment as an American worker, the Brazilian worker would still deliver less production. This difference occurs due to the lower capacity of the Brazilian worker to use production inputs, a measure known as total factor productivity (TFP).
- An international comparison of productivity shows that the pace of improvements in physical capital and human capital in Brazil has not been much different from that of the majority of emerging and developed economies. On the other hand, the pace of growth in TFP in Brazil has been much lower.

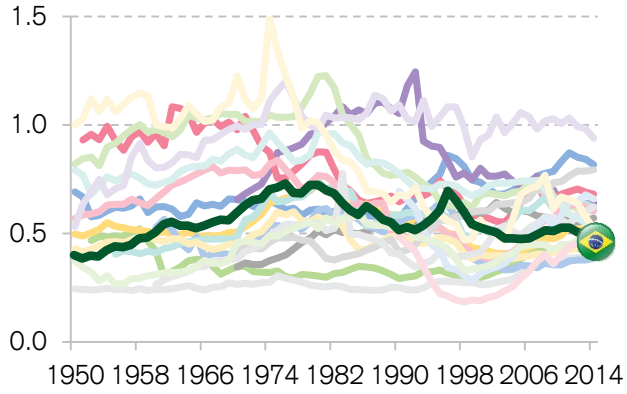
Stock of capital[1]
(USD trillion, PPP of 2011)



Human capital
(index)



Total factor productivity
(PPP of 2011, USA=1)



Argentina, Bangladesh, Brazil, Bulgaria, Chile, Colombia, Hungary, India
Indonesia, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, China
Russia, South Africa, Thailand, Turkey, Ukraine, Venezuela, Romania

[1] China was excluded from the stock of capital exhibit to avoid distorting the exhibit's scale..
Source: Penn World Table, Credit Suisse

Inefficiency in Brazil has many causes

- TFP is understood as the representation of many dimensions of an economy, from trade openness to institutional soundness. Brazil has weak points in all these dimensions.

Drivers of total factor productivity

Ease of doing business

- Ease of starting a business
- Obtaining construction licenses
- Registration of property
- Access to credit
- Freedom of trade
- Level of flexibility of labor market
- Freedom to invest
- Financial freedom
- Level of competition in domestic market
- Efficiency of financial market
- Financial reliability

Adoption of technology

- Availability of scientists and engineers
- Availability of recent technologies
- Capacity for innovation
- Capacity of the country to attract talent
- Capacity of the country to retain talent
- Absorption of technology at corporate level
- Cooperation between universities and business in R&D
- Level of inward direct investment
- Total patents
- Training to adopt technology

Regulation and judiciary

- Protection of minority investors
- Performance of agreements
- Resolution of insolvency
- Property rights
- Government integrity
- Judicial efficiency
- Ethics and corruption
- Level of undue influence
- Security
- Corporate ethics
- Accounting transparency

Size and efficiency of the state

- Government spending
- Fiscal health
- Level of independence of monetary policy
- Government efficiency
- Level of taxation

Quality of education

- Quality of education
- Workforce training

Trade openness

- Exports and imports of goods and services as share of global trade or GDP

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Source: World Bank, Heritage Foundation, Global Competitiveness Report, WIPO, UNCTAD, Penn World Table, Credit Suisse

Trade openness is one of the causes of the differences in TFP

- The weight of various factors in the dynamics of TFP was calculated based on panel estimations with information on 56 countries, from 1995 to 2014, based on the joint estimation[1], backward selection[2], and forward selection[3] methods. The variables with the highest statistical significance and weight in the specifications are trade openness and government integrity.

Explanatory variables of TFP for each of the methods adopted

	Joint estimation	Backward selection	Forward selection
Imports and exports of goods and services in global trade	★★★	★★★★	★★★★
Government integrity	★★★★★	★★★★★	★★★★★
Flexibility of labor market	★★★★★	★★★★	
Resolution of insolvency	★★★★	★★★★★	
Registration of property		★★	
Property rights	★		★★★
Access to credit	★		
Investment in training to adopt technology		★★	
Ease of starting a business		★★★★	
Total patents			★★★
Government efficiency			★
Workforce training			★

Significance	★★★★★ 0	★★★★ 0.1%	★★★ 1%	★★ 5%	★ 10%

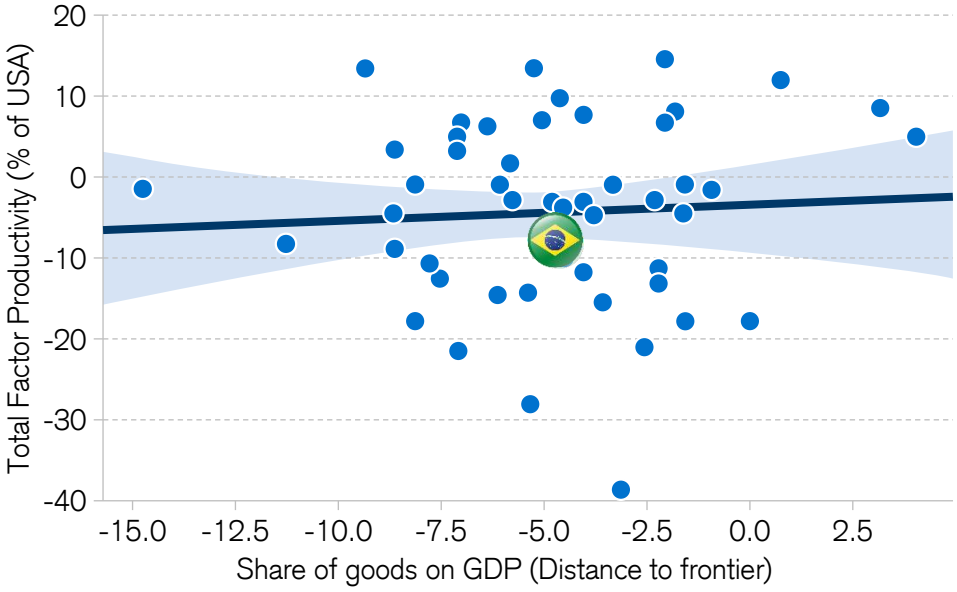
[1] Joint estimation: The model is estimated with all variables together; variables that have statistically significant coefficients and the sign in conformity with that suggested by literature are chosen. The model considers a fixed effect for country and year. [2] Backward selection: Based on the complete estimation, the variables without statistical significance and with the sign opposite to that suggested by the theory were removed one by one, according to the probability value (p-value). The lower the value, the higher the probability that the coefficient of a given variable will be different from zero. The chosen model is that in which only variables with statistically significant coefficients and the sign in conformity with that suggested by literature are left. [3] Forward selection: This methodology consisted of building the models based on all possible combinations of the variables contained in six specific groups. The following restrictions were imposed: (i) one variable per group; and (ii) sign of the coefficients in line with that indicated by literature. The selected model was the one with the highest adherence to the data for all specifications.

Source: World Bank, Heritage Foundation, Global Competitiveness Report, WIPO, UNCTAD, Penn World Table, Credit Suisse

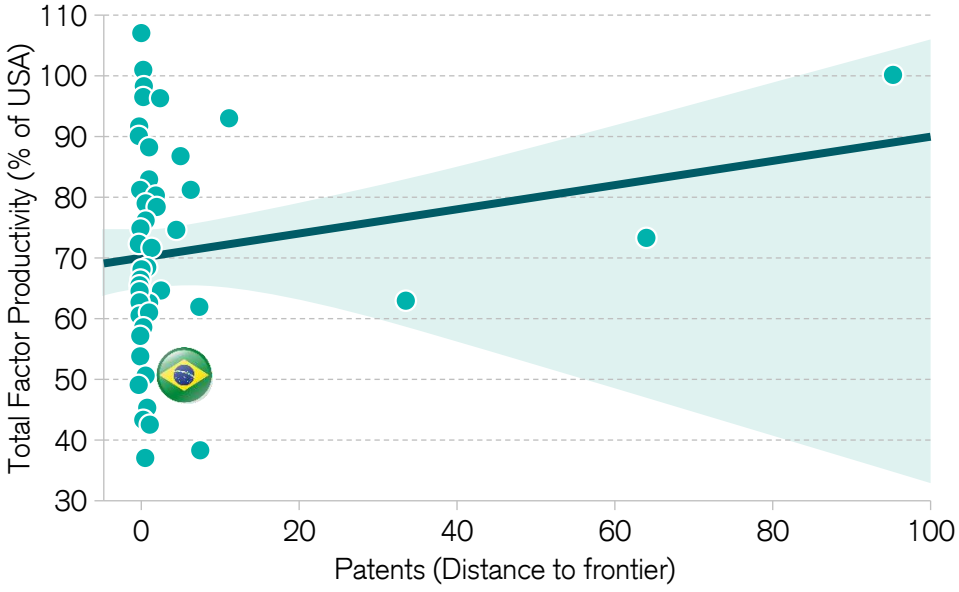
Brazilian economy not very open to trade

- One of the factors that explains the low efficiency of the Brazilian economy is the low level of trade openness, which largely shelters the domestic market from global competition. Brazil has continued to advance very little in this area over the past few years and even saw a reduction in its openness from 2008 to 2014.
- Brazil also produces few patents, considering its current level of efficiency. However, aside from a few emerging and developed economies with high production of patents (e.g., China), there is a high concentration in lower levels of the analyzed patent indicator.

Relationship between average changes from 2008 to 2014 in relative TFP and trade openness



Relationship between average TFP from 2008 to 2014 and patents indicator

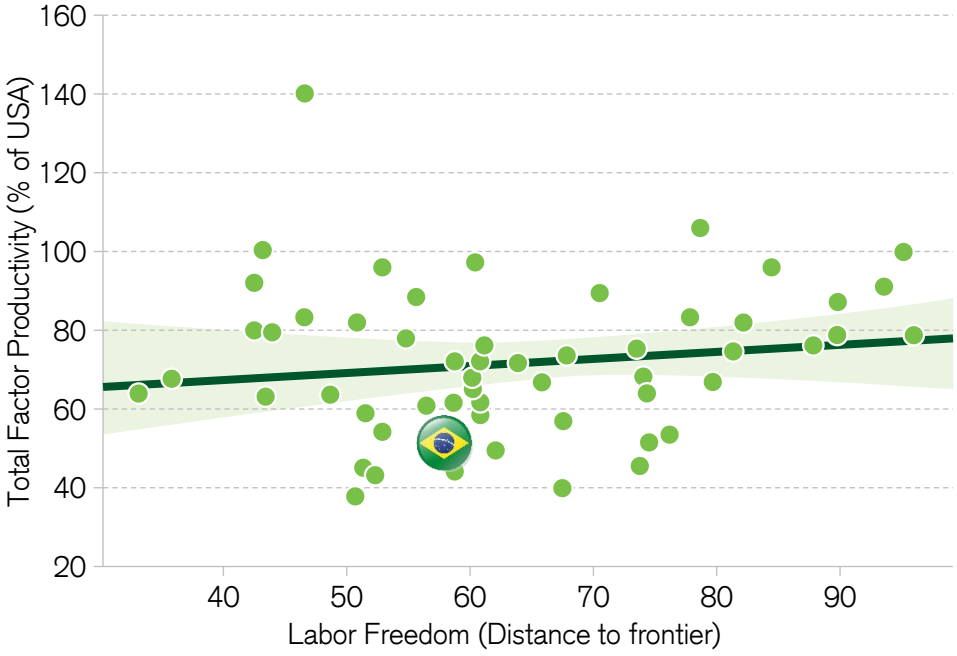


Source: World Bank, Heritage Foundation, Global Competitiveness Report, WIPO, UNCTAD, Penn World Table, Credit Suisse

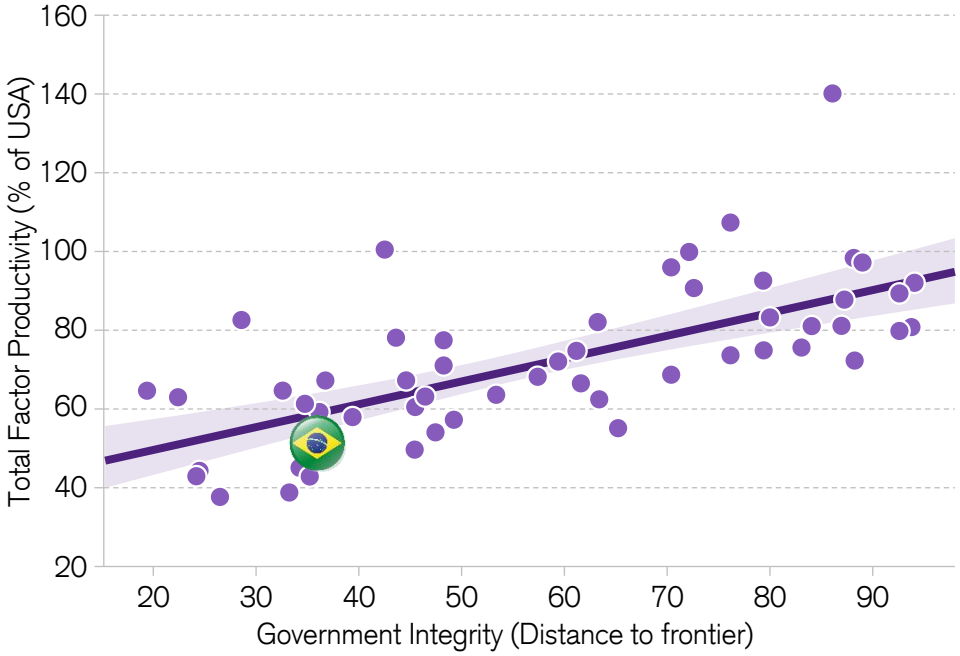
Country needs to make labor market more flexible

- The Temer administration approved the labor reform in 2017, which will likely increase the flexibility of the Brazilian labor market over the next few years. However, the country needs to make additional headway in this regard, in light of its position far below that of countries with greater flexibility.
- Strengthening the judiciary and other oversight bodies with the objective of raising the level of government integrity will likely contribute to a rise in labor productivity in Brazil.

Relationship between average TFP from 2008 to 2014 and labor market flexibility



Relationship between average TFP from 2008 to 2014 and government integrity indicator

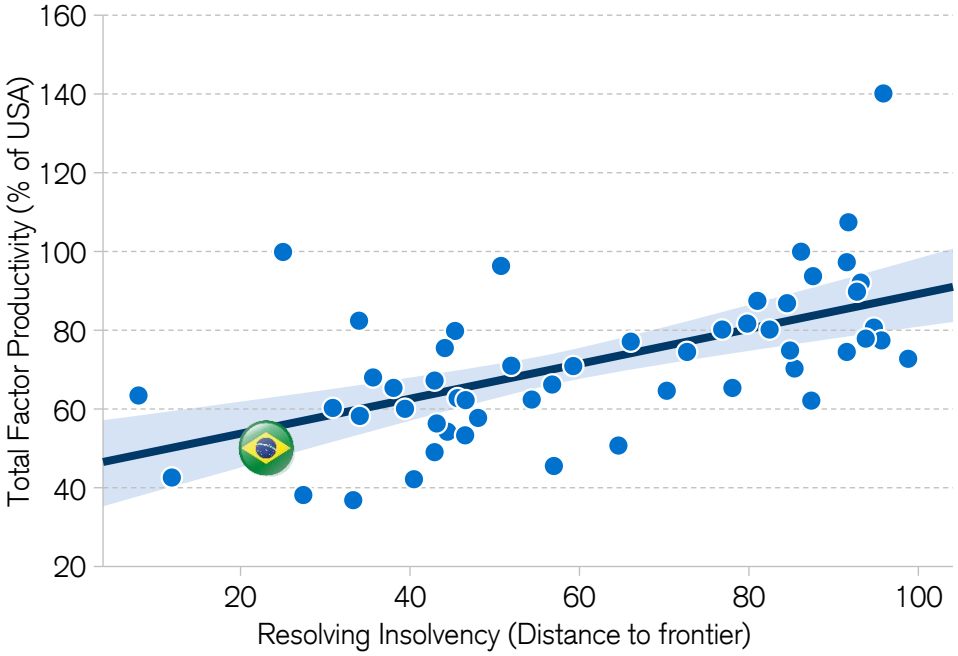


Source: World Bank, Heritage Foundation, Global Competitiveness Report, WIPO, UNCTAD, Penn World Table, Credit Suisse

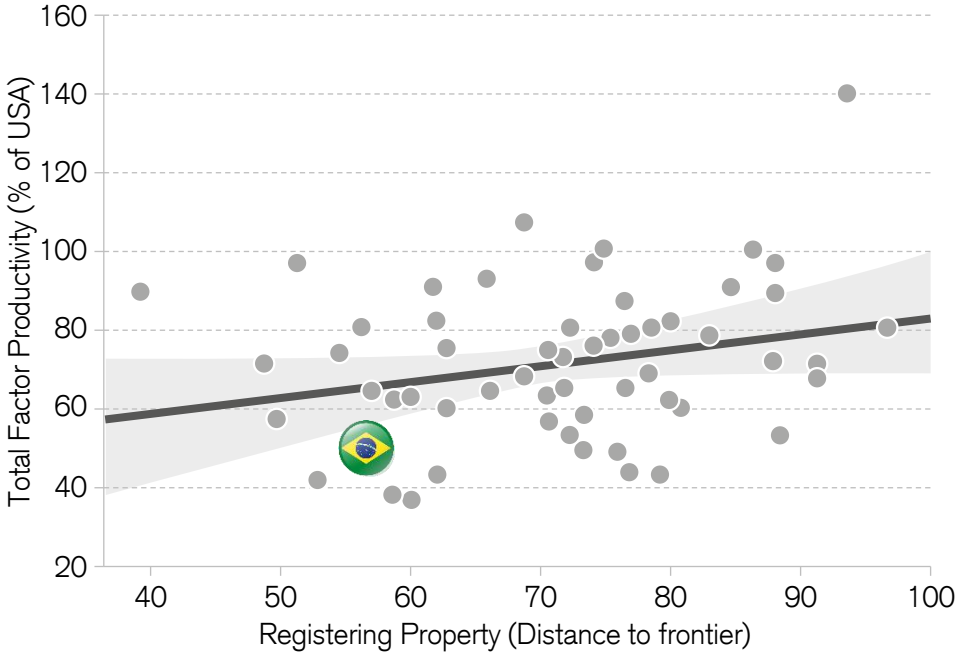
Improvement in business environment would raise efficiency

- The Brazilian economy also stands out negatively with regard to the World Bank's business environment indicators. For example, the country has a low score in the resolution of insolvency and registration of properties.
- An agenda of microeconomic reforms that reduces bureaucracy and improves the business environment would have a substantial impact on growth in labor productivity over the next few decades.

Relationship between average TFP from 2008 to 2014 and insolvency resolution indicator



Relationship between average TFP from 2008 to 2014 and registering property indicator

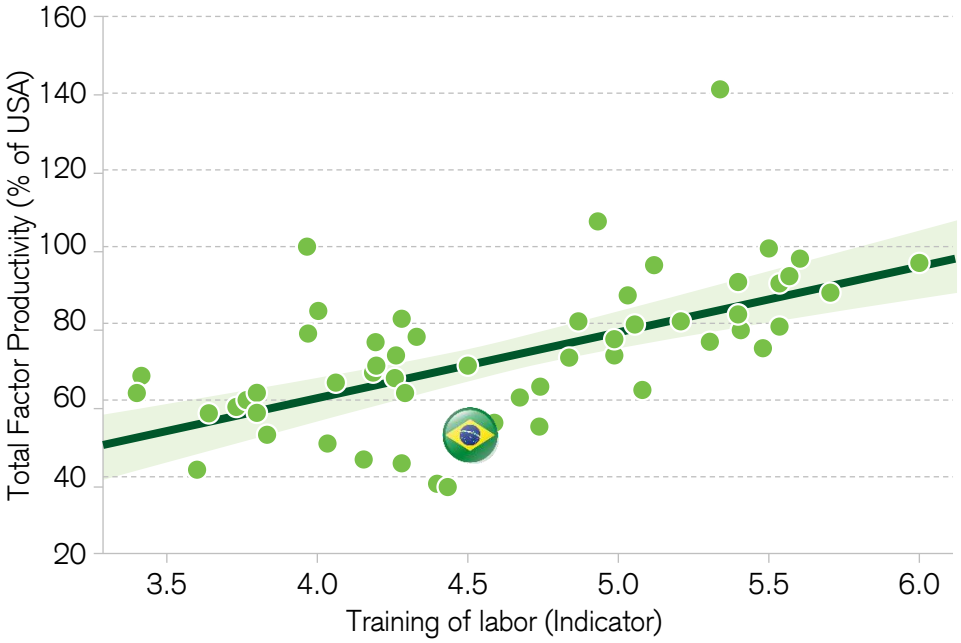


Source: World Bank, Heritage Foundation, Global Competitiveness Report, WIPO, UNCTAD, Penn World Table, Credit Suisse

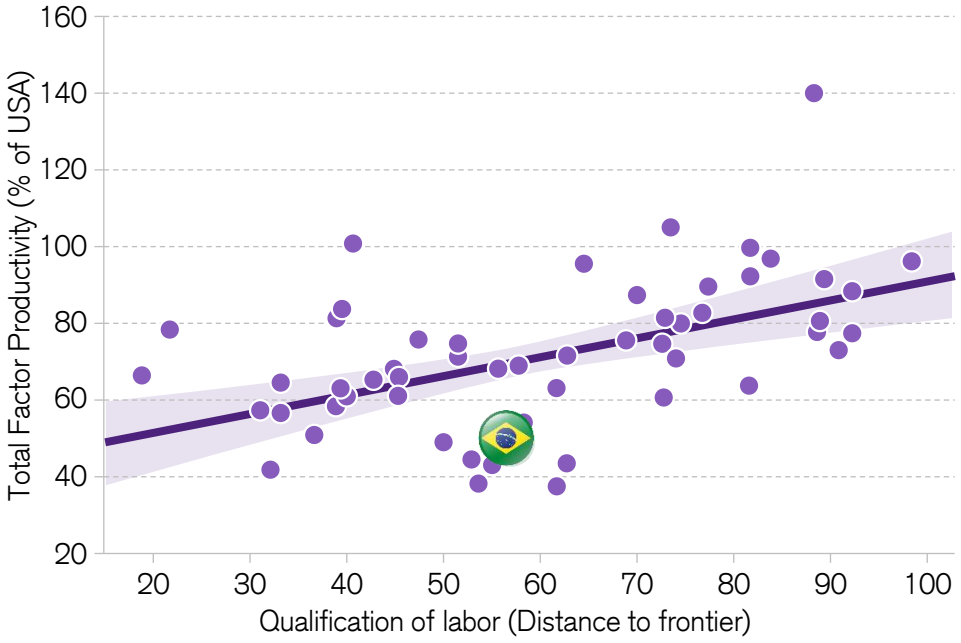
Qualification of labor would increase productivity

- Brazilian labor qualification indicators also suggest that the country needs to advance significantly in this area to reduce the differences in per capita income compared with developed economies.
- Brazilian workers are less able to use available top-notch technologies because they are less qualified for these tasks. The increase in qualification courses for these professionals would contribute to a rise in productivity in the coming years.

Relationship between average relative TFP from 2008 to 2014 and training of labor



Relationship between average relative TFP from 2008 to 2014 and qualification of labor

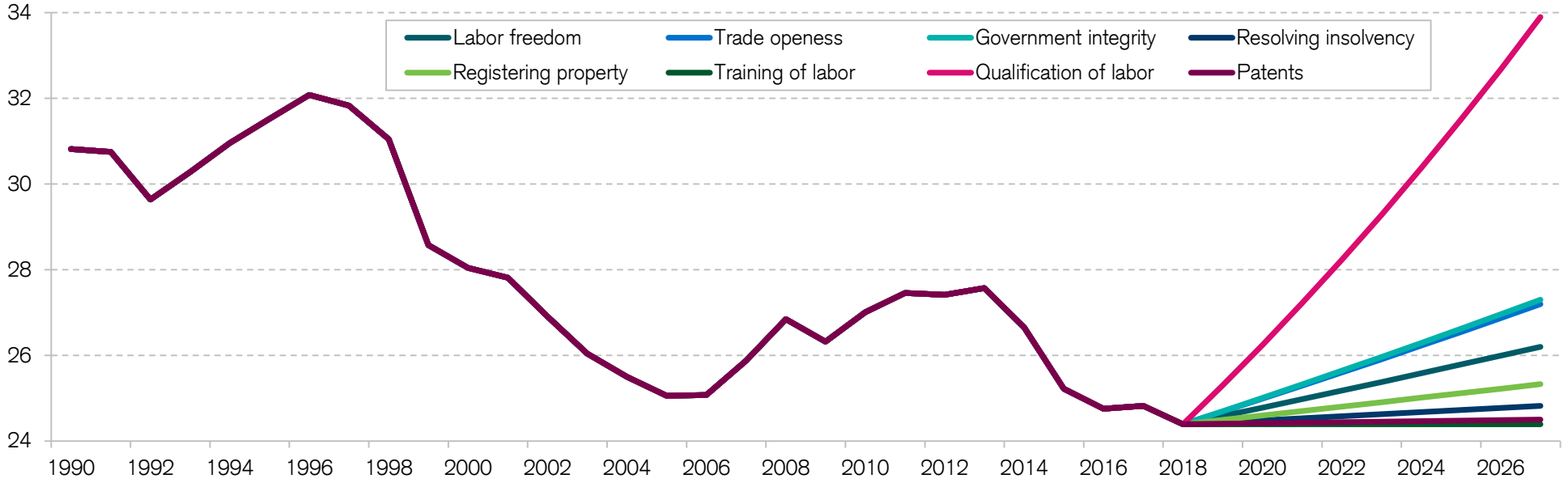


Source: World Bank, Heritage Foundation, Global Competitiveness Report, WIPO, UNCTAD, Penn World Table, Credit Suisse

Agenda of reforms to accelerate rise in productivity

- The implementation of a wide range of microeconomic reforms is essential to reverse the downtrend in productivity in recent years and reduce income disparity in Brazil compared with developed economies.
- The range of measures needs to be wide enough to accommodate the high number of factors that explain the country's low efficiency. The measures with the greatest impact on labor productivity aim: to increase the level of trade openness, to rise the qualification of labor, to strengthen institutions, and to improve the business environment in the country.

Simulations of labor productivity in relation to the United States (%)



We assumed in all scenarios that the indicators used as variables to explain TFP converge to the levels of emerging economies with the best classification in each of the indicators: (i) flexibility of the labor market – Bulgaria; (ii) trade openness – Slovenia; (iii) government integrity – Slovenia; (iv) resolving insolvency – Colombia; (v) registering property – Peru; (vi) training of labor – South Africa; (vii) qualification of labor – South Africa; (viii) patents – India.

Source: World Bank, Heritage Foundation, Global Competitiveness Report, WIPO, UNCTAD, Penn World Table, Credit Suisse

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Fiscal policy

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Most fiscal rules will be met in 2019

- Contrary to recent past, the discussion about public accounts will be more focused on medium-term sustainability than on short-term dynamics of the fiscal result.
- The social security reform is an essential condition for the fiscal consolidation process and, consequently, the anchoring of agents' expectations regarding the sustainability of public accounts.
- With respect to the three fiscal rules in effect in Brazil, we expect that, in 2019, the government will not meet the golden rule only. Accordingly, the government will need to secure Congress approval of an extraordinary credit to avoid the consequences of failing to meet such rule.

Expectations for fiscal rules in Brazil

	2018	2019	2020
Golden rule States that total lending cannot exceed capital expenditures	✓	✗	✗
Spending cap rule Establishes that primary expenditures cannot post real growth over the next 10 years except as provided by law.	✓	✓	✓
Target for primary balance, difference between primary revenues and expenditures established by Budgetary Directives Act (LDO)	✓	✓	✓

Main negative risks to fiscal accounts in 2019

- Approved social security reform not sufficient to stabilize social security deficit in medium term
- Fiscal measures needed in addition to social security reform to reduce the deficit (e.g., adjustment of minimum wage, wage bonus) do not advance
- Lawsuits with a negative impact on public accounts (e.g., exclusion of ICMS from calculation base for PIS and Cofins taxes)
- Postponement of oil auctions from transfer of rights ("Cessão Onerosa") area[1]
- Oil prices continue to see sharp decreases, which not only lowers the royalty and special participation payments but also contributes to a reduction in the proceeds received in the oil auctions from the transfer of rights
- Fiscal situation of states becomes unsustainable, and federal government grants new aid package without requiring significant fiscal adjustment in exchange

[1] Congress is discussing the sale of approximately 13bn barrels of oil found in the pre-salt area, which was awarded for Petrobras to explore under the transfer of rights regime.

Source: Credit Suisse

Fiscal impact of certain processes may be high

- Although our base-case scenario assumes that the primary deficit target will be fulfilled in 2019 and 2020, a few processes could hinder such scenario:

Main processes with negative impact on public accounts

Deduction of input credits from the taxable base of PIS and Cofins

- Analysis of the concept of input for purpose of deduction of credit from the PIS/Cofins payable under the non-cumulative system
- Proceeding to be analyzed by the Federal Appeals Court (STJ)
- Impact of BRL58bn in first year

Exclusion of ICMS levied from taxable base of PIS and Cofins

- Discussion about the multiple charging of ICMS included in the price of the good or service on the taxable base of PIS/Cofins
- Awaiting decision by Federal Supreme Court (STF)
- Impact of BRL45.8bn in first year

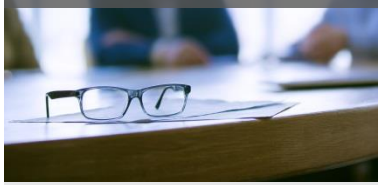
Application of fines for denial of benefit at administrative level

- No application of fines to taxpayers requesting tax reimbursement, return, or set-off in bad faith
- Total impact of BRL32bn

Reinstatement of IPI bonus credit for exporters

- A tax incentive to exporters via IPI deductions remained in effect from 1969 to 1979. The incentive ceased to be applied and its reinstatement is currently being discussed.
- Impact of BRL13.2bn

Questioning of non-cumulative payment of PIS and Cofins contributions



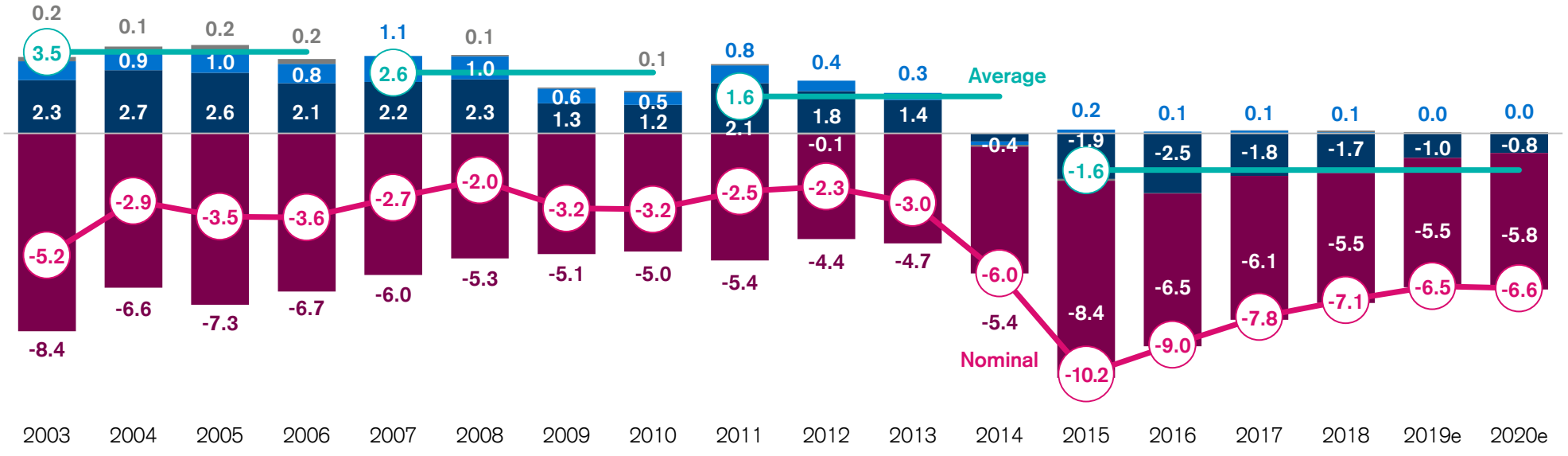
- The principle of non-cumulative payment of taxes deals with the government's power to levy taxes by giving a tax credit based on the amount spent on inputs and goods acquired for resale.
- Impact of up to BRL54bn in one year.

Source: Office of the Federal Attorney General (AGU), Credit Suisse

Nominal deficit of 6.5% of GDP in 2019

- The reduction in the primary deficit as a percentage of GDP, from 1.7% in 2018 to 1.0% in 2019 and 0.8% in 2020, will contribute to a decline in the nominal deficit, from 7.1% of GDP in 2018 to 6.5% of GDP in 2019 and 6.6% of GDP in 2020.
- Continuity of low interest rates by historical standards would also contribute to keep the nominal deficit at a more moderate level. However, Brazil should continue to implement austere fiscal measures for interest rates to converge from the current levels to the magnitude of other emerging market economies.

Interest rate payments and primary and nominal deficits (% of GDP)

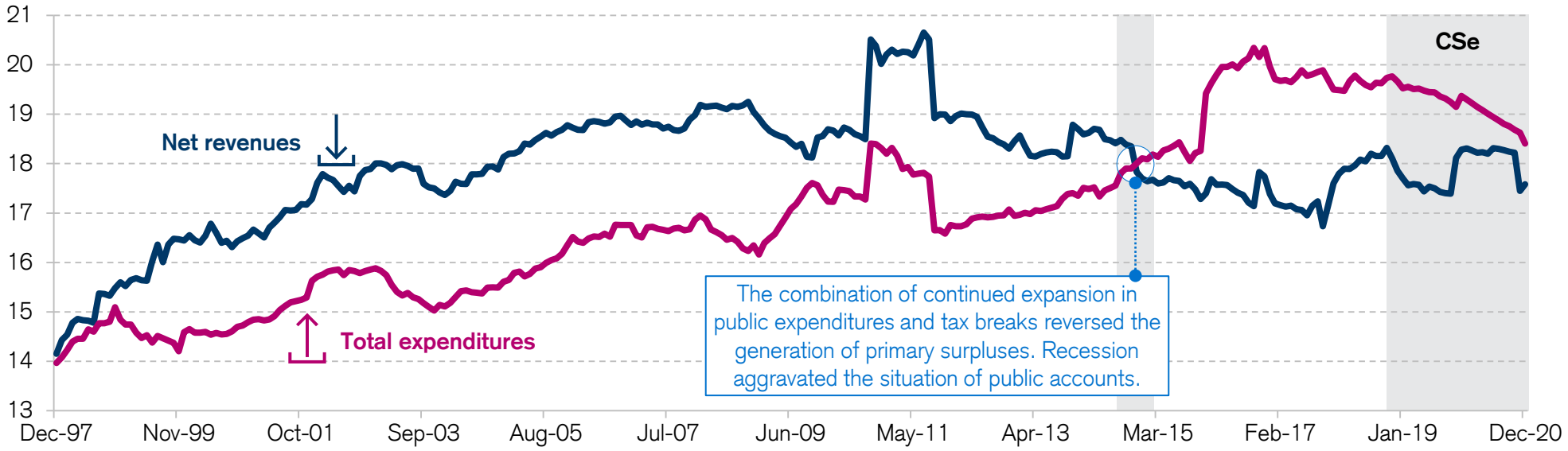


Source: Central Bank of Brazil, Credit Suisse

Deterioration in fiscal accounts in recent years

- The primary balance of the central government initiated a steep downtrend in recent years, with a steady reduction in net revenues and continued expansion in primary expenditures.
- The primary balance, which posted a surplus greater than 2.0% of GDP until mid-2012, declined significantly until reaching a deficit of 2.6% of GDP in December 2016.
- Despite the expectation of economic recovery, which would raise primary revenues, the fiscal adjustment will need to be implemented primarily through cuts in primary expenditures.

Net revenues and total primary expenditures of central government
(% of GDP)



Source: Brazilian Treasury, Credit Suisse

Central government primary deficit of BRL79bn in 2019

- We expect the central government to meet the targets of BRL139bn in 2019 and BRL110bn in 2020.
- Our forecast is compatible with the continuity of strong contributions from non-recurring revenues in the next two years. For example, we expect revenues of BRL66bn from concessions in 2019 and BRL23bn in 2020. For 2019, we are assuming that the transfer of oil rights (onerous assignment) will have an impact of BRL60bn on fiscal revenues in the year.
- On the expenditure side, approval of a pension reform would contribute to a deceleration in expenditures in 2020. We are also considering that the next administration should take other austere measures such as the end of the wage bonus in 2020.

Breakdown of the primary result (BRL billion)

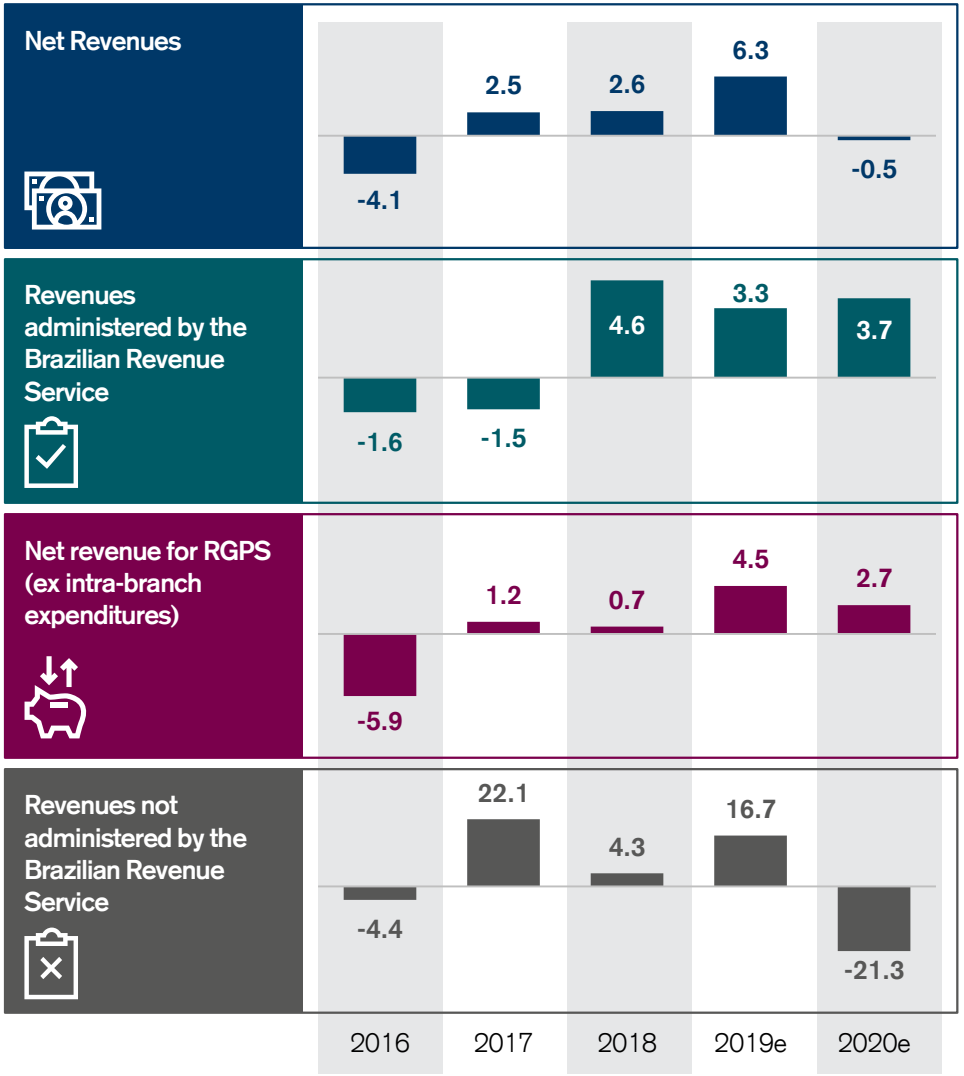
	2015	2016	2017	2018	2019e	2020e
I. TOTAL REVENUES	**1,248**	**1,315**	**1,383**	**1,505**	**1,627**	**1,691**
I.1. Revenue administered by Brazilian Revenue Service (RFB)	765	820	836	918	973	1,049
I.2. Fiscal incentives	0	0	-1	0	0	0
I.3. Net collections for RGPS (ex intrabudgetary amounts)	350	358	375	396	425	454
I.4. Revenues not administered by RFB	132	137	174	190	229	187
I.4.1. Concessions and permits	6	22	32	22	66	23
I.4.2. Dividends and equity interests	12	3	6	7	8	8
I.4.3. Contribution to Social Security Plan of Public-Sector Employees	12	12	14	14	15	16
I.4.4. Share of financial compensations	29	23	36	60	58	61
I.4.5. Own revenues (sources 50, 81, and 82)	15	14	13	15	16	17
I.4.6. Contribution to education allowance	19	20	20	22	23	25
I.4.7. Supplemental payment to Severance Pay Fund (FGTS) (Supplemental Law No. 110/01)	5	6	5	5	5	6
I.4.8. Transactions involving assets	0	1	1	1	0	0
I.4.9. Other revenues	35	37	47	42	38	31
II. Transfers to states and municipalities	**205**	**227**	**228**	**260**	**269**	**286**
III. NET REVENUE (I – II)	**1,043**	**1,088**	**1,155**	**1,244**	**1,358**	**1,405**
IV. TOTAL EXPENDITURES	**1,164**	**1,249**	**1,279**	**1,370**	**1,438**	**1,469**
IV.1. Social security benefits	436	508	557	594	644	698
IV.2. Personnel and social charges	238	258	284	302	318	331
IV.3. Other mandatory expenditures	237	200	185	190	201	170
IV.4. Discretionary expenditures, all branches	253	284	253	282	274	270
V. Sovereign Wealth Fund of Brazil	**1**	**0**	**0**	**4**	**0**	**0**
VI. PRIMARY BALANCE OF CENTRAL GOVERNMENT (III - IV + V)	**-121**	**-161**	**-124**	**-121**	**-79**	**-64**

Source: Brazilian Treasury, Credit Suisse

We expect real acceleration in tax revenues in 2019

- We expect strong real growth of 6.3% in primary revenues in 2019, after growth of 2.6% in 2018. We expect the following breakdown of revenues:
  - Administered revenues: real growth of 3.3% in 2019 and 3.7% in 2020. This group of revenues is the most sensitive to economic activity and would benefit from a scenario of more significant economic growth.
  - Net revenues for RGPS: We expect real growth of 4.5% in 2019. The sharper recovery of the labor market, boosted by an increase in the creation of formal jobs, will be the main driver of such significant acceleration.
  - Non-administered revenues: growth of 16.7% in 2019. Our expectation is based on the impact of the auction of surplus oil barrels under onerous assignment on tax revenues.

Real growth in primary revenues (% p.a.)

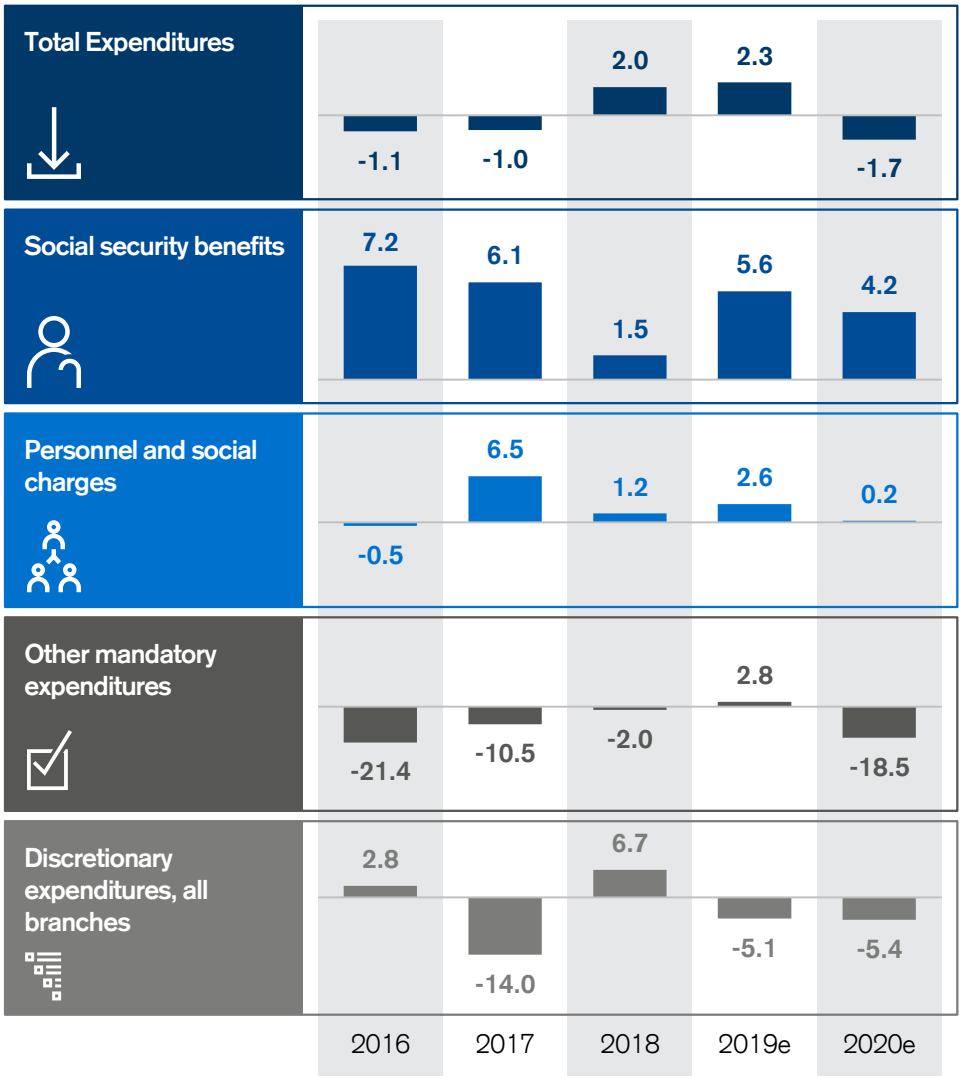


Source: Brazilian Treasury, Credit Suisse

Primary expenditures to increase 2.3% in real terms in 2019

- Primary expenditures will increase 2.3% in real terms in 2019, after real growth of 2.0% in 2018. The government will be able to meet the spending limit rule in 2019[1].
- The primary expenditures for social security will accelerate in real terms due to a higher increase in the minimum wage in 2019 and still-high vegetative growth in such expenditures. Approval of the social security reform and prospects of a change in the rule for minimum wage increase would limit a more substantial growth in these expenditures in 2020.
- Discretionary expenditures will continue to decline in real terms, in view of the need to fulfill the cap on spending. This group of expenditures is less dependent on the approval of laws and, therefore, more susceptible to short-term fiscal adjustments.

Real growth in primary expenditures (% p.a.)



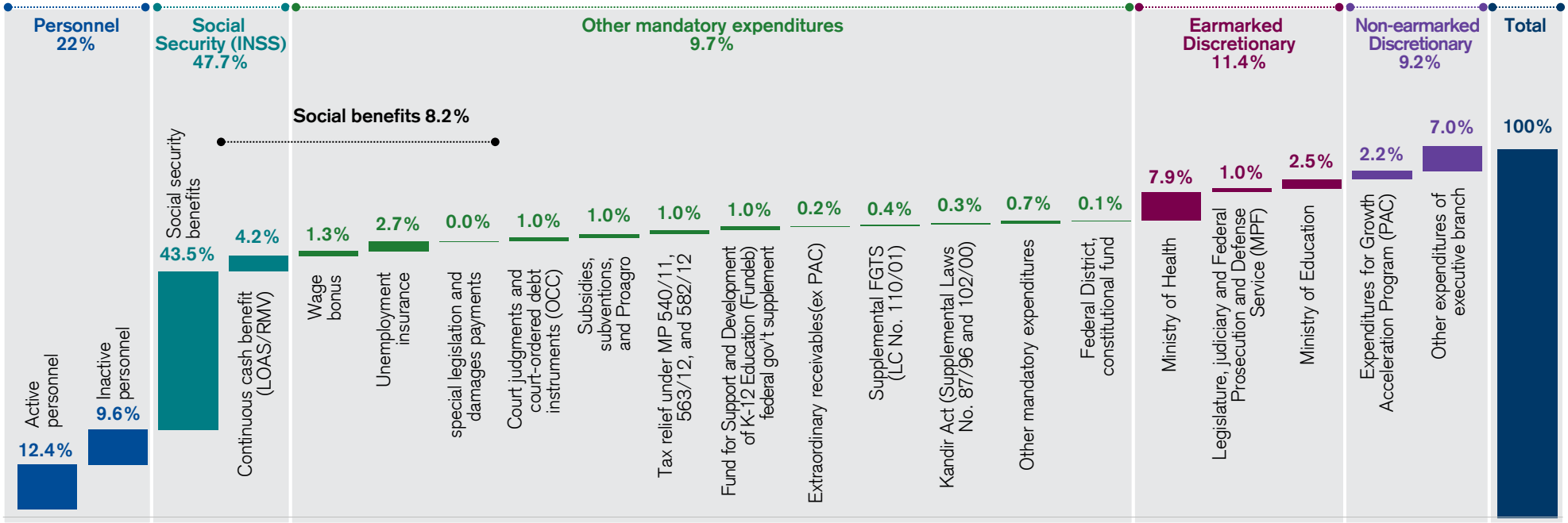
[1] Excluding the expenditures not considered in the calculation of the spending cap, growth in primary expenditures would be negative in real terms.

Source: Brazilian Treasury, Credit Suisse

Rigidity of primary expenditures is very high

- The new administration will need to implement a fiscal adjustment that combines an increase in revenues either by raising taxes or reducing subsidies, and a reduction in primary expenditures.
- However, the primary expenditures of the central government are very rigid, and approximately 48% of them are social security expenditures. Personnel expenditures represent 22% of the total. Other mandatory expenditures (i.e., court judgments and requisitions to treasury for payment of judgments) and related discretionary expenditures are equivalent to 21% of the total. Finally, just 9.2% of primary expenditures are eligible for cuts.

Breakdown of primary expenditures (% of total, rolling 12 months through September 2018)

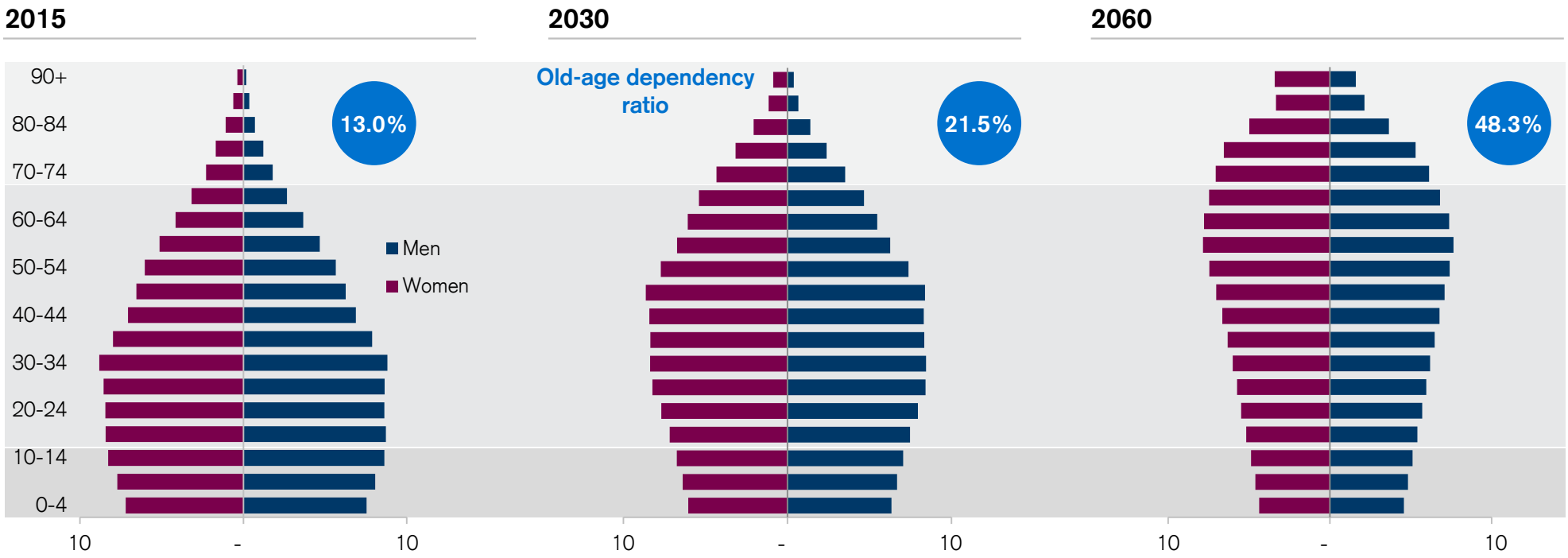


Source: Brazilian Treasury, Credit Suisse

Aging population a challenge for economy

- Brazil's old-age dependency ratio (ratio of individuals aged 65 or above to the population aged 20 to 64 years) is set to increase from 13.0% in 2015 to 21.5% in 2030 and 48.3% in 2060, with an average increase of 0.8% per year. Compared to OECD countries, it will be the fastest aging of a population seen to date.
- The transition poses a challenge to the sustainability of growth and fiscal accounts, especially those related to the social security system.

Demographic distribution of population (millions of persons, %)

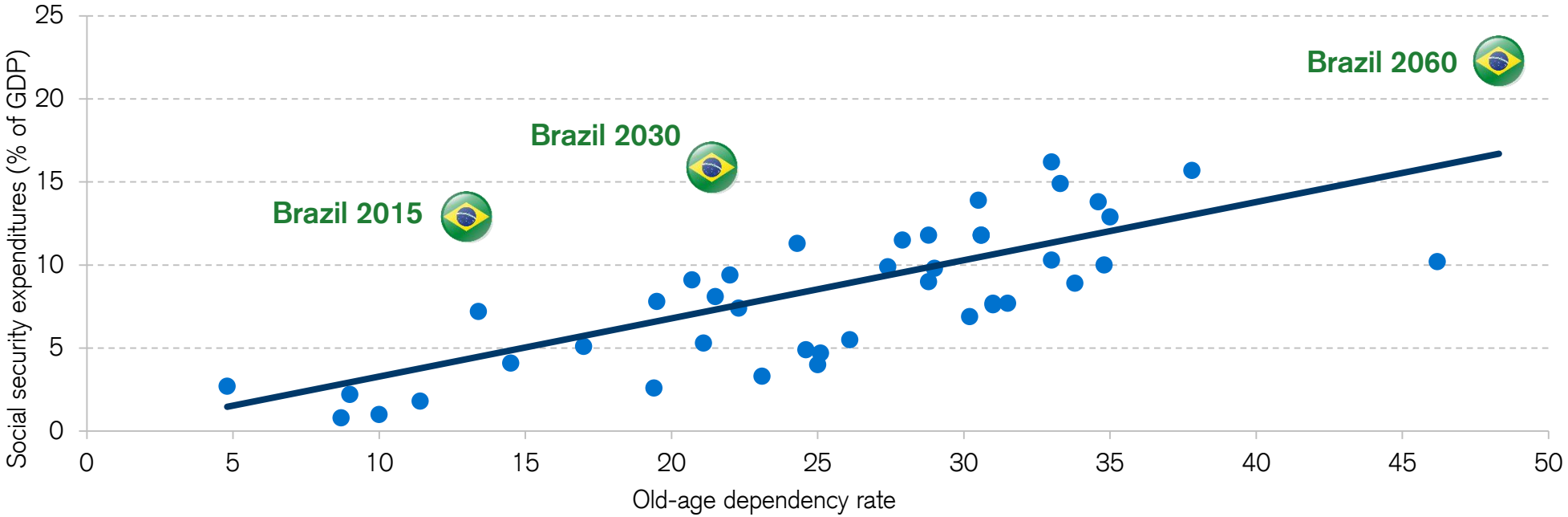


Source: Brazilian Statistics Bureau (IBGE), Credit Suisse

High pension expenditures due to demographics

- Social security spending accounted for 12.7% of GDP in 2015[1], 8.6pps higher than expected, given the relationship between expenditures and the dependency rate across a sample of countries. This is also the greatest deviation from the trend line among all the countries considered in the sample[2].
- In view of the aging population and the current retirement rules, Brazil's expenditures should reach unprecedented levels over the next few decades.

Pension expenditures and old-age dependency rate



[1]In the above analysis, the amount of social security expenditures for the RPPS in Brazil were considered constant and equal to 3.6% of GDP; [2]The sample is composed of the following countries: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States, Argentina, China, India, Indonesia, Russia, Saudi Arabia, and South Africa

Source: OECD, Brazilian Statistics Bureau (IBGE), Credit Suisse

Current retirement rules are benevolent

Retirements	Type	Minimum age	Time of contribution
Age	Urban	65 (men); 60 (women)	Minimum contribution of 180 months worked.
	Farm	60 (men); 55 (women)	Minimum contribution of 180 months worked. Proof of farming activity for at least 180 months, even if discontinuous.
Disability	Permanently disabled worker unable to exercise any labor or to be requalified for another profession, according to INSS medical expert. Benefit is paid as long as the disability persists; expert examination performed every two years[1].		
Time of contribution	Full	None	Men: 35 years of contribution and 180 months effectively worked; Women: 30 years of contribution and 180 months effectively worked.
	Proportional	53 (men); 48 (women)	Men: 30 years of contribution and 180 months effectively worked; Women: 25 years of contribution and 180 months effectively worked.
	Progressive, 85/95	None	Men: sum of age and time of contribution = 95 and 180 months effectively worked; Women: sum of age and time of contribution = 85 and 180 months effectively worked.
Survivor's pension	Death of insured or, in the event of disappearance, court-declared presumption of death. Deceased must have been insured in INSS system on date of death. Duration of benefit may vary according to number of contributions of deceased, in addition to other factors.		
Allowances / other benefits			
Illness	Illness that renders the person temporarily incapable of working. Waiting period of 12 contributions (exempt in the event of an on-the-job accident or illnesses set forth by law). For employees at a company: leave from work for at least 15 days (calendar days or intermittently over 60 days).		
Accident	Existence of permanent side effects that reduce insured's ability to work. This entitlement is analyzed by INSS medical expert at the time of the expert evaluation. The benefit is paid as a kind of reimbursement due to the accident and therefore does not prevent the person from continuing to work. There is no minimum time of contribution, since it is only for on-the-job accidents.		
Imprisonment	Beneficiary must have been an insured on the date of imprisonment.		
Maternity pay	Men: Benefit also paid to fathers who carry out the role of mothers, both in cases of adoption by men and in the case of men who become widowers during a child's birth. Women: 10 months of work for individual contributors, optional contributors, and special insured workers.		
Welfare benefits (LOAS/RMV)			
Elderly	Minimum age of 65 years. Monthly household income (per capita) less than one-fourth of the minimum wage. Must not be enrolled in any social security system. Must not receive benefits of any kind, other than medical assistance. Must prove that they do not have the means to support themselves and that they are not being supported by their family.		
Disabled	Monthly household income (per capita) less than one-fourth of the minimum wage. Must not be enrolled in any social security system. Must not receive benefits of any kind, other than medical assistance. Must prove that they do not have the means to support themselves and that they are not being supported by their family.		

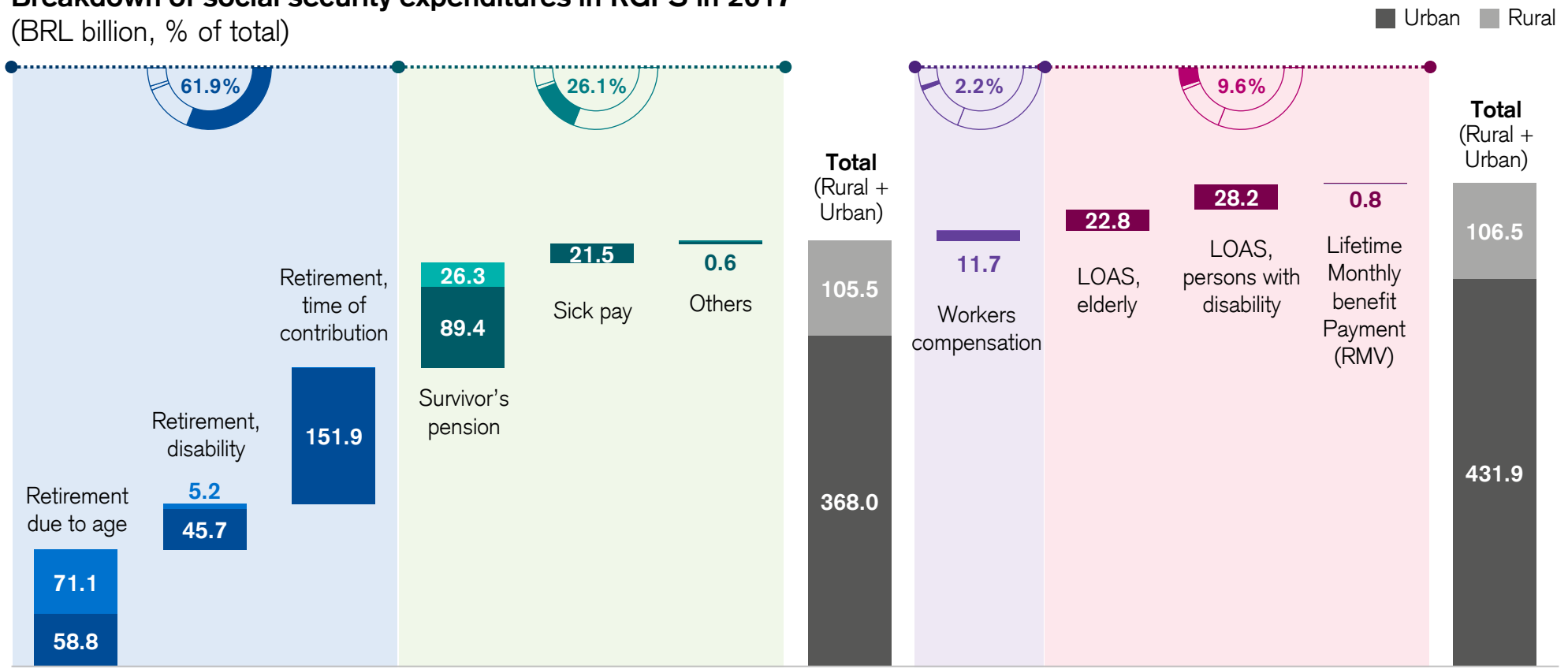
[1] Except for those aged 60 years or more.

Source: Secretariat of Social Security, Credit Suisse

Greater weight of retirement and survivor's pensions

- Survivor's pensions and retirement benefits represent 83.4% of total expenditures in the social security system. A reduction in the growth of social security expenditures requires changes to the criteria for eligibility and calculation of the amount of both social security benefits.

Breakdown of social security expenditures in RGPS in 2017
(BRL billion, % of total)



Source: Secretariat of Social Security, Credit Suisse

Retirement by time of contribution is the most expensive

- Retirement by time of contribution yields the highest average benefit, of BRL1,931 per month, and accounts for 28% of social security expenditures, despite representing only 17% of benefits. On the other hand, social assistance benefits (LOAS) are the lowest payments, averaging BRL851 per month, and account for 10% of expenditures and 14% of benefits.

Breakdown of social security expenditures in 2017 ('000, BRL)

	Number of benefits ('000)			Average value of benefits (BRL)			Persons (%)	Expenditures (%)
	Non-farm	Farm	Total	Non-farm	Farm	Total		
Total	**24,573**	**29,462**	**34,097**	**1,315**	**837**	**1,181**	**100**	**100**
Social security benefits (private-sector employees)	**20,001**	**28,639**	**29,462**	**1,420**	**837**	**1,232**	**86**	**90**
Social security	**19,210**	**19,454**	**28,639**	**1,433**	**837**	**1,237**	**84**	**88**
Retirements	12,607	10,293	19,454	1,521	837	1,281	57	62
Age	3,929	6,363	10,293	1,120	836	944	30	24
Disability	2,802	461	3,263	1,219	842	1,166	10	9
Time of contribution	5,876	22	5,898	1,934	1,054	1,931	17	28
Survivor's pension	5,261	2,360	7,621	1,271	833	1,136	22	21
Allowances / other benefits	1,285	215	1,500	1,250	864	1,195	4	4
Maternity pay	56	8	64	838	758	829	0	0
Others	0	0	0	695	0	695	0	0
Workers compensation	**791**	**32**	**823**	**1,102**	**750**	**1,089**	**2**	**2**
Disability	196	13	209	1,476	831	1,435	1	1
Survivor's pensions	109	4	113	1,256	848	1,242	0	0
Sick pay	126	7	133	1,443	879	1,414	0	0
Allowance in case of accidents	316	8	324	809	459	800	1	1
Additional allowance	45	0	45	215	0	215	0	0
Welfare benefits	**4,552**	**62**	**4,614**	**851**	**851**	**851**	**14**	**10**
Welfare benefits (LOAS)	4,483	0	4,483	851	-	851	13	9
Elderly	1,998	0	1,998	852	-	852	6	4
Disabled	2,485	0	2,485	850	-	850	7	5
Monthly lifetime income	69	62	131	850	851	851	0	0
Age	9	10	19	853	853	853	0	0
Disability	59	51	112	850	851	850	0	0
Social security charges of the federal government (EPU)	**21**	**0**	**21**	**1,704**	**15**	**1,704**	**0**	**0**

Source: Secretariat of Social Security, Credit Suisse

Temer's pension reform proposal was tough on public sector

Comparison of current and proposed retirement rules for public servers

	Current rules	Government's original proposal	Substitute text submitted to Special Committee
Minimum age	Men: age 60	Men: age 65	Men: age 60 to 65 (as of 2028)
	Women: age 55	Women: age 65	Women: age 55 to 62 (as of 2032)
Time of contribution	35 years for men and 30 years for women	25 years for men and women	25 years for men and women
Benefit calculation:	Joined public sector before 2003: full benefits (equal to last compensation in full-time position from which person retired). Adjustment of benefit with parity to compensation of active employees	51% of average salary for purposes of calculation of Social Security contribution, plus 1pps of this average for each year of contribution	Joined public sector before 2003: 100% of average salary since 1994 or since start of contribution.
	Joined public sector between 2003 and 2013: average of highest compensations (80% of contributions since 1994), with adjustments equal to those in effect for private-sector regime (RGPS).		Joined public sector between 2003 and 2013: 70% of the average of all salaries since 1994 plus 1.5pps for each year above 25 years of contribution, plus another 2pps for each year above 30 years of contribution and another 2.5pps for each year after 35 years, until reaching 100% at 40 years of contribution.
	Joined public sector as of 2013: average of highest compensations (80% of contributions since 1994), with adjustments equal to those in effect for private-sector regime (RGPS). Benefit subject to cap in effect in private-sector regime (RGPS).		Joined public sector as of 2013: same rule as for those who joined public service between 2004 and 2013. The amount will be limited to the maximum social security benefit (of BRL 5,531/month), if the state or municipality has created a supplemental pension fund.
Transition rule		Men aged 50 and above and women aged 45 and above would still retire according to the current rules, but with an addition period of 50% of the time remaining until the minimum time of contribution (35 years for men and 30 years for women). For those who joined between 2003 and 2013, the benefit would correspond to 100% of the average salary since 1994 or since the start of contribution.	Increase by 30% of the time remaining for retirement under current rules, subject to a minimum age of 55 for men and 60 for women, for any employee who joined the public sector before approval of the reform. Increase of one year for every two years, for both women and men, as of 2020, until the 30% increase in time remaining for retirement starts to be counted. In the case of employees who joined the public sector before 2003, full salary and parity would be assured only for those who retire once they are at least aged 65 (men) or 62 years (women).
States and municipalities	Employees of states and municipalities would be subject to the retirement rules of the corresponding social security system for their respective jurisdictions.	Employees of states and municipalities would be subject to the same rules as federal government employees.	States and municipalities will have six months from the date of publication of the constitutional amendment to change their own social security systems. After this period, the rules of PEC 287/2016 will prevail.

Source: Federal Constitution, PEC 287/2016, Credit Suisse

Parts of reform can be implemented by ordinary law

- President Temer submitted three versions of pension reform to Congress. Parts of them could be proposed in bills of ordinary law, which do not require a constitutional majority.

	Government's original proposal	Substitute text submitted to Special Committee	Change
General principle of reform	Unification of different retirement systems (by age, time of contribution, and Social Security Regimes for Public-Sector Employees (RPPS)) in a single retirement by age, with more restrictive requirements and little difference between the different population cohorts.	Unification of different long-term retirement regimes, moving to a less strict transition rule. The new retirement by age would have less restrictive requirements but would preserve differences between them for population cohorts.	
Requirements for retirement by age	Minimum age: 65 years for all[1]	Minimum age: 65 years for men (non-farm) and 62 years for women (non-farm), 60 years for men (farm) and 55 years for women (farm)	According to the constitution
	Minimum time of contribution: 25 years	Minimum time of contribution: 15 years	According to the constitution
Transition rule	Men 50 years of age and above and women 45 years of age and above would still retire under the current rules, but with an additional period of 50% of the time remaining until the minimum time of contribution.	There is no minimum age for the transition rule.	According to the constitution
		Increase by 30% of the time remaining for retirement under current rules, subject to a minimum age of 55 years for men and 53 years for women.	
		Increase of one year for every two years (for women and men) as of January 1, 2020, until the date the beneficiary fulfills the 30% increase in time remaining for retirement.	
Formula for calculation of benefit amount	Substitution of social security factor with defined benefit for 51% of average remuneration and salary on which social security contribution was levied, accrued with 1pps per year of contribution, subject to the lower limit of one monthly minimum wage and to upper limit of 100% of the above-cited average.	Benefit amount: 60% of average salary, added to:	By law
		+ 1.0pps per year, if the beneficiary contributes 10 years in addition to the mandatory 15 years.	
		+ 1.5pps per year, if the beneficiary contributes from 10 to 15 years in addition to the mandatory 15 years.	
		+ 2.0pps per year, if the beneficiary contributes from 15 to 20 years in addition to the mandatory 15 years.	
		+ 2.5pps per year, if the beneficiary contributes from 20 to 25 years in addition to the mandatory 15 years.	
		Thus, the salary average is paid in full with 40 years of contribution.	
Survivor's pension	Prohibits the cumulative receipt of survivor's and retirement pension or two pensions of this type.	Prohibits the cumulative receipt of two survivor's pensions but allows individuals to receive pension and retirement if the two benefits, in the aggregate, do not exceed two times the minimum wage.	By law
	Pension calculated as 50% of the benefit plus 10pps per dependent. Pensions would no longer be linked to the minimum wage.	Pension amount calculated as 50% of the benefit plus 10pps per dependent. The maximum benefit amount is subject to the maximum benefit allowed under the RGPS and the minimum benefit is linked to the minimum wage.	By law
Continuous Cash Benefit Program (BCP)	People with disabilities may receive BPC payments at any age. Minimum age to be entitled to the benefit increased to 70 years in the case of the elderly.	People with disabilities may receive BPC payments at any age. The elderly will be entitled to the benefit at age 65. Other rules for BPC eligibility will be regulated by law.	According to the constitution
	The benefit amount would no longer be linked to the minimum wage.	Benefit is equal to one monthly minimum wage.	According to the constitution

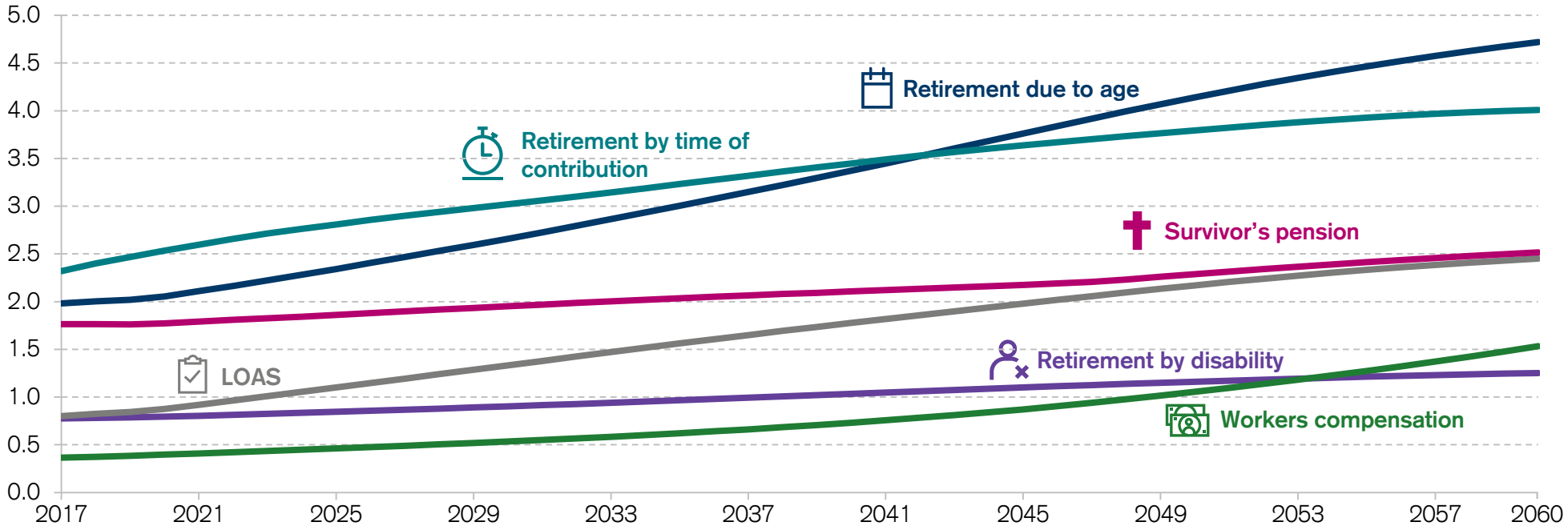
[1] The minimum age would be adjusted automatically based on the increase in survival expectancy at 65 years.

Source: Chamber of Deputies, PEC 287/2016, Federal Constitution, Law 8213/1991, Credit Suisse

Widespread increase in expenditures for benefits

- The rapid aging of the population will put even more pressure on the balance of the social security system. Benefits that are more directly affected by the aging of population (retirement due to age, time of contribution, and LOAS for the elderly) will increase the most.
- As a result, retirement benefits will amount to 10.0% of GDP by 2060, compared with 5.1% of GDP in 2017.

Path of social security expenditures, by benefit
(% of GDP)

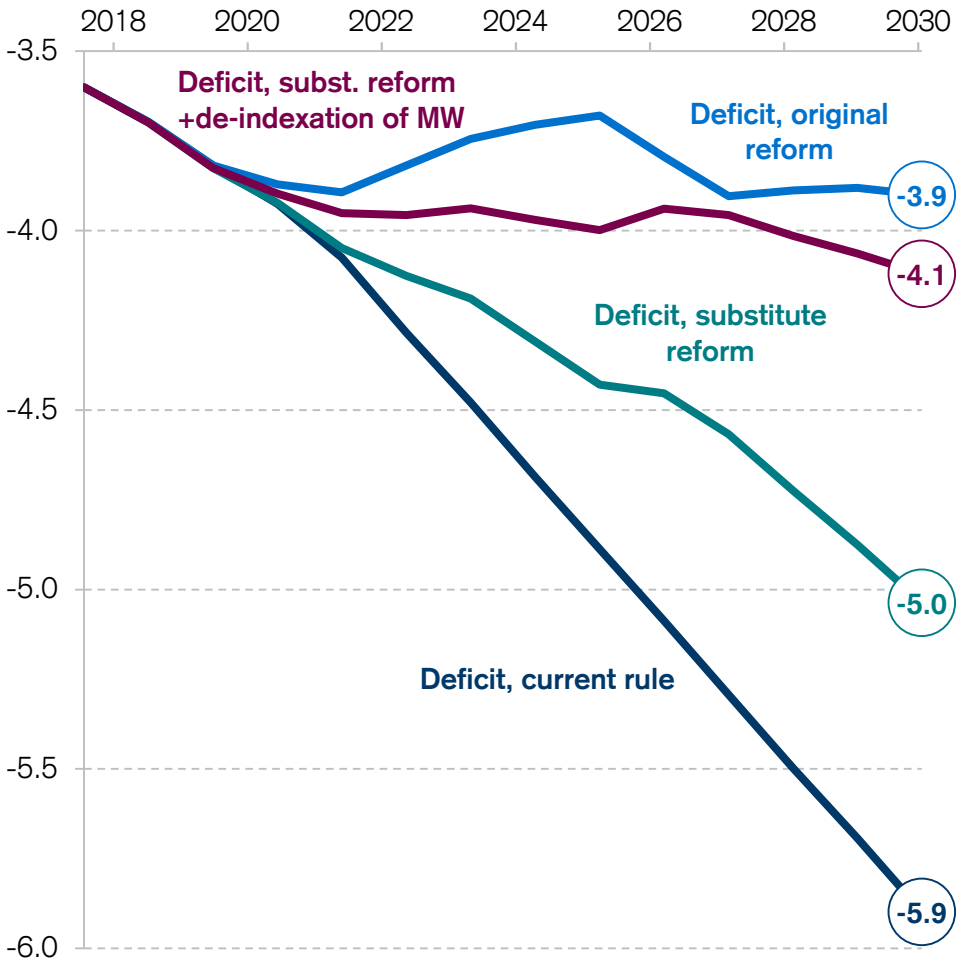


Source: Secretariat of Social Security, Credit Suisse

Even original bill would not reverse system deficit

- In the scenario without reform, the social security deficit would reach 5.9% of GDP by 2030. The first bill proposed by President Michel Temer would lead to a reduction in the deficit to 3.9% of GDP by 2030, which would represent total savings of BRL880bn (at 2017 prices) in the period.
- The substitute bill would be less effective. The deficit would reach 5.0% of GDP by 2030, and the savings would total BRL380bn, 43% of that of the original bill.
- In a scenario in which the substitute bill is followed by a change in legislation to adjust the minimum wage only for inflation in the coming years the results would be close to those of the original bill from 2020 to 2030. This is our base-case scenario for the medium term.

Simulations of social security deficit[1]
(% of GDP)



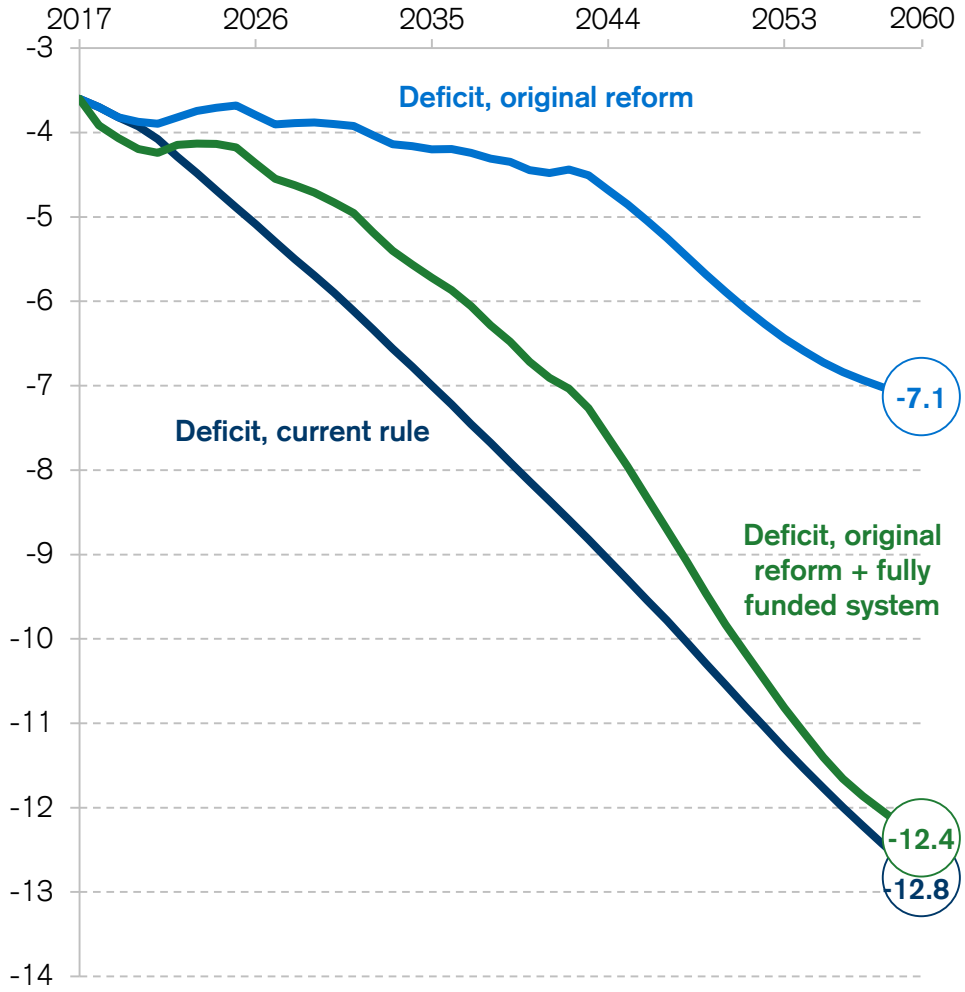
[1]Our simulations assume that the social security reform will be approved in 2019 and that the new rules will come into effect in 2020.

Source: Secretariat of Social Security, Credit Suisse

Fully funded system has high implementation cost

- In a scenario in which President Temer's first pension reform is passed with an amendment requiring people born after 2002 (who will join the labor market by 2020) to retire under a fully funded system, the deficit would increase by almost 5.0pps of GDP by 2060 compared with the simulation for Temer's original proposal.
- The difference is due to losses in social security contributions, since new retirees under the fully funded system would not have contributed to the pay-as-you-go system. Transition to a fully funded system will likely require a tax increase.
- This rise in the deficit in the simulation for the fully funded system occurs because, under the old system (pay-as-you-go), expenses do not decline at the same pace as revenues. Expenses will decline when the number of people leaving the system exceeds the number of people who are retiring.

Simulations of social security deficit
(% of GDP)

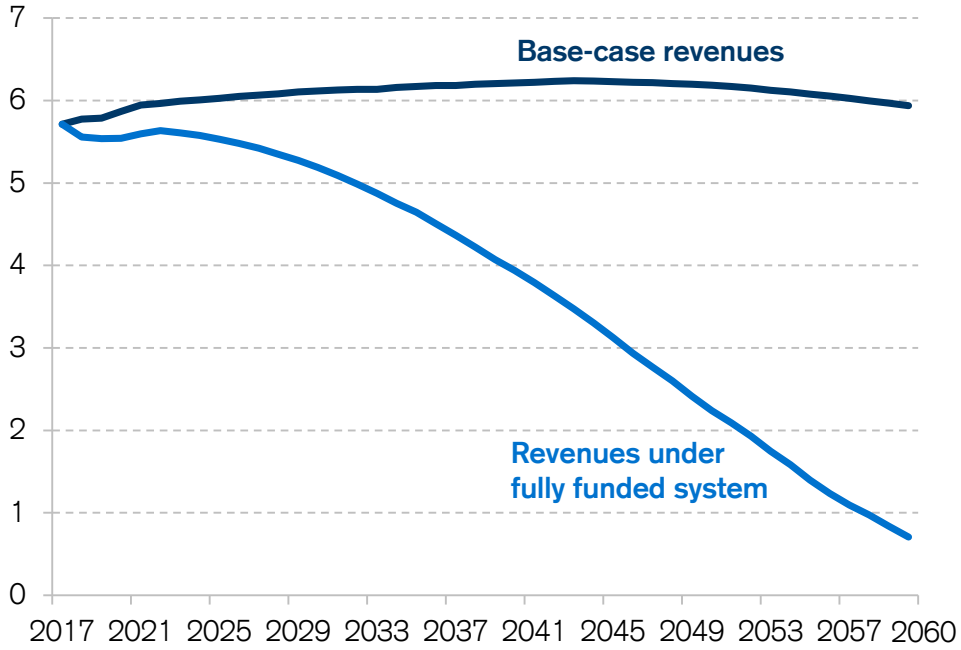


Source: Secretariat of Social Security, Credit Suisse

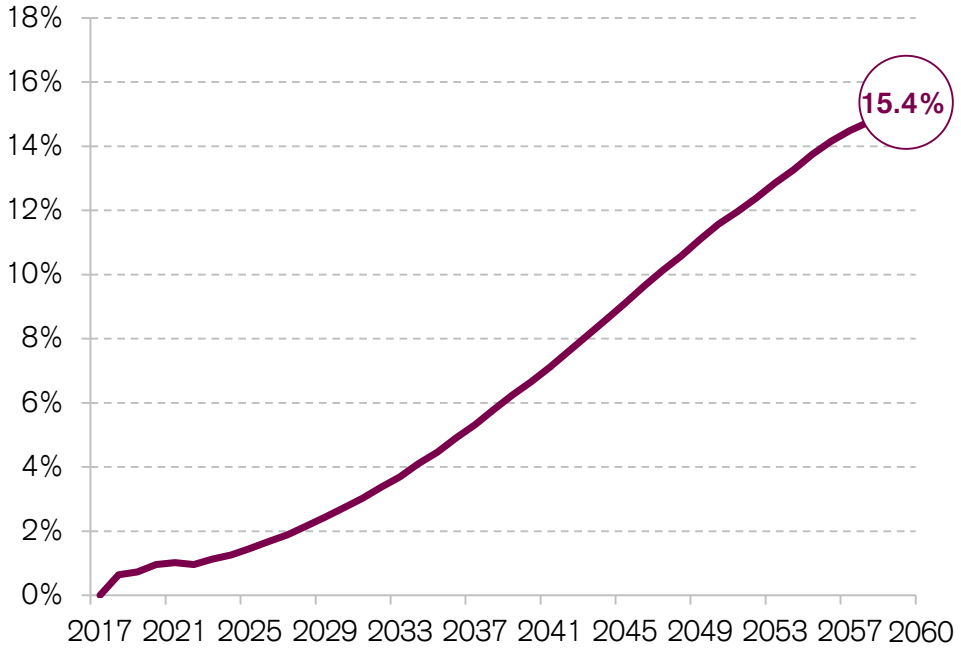
Fully funded system would require tax increase

- In the hypothetical scenario of new workers contributing only to a fully funded system, social security contributions to the previous system would decline sharply to a mere 0.7% of GDP in 2060.
- To keep the social security deficit on the same path as if the first reform bill submitted by President Temer were approved, the government would need to increase taxes. Considering a tax on wages, the rate would have to increase each year to offset the loss in revenues, reaching 15.4% of wages by 2060.

Social security revenues in pay-as-you-go system under different scenarios (% of GDP)



Rate of tax on wages necessary to keep deficit on path projected for first reform bill (% of wages)

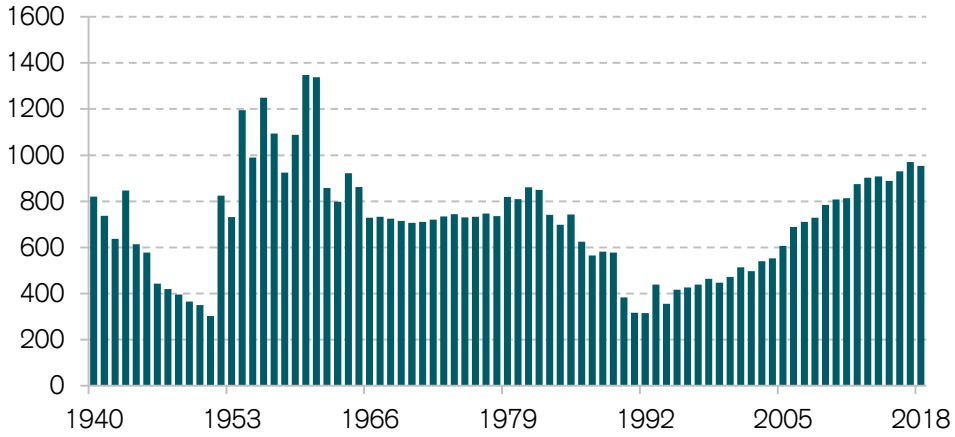


Source: Secretariat of Social Security, Credit Suisse

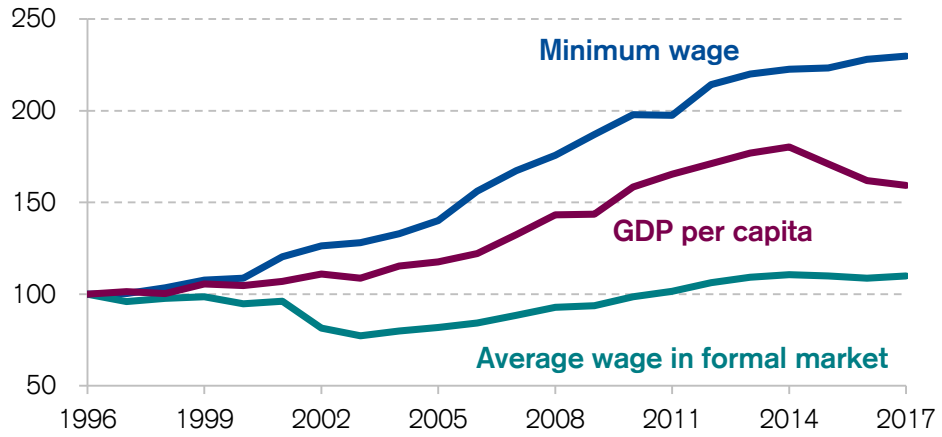
New rule for increase in minimum wage to be set

- The current rule for adjustment of the minimum wage, in effect since 2012[1], will be applied for the last time in 2019. The rule establishes that the adjustments are based on the rate of INPC inflation for the previous year added to the highest between GDP growth for two years prior and zero.
- With the end of the rule, the executive branch could send a provisional measure indicating a new adjustment methodology to the National Congress, where its conversion into ordinary law will be analyzed by both the Chamber of Deputies and the Senate and will require approval by a simple majority.
- The past few years saw a sharp real increase in the minimum wage, higher than growth rate of GDP per capita and the average real wage of the formal labor market.

Real minimum wage
(BRL, 2018 prices)



Dynamics in real terms of minimum wage, GDP per capita, and average wage in formal market (1996=100)



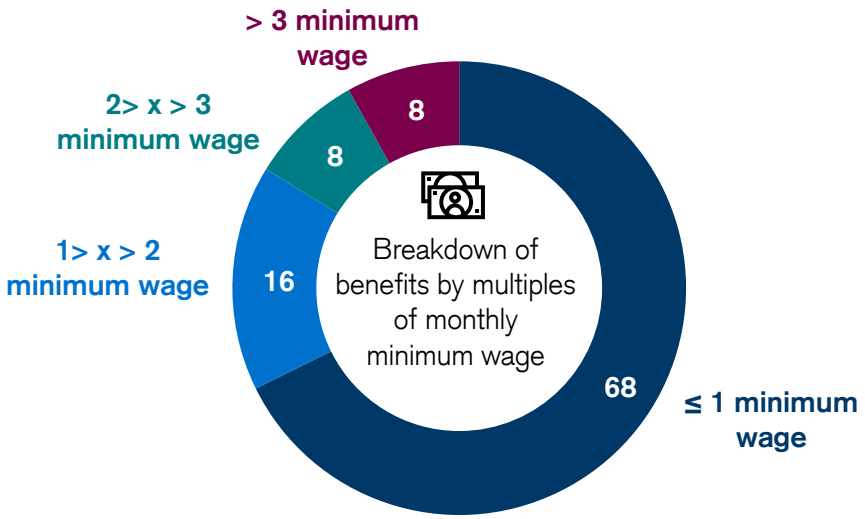
[1] Laws No. 12382/2011 and 13152/2015.

Source: Ministry of Labor, Credit Suisse

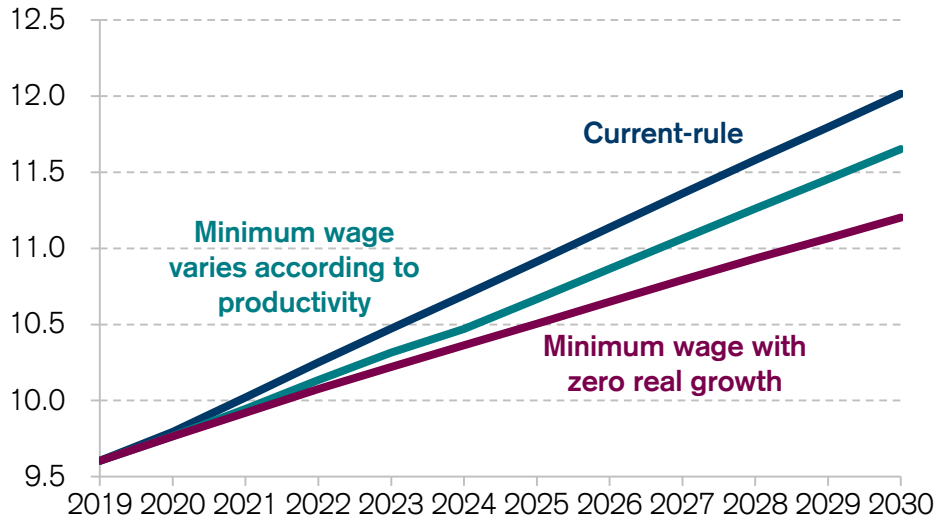
MW rule has strong impact on pension spending

- Changes in the minimum wage rule would have a significant impact on public expenditures, since almost 70% of social security benefits are linked to it.
- Our base-case scenario assumes that, under the new rule, the minimum wage will be adjusted only for inflation. This scenario is compatible with fiscal savings with social security expenditures of BRL375bn (at 2017 prices) from 2020 to 2030.
- In the alternative scenario, in which the minimum wage is adjusted for productivity, the impact would be approximately half of that in the period.

Breakdown of benefits by multiples of monthly minimum wage in 2017 (%)



Social security expenditures under different minimum wage rules (% of GDP)

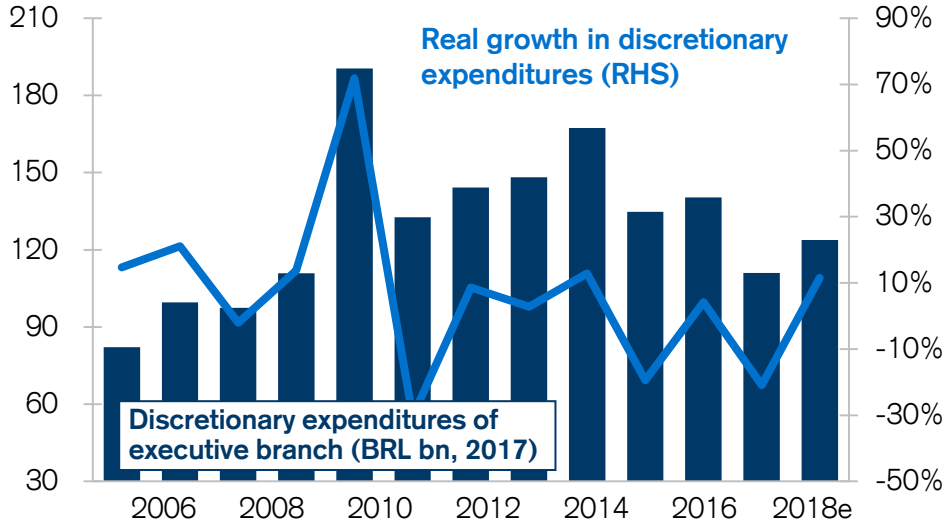


Source: Secretariat of Social Security, Credit Suisse

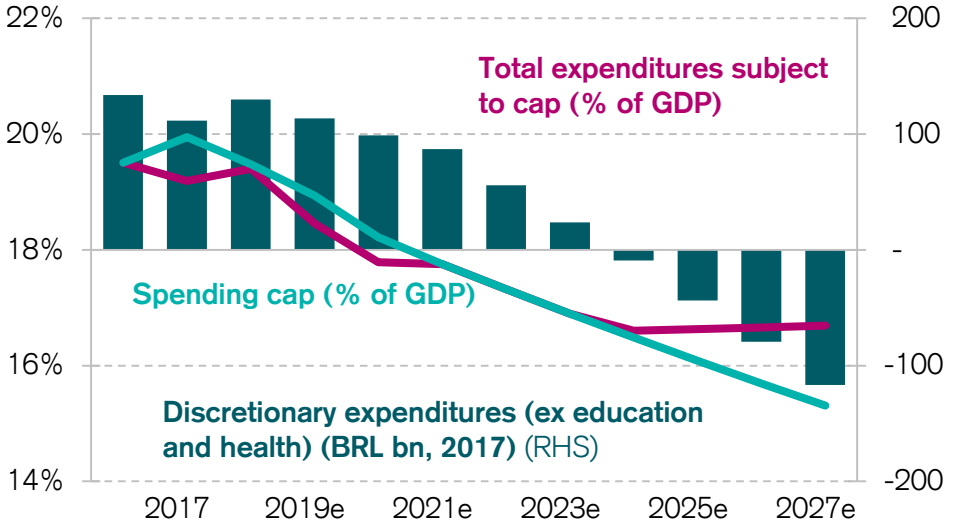
Discretionary expenditures not enough to meet EC 95

- Under the current system for social security expenditures and assuming that other expenditures remain constant in real terms, compliance with Constitutional Amendment (EC) 95/16 would not be possible by merely reducing discretionary expenditures (except for education and healthcare) as of 2024, when they will reach zero. Discretionary expenditures are currently at the same level as in 2011 in real terms, which suggests that additional cuts would be hard to implement.
- To meet the spending cap until 2027, the government will need to reduce mandatory expenditures by at least 1.5% of GDP in addition to discretionary expenditures.

Discretionary expenditures in real terms
(BRL billion, % year-on-year real terms)



Total discretionary expenditures after cut needed to meet EC 95 (%)

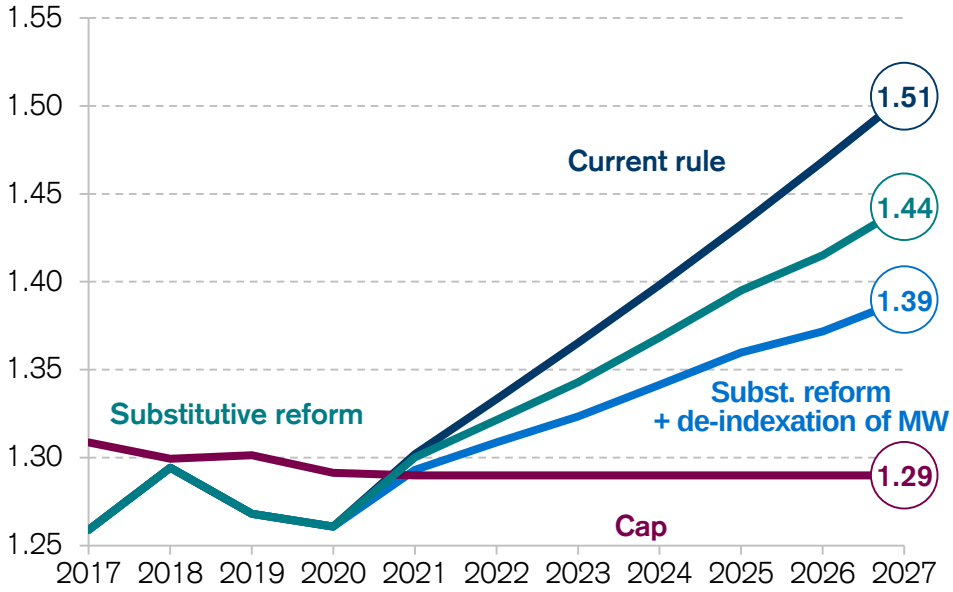


Source: Brazilian Treasury, Credit Suisse

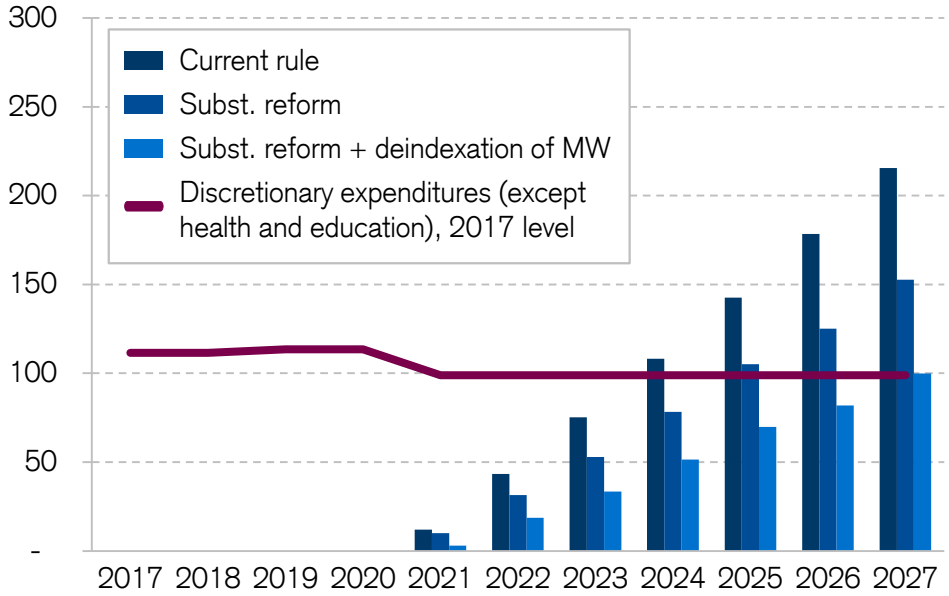
Proposed pension reform not enough to meet EC95

- The approval of a pension reform would not cause enough impact in its early years to delay the breach of the EC 95/16 cap. Unless other measures are taken, the cap will be breached by 2021.[1]
- Assuming the approval of the substitutive bill and correction of the minimum wage only by inflation as of 2020, meeting the spending caps under EC 95 until 2027 would require additional cuts in discretionary expenditures in 2017.

Simulations of primary expenditures under different social security reforms (BRL trillion, 2017 prices)



Necessary cut in expenditures to meet EC95 in each social security scenario (BRL billion, 2017 prices)



[1] Our simulations are based on our fiscal projections for 2018 to 2020 and, as of 2021, assume growth in social security and LOAS expenditures according to the respective social security reforms and that other expenditures remain constant in real terms.

Source: Brazilian Treasury, Credit Suisse

Tax relief programs to account for 4.1% of GDP in 2019

- The next administration will need to implement a strong fiscal consolidation process in the coming years. Although a significant part of the adjustment will likely be implemented through a reduction in primary expenditures (e.g., pension expenditures), there is still room for implementation of measures on the revenue side.
- The loss of tax revenues due to exemptions or reduced tax rates is widespread. Reversal of tax incentives, even if partial, is fundamental for the fiscal adjustment process.
- Tax relief programs will likely account for BRL306bn in 2019, or 4.1% of GDP.
- Studies on certain tax relief programs are necessary to quantify their possible benefits, in terms of either their direct benefits to the society or an increase in productivity or in the economy's efficiency.

Tax relief projected for 2019 (BRL million, %)

		Total	%
1	**"Simples Nacional"[1]**	87,253	28.4
2	**Exempt and non-taxable earnings (individual income tax)**	32,134	10.5
	Retired declarants aged 65 or over	8,671	2.8
	Retirement due to serious illness or accident	13,895	4.5
	Indemnity for employment severance	8,469	2.8
	Other	959	0.3
3	**Free Trade Zone of Manaus and free trade areas**	24,727	8.1
4	**Nonprofit organizations**	24,258	7.9
5	**Agriculture and agribusiness**	30,233	9.8
6	**Deductions from taxable earnings (individual income tax)**	20,098	6.6
	Medical expenses	15,502	5.1
	Education expenses	4,596	1.5
7	**Payroll tax breaks**	9,562	3.1
8	**Benefits for workers**	12,538	4.1
	Medical, dental, and pharmacy benefits for employees	5,645	1.8
	Public transportation and taxi	2,413	0.8
9	**Medication, pharmaceuticals, and medical equipment**	9,378	3.1
10	**Other**	56,216	18.3
	Total	**306,397**	**100**

[1] Consolidated Optional Single-Rate Tax Regime (Simples Nacional) for micro and small enterprises (SME).
Source: Ministry of Planning, Budgeting, and Management; Ministry of Finance; Credit Suisse

Only certain taxes not subject to one-year waiting period

- Most taxes are legally subject to either a 90-day or a 1-year waiting period, which means that changes to tax laws come into effect only after 90 days or 1 year, respectively.
- The only taxes not subject to any waiting period are the Importation Tax (II) and Exportation Tax (IE), the Tax on Financial Transactions (IOF), the War Tax, the Income Tax (IR), and the taxable bases of the State Motor Vehicle Ownership Tax (IPVA) and the Municipal Property Tax (IPTU).

Taxes subject to 90-day or 1-year waiting period

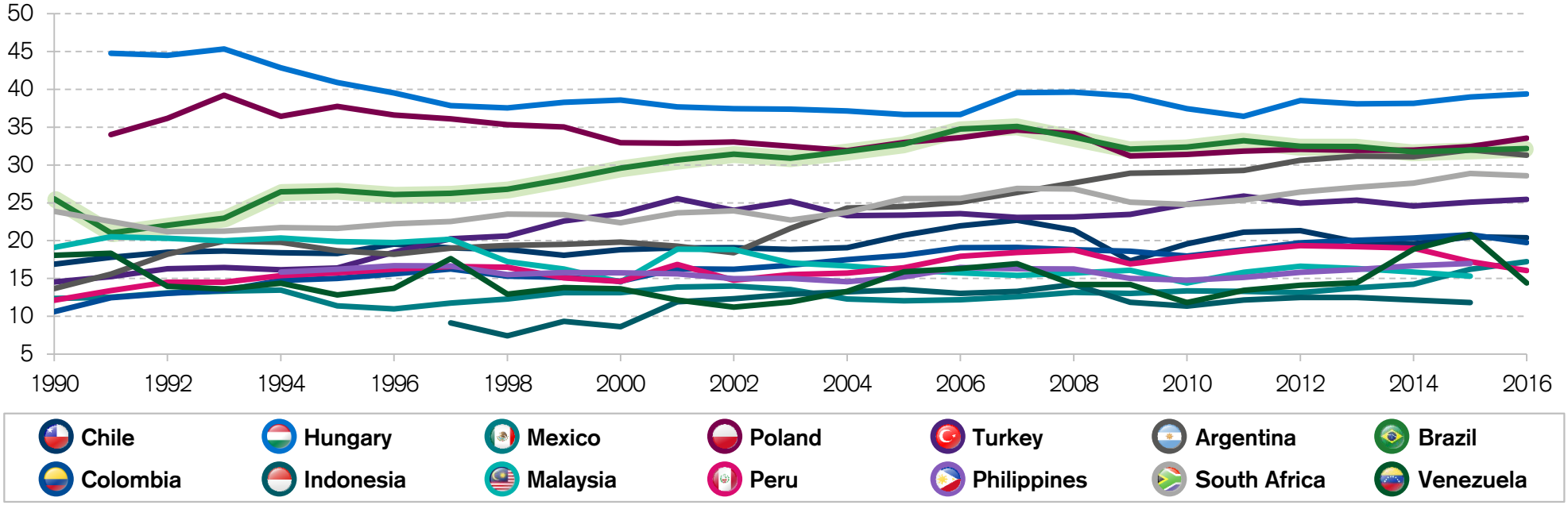
	1-year waiting period	90-day waiting period
Imports	✗	✗
Exports	✗	✗
Tax on Industrialized Products (IPI)	✗	✓
Tax on Financial Transactions (IOF)	✗	✗
War Tax	✗	✗
Compulsory loan (public calamity and war)	✗	✓
Cide fuels tax	✗	✓
State Tax on the Circulation of Goods and the Provision of Services (ICMS), fuels	✗	✓
Social Contribution to Healthcare (CSS)	✗	✓
Income Tax (IR)	✗	✗
Taxable base of the State Motor Vehicle Ownership Tax (IPVA)	✗	✗
Taxable base of the Municipal Property Tax (IPTU)	✗	✗

Source: Brazilian Revenue Service, Credit Suisse

Tax burden in Brazil is high for an emerging country

- According to the database on tax revenues of the Organization for Economic Co-operation and Development (OECD), the tax burden in Brazil was the third highest among emerging economies in 2016.
- Despite the recent stability, Brazil's tax burden was 32% of GDP in 2016, much higher than the average of 24.6% of GDP among the emerging economies analyzed.
- Despite the increase, the tax burden has not been sufficient to offset the substantial expansion in public spending in recent years.

Taxes as a percentage of GDP in emerging markets(%)

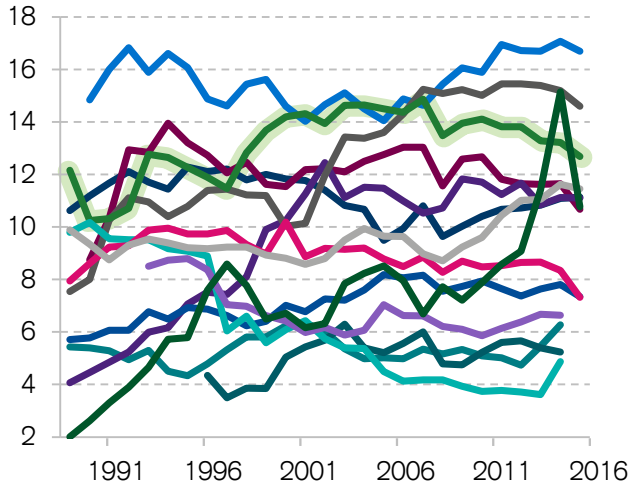


Source: OECD, Credit Suisse

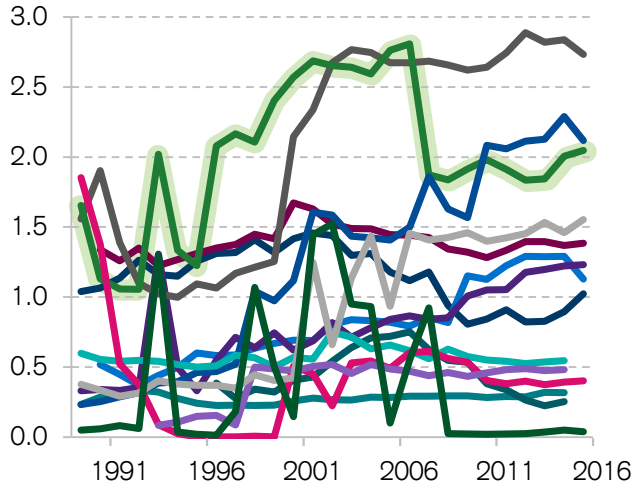
Taxes in goods and services are high in Brazil

- Taxes on goods and services totaled 12.7% of GDP, the third highest level among emerging economies. The high taxes on goods and services make Brazil's tax system highly regressive, given the greater impact on lower-income segments of the population.
- The tax burden as a proportion of GDP in other sectors is also quite high. The social security contribution is the third-highest among emerging economies, as is property taxes.

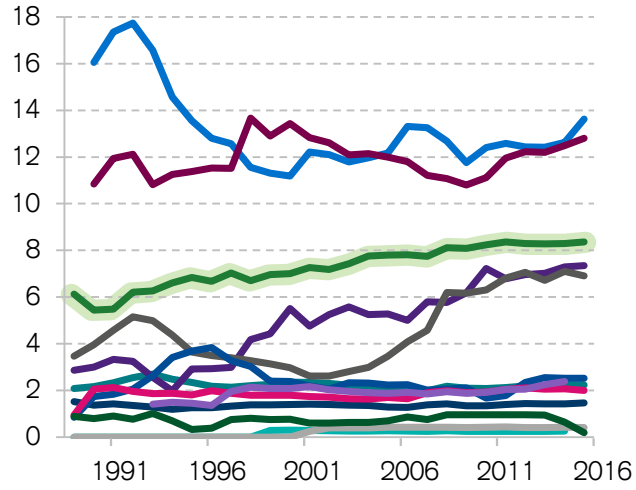
Taxes on goods and services
(% of GDP)



Property taxes
(% of GDP)



Social security contribution
(% of GDP)



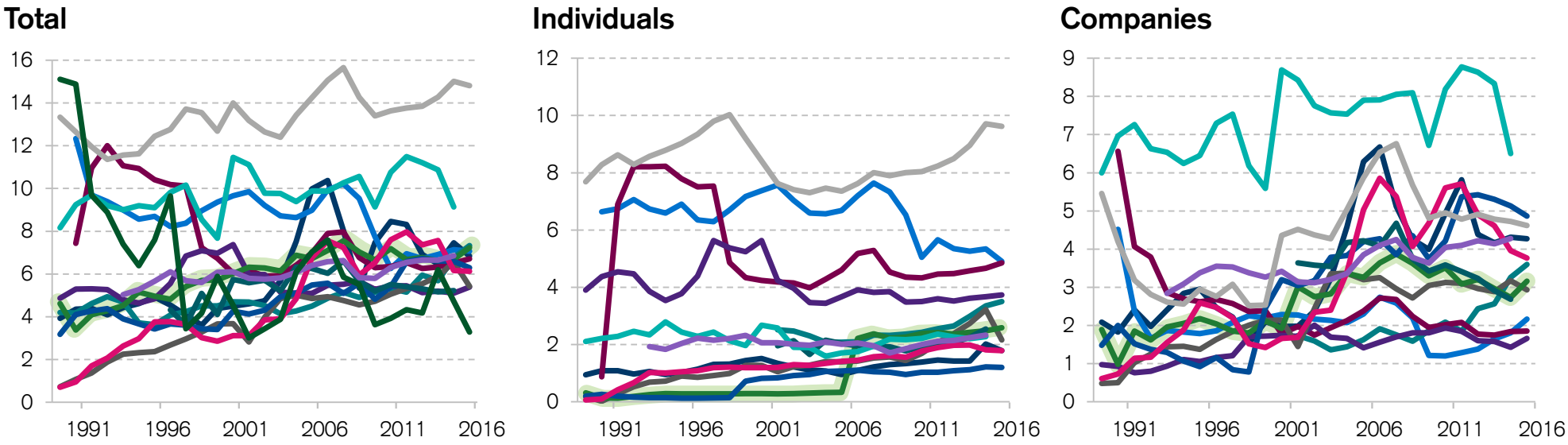
Chile, Hungary, Mexico, Poland, Turkey, Argentina, Brazil
Colombia, Indonesia, Malaysia, Peru, Philippines, South Africa, Venezuela

Source: OECD, Credit Suisse

Tax on income and profits equal to that of emerging markets

- Taxes on income, profits, and capital gains in Brazil reached 7.2% of GDP in 2016, a level similar to the average of 6.9% of GDP for this same type of tax in emerging economies.
- Taxes in income, profits, and capital gains of individuals as a percentage of GDP are lower in Brazil than in the average emerging market, whereas these same taxes charged to companies in Brazil are close to the average for emerging economies.

Taxes on income, profits, and capital gains in emerging markets(% of GDP)

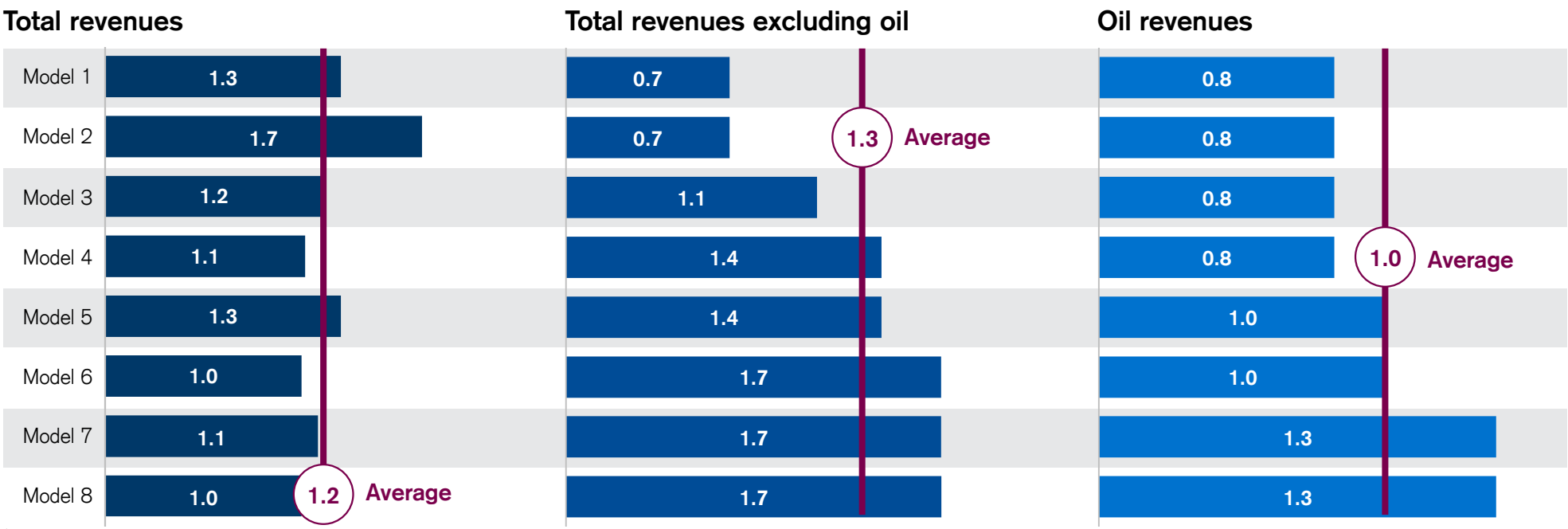


Source: OECD, Credit Suisse

Elasticity of fiscal revenues to output gap at close to 1.2

- We estimated eight versions of a Kalman filter model to measure the elasticity of the revenues of the central government in real terms to the output gap. The explanatory variables considered in the models were output gap, the one-period lag of the output gap, the real exchange rate, and the gap between international and domestic oil prices.
- The estimated elasticities for total revenues ranged from 1.04 to 1.69, with an average elasticity of 1.20. This means that growth in total real revenues increases by 1.2% for each 1% increase in the output gap measure.

Elasticities of fiscal revenues to output gap and oil price gap



[1] For more details, please see "Nota metodológica Resultado Fiscal Estrutural" published by the Secretariat of Economic Policy in April 2018.

Source: National Treasury, Brazilian Revenue Service, Credit Suisse

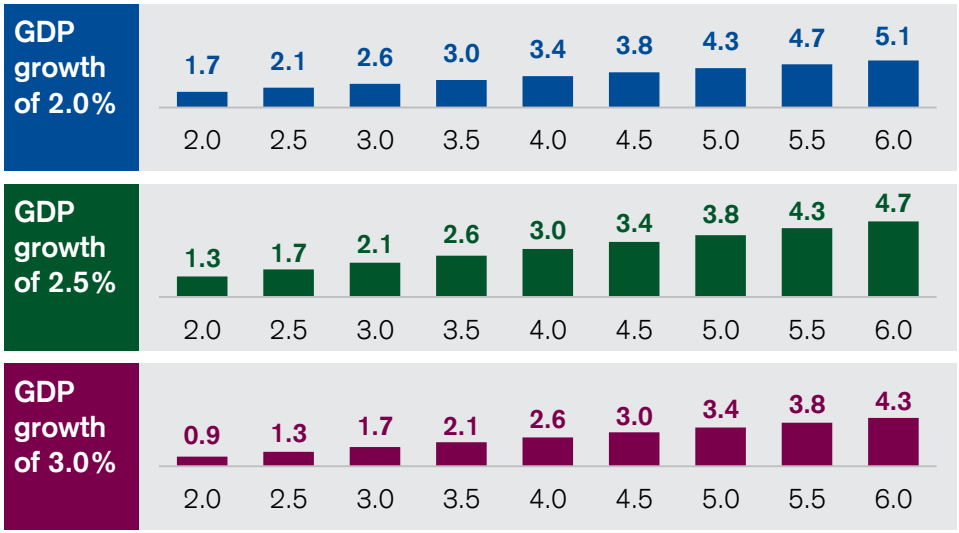
Need for substantial fiscal adjustment in coming years

- After several years of deterioration in public accounts, Brazil will need to implement a significant fiscal adjustment over the next few years. Even based on favorable assumptions for GDP growth and interest rates, the fiscal adjustment needs to be substantial. For example, the primary balance would have to rise from its current level by:
  - 4.3pps (from -1.7% to 2.6%): scenario with GDP growth of 2.0% and a real interest rate of 5.0%
  - 3.4pps (from -1.7% to 1.7%): scenario with GDP growth of 2.5% and a real interest rate of 4.5%
  - 2.6pps (from -1.7% to 0.9%): scenario with GDP growth of 3.0% and a real interest rate of 4.0%

Primary balance needed to stabilize gross debt at 85%
(% of GDP)

GDP growth \ Real interest rate	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
1.0	0.9	1.3	1.7	2.1	2.6	3.0	3.4	3.8	4.3
1.5	0.4	0.9	1.3	1.7	2.1	2.6	3.0	3.4	3.8
2.0	0.0	0.4	0.9	1.3	**1.7**	**2.1**	**2.6**	3.0	3.4
2.5	-0.4	0.0	0.4	0.9	**1.3**	**1.7**	**2.1**	2.6	3.0
3.0	-0.9	-0.4	0.0	0.4	**0.9**	**1.3**	**1.7**	2.1	2.6
3.5	-1.3	-0.9	-0.4	0.0	0.4	0.9	1.3	1.7	2.1
4.0	-1.7	-1.3	-0.9	-0.4	0.0	0.4	0.9	1.3	1.7
4.5	-2.1	-1.7	-1.3	-0.9	-0.4	0.0	0.4	0.9	1.3
5.0	-2.6	-2.1	-1.7	-1.3	-0.9	-0.4	0.0	0.4	0.9

Size of fiscal adjustment needed to stabilize gross debt
(% of GDP)



Source: National Treasury, Credit Suisse

It will take time for debt-to-GDP ratio to stabilize

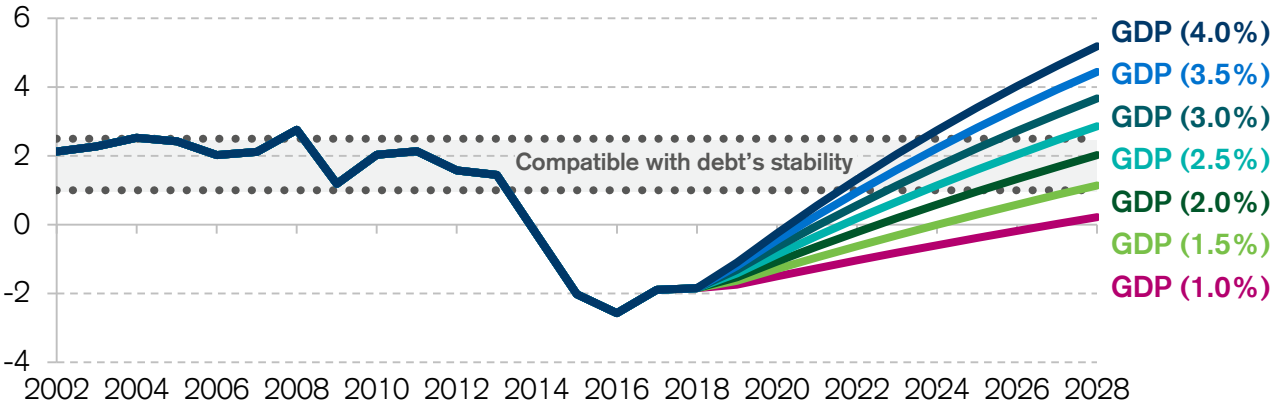
- Stabilization of the gross debt at 85% of GDP requires the primary balance to converge to a primary surplus of 1.0% to 2.5% of GDP, depending on the assumptions used for the real interest rate and GDP growth.
- It would take a few years for the primary balance to reach this range. Even based on conservative assumptions for growth in expenditures and the dynamics of non-recurring revenues and GDP growth of 4.0%, the primary balance compatible with stabilization of the gross debt as a percentage of GDP would not be reached before 2022.
- Over a ten-year horizon, gross debt as a percentage of GDP would stabilize only in the scenario with GDP growth remaining higher than 1.5% in this period.

Simulations for path of primary balance in coming years (% of GDP)

Assumptions for exogenous variables in 2019–2028 period

Elasticity of real growth in recurring revenues to real GDP growth: 1.2.
Real growth in expenditures: zero, compatible with Constitutional Amendment ("EC") 95.
Non-recurring revenues: Stable as percentage of GDP on average from 2012 to 2017.

Primary balance compatible with stabilization of gross debt



Source: Brazilian Treasury, Credit Suisse

Compliance with EC 95 ensures stability of debt

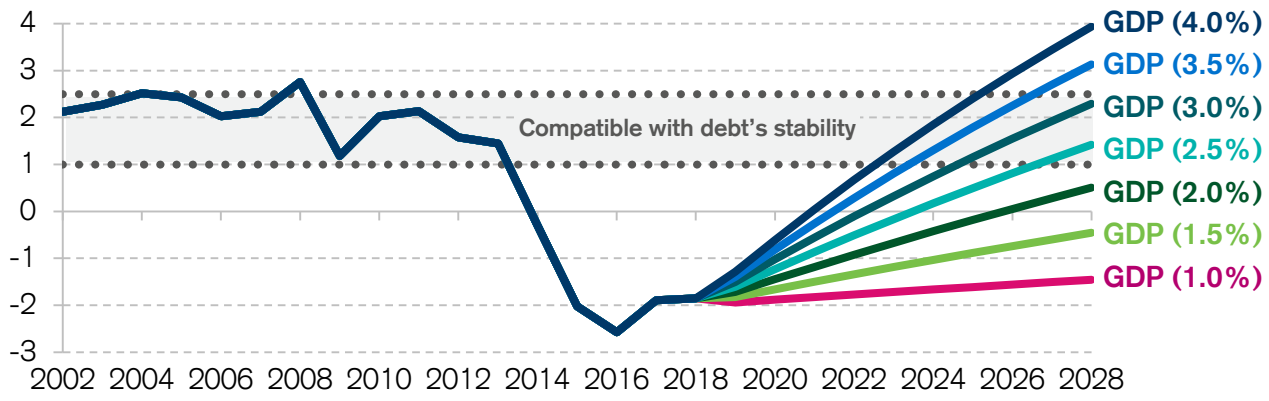
- If we assume an increase in primary expenditures beyond that permitted by EC 95, it will be much more difficult to stabilize gross debt as a percentage of GDP over the next ten years.
- Assuming 1% of real growth in primary expenditures, only in scenarios in which GDP growth is greater than 2.0% would the primary balance as a percentage of GDP reach the range compatible with stabilization of gross debt at 85% of GDP.
- Amending EC 95 would be a mistake. Not only would amending EC 95 enable an increase in spending in a scenario of a lack of fiscal control, it would lead to a de-anchoring of agents' expectations regarding the path of fiscal accounts.

Simulations for path of primary balance in coming years (% of GDP)

Assumptions for exogenous variables in 2019–2028 period

Elasticity of real growth in recurring revenues to real GDP growth: 1.2.
Real growth in expenditures: 1.0%, close to average growth from 2015 to 2018.
Non-recurring revenues: Stable as percentage of GDP on average from 2012 to 2017.

Primary balance compatible with stabilization of gross debt

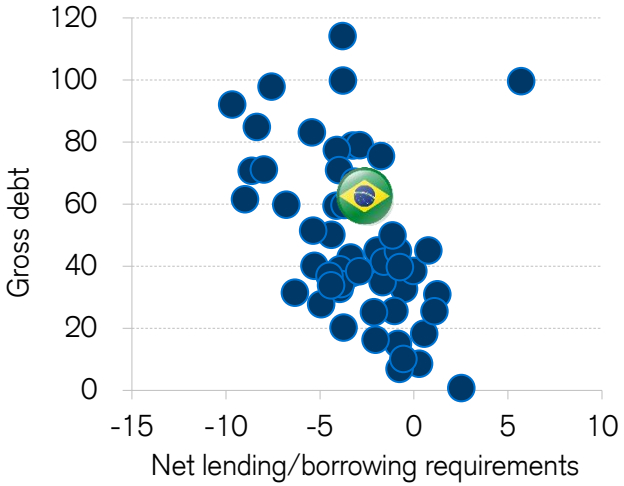


Source: Brazilian Treasury, Credit Suisse

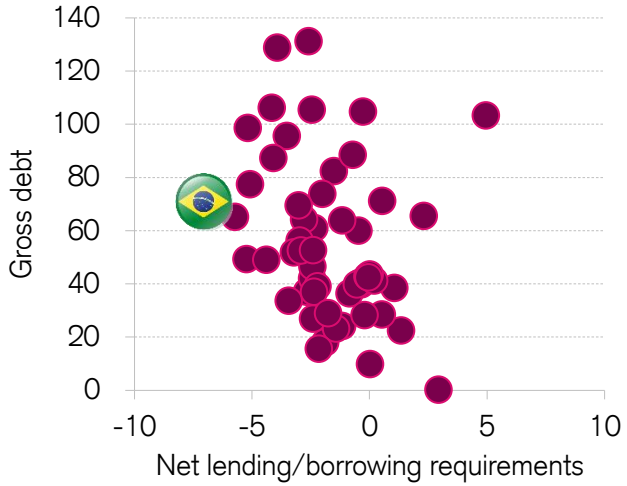
Recent deterioration in Brazil's fiscal fundamentals

- According to the IMF, from 2008 to 2012 Brazil had a relatively favorable fiscal position compared with that of the rest of the world. However, since 2013 there has been a gap between Brazil's fiscal statistics and those of the rest of the world, with a rise in the nominal deficit and in public debt, both as a percentage of GDP.
- Brazil should implement a strong fiscal consolidation package in the coming years. If this does not happen, Brazil's fiscal position will deteriorate even more compared with that of the rest of the world.

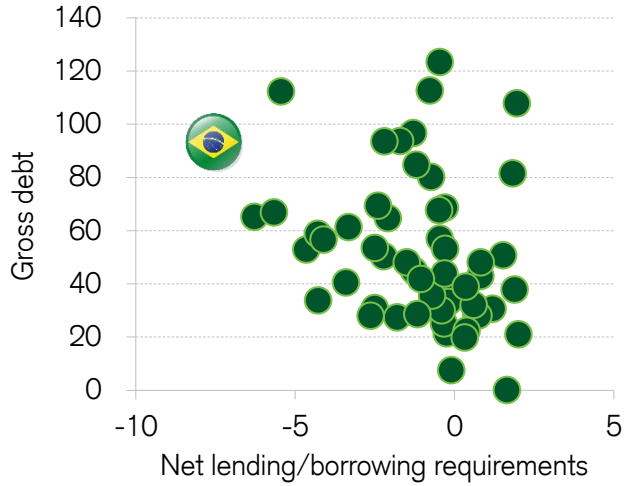
Average gross debt compared with average nominal balance of selected countries in 2008–12 (% of GDP)[1]



Average gross debt compared with average nominal balance of selected countries in 2013–17 (% of GDP)[1]



Average gross debt compared with average nominal balance of selected countries in 2018–23 (% of GDP)[1]



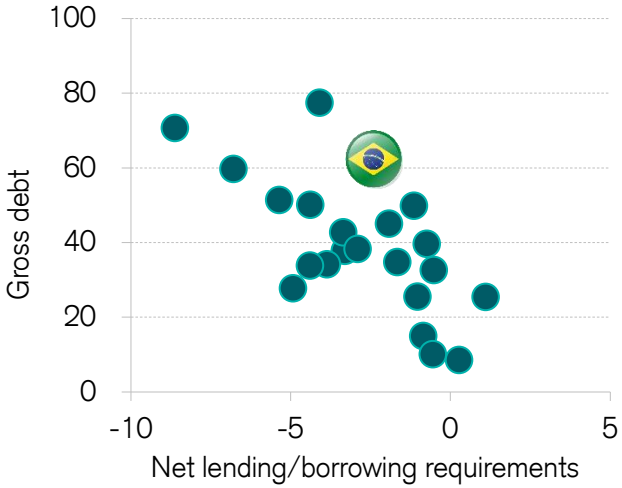
[1] We chose the countries based on the IMF's classification of emerging and developed economies, which comprises a total of 62 countries, of which 23 are emerging. The emerging economies sample is composed of the following countries: Argentina, Bangladesh, Brazil, Bulgaria, Chile, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Turkey, Ukraine and Venezuela; whereas the full sample also considers the following advanced countries: Australia, Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong SAR, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Macao SAR, Malta, Netherlands, New Zealand, Norway, Portugal, Puerto Rico, San Marino, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan Province of China, United Kingdom and United States [2] The images do not include the following countries, which had more than two standard deviations in any one parameter or whose data was not available in the database: Greece, Ireland, Japan, Macao SAR, Norway, Puerto Rico and Venezuela.

Source: International Monetary Fund (IMF), Credit Suisse

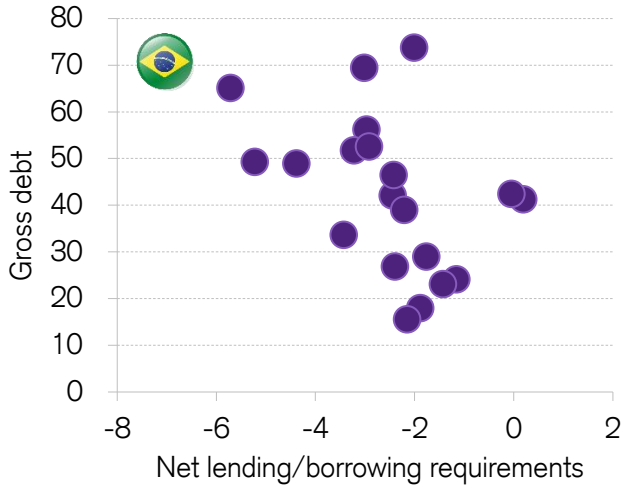
Weak fiscal accounts compared to other emerging markets

- The deterioration in Brazil's fiscal figures is also significant compared with emerging economies:
  - 2008–12: Brazil had a relatively high gross debt as percentage of GDP. However, the nominal deficit was not so different compared with other emerging economies.
  - 2013–17: Gross debt as a percentage of GDP remained high, and the nominal deficit saw strong deterioration in this period.
  - 2018–23: If nothing changes, Brazil's fiscal position will worsen further, and the country will become the emerging economy with the highest debt and the most deteriorated fiscal accounts in the sample, excluding Venezuela.

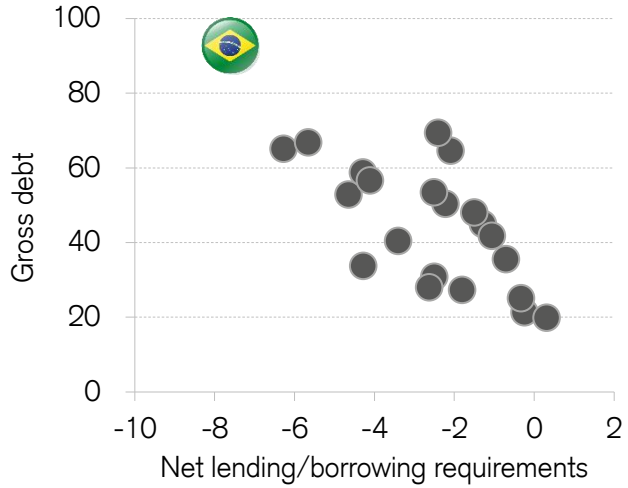
Average gross debt compared with average nominal balance of emerging economies in 2008–12 (% of GDP)[1]



Average gross debt compared with average nominal balance of emerging economies in 2013–17 (% of GDP)[1]



Average gross debt compared with average nominal balance of emerging economies in 2018–23 (% of GDP)[1]



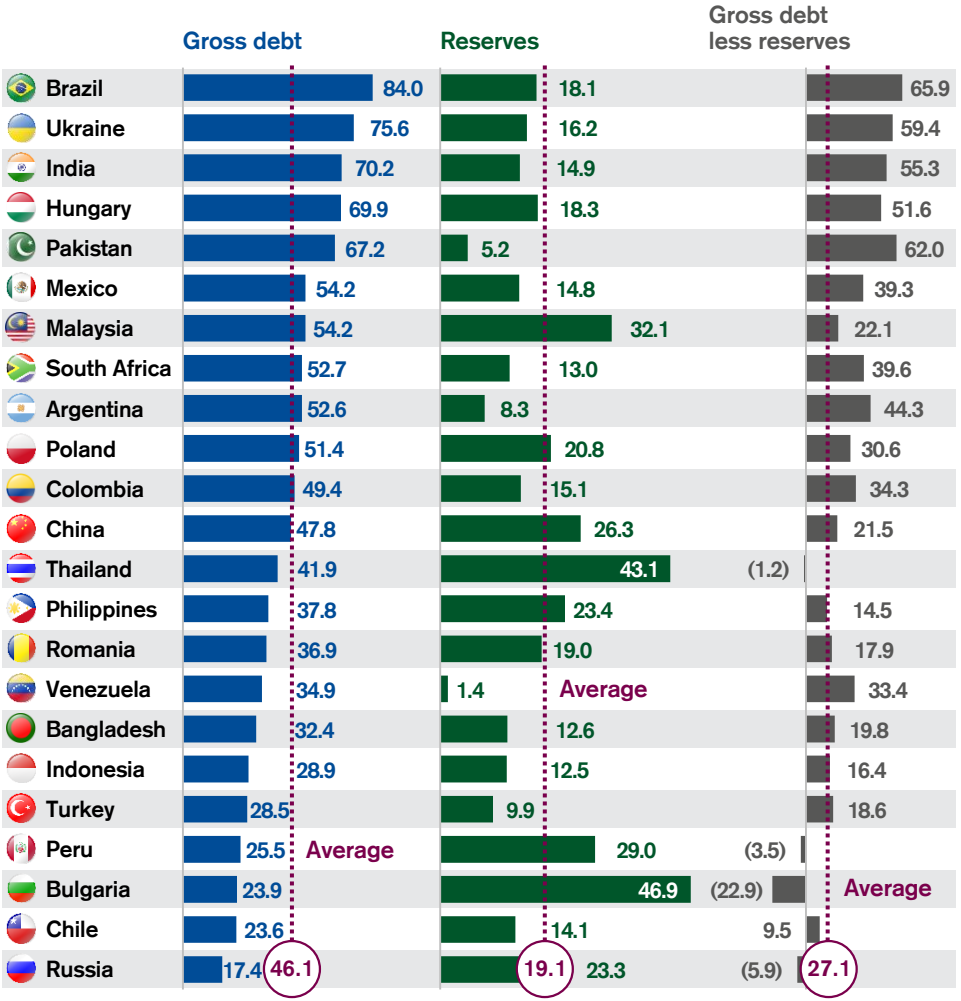
[1] The emerging economies sample is composed of the following countries: Argentina, Bangladesh, Brazil, Bulgaria, Chile, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Turkey, Ukraine and Venezuela. The images do not include Venezuela, which had more than two standard deviations in both parameters.

Source: International Monetary Fund (IMF), Credit Suisse

Gross debt is high, even after deducting reserves

- Although Brazil's gross debt is high compared with that of other countries, it can be argued that the level of international reserves (USD371bn in 2017) should be taken into account when analyzing the public debt, since reserves have had a positive influence on increases in debt and are highly liquid.
- Although high by historical standards, Brazil's reserves-to-GDP ratio is not high compared with that of other emerging economies. For example, in the sample of countries classified by the IMF as emerging economies, the average reserves-to-GDP ratio was 19.1% in 2017, higher than Brazil's 18.1% for the same period.
- Accordingly, Brazil's relative position in terms of public debt as a percentage of GDP does not change when we deduct international reserves.

Gross debt compared with international reserves
(% of GDP, 2017)

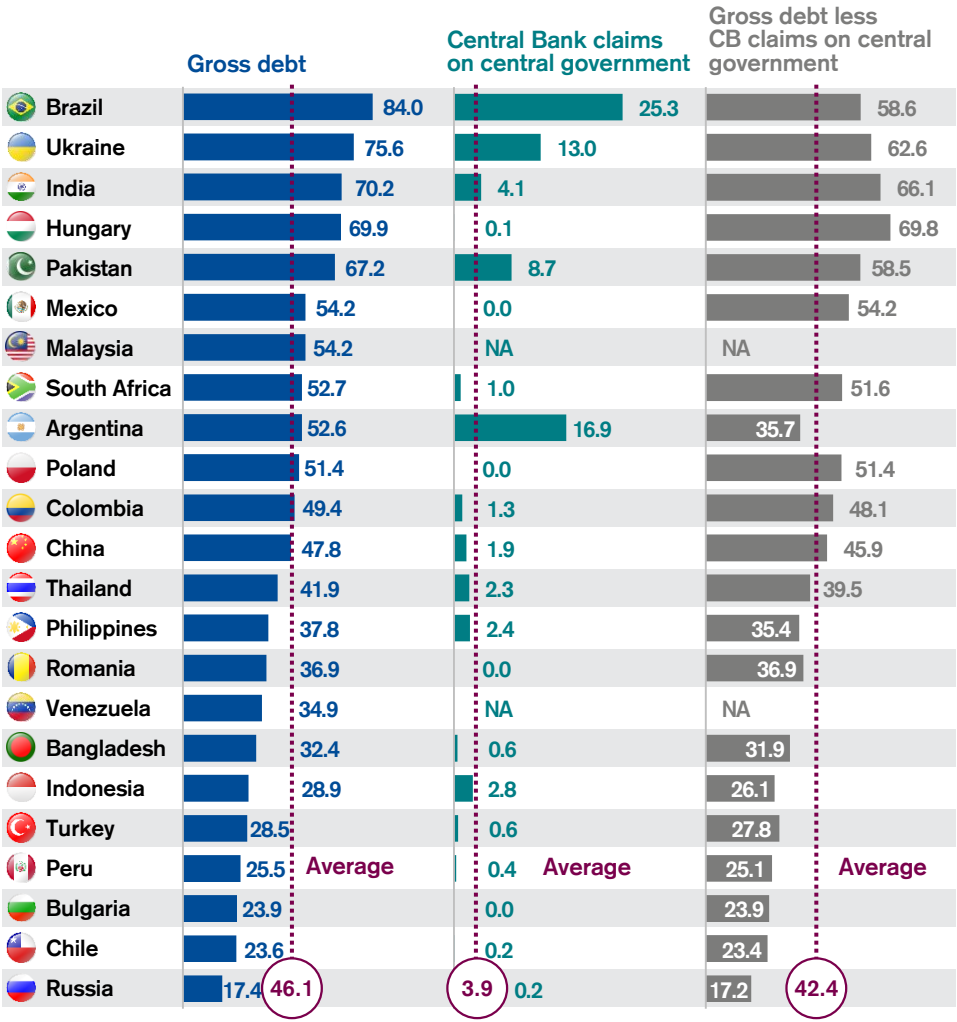


Source: International Monetary Fund (IMF), Credit Suisse

New instruments would not make public debt low

- The dynamics of public debt over the next few years could be positively affected by approval of Bill of Law No. 9248/2017, submitted by the government to the National Congress in December 2017, which authorizes the central bank to take voluntary time deposits from financial institutions.
- Establishment of this new monetary policy instrument would enable the central bank to reduce liquidity by encouraging financial institutions to make interest-bearing deposits with the monetary authority for a minimum term of one day.
- Even considering the potential impact that implementation of interest-bearing deposits would have on the level of public indebtedness as a percentage of GDP, Brazil's relative position would still be unfavorable compared with that of other emerging economies.

Gross debt compared with central bank claims on central government (% of GDP, 2017)



Source: International Monetary Fund (IMF), Credit Suisse

Fulfillment of golden rule to be difficult in 2019

- The golden rule prohibits "credit transactions that exceed the amount of capital expenditures, except those authorized by means of supplemental or special credits with a specific purpose, approved by the legislative branch by absolute majority."
- After implementing several measures, the government secured a margin of BRL12.5bn for fulfillment of the golden rule in 2018.
- For 2019, the Brazilian Treasury estimates a shortfall of BRL260.5bn, which will likely be reduced to BRL109.2bn owing partially to the use of funds from the positive result of the Central Bank of Brazil. Accordingly, the government will need to secure Congress approval of a supplemental credit to avoid the consequences of failing to meet such rule.

Measures to balance the margin of the golden rule in 2018 (BRL billion)

	2018
BNDES – early payment	130.0
Sovereign wealth fund	27.5
National Development Fund (FND)	17.4
Telecommunications Inspection Fund (Fistel)	6.7
Proceeds from concessions and permits	13.1
Financial Assets Rehabilitation Program (PESA)	4.4

Sufficiency of golden rule (BRL billion)

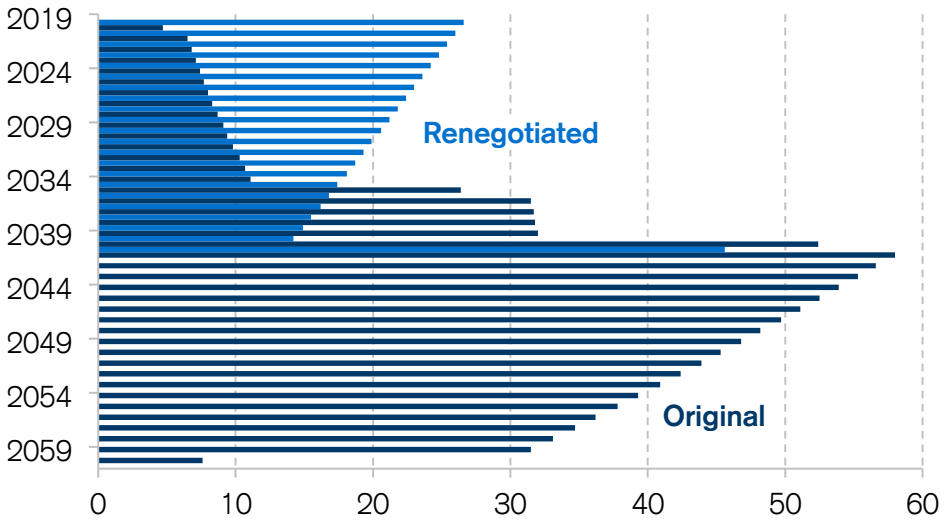
	2018	2019
Capital expenditures (I)	**891.7**	**749.4**
Investments	38.9	32.7
Financial investments	70.3	71.6
Amortizations	782.4	645.1
Revenues from credit transactions considered (II = a - b)	**879.2**	**1009.9**
Revenues from loan transactions in period (a)	923.9	867.2
Change in debt subaccount (b)	44.6	-142.7
Margin of golden rule (III = I - II)	**12.5**	**-260.5**

Source: Brazilian Treasury, Credit Suisse

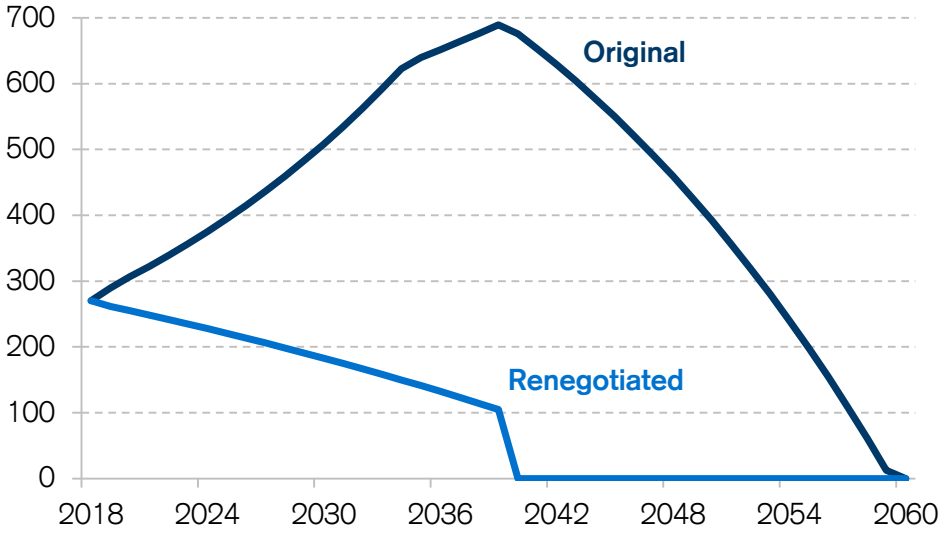
Repayment of funds by BNDES will be swifter

- Thanks to the debt renegotiation between the Brazilian Treasury and the BNDES in 2018, the loans taken out by the BNDES from the government will be repaid much faster.
- Considering the renegotiated payment flow, BRL26.6bn will be repaid in 2019 and BRL26bn in 2020. For the other years, the amount repaid will likely be lower, reaching BRL14.2bn in 2039, and the last payment, of BRL45.6bn, will be made in 2040. By such date, the BNDES will have repaid all loans taken out from the Brazilian Treasury in the past few years.

Flow of BNDES payments to the Treasury[1]
(current BRL billion)



Balance of BNDES debt to the Treasury[1]
(current BRL billion)



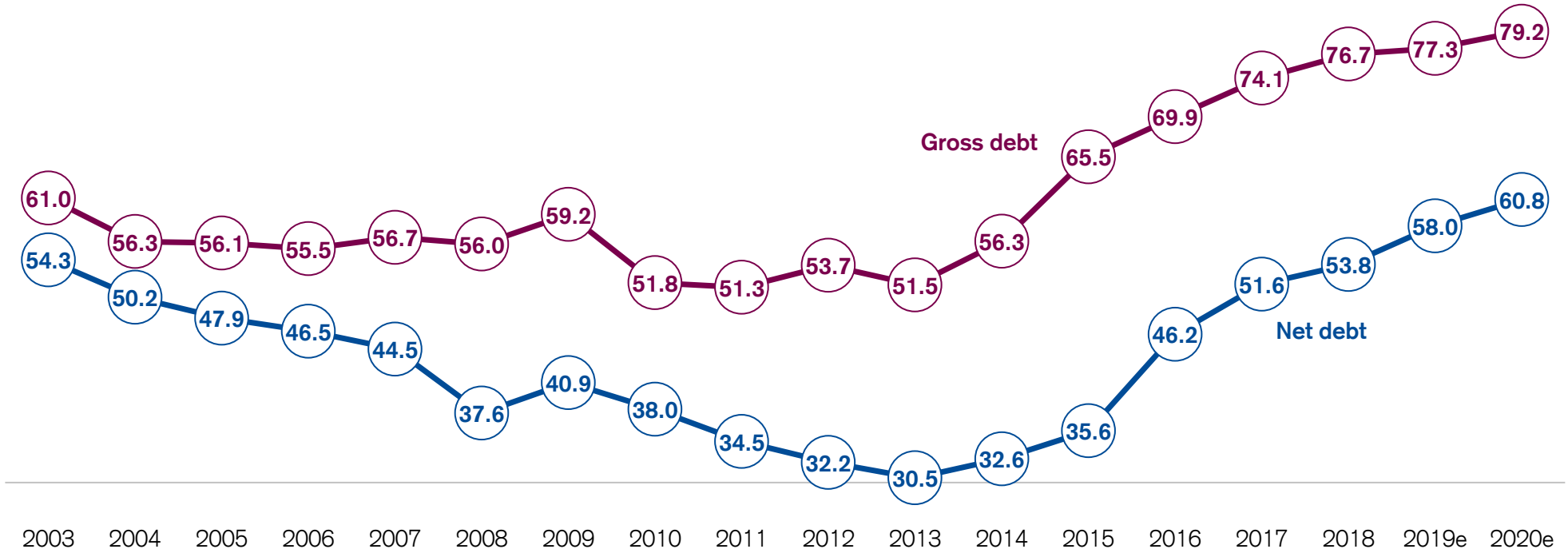
[1] For more information, please see Tinoco, G., Giambiagi, F., Leite, J., Nunes, A., and Provençano F. "A renegociação da dívida do BNDES com o Tesouro Nacional: antecedentes, motivação e desdobramentos," texts for discussion 131, October 2018. Despite the decline in the volume of funds received from the Treasury in the past few years, the BNDES will continue to receive contributions via the Workers Support Fund (FAT).

Source: Brazilian Development Bank (BNDES), Credit Suisse

Gross debt to remain on uptrend in next few years

- Despite the more favorable scenario for economic growth and, consequently, for the dynamics of the fiscal accounts, the path of gross debt as a percentage of GDP will remain on an uptrend in the next few years.
- Even considering in our base-case scenario the scheduled return of funds by the BNDES to the Brazilian Treasury, gross debt as a percentage of GDP is expected to increase from 76.7% in 2018 to 79.2% in 2020. Net debt as a percentage of GDP will likely increase from 53.8% of GDP in 2018 to 60.8% of GDP in 2020.

Paths of gross and net debt (% of GDP)

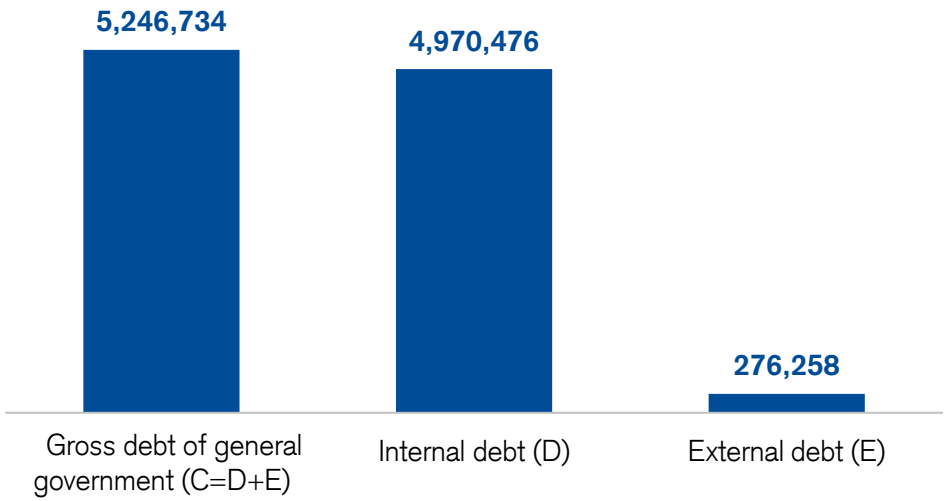


Source: Central Bank of Brazil, Credit Suisse

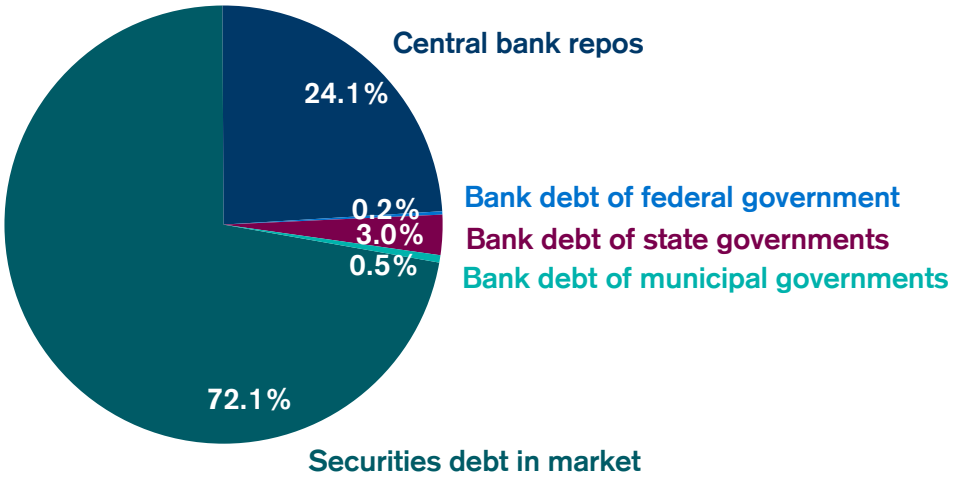
Most of Brazil's debt is denominated in local currency

- The gross debt of the general government (federal government, states, and municipalities) reached BRL5.3trn in September 2018, of which the domestic debt accounts for BRL4.97trn and the external debt, for only BRL276bn.
- Among the main components of domestic debt, the highlights are the securities debt in the market (72% of total gross debt as of September 2018) and repos of the Central Bank of Brazil (24%).
- Such higher share of domestic debt in total government indebtedness reduces the risk of a swift and sharp increase in debt in the event of a spike in risk aversion in international markets.

Total gross debt, domestic and external
(BRL million, Sep-18)



Breakdown of domestic debt
(%, Sep-18)



Source: Central Bank of Brazil, Credit Suisse

Fiscal situation of states is unfavorable

- The aggregate fiscal result of the states, according to the criterion of committed expenditures, was a primary deficit of BRL13.9bn in 2017, after a primary deficit of BRL2.8bn in 2016. The sharp increase in personnel expenditures, social charges, and investments more than offset the recovery of tax revenues.
- Conversely, from the perspective of expenditures paid, the primary balance of states improved in 2017 compared with 2016. The primary result went from a surplus of BRL14.1bn in 2016 to BRL15.8bn in 2017. This difference between the two criteria is explained by the recording of residual payables.

Primary balance of states, criterion of committed expenditures[1] (BRL million)

	2015	2016	2017
Levies, fees, and betterment taxes (contributions)	423,418	447,924	477,608
State Tax on the Circulation of Goods and the Provision of Services (ICMS)	333,188	348,919	372,123
Current transfers	159,860	176,131	172,345
Share of State Participation Fund (FPE)	60,971	69,828	6,679
Other current revenues	90,103	81,490	93,382
Capital transfers	3,669	4,983	4,234
Other capital revenues	3,625	4,429	4,789
Total primary revenue	**680,675**	**714,957**	**752,358**
Personnel and social charges	358,032	377,545	402,933
Other current expenditures	278,485	295,093	314,902
Investments	39,832	36,669	41,654
Other Investments	6,088	8,476	6,741
Primary expenditures	**682,437**	**717,783**	**766,230**
Primary balance	**-1,762**	**-2,826**	**-13,872**

Primary balance of states, criterion of expenditures paid[1] (BRL million)

	2015	2016	2017
Levies, fees, and betterment taxes (contributions)	423,418	447,924	477,608
State Tax on the Circulation of Goods and the Provision of Services (ICMS)	333,188	348,919	372,123
Current transfers	159,860	176,131	172,345
Share of State Participation Fund (FPE)	60,971	69,828	66,790
Other current revenues	90,103	81,490	93,382
Capital transfers	3,669	4,983	4,234
Other capital revenues	3,625	4,429	4,789
Total primary revenue	**680,675**	**714,957**	**752,358**
Personnel and social charges	350,291	373,041	395,353
Other current expenditures	269,573	286,805	300,657
Investments	38,003	33,772	34,058
Other Investments	6,158	7,252	6,503
Primary expenditures	**664,025**	**700,870**	**736,571**
Primary balance	**16,650**	**14,087**	**15,787**

[1] Both criteria are used by the Brazilian Treasury, which uses a different methodology from that of the Central Bank of Brazil. The central bank's methodology is more similar to the criterion of expenditures paid, since its fiscal balance calculations do not include, for example, the residual payables recorded.
Source: Brazilian Treasury, Credit Suisse

Sharp increase in residual payments in 2017

- The volume of residual payables recorded by states increased considerably in 2017, reinforcing the assessment that most states are still funding themselves by postponing their payments to suppliers and civil servants.
- The total amount of residual payables recorded by states rose from BRL16.9bn in 2016 to BRL29.7bn in 2017. The state that recorded the highest volume of residual payables in 2017 was Rio de Janeiro: BRL6.5bn. The state with highest nominal change in the volume of residual payables recorded was São Paulo: from BRL-0.5bn in 2016 to BRL5.6bn in 2017.
- Such sharp rise in the volume of residual payables evidences the scenario of significant deterioration of the budgetary result of states in the past few years.

Residual payables recorded by states (BRL million)

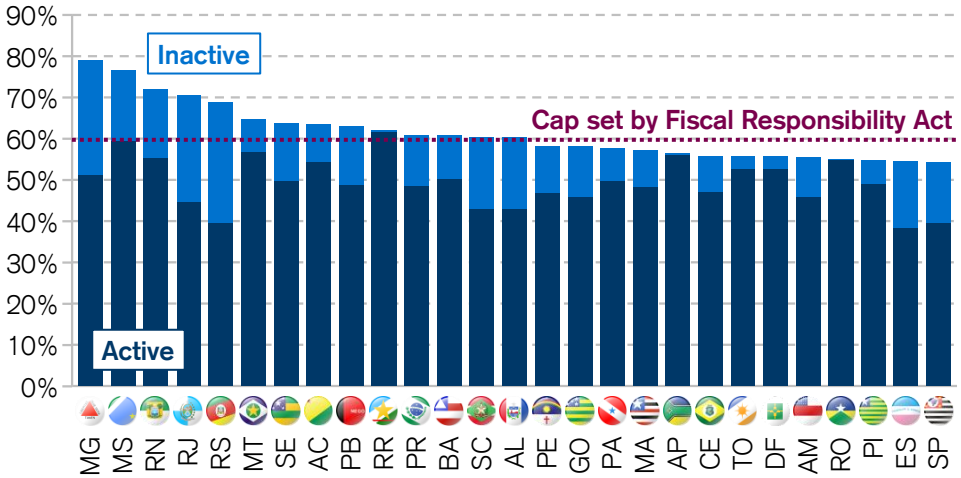
	2015	2016	2017
Acre	86	50	43
Alagoas	8	68	-124
Amazonas	-39	363	516
Amapá	555	534	620
Bahia	139	-125	420
Ceará	86	58	293
Federal District	2,169	461	479
Espírito Santo	140	110	202
Goiás	1,721	558	674
Maranhão	545	235	427
Minas Gerais	3,569	4,736	5,975
Mato Grosso do Sul	539	130	1,074
Mato Grosso do Sul	447	973	1,423
Pará	-30	49	182
Paraíba	173	362	55
Pernambuco	665	171	297
Piauí	120	220	68
Paraná	486	-289	2,820
Rio de Janeiro	2,594	6,887	6,484
Rio Grande do Norte	255	384	500
Rondônia	319	33	141
Roraima	260	67	799
Rio Grande do Sul	1,962	866	13
Santa Catarina	356	269	600
Sergipe	222	-36	-9
São Paulo	969	-485	5,597
Tocantins	96	265	90
TOTAL	**18,412**	**16,914**	**29,659**

Source: Brazilian Treasury, Credit Suisse

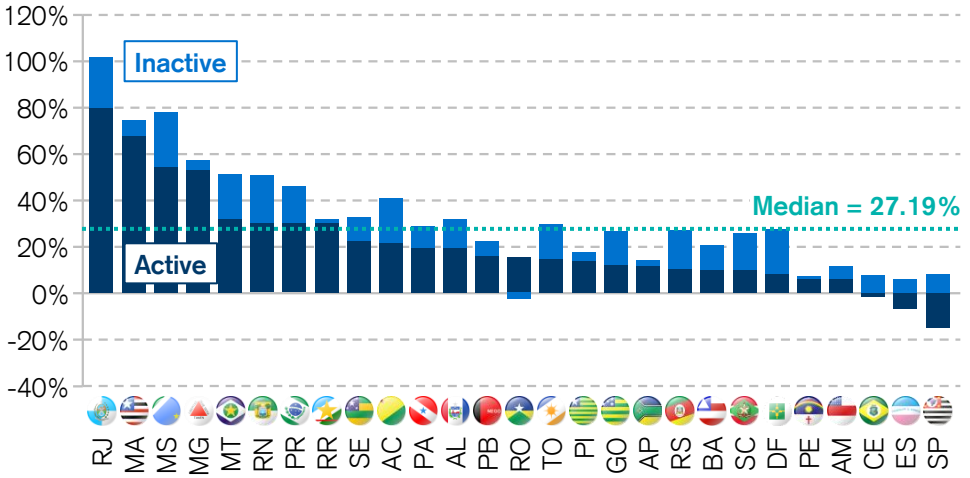
Sharp increase in personnel expenditures in states

- Expenditures for active and inactive personnel in certain states substantially exceeds the cap of 60% of net current revenues (RCL) established by the Fiscal Responsibility Act. States such as Minas Gerais, Mato Grosso do Sul, Rio Grande do Norte, and Rio de Janeiro posted personnel expenditures of close to 70% of RCL or higher in 2017.
- The states with highest growth in personnel expenditures in the recent years were Rio de Janeiro, Maranhão, Mato Grosso do Sul, and Minas Gerais.
- A successful fiscal consolidation process in states will necessarily need to contemplate a social security reform to revert the rise in expenditures for inactive personnel.

Personnel expenditures, by state
(% of net current revenues)



Real growth in personnel expenditures from 2011 to 2017 (%)

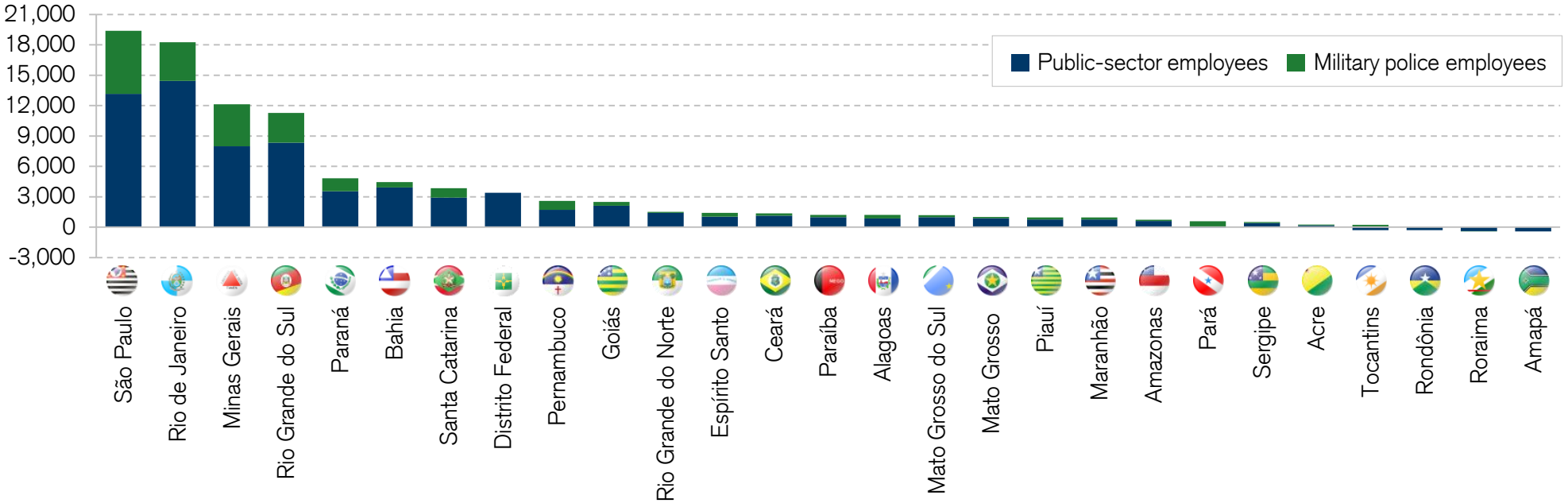


Source: Brazilian Treasury, Credit Suisse

Most states have social security deficit

- According to the Statement of Social Security and Pass-Through Information (DIPR), the social security deficit of the states totaled BRL94.4bn in 2017, of which BRL70bn referred to the deficit of civil servants and BRL24.4bn to the deficit of military personnel.
- The states with highest social security deficits in nominal terms are São Paulo, Rio de Janeiro, Minas Gerais, and Rio Grande do Sul. The social security deficit of the state of Rio de Janeiro was BRL18.3bn in 2017, indicating that most of its nominal deficit is the result of an imbalance in the social security account.

Social security deficit of states (BRL million, 2017)

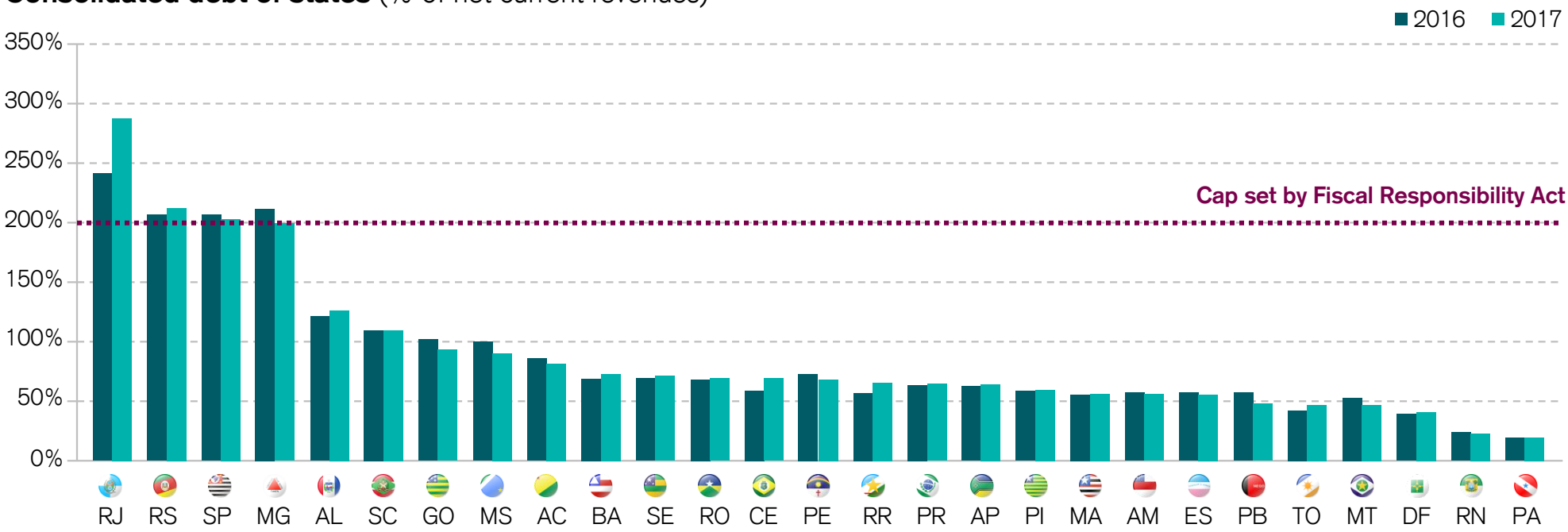


Source: Brazilian Treasury, Secretariat of Social Security, Credit Suisse

Rio de Janeiro is the state with highest debt/revenue ratio

- Certain states have also reached the cap for debt as a percentage of net current revenues established by the Fiscal Responsibility Act. The state with the highest ratio of net debt to net current revenues is Rio de Janeiro, with almost 300% in 2017.
- Other very important states to Brazil's economy, such as Rio Grande do Sul, São Paulo, and Minas Gerais, have also exceeded the cap established by the Fiscal Responsibility Act for this ratio.
- The high indebtedness of states is a major fiscal risk to the situation of the federal government's fiscal accounts.

Consolidated debt of states (% of net current revenues)



Source: Brazilian Treasury, Credit Suisse

Financial markets

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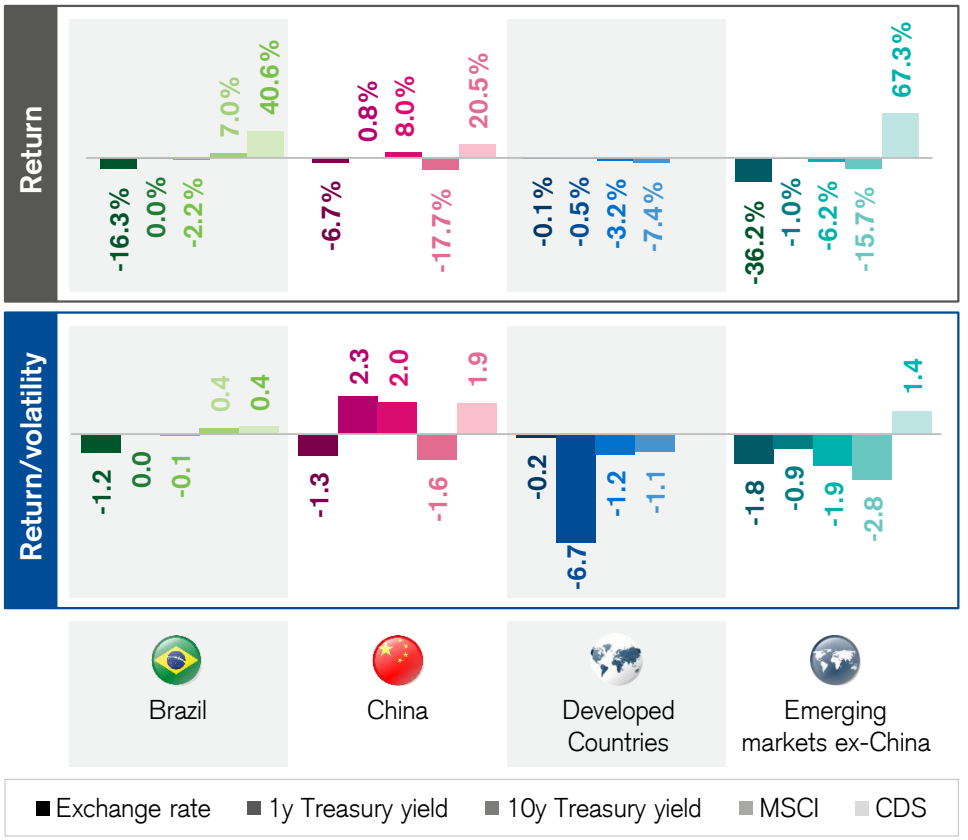
Appreciation of USD against most currencies in 2018

- The dollar posted the best performance in 2018 within a class of assets that includes currencies, interest rates, equities, and risks. The currency performed well, in terms of both overall return and return normalized by volatility, against the BRL and the currencies of other emerging economies. The CDS of emerging economies posted good returns in the year, in line with the depreciation of currencies of emerging economies.
- On the other hand, the currencies of emerging markets and equities in China saw the worst performances, declining 36.2% and 17.7% year to date, respectively. In normalized terms, the one-year treasury rates saw the lowest return in the year.

Performance of exchange rate, treasury bonds, equities, and CDS in 2018 (1)



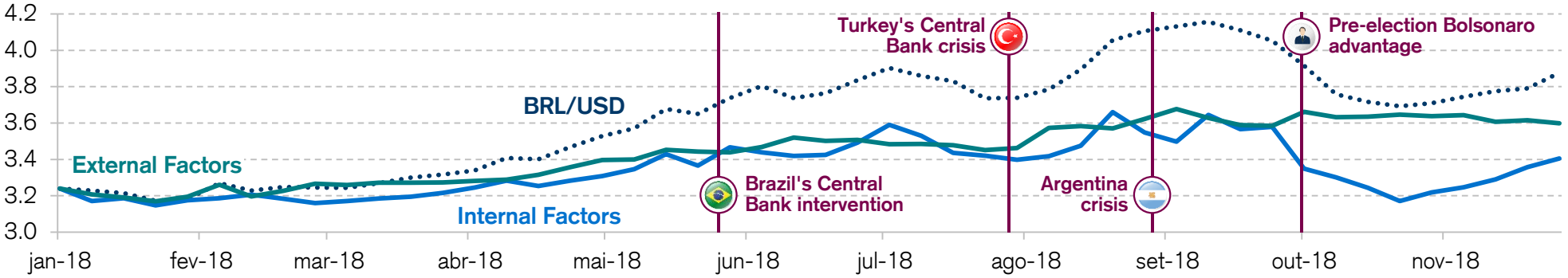
[1] Last date: 30-Nov-2018. The currencies used were based on the dollar exchange rate, interest rate indexes are in local currency, and the MSCI is denominated in LCU for Brazil and China, for developed economies and emerging economies MSCI is denominated in USD and the CDS in USD. The year-to-date return at the interest rate is calculated as the percentage change of the synthetic price of a bond. To set up the developed and emerging interest rate, the index for each country was weighted by 2017 GDP. The Emerging Market CDS embeds the China country risk. We considered the following emerging markets: Armenia, Bulgaria, China, Colombia, India, Mexico, South Africa, and Russia. We considered the following developed economies: Australia, Austria, Belgium, Germany, Hong Kong, Ireland, Iceland, Israel, Italy, Japan, Netherlands, New Zealand, South Korea, Spain, Switzerland, United Kingdom, United States, Singapore, France, and Canada.

Source: Bloomberg, Credit Suisse.

External factors explained most of BRL depreciation in 2018

- The BRL/USD depreciation in 2018 was explained mostly by widespread strengthening of the USD. Several factors drove the good performance of the USD: strong US growth, higher rates, and higher risk aversion in emerging markets. On the other hand, domestic factors (e.g., presidential election) drove the higher FX volatility. Specific external factors also contributed to the higher FX volatility (e.g., crisis in Turkey and Argentina).
- In November, the BRL/USD exchange rate driven by domestic factors was 3.40 and the rate driven by only external factors was 3.60. For the next year, the less liquid global financial market should be partially offset by the more favorable scenario for the domestic economy due to the more positive prospects for the approval of economic reforms by Congress and cyclical recovery of the economic activity.

Dynamics of domestic and external-driven exchange rates[1] (BRL/USD)



[1] To break down the exchange rate into external and internal factors, we projected the weekly changes in the BRL/USD exchange rate using 40 currencies of developed and emerging economies in the Ridge regression model. The external factor is calculated as the forecast model and the domestic factor as the residual of the regression.

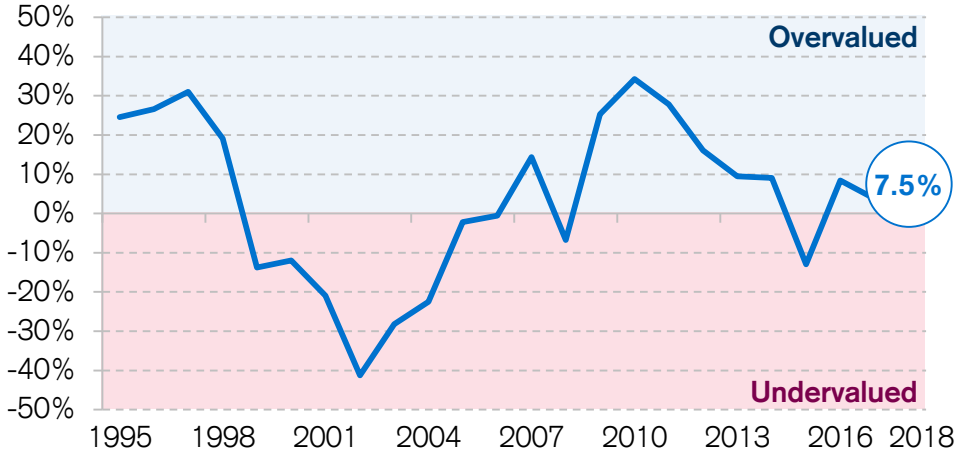
We consider the following currencies: EUR, JPY, BGN, CYP, CZK, DKK, EEK, GBP, HUF, LTL, LVL, MTL, PLN, ROL, RON, SEK, SIT, SKK, CHF, ISK, NOK, HRK, RUB, TRL, TRY, AUD, BRL, CAD, CNY, HKD, IDR, ILS, INR, KRW, MXN, MYR, NZD, PHP, SGD, THB and ZAR

Source: European Central Bank, Credit Suisse

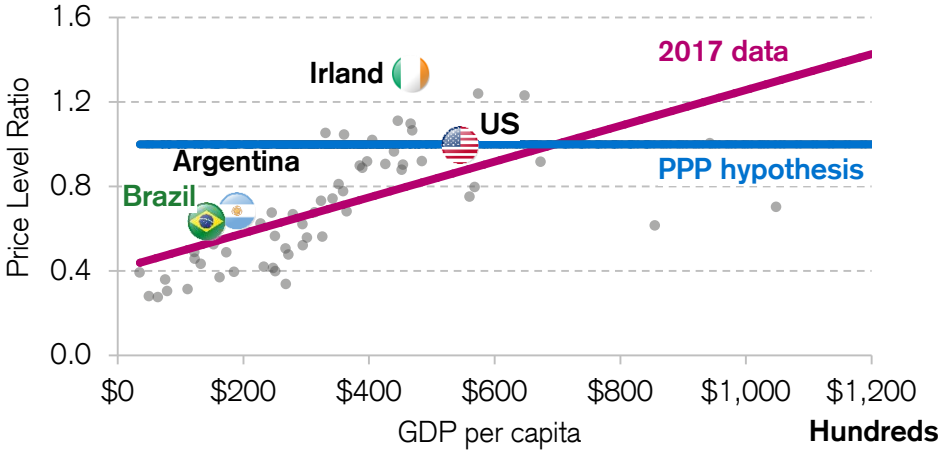
FX rate is well balanced in real terms

- Historically, the real exchange rate had already shown strong deviations from the level implied by purchasing power parity, both adjusted and not adjusted for productivity (e.g., 2002 and 2011). Since 2013, however, the real exchange rate has not become either overvalued or undervalued by more than 13%.
- In October 2018, the exchange rate did not reflect significant pressures in both real and productivity terms. The gap between the spot effective exchange rate and its historical mean, suggests that the real exchange rate is 7.5% appreciated. Theoretically, economies with low productivity, such as Brazil, have a cheaper basket of goods than high-productivity countries. Controlling also for the economies' productivity, the real exchange rate is 4.0% appreciated.

Level of overvaluation of real exchange rate[1]
(%)



Price level ratio versus GDP per capita[2]
(country/USA)/(2011 USD PPP)



[1] Brazil's effective exchange rate is a weighting of the real exchange rates of the BRL against the currencies of its main trading partners. It is common in specialized literature to assume that, according to the Purchasing Power Parity theory, the effective exchange rate has a mean reversion. [2]Country i's price level ratio is defined as $P_i/(P_{US} * E)$, where P_i is the price of a basket of goods negotiated in country i in national currency units, and E is the exchange rate for i's currency against the USD. Purchasing power parity guarantees that the same basket of goods negotiated in two countries and in the same currency will have the same price (in absence of frictions); otherwise, there would be an arbitrage opportunity. Source: World Bank Group (WBG), Credit Suisse.

Better performance of FX models over longer horizons

- The main theoretical economic models show better performance in forecasting the exchange rate over long horizons (12 months) than short horizons (3 months).[1] Overall, the economic models that consider interest rate differentials (Brazil vs. United States) and inflation differentials show better performance than the Taylor rule model.
- The uncovered interest rate parity + CDS showed the lowest out-of-sample error for short-term horizons. The model has 98% of the mean square error of the random walk (RW - MSE) model for forecasting horizons of 3 months.

Economic model to forecast nominal exchange rate

Model	Equation	Performance[2]	
		h = 3 months	h = 1 year
Uncovered interest rate parity	$E_t(s_{t+h} - s_t) = \beta(i_{t+h} - i^*_{t+h})$	**1.09**	**0.99**
Uncovered interest rate parity + CDS	$E_t(s_{t+h} - s_t) = \beta[i_{t+h} - (i^*_{t+h} + \rho)]$	**0.98**	**1.08**
Inflation model (PPP)	$E_t(s_{t+h} - s_t) = \beta(\pi_{t+h} - \pi^*_{t+h})$	**1.23**	**0.81**
Taylor rule model	$E_t(s_{t+h} - s_t) = \beta_0 + \beta_1(\pi_{t+h} - \pi^*_{t+h}) + \beta_2(y^{gap}_{t+h} - y^{gap*}_{t+h})$	**2.23**	**1.55**

[1] Performance is measured by the ratio of the Mean Square Error (MSE) of the model to the MSE of the random walk model.[2] s_t is defined as the BRL/USD exchange rate, i_t is the domestic interest rate, i_t^* is the US interest rate, y_t^{gap} is the Brazilian output gap, $y_t^{gap,*}$ is the US output gap, π_t is the Brazilian inflation rate, ρ is the Brazilian government default risk (CDS), and π_t^* is the US inflation rate. Source: Brazilian Association of Financial and Capital Market Entities (Anbima), Central Bank of Brazil, Brazilian Statistics Bureau (IBGE), Credit Suisse

Economic models suggest stable exchange rate in 2019

- For the short term, the economic models considering the difference between the inflation rates in the USA and Brazil (inflation model - PPP) and output gap differentials (Taylor Model) point to a depreciation of the BRL/USD exchange rate. The weighted-average forecast for three months predicts 0.8% depreciation of the BRL/USD rate.
- For one year ahead, the UIRP+CDS and PPP models show depreciation of the BRL against the USD, with the former predicting depreciation of 0.3% and the latter forecasting 8.0% depreciation. The weighted-average forecast of the 3 models for 12 months ahead predicts a small depreciation of 2.6% in the BRL/USD rate.

Economic model to forecast the nominal exchange rate

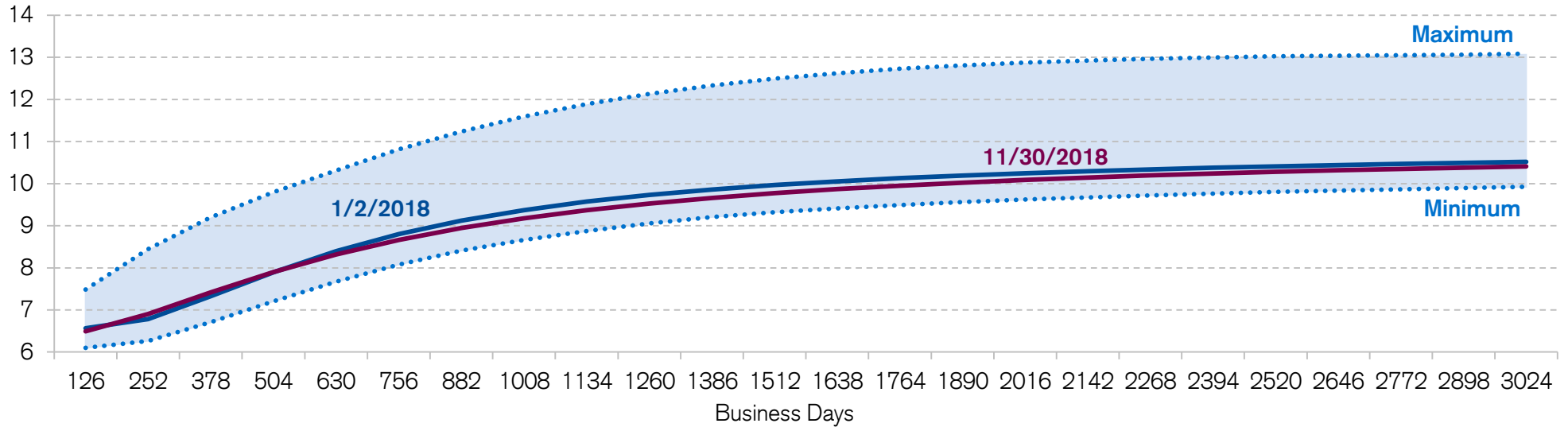
	2019 Forecast appreciate (-) or depreciate (+) in %	
Model	**First quarterly change**	**Annual change**
Uncovered interest rate parity	**-0.1%**	**0.0%**
Uncovered interest rate parity + CDS	**0.0%**	**0.3%**
Inflation model (PPP)	**2.7%**	**8.0%**
Taylor model	**1.4%**	**0.0%**
Weighted by RMSE forecast for BRL/USD	**0.8%**	**2.6%**

Source: Brazilian Association of Financial and Capital Market Entities (Anbima), Central Bank of Brazil, Brazilian Statistics Bureau (IBGE), Credit Suisse

Electoral uncertainty explains sharp rise in yield curve

- The yield curve showed a significant increase in its long term tenors from June to September 2018, when 10-year rates reached 13.3% p.a. in September. This shift is explained by high uncertainty surrounding the result of the presidential election.
- After the election result was known, interest rates for all maturities declined substantially to levels close to those in effect at the start of the year. With the probable start of the monetary tightening cycle and prospects for approval of important structural reforms throughout the year, the yield curve will likely reduce its slope, as interest rates for shorter maturities rise and for longer maturities fall.

Maximum, minimum, first, and last term structure of interest rates in 2018
(%, p.a.)

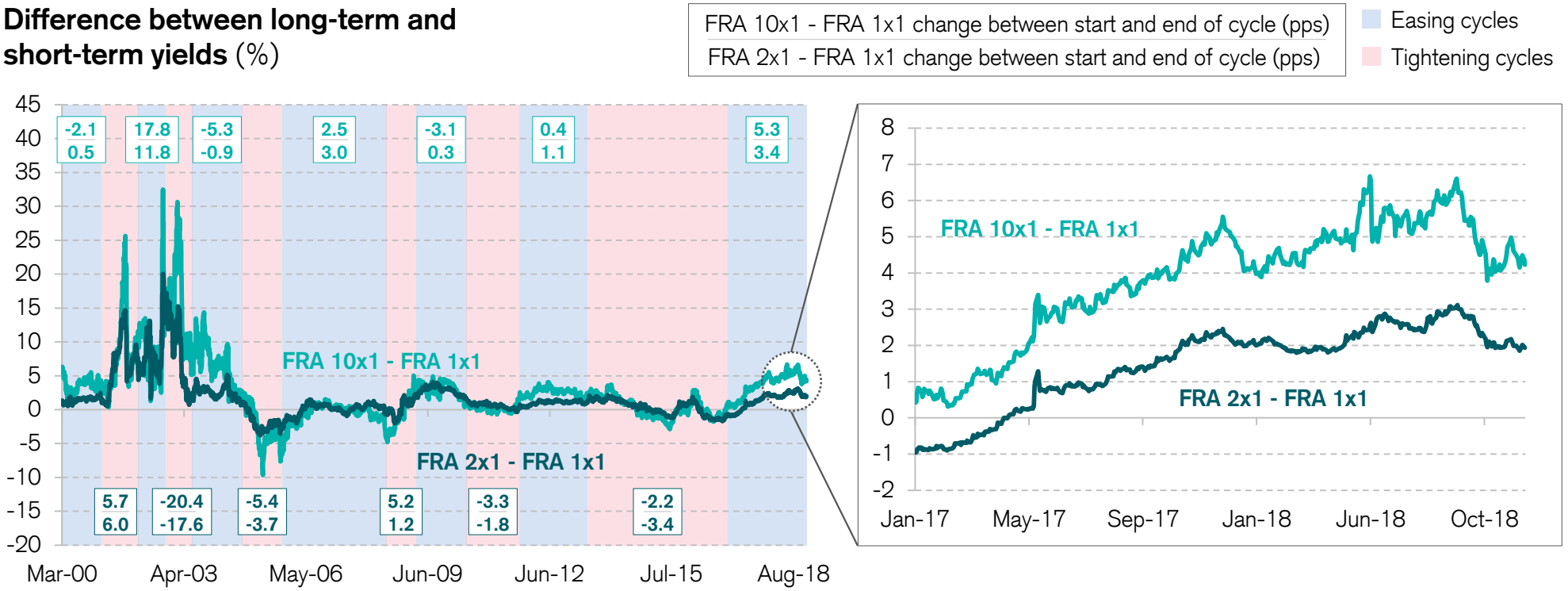


Source: Brazilian Association of Financial and Capital Market Entities (Anbima), Credit Suisse

Flattening of yield curve with tightening cycle in 2019

- This spread between the long- and short-term interest rates is the government's opportunity cost to fund in the long run. Historically, this cost tends to be sensitive to monetary cycles, as short-term interest rates are highly sensitive to the monetary policy rate: in tightening cycles, short-term interest rates tend to increase, while in easing cycles they tend to decline.
- As result, the expected normalization of Selic rate in 2019 should pressure the short leg of the slope spread.

Difference between long-term and short-term yields (%)

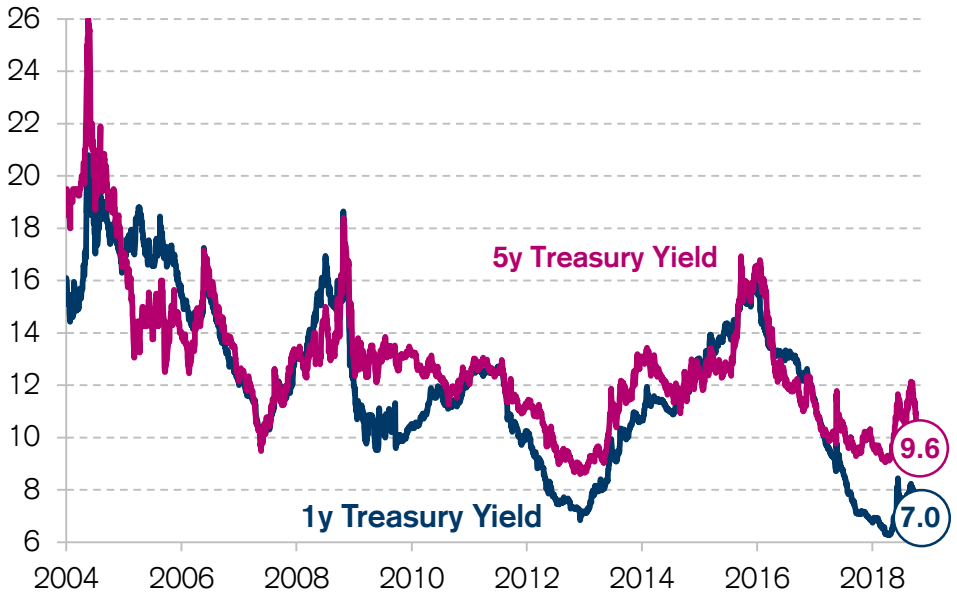


Source: Brazilian Association of Financial and Capital Market Entities (Anbima), Credit Suisse

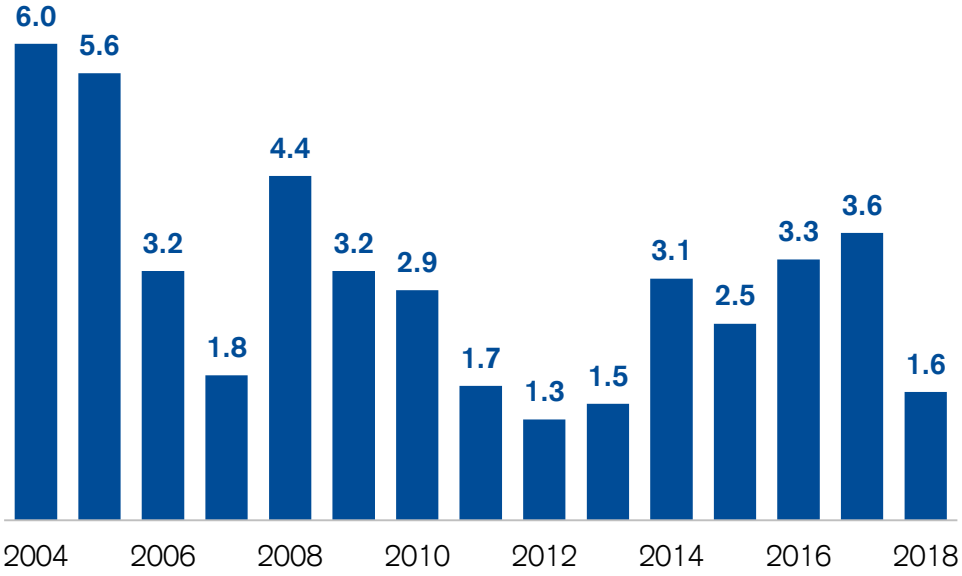
Yield curve remained steep throughout 2018

- The slope of the yield curve, calculated as the difference between the long-term and short-term rates, remained steep in 2018. For example, the difference between 5-year and 1-year rates reached 406 basis points in September 2018, the highest since 2004. Two factors explain the wide difference: the low historical level of the monetary policy rate and the high uncertainty regarding the trajectory of fiscal policy.
- However, the differential between long-term and short-term rates was limited to a 1.6 percentage point change throughout the entire year, the third smallest variation since 2004.

One- and five-year treasury yields
(%, annual rate)



Difference between the maximum slope 5y-1y and the minimum slope 5y-1y (%, annual rate)

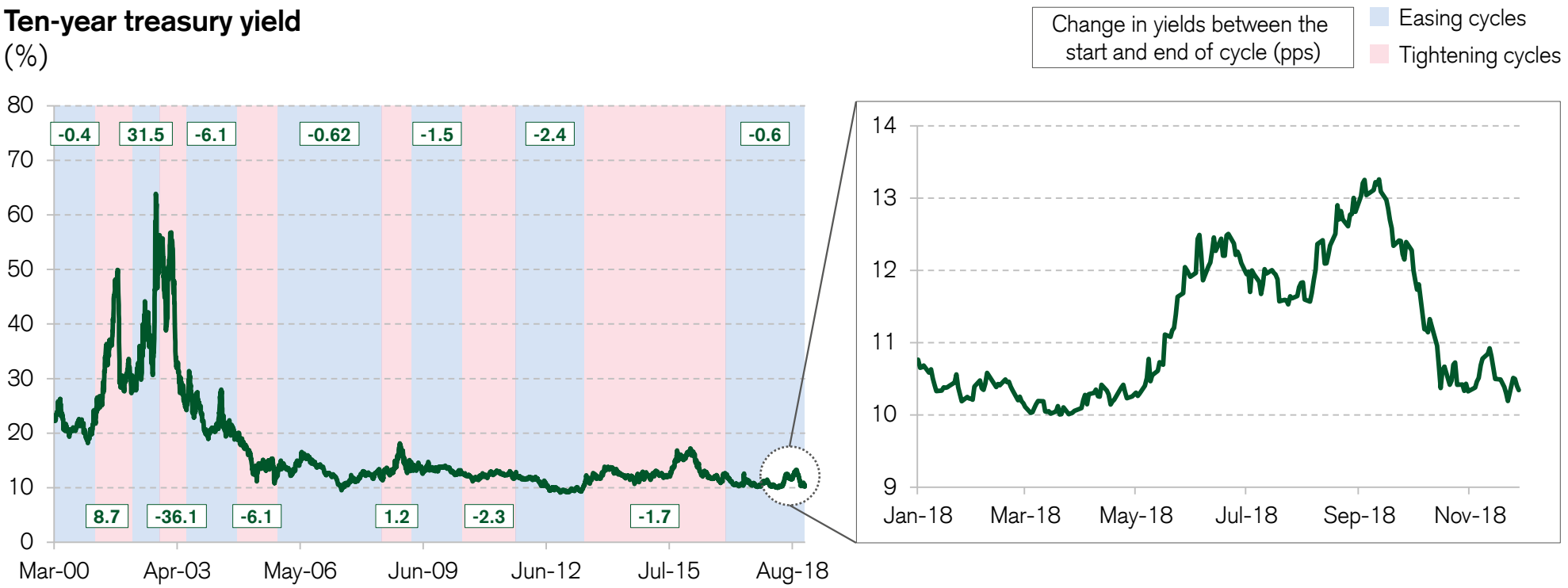


Source: Brazilian Association of Financial and Capital Market Entities (Anbima), Credit Suisse

Long-term treasury yields less sensitive to monetary cycles

- The long-term interest rate is less sensitive to monetary cycles and more sensitive to the fundamentals of the economy, such as the natural interest rate, the path of the gross debt, potential GDP growth, and long-term inflation.
- The tightening cycle to take place in 2019 will probably not produce meaningful changes in the yield of the 10-year treasury bond. On the other hand, approval of reforms that improve the fundamentals of the economy could substantially change the long-term interest rate.

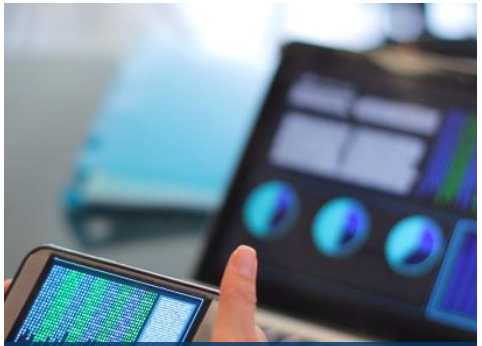
Ten-year treasury yield
(%)



Source: Brazilian Association of Financial and Capital Market Entities (Anbima), Credit Suisse

Four approaches to calculating the real interest rate

- We used four different methods to calculate the real interest rate:

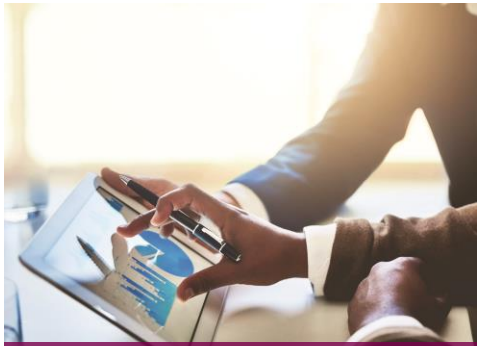


Ex ante approach

The ex ante real interest rate is the nominal interest rate for 360 days (in the swap DI versus PRE contract) minus the expected rate of inflation one year ahead (obtained in Market Readout survey).

Ex post approach

The ex post real interest rate is the monetary policy rate (Selic) minus inflation over the past 12 months.



Local government bonds approach

In this case, the real interest rate is the interest on the inflation-linked government bond (NTN-B).

International arbitrage approach

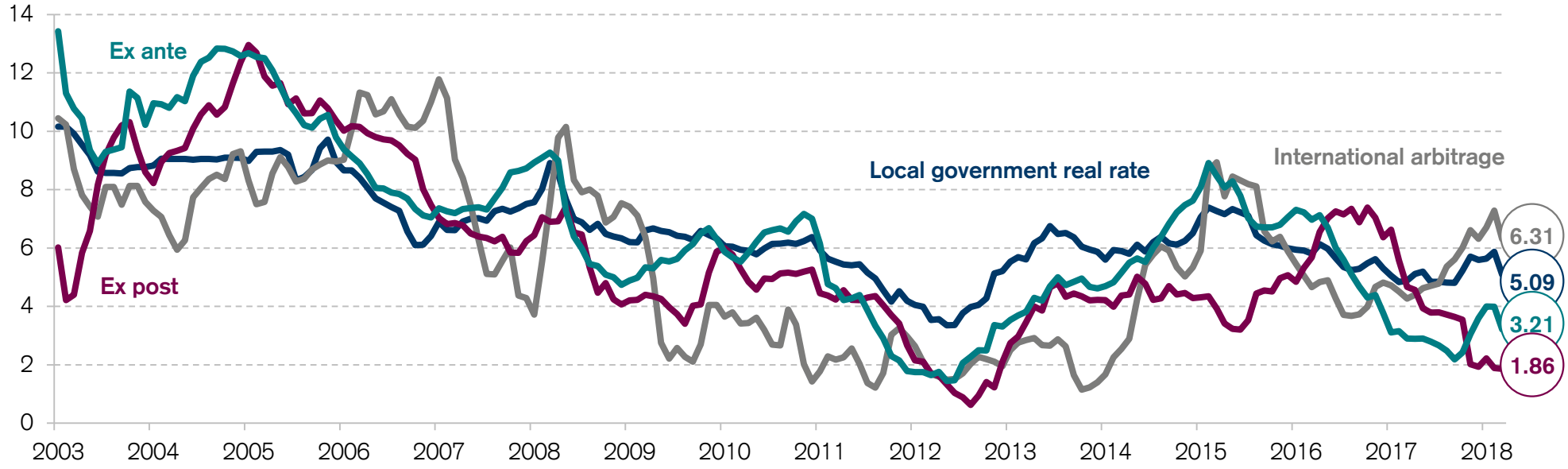
The real interest rate is a composition of the international real interest rate plus the Brazilian risk premiums for exchange rate and default.

Source: Credit Suisse

Real interest rates increased in 2018

- All measures of real interest rates increased in 2018, except for the ex post real interest rate. The real interest rate estimated using the international arbitrage approach increased to 6.3% in October, while local government bond rates increased to 5.1% and ex ante rates to 3.2% in the month. The higher interest rates were explained mainly by the increase in the federal funds rates and domestic risk aversion.
- On the other hand, the ex post real interest rate remained on a downward trend due to the higher inflation, reaching its lowest level since 2012 in October 2018 (1.9%). The prospects of higher foreign interest rates should pressure local domestic rates, particularly the ex post real rate.

Real interest rate (%)



Source: Bloomberg, Brazilian Association of Financial and Capital Market Entities (Anbima), US Federal Reserve, IpeaData, Central Bank of Brazil, B3, Brazilian Treasury Secretariat, Credit Suisse

Central bank will need to normalize nominal interest rate

- The low level of the ex ante real interest rate reflects the lowest nominal monetary policy rate (Selic) ever. The central bank has been keeping the Selic interest rate at its lowest level in order to stimulate domestic demand.
- With the reduction of the slackness of the economy, demand pressures on inflation would leave less room for the central bank to keep its monetary policy rate at an expansionist level. As a result, we expect the central bank to start a tightening cycle in 3Q19 by increasing the Selic rate to the natural nominal interest rate (natural real interest rate plus inflation target).
- We estimate the natural interest rate of the Brazilian economy using a combination of two statistical filters with eight real interest rates.[1]

Seven ways to estimate the natural interest rate

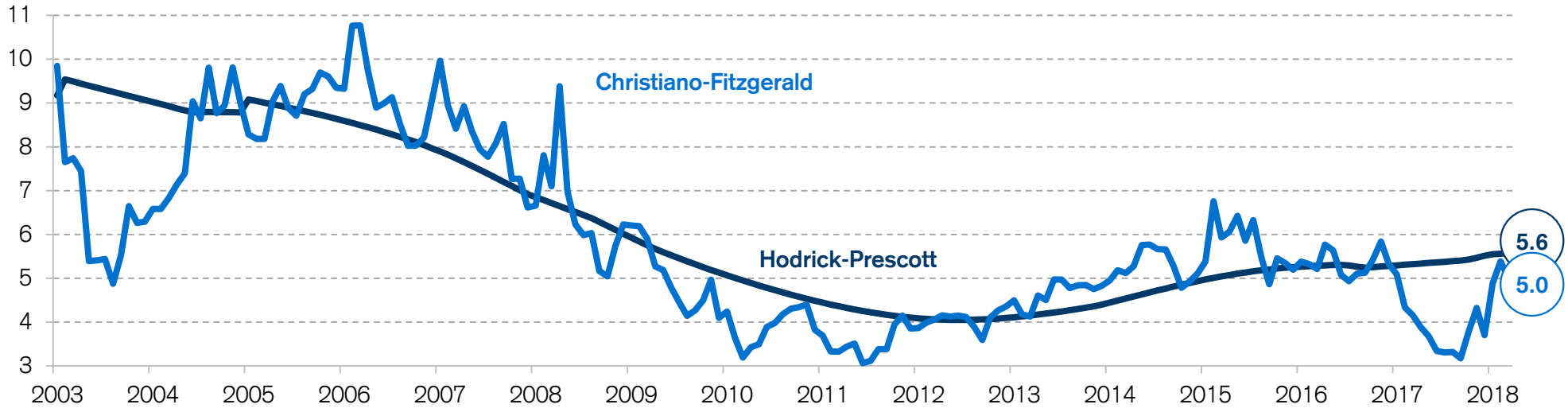
$(r_t = r_t^* + \gamma_t + \tau_t)$	International real interest rate (r_t*)	Country risk (γ_t)	FX risk (τ_t)
$r_t^* = r_{1,t}^{Fed}$	Fed Funds	EMBI+	One-year Brazil dollar bond rate (FRC)
$r_t^* = r_{2,t}^{Libor}$	Libor 1y or overnight	EMBI+	One-year Brazil dollar bond rate (FRC)
$r_t^* = r_{3,t}^{TIPS}$	Treasury Inflation-Protected Securities (TIPS)	Five-year CDS	Five-year Brazil dollar bond rate (FRC)
Local interest rate embedded in public bonds			
$r_t^* = r_{5,\ tNTNB}^{\ 5\ years}$	Five-year real interest rate implied in five-year NTN-B yield curve		
$r_t^* = r_{5,\ tNTNB}^{\ 2045}$	Real interest rate embedded in 2045 NTN-B		
Ex – Post approach			
$r_t^* = i_{Selic} - \pi$	Selic interest rate minus last 12 months inflation		
Ex – Ante approach			
$r_t^* = i_{PRExDI} - E(\pi)$	The interest rate for 360 days (extracted from DIxPRE swap) minus the expected rate of inflation one-year ahead (obtained in the Market Readout survey).		

[1]We used the Hodrick-Prescott (HP) and Christiano-Fitzgerald (CF) filters.
Source: Credit Suisse.

Natural real interest rate of 5.3% in 2018

- The natural real interest calculated by both methods has increased slightly in 2018. The median of all estimates for the natural real interest rates increased from 4.5% in December 2017 to 5.3% in October 2018.
- Of the 16 estimates of the natural interest rate, 11 were higher than 4.5% and 7 higher than 5.5%. The highest natural interest rates were those estimated using foreign interest rates.
- On the one hand, the expected increase in foreign interest rates should pressure the natural real interest rates in Brazil in the coming quarters. On the other hand, advancement of structural reforms in 2019 would reduce the risk premiums attributed to the domestic economy.

Median estimates of natural interest rate using Christiano-Fitzgerald and Hodrick-Prescott filters (%, annual)



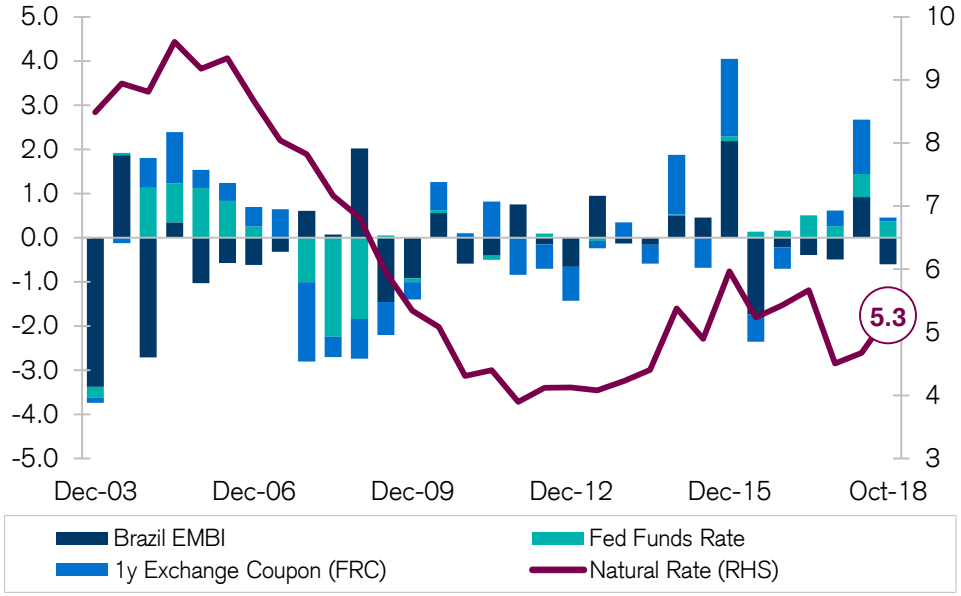
Source: Bloomberg, Brazilian Association of Financial and Capital Market Entities (Anbima), US Federal Reserve, IpeaData, Central Bank of Brazil, B3, Brazilian Treasury Secretariat, Credit Suisse

Exchange rate premium pressured natural real rates in 2018

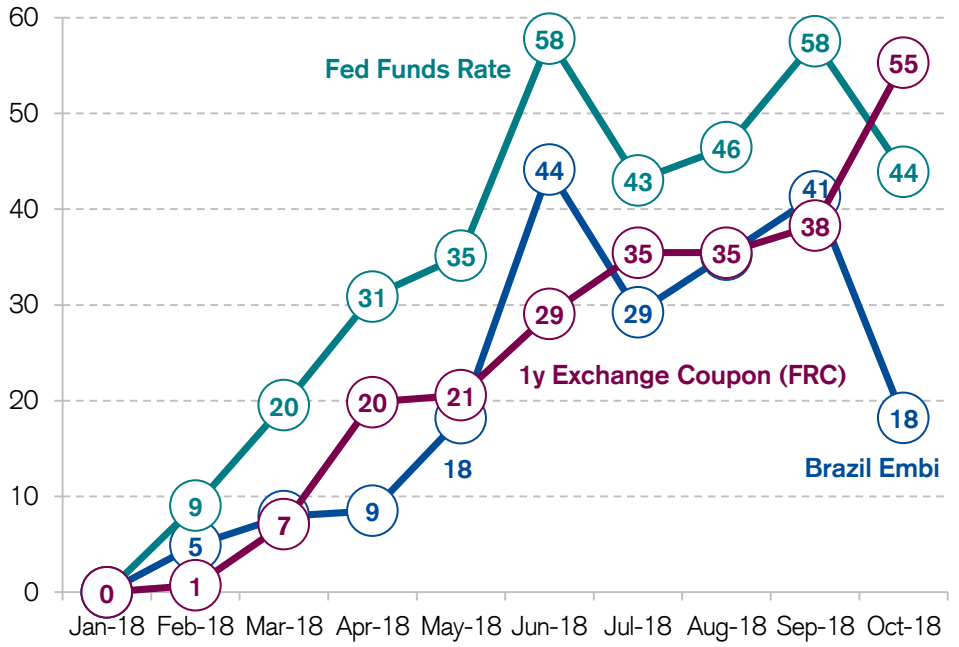
- A breakdown of the components used in the international approach to calculate the natural interest rate reinforces the view that the exchange rate premium was the main factor pressuring natural real rates in 2018. All components used in the methodology contributed to the increase in the natural interest rate in 2018: (i) exchange rate premium increased by 55bps; (ii) Fed rates rose by 44bps; and (iii) default premium rose by 18bps.
- In 2019, the Fed Funds is expected to keep increasing due to the tightening cycle in developed markets, but the exchange rate and default premiums should moderate with the approval of structural reforms.

Natural interest rate, EMBI, Fed funds rates, and FRC

(%, pps, annual and semiannual change)



2018 cumulative change in EMBI, Fed funds and FRC (bps)

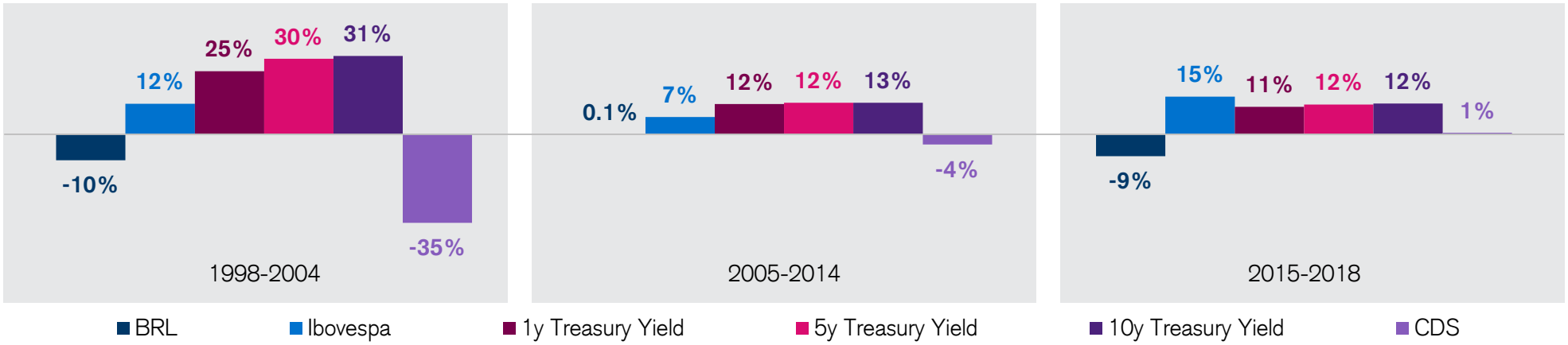


Source: Bloomberg, Brazilian Association of Financial and Capital Market Entities (Anbima), US Federal Reserve, IpeaData, Central Bank of Brazil, B3, Brazilian Treasury Secretariat, Credit Suisse

Ibovespa posted high return in the period from 2015 to 2018

- Investments in public securities have become less profitable in the past 20 years. The average yield for 5-year notes was 30% from 1998 to 2004 and 12% from 2015 to 2018. This movement resulted from improvements in the management of fiscal and monetary policies since 1998, for example with the implementation of the Fiscal Responsibility Act, inflation targeting, and the cap on spending. The reduction of the external debt and increase in reserves also contributed to this scenario.
- With the expectation of implementation of economic measures favorable to long-term growth as of 2016, stocks rose sharply and were the best performers of all assets analyzed from 2015 to 2018. Approval of structural reforms and maintenance of pro-growth economic policies will likely maintain the prospects for high returns on this class of asset over the next few years.

Performance of main asset classes in Brazil[1]
(average annual rate, %)

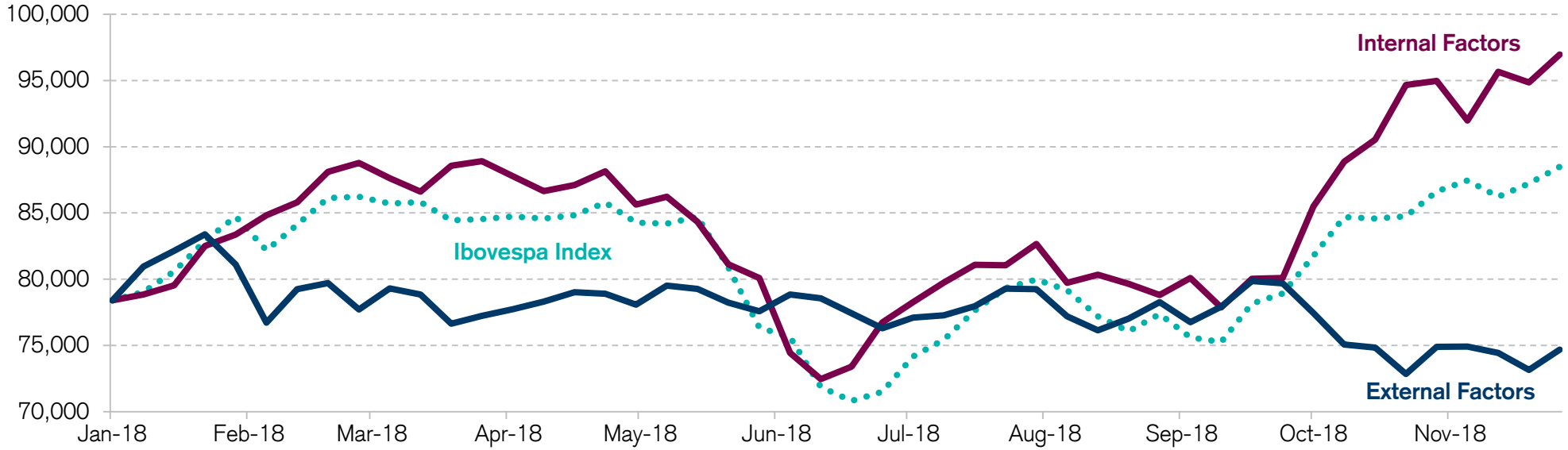


[1]For the Treasury Yield performance was used the average of treasury interest rate for the period.
Source: Brazilian Association of Financial and Capital Market Entities (Anbima), Bloomberg, Credit Suisse

Sharp increase in Ibovespa, driven by domestic factors

- The increase in the Ibovespa in 2018 was driven by internal factors[1]. The index explained by internal factors saw a strong increase in October, reflecting a positive market outlook for the next few years, after the 2018 electoral process. The Ibovespa driven by only domestic factors was at 96952 points on November 30, much higher than the 78401 points on January 1.
- Declines in foreign stock markets and other external factors contributed negatively to the performance of the Ibovespa in 2018. The index with the effects of only external factors was at 74690 points on November 30.

Dynamics of Ibovespa explained by internal and external factors
(thousands of points)



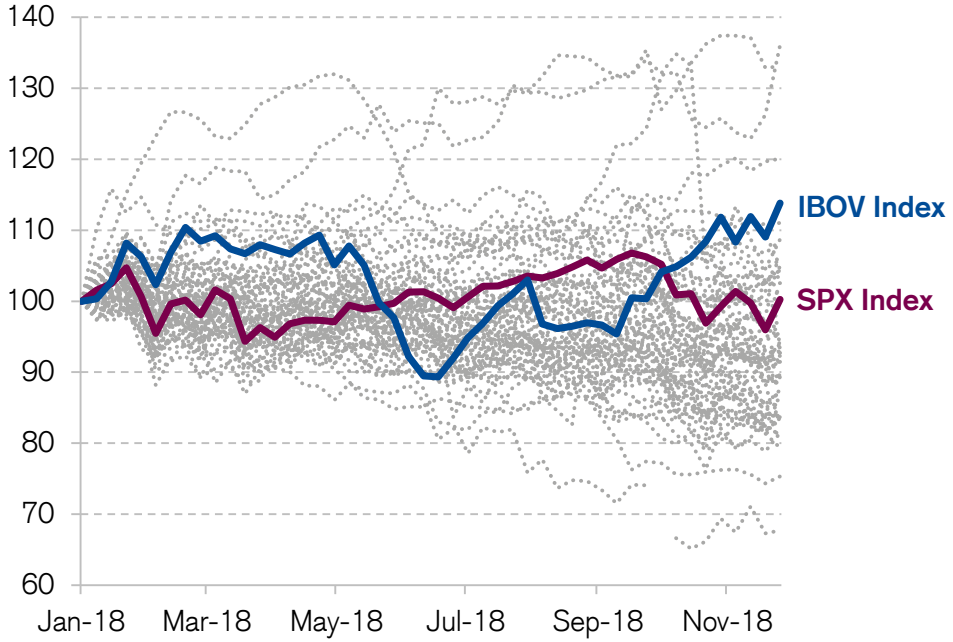
[1] The Ibovespa index is measured in BRL. To break down the exchange rate into external and internal factors, we projected the weekly changes in the Ibovespa using 66 stock market indexes of developed and emerging countries in the Ridge regression model. The external factor is calculated as the forecast model and the domestic factor as the residual of the regression.

Source: Bloomberg, Credit Suisse

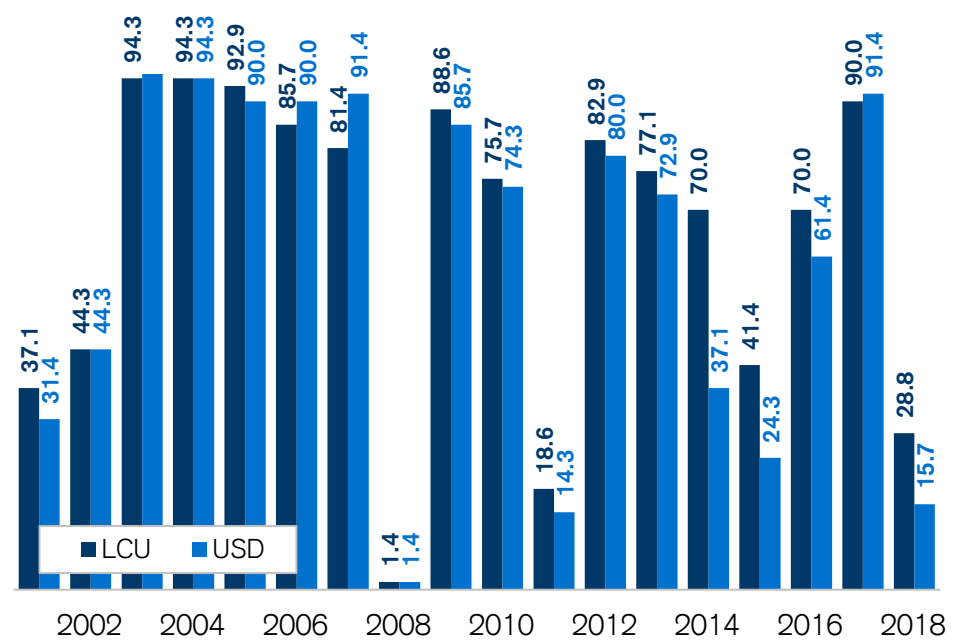
Most stock markets performed poorly in 2018

- Through November 2018, only 28.8% of 70 stock markets had positive returns in local currency terms in the year. As the USD rose sharply against other currencies, stock market returns in USD were even worse: only 15.7% of the 70 markets posted positive returns in 2018 in USD terms.
- The performance of stock markets in the year was the third lowest since 2001. The Ibovespa increased 13% in BRL terms in the year but decreased 5.6% in USD terms.

Global stock market indexes in 2018
(2-Jan-2018 = 100; in LCU terms)



Percentage of stock market indexes with positive annual results (%)

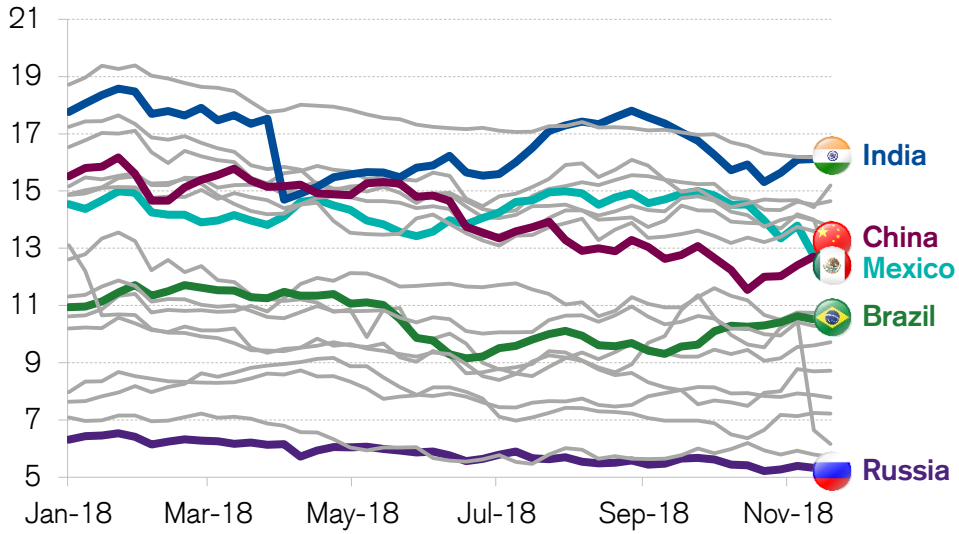


Source: Bloomberg, Credit Suisse

Relative stability of P/E in 2019

- The ratio of the price of a share to the expected earnings (P/E) of the Brazilian stock exchange was relatively stable in 2018, with two different moments: a reduction in P/E in the pre-election period and a recovery in the last few months of the year.
- From a historical perspective, the P/E is close to its historical average but at a level still low compared to the peaks of 2016 and 2017, when the prospects for the approval of reforms were favorable. The progress of the agenda of reforms and privatizations in Congress and the more significant growth of the economy in 2019 will likely boost the expectations of higher earnings and returns on the stock exchange.

P/E of most important stock markets of emerging countries[1] (%, by country)



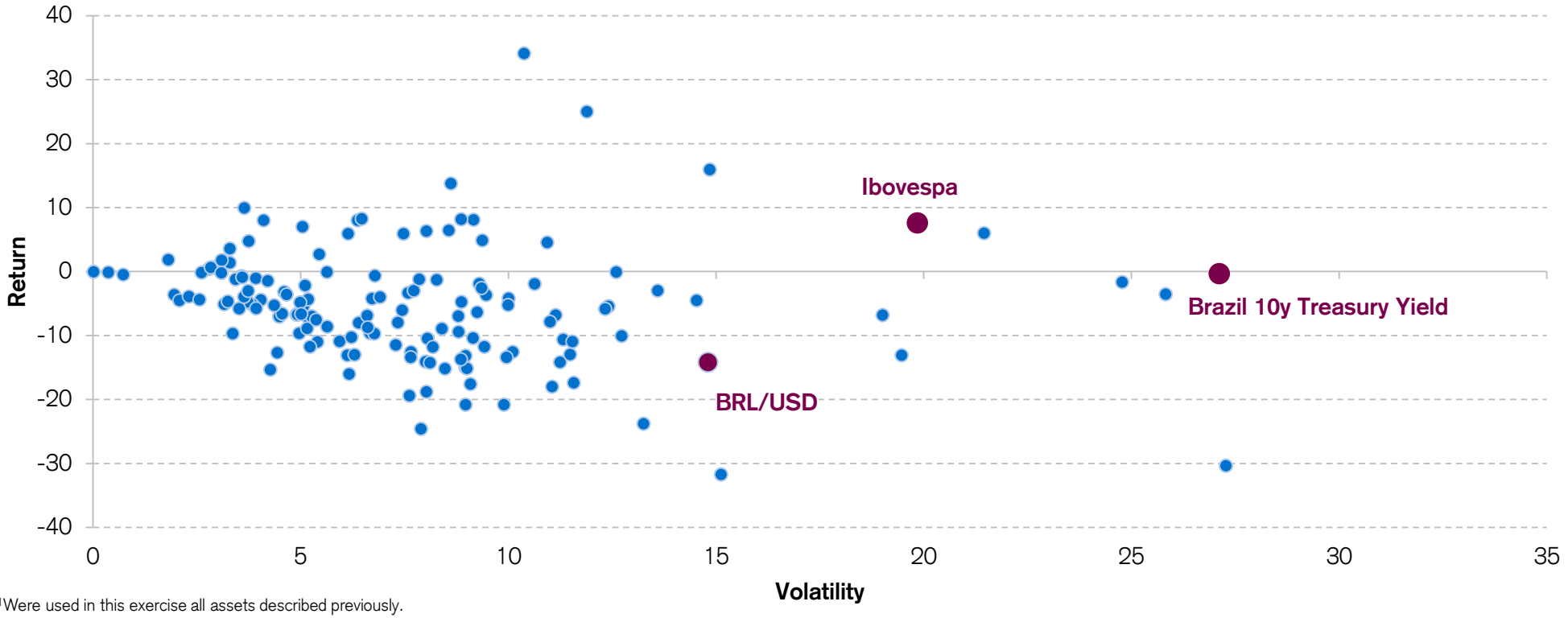
P/E for Ibovespa[(1)] (%)

[1]Twelve-month forward earnings. Source: Bloomberg, Credit Suisse

High volatility of Brazilian assets in 2018

- Within the class of assets consisting of currencies, stocks, and public bonds, Brazilian assets performed poorly in 2018 compared with other emerging and developed economies.
- The high volatility of prices owing to the presidential election in 2018 led to an even worse return on Brazilian assets per risk unit.

Return vs. volatility on investments in currencies, stocks, and public bonds in 2018 (%, year-to-date)[1]



[1]Were used in this exercise all assets described previously.

Source: Bloomberg, Credit Suisse

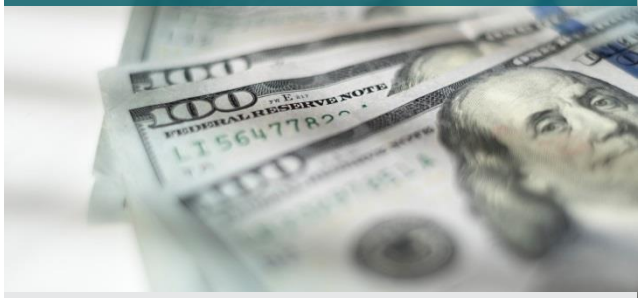
Stock market to benefit from positive growth outlook

- Our base-case scenario is compatible with the following:

Fixed income

The likely normalization of monetary policy in the end of 2019 as a result of the higher inflation, resumption of economic activity, low differential of domestic and foreign interest rate, and the lower inflation targets for the coming years, and the more favorable prospects for implementation of the fiscal agenda suggest that the yield curve should flatten from the current levels.

Exchange rate



The equilibrium models for exchange rate show limited room for strong appreciation of the BRL in 2019. On the domestic front, approval of social security reform and implementation of a more liberal economic agenda should contribute to appreciation of the BRL. However, the prospects for continuation of the monetary tightening cycle in the USA and of high risk aversion in global financial markets should limit the short-term capital inflows into the domestic market.

Equity

Despite the more positive performance of the domestic stock exchange compared with other classes of assets in recent years, current valuations are not expensive from a historical perspective. Furthermore, the acceleration of economic activity combined with a more positive outlook for long-term growth as a result of implementation of a market-friendly agenda (e.g., privatizations and microeconomic reforms) should increase the market's expectations of both GDP growth and growth in profits in Brazil in the coming years.

Source: Credit Suisse

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Brazil in numbers

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Brazil in numbers
Economic activity

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018F	2019F	2020F
Economic Activity															
Nominal GDP (BRL bn)		2,720	3,110	3,335	3,885	4,375	4,815	5,330	5,780	5,996	6,267	6,554	6,998	7,525	8,076
Nominal GDP (USD bn)		1,395	1,695	1,675	2,210	2,615	2,465	2,470	2,455	1,798	1,799	2,054	1,912	2,034	2,219
Real GDP growth (%)		6.1	5.1	-0.1	7.5	4.0	1.9	3.0	0.5	-3.5	-3.3	1.1	1.4	3.0	2.5
Supply	Agriculture (%)	3.2	5.8	-3.7	6.7	5.6	-3.1	8.4	2.8	3.3	-5.2	12.5	-0.1	0.9	2.0
	Industry (%)	6.2	4.1	-4.7	10.2	4.1	-0.7	2.2	-1.5	-5.8	-4.6	-0.5	1.3	3.7	3.2
	Services (%)	5.8	4.8	2.1	5.8	3.5	2.9	2.8	1.0	-2.7	-2.3	0.5	1.5	2.7	2.2
Demand	Household consumption (%)	6.4	6.5	4.5	6.2	4.8	3.5	3.5	2.3	-3.2	-3.9	1.4	2.0	2.9	2.6
	Government consumption (%)	4.1	2.0	2.9	3.9	2.2	2.3	1.5	0.8	-1.4	0.2	-0.9	0.3	0.0	0.0
	Gross fixed capital formation (%)	12.0	12.3	-2.1	17.9	6.8	0.8	5.8	-4.2	-13.9	-12.1	-2.5	5.0	9.3	5.7
	Exports (%)	6.2	0.4	-9.2	11.7	4.8	0.7	1.8	-1.6	6.8	0.9	5.2	6.0	7.5	3.5
	Imports (%)	19.6	17.0	-7.6	33.6	9.4	1.1	6.7	-2.3	-14.2	-10.3	5.0	9.8	7.0	5.1
Unemployment - IBGE (% of EAP)[1]		-	-	-	-	-	7.4	7.1	6.8	8.5	11.5	12.7	12.3	11.3	10.6
Habitual earnings (%)		-	-	-	-	-	-	3.3	1.1	-0.3	-1.9	2.3	0.6	1.7	2.1
Working Population (%)		-	-	-	-	-	-	1.4	1.5	0.0	-1.9	0.3	1.4	2.4	1.9
Wage bill (%)		-	-	-	-	-	-	4.7	2.9	-0.1	-3.2	2.6	2.0	4.1	4.0
Banking credit (% of GDP)		34.7	39.7	42.6	44.1	46.5	49.2	50.9	52.2	53.7	49.6	47.1	49.7	47.2	47.8
Unmarked lending (% of GDP)		23.1	26.8	27.1	27.2	28.1	29.0	28.3	27.3	27.3	24.9	24.2	26.9	26.6	27.5
Earmarked lending (% of GDP)		11.6	12.9	15.5	16.9	18.4	20.2	22.6	24.9	26.4	24.8	23.0	22.8	20.7	20.3

(1) Average rate, measured by the National Household Sample Survey.

Fonte: IBGE, Banco Central, Tesouro Nacional, Credit Suisse

Brazil in numbers

Inflation, fiscal and monetary policies

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018F	2019F	2020F
Inflation, FX and interest rate														
IPCA - IBGE (%)	4.5	5.9	4.3	5.9	6.5	5.8	5.9	6.4	10.7	6.3	2.9	3.7	4.2	4.2
Food at home (%)	12.4	10.7	0.9	10.7	5.4	10.0	7.6	7.1	12.9	9.4	-4.9	4.5	4.3	4.0
Industrial goods (%)	2.1	4.0	2.9	3.5	3.6	1.8	5.2	4.3	6.2	4.8	1.0	1.1	3.2	3.8
Services (%)	5.2	6.4	6.4	7.6	9.0	8.7	8.7	8.3	8.1	6.5	4.5	3.3	4.2	4.4
Administered prices (%)	1.5	3.5	4.5	3.2	5.6	3.7	1.5	5.3	18.1	5.5	8.0	6.2	5.2	4.5
End of period FX (BRL/USD)	1.77	2.34	1.74	1.67	1.88	2.04	2.34	2.66	3.90	3.19	3.31	3.87	3.60	3.68
Average FX (BRL/USD)	1.95	1.84	2.00	1.76	1.67	1.95	2.16	2.35	3.34	3.48	3.19	3.65	3.74	3.64
End-of-period target Selic interest rate(%)	11.25	13.75	8.75	10.75	11.00	7.25	10.00	11.75	14.25	13.75	7.00	6.50	8.00	9.00
Average Selic basic interest rate (%)	11.98	12.38	10.01	9.82	11.67	8.53	8.19	10.89	13.63	14.10	10.16	6.56	6.83	8.88
Fiscal Policy[2]														
Nominal balance (% of GDP)	-2.7	-2.0	-3.2	-3.2	-2.5	-2.3	-3.0	-6.0	-10.2	-9.0	-7.8	-7.1	-6.5	-6.6
Primary balance (% of GDP)	3.2	3.3	1.9	1.8	2.9	2.2	1.7	-0.6	-1.9	-2.5	-1.7	-1.7	-1.0	-0.8
Central government revenues (% of GDP)	22.7	23.0	22.1	23.6	22.6	22.0	22.1	21.1	20.8	21.0	21.1	21.3	21.6	20.9
Primary expenditures of central gov't (% of GDP)	16.9	16.2	17.4	18.2	16.8	16.9	17.3	18.1	19.4	20.0	19.5	19.3	19.1	18.2
Gross debt of overall government (% of GDP)[3]	56.7	56.0	59.2	51.8	51.3	53.7	51.5	56.3	65.5	70.0	74.0	76.7	77.3	79.2
Net debt of the public sector(% of GDP)	44.5	37.6	40.9	38.0	34.5	32.2	30.5	32.6	35.6	46.2	51.6	53.8	58.0	60.8

(2) As of 2009, Petrobras was excluded from the fiscal indicators of the public sector

(3) Amounts refer to new methodology of the Central Bank

Fonte: IBGE, Banco Central, Tesouro Nacional, Credit Suisse

Brazil in numbers
External sector

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018F	2019F	2020F
Balance of Payments														
Current account balance (USD bn)	0.4	-30.6	-26.3	-79.0	-76.3	-83.8	-79.8	-101.4	-54.1	-23.2	-5.5	-14.5	-27.3	-36.7
Current account balance (% of GDP)	0.0	-1.8	-1.6	-3.6	-2.9	-3.4	-3.2	-4.1	-3.0	-1.3	-0.3	-0.8	-1.3	-1.7
Trade balance (USD bn)	38.5	23.8	25.0	18.5	27.6	17.4	0.4	-6.6	17.7	45.0	64.0	53.6	52.1	49.1
Goods exported (USD bn)	160.7	198.4	153.6	201.3	255.5	242.3	241.6	224.1	190.1	184.5	217.2	239.0	254.0	267.0
Goods imported (USD bn)	122.2	174.6	128.7	182.8	227.9	224.9	241.2	230.7	172.4	139.4	153.2	185.4	201.9	217.9
Services and income (USD bn)	-42.1	-58.7	-54.6	-100.4	-106.9	-104.1	-83.9	-97.5	-74.5	-71.1	-72.1	-70.6	-82.0	-88.4
Remittances of profits and dividends (USDbn)	-22.4	-33.9	-25.2	-58.8	-55.8	-47.8	-18.7	-28.4	-15.5	-18.9	-15.8	-16.9	-22.5	-24.5
International travel and equipment rental (USDbn)	-9.0	-13.0	-15.0	-24.4	-31.4	-34.4	-37.6	-41.4	-33.0	-28.0	-30.0	-27.4	-31.8	-34.5
Net interest (USD bn)	-7.0	-8.5	-10.4	-12.0	-14.4	-16.6	-19.3	-21.4	-22.5	-22.1	-22.8	-20.0	-19.0	-19.5
Inward direct investment (USD bn)	44.6	50.7	31.5	88.5	101.2	86.6	69.7	97.2	74.7	77.8	70.7	88.3	90.0	90.0
Foreign portfolio investments (USD bn)	47.0	9.5	49.0	55.2	12.4	17.0	42.1	38.6	26.5	-15.6	0.6	-10.0	8.0	24.0
Equities (USD bn)	26.2	-7.6	37.1	37.7	7.2	5.6	11.1	11.5	9.8	11.0	5.7	-5.6	12.0	15.0
Fixed Income (USD)	20.8	17.1	11.9	17.5	5.3	11.4	31.0	27.1	16.7	-26.7	-5.1	-4.3	-4.0	9.0
Medium and long-term disbursements (USD bn)	-2.3	8.8	6.8	30.1	47.7	18.7	2.5	21.6	-3.6	-15.7	-5.7	-7.4	-2.4	-10.0
Disbursements (USD bn)	34.4	29.4	33.1	60.6	82.1	56.3	60.5	71.2	72.9	55.2	58.7	63.6	62.5	61.0
Amortizations (USD bn)	-36.7	-20.6	-26.3	-30.6	-34.5	-37.6	-58.0	-49.6	-76.5	-70.9	-64.3	-70.9	-64.9	-71.0
External debt and international reserves														
External debt (USD bn)	241	263	278	352	416	455	487	561	540	549	545	573	588	589
Public (USD bn)	91	89	99	111	110	121	120	136	128	128	133	133	133	133
Private (USD bn)	149	174	179	241	306	334	367	425	413	421	412	440	455	456
External debt (% of GDP)	17.2	15.5	16.6	15.9	15.9	18.5	19.7	22.8	30.1	30.5	26.5	30.0	28.9	26.6
External debt / Goods exported (%)	150	133	181	175	163	188	202	250	284	297	251	240	230	221
Gross international reserves (USD bn)	180	207	239	289	352	379	376	374	369	372	382	387	392	398
Gross international reserves / External debt (%)	75	79	86	82	85	83	77	67	68	68	70	68	67	68

Fonte: IBGE, Banco Central, Tesouro Nacional, Credit Suisse

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