

**Brazil Macro Compass**

**Five Charts That Helped to Explain the Brazilian Economy in 2018**

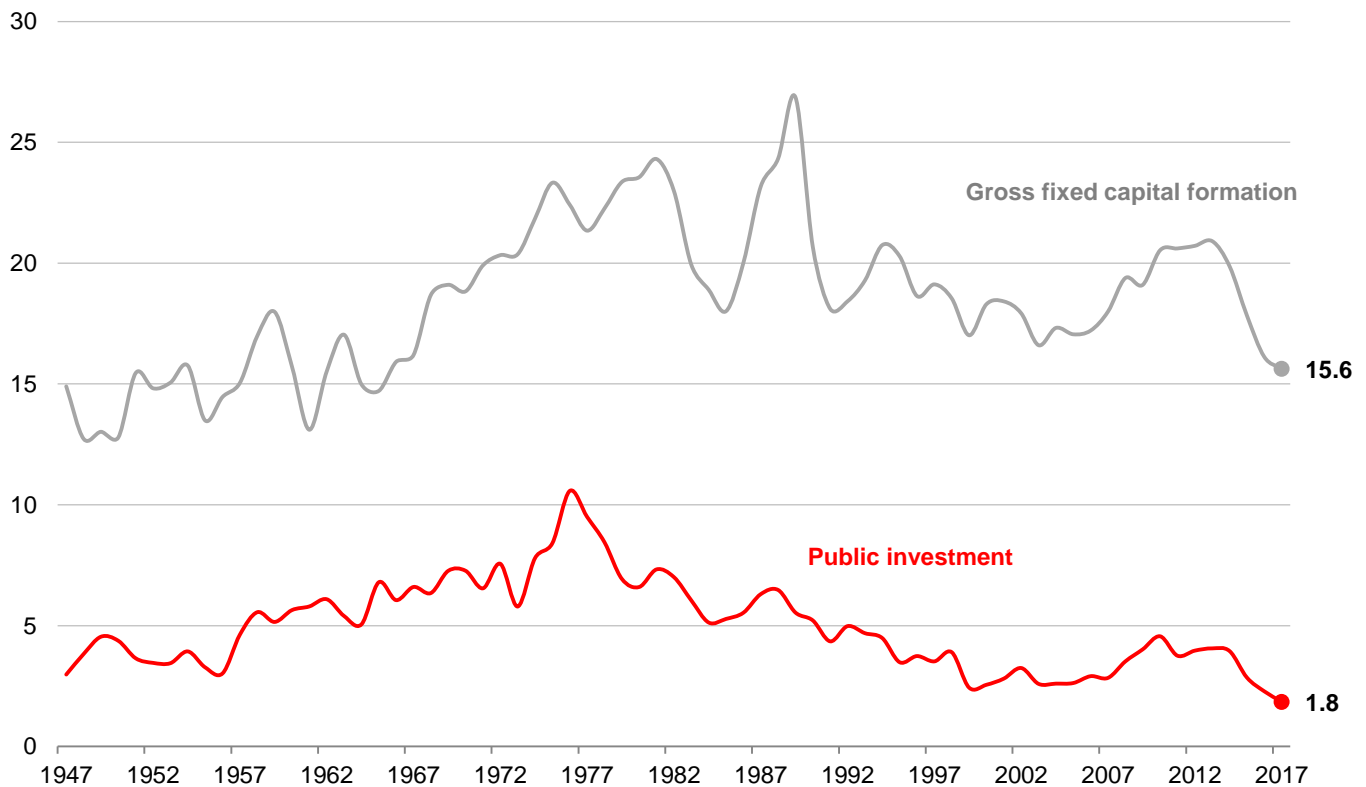
**Luciano Sobral\***  
lusobral@santander.com.br  
+5511 3553 3753

In the last *Brazil Macro Compass* of 2018, we present the five “Charts of the Week” from issues of this publication throughout 2018 that we think were the most useful to make sense of Brazil in this busy year. We will resume the publication of *Brazil Macro Compass* in its regular format on January 4, 2019. Many thanks for your readership, and happy holidays!

**1. Public Investment at Rock Bottom**

Researchers Rodrigo Orair (from the Senate’s Independent Fiscal Institution and IPEA) and Sergio Gobetti (IPEA) recently updated their long-run time series on public investment. According to their data, public investment in 2017 was the lowest in the 70 years covered by their research, amounting to only 1.8% of GDP (1.16% excluding state-owned firms). Gross fixed capital formation, at 15.6% of GDP, was the lowest since 1965.

**Brazil: Public Investment (Including State-Owned Firms) and Gross Fixed Capital Formation, % of GDP**



Sources: Orair & Gobetti, Observatório de Political Fiscal FGV/IBRE, Santander.

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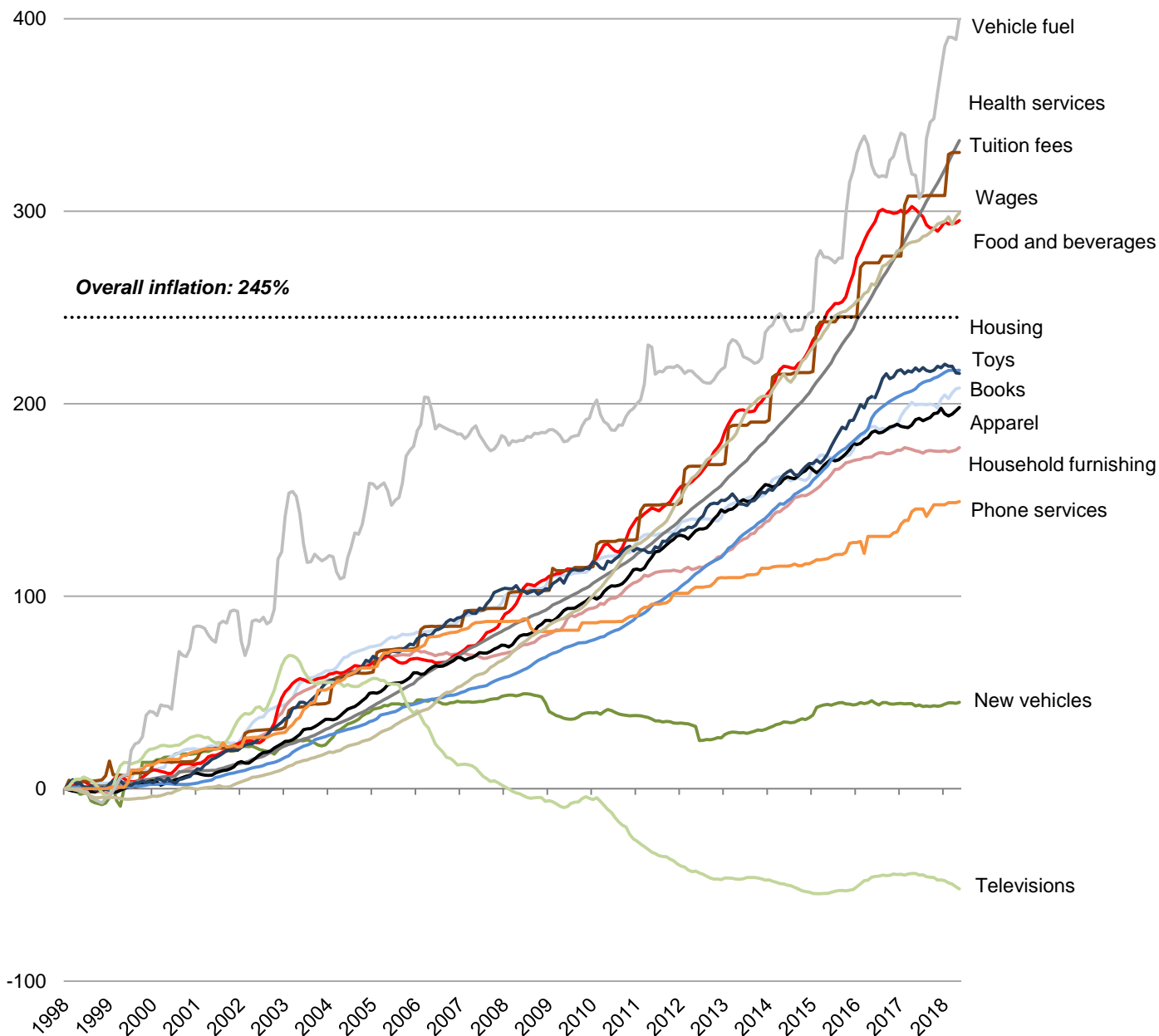
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## 2. Twenty Years of Inflation Explained

A chart created by the University of Michigan's Mark J. Perry, splitting some components of CPI inflation in the U.S. over the past 20 years, was called "the chart of the century" in the press and, reportedly, made the rounds at the Federal Reserve<sup>1</sup>. In the chart above, we tried to replicate Perry's analysis using data from Brazil's IPCA. In the period, as in the U.S., health services and tuition fees rose significantly above inflation. Wages also posted substantial real gains, offsetting generally high inflation across price groups. We think competition probably played a role in tradable prices, which, except for food and beverages, have risen less than the inflation rate since 1998 (in the U.S., most of those items' prices fell outright). Finally, vehicles became more affordable, and TV set prices practically halved.

### Brazil – Changes in Wages and the Prices of Selected Goods and Services Since 1998



Wages: labor income from the national household survey (PNAD). Groups of goods and services from IPCA (Phone Services: cell phone services from August 1999). Sources: IBGE, Santander.

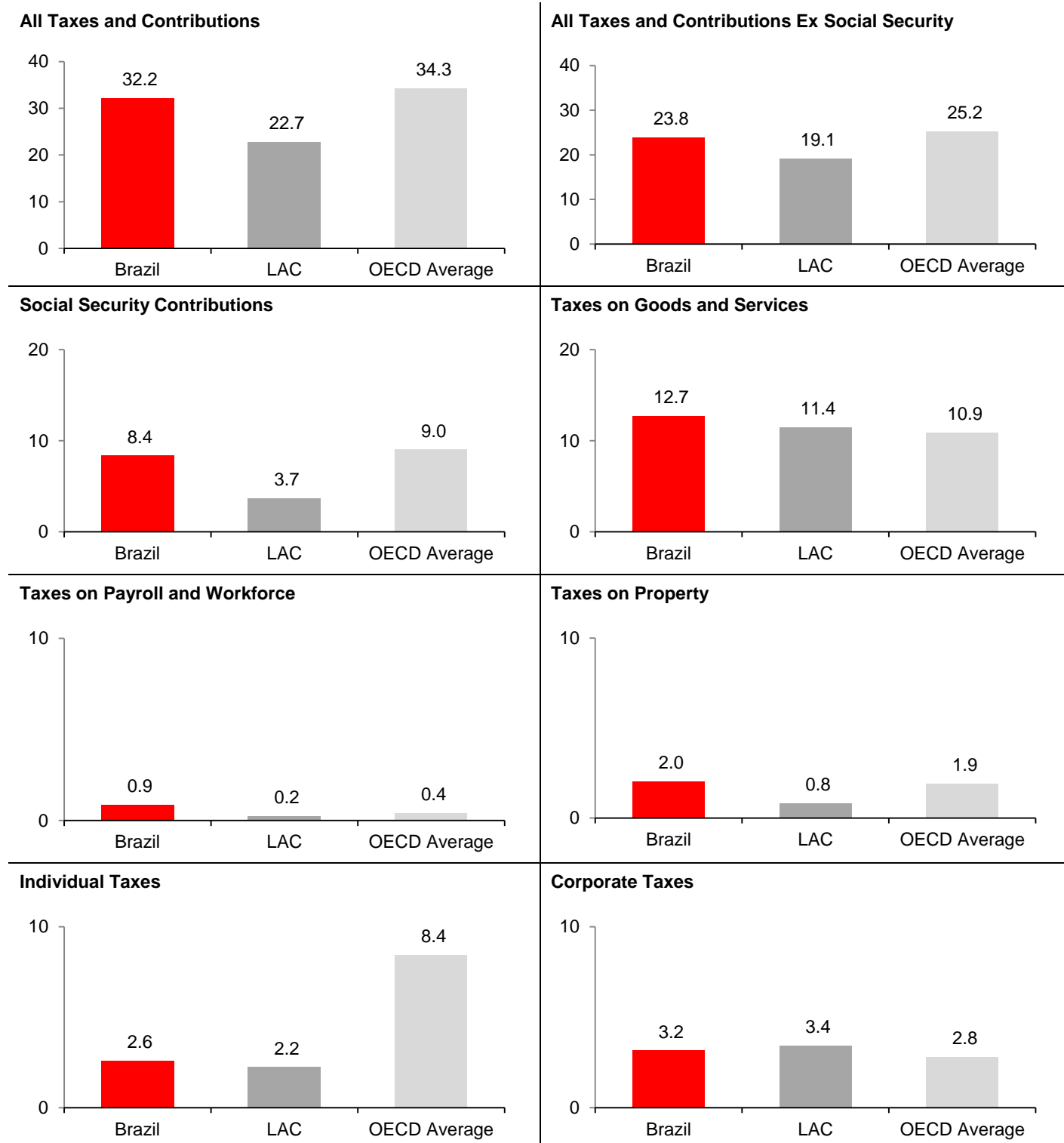
<sup>1</sup> "Chart of the Century Gives Powell Gloomy Glimpse of Trade-War World," by Rich Miller and Vince Golle (Bloomberg, July 10, 2018).



### 3. Tax Structure, Here and There

On June 28, the OECD released a comprehensive cross-country database on tax levels and structures through time (Global Revenue Statistics Database). We used it to compare tax revenue from different sources in Brazil with the averages for OECD members and Latin America and the Caribbean (LAC). Brazil's total tax revenue is much higher than the LAC average and comparable to the OECD, mostly because of relatively high social security contributions. Individual taxes in both Brazil and LAC are considerably lower than in OECD countries.

#### General Government Tax Revenue as % of GDP (2016 or latest available)



Sources: OECD, Santander.

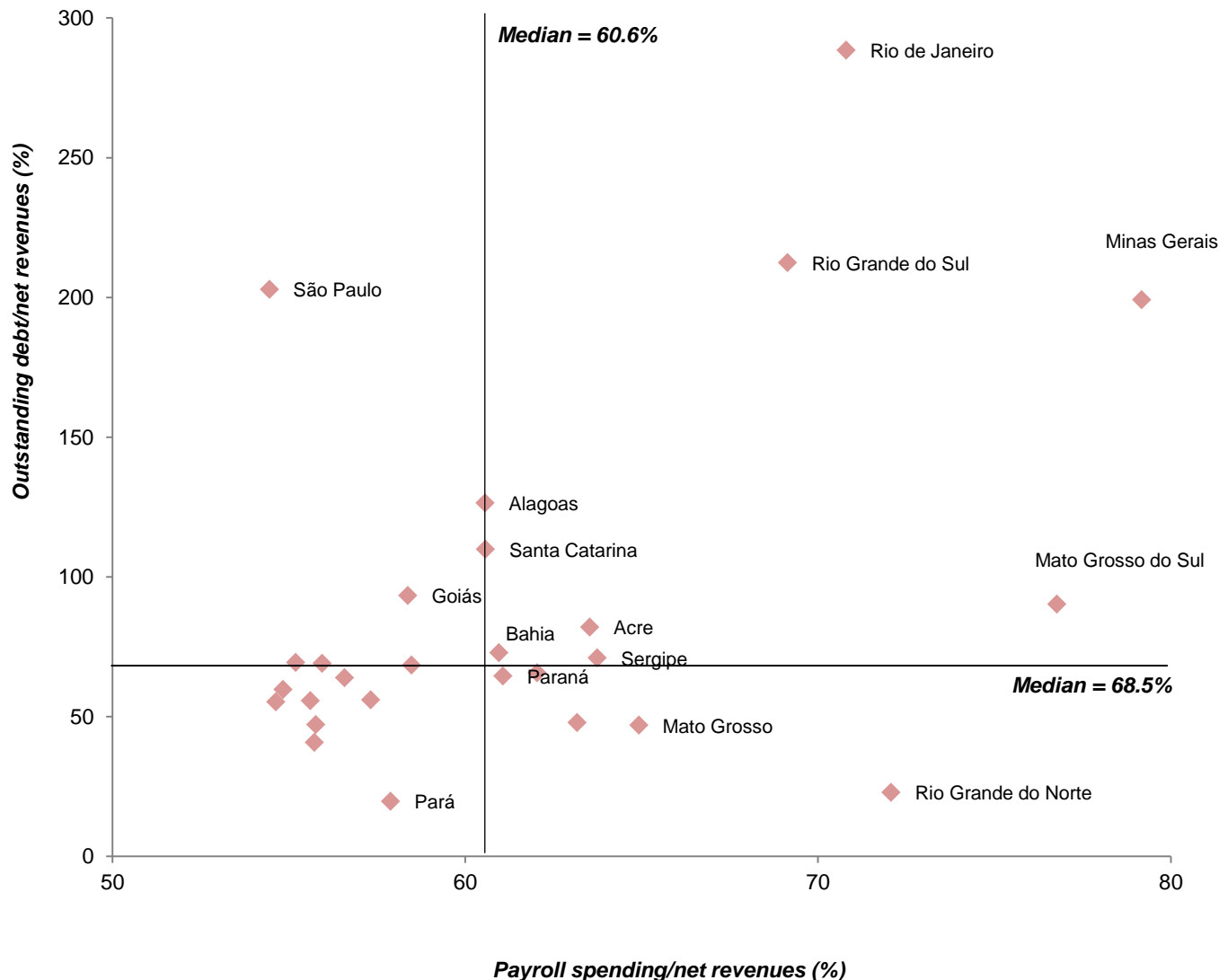


## 4. Subnational Finances, National Problems

On November 13, the Brazilian National Treasury released a comprehensive *Bulletin of Finances of Subnational Entities*, providing a plethora of data on the fiscal health of the country's states and municipalities. Our "Chart of the Week" compares two dimensions of the states' accounts: debt and payroll spending. Three of the largest Brazilian states (Rio de Janeiro, Rio Grande do Sul, and Minas Gerais), which account for almost a quarter of the country's population, are in the high debt/high payroll spending quadrant. According to the report, Rio de Janeiro State more than doubled payroll spending (including pensions) in real terms between 2011 and 2017. São Paulo, the most populous state (22% of Brazil's population), has the lowest payroll burden among all the states (54%, with virtually no growth between 2011 and 2017), but one of the highest debt levels.

Renegotiating debt payments and other transfers with the subnational entities will be one of the first challenges of the newly elected president in 2019, as we believe the newly elected governors are likely to line up in Brasília to extend their lifelines with the federal government, currently subject to a refinancing program announced by the Temer government in June 2016 and accepted by 24 of the 27 states. Several states are not meeting the conditions implied in the program, which include keeping the payroll spending/net revenue ratio below 60%.

### Brazil States – Outstanding Debt and Payroll Spending as Share of Net Revenues (2017)



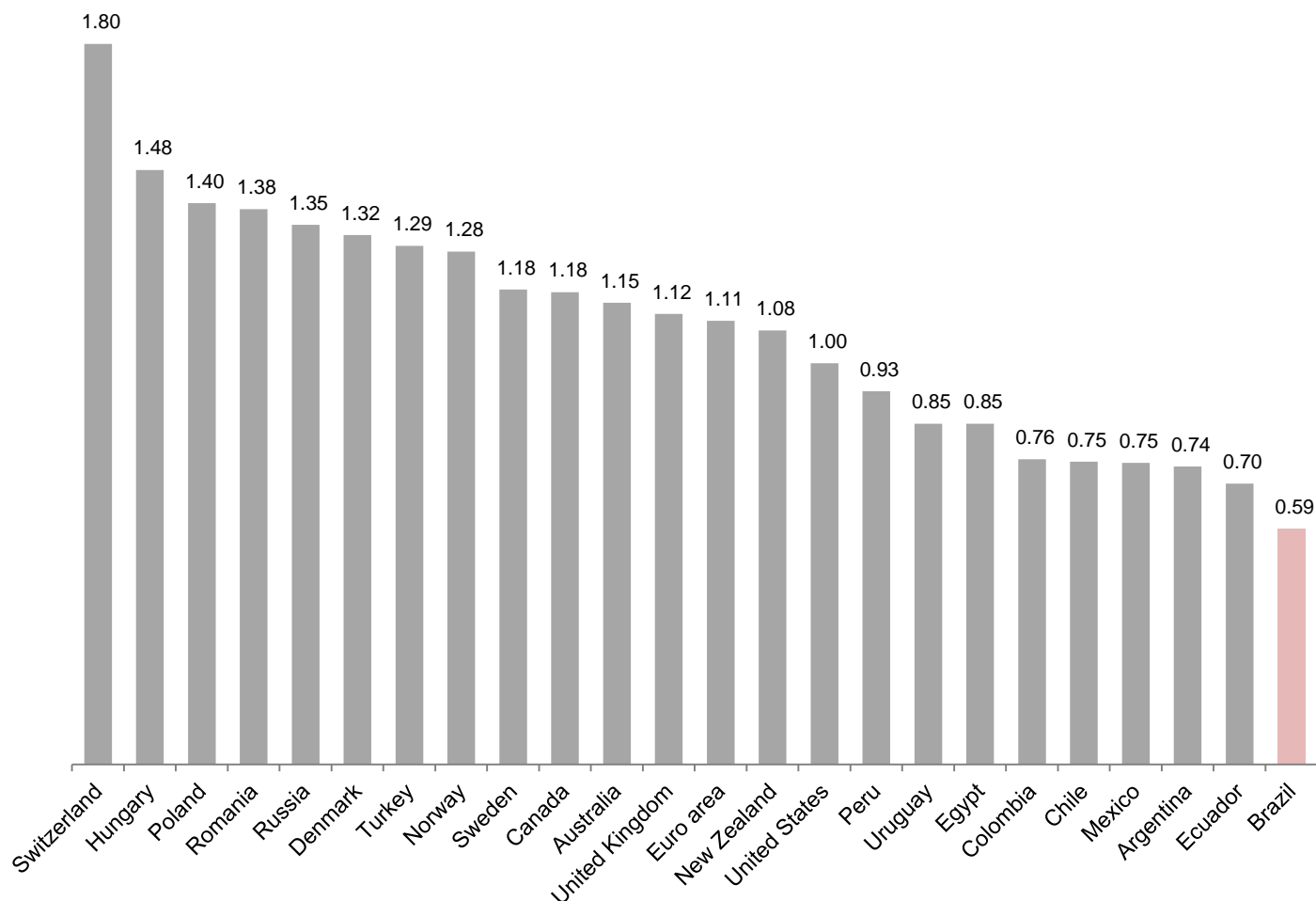
Sources: National Treasury, Santander.



## 5. Stickernomics

In *Stickernomics – What Do the Prices of Soccer Stickers Around the World Tell Us About Exchange Rates?* (April 24, 2018), we emulate the methodology of the famous Big Mac Index, replacing hamburgers with soccer stickers as a yardstick to test the “law of one price”. As in the case of Big Macs, there are large divergences among sticker prices among countries — from USD1.80 a packet in Switzerland to USD0.59 in Brazil, the cheapest country for soccer aficionados.

### Price in USD of a Packet with 5 Soccer Stickers



Sources: Panini, *LatinAmerican Post*, Santander

### Recent Publications (Available on Our Website)

- *Economic and Political Calendar: What to Watch in Brazil in 2019* (December 5, 2018)
- *Risks for the Selic in 2019 Expected to Become Even Less Asymmetric* (November 6, 2018)
- *20 Charts that Explain Brazil's New Political Power Structure* (October 29, 2018)
- *Brazil Post Elections: Honeymoon and Marriage* (October 25, 2018)
- *Brazil – Risk Premium: Apples and Oranges* (October 9, 2018)



## CONTACTS / IMPORTANT DISCLOSURES

### Macro Research

Maciej Reluga*	Head Macro, Rates & FX Strategy – CEE	maciej.reluga@santander.pl	48-22-534-1888
Sergio Galván*	Economist – Argentina	sgalvan@santanderio.com.ar	54-11-4341-1728
Maurício Molan*	Economist – Brazil	mmolan@santander.com.br	5511-3012-5724
Juan Pablo Cabrera*	Economist – Chile	jcabrera@santander.cl	562-2320-3778
Diana Ayala	Economist – Colombia, Peru	diana.ayala@santander.us	212-407-0979
Guillermo Aboumrad*	Economist – Mexico	gjaboumrad@santander.com.mx	5255-5257-8170
Piotr Bielski*	Economist – Poland	piotr.bielski@santander.pl	48-22-534-1888
Marcela Bensión*	Economist – Uruguay	mbension@santander.com.uy	5982-1747-5537

### Fixed Income Research

Diana Ayala	Macro, Rates & FX Strategy – Latin America	diana.ayala@santander.us	212-407-0979
Juan Arranz*	Chief Rates & FX Strategist – Argentina	jarranz@santanderio.com.ar	5411-4341-1065
Juan Pablo Cabrera*	Chief Rates & FX Strategist – Chile	jcabrera@santander.cl	562-2320-3778
David Franco*	Macro, Rates & FX Strategy – Latin America	david.franco@santanderCIB.co.uk	44-207-756-6633
Aaron Holsberg	Head of Credit Research	aholsberg@santander.us	212-407-0978

### Equity Research

Christian Audi	Head LatAm Equity Research	caudi@santander.us	212-350-3991
Andres Soto	Head, Andean	asoto@santander.us	212-407-0976
Walter Chiarvesio*	Head, Argentina	wchiarvesio@santanderio.com.ar	5411-4341-1564
Nicolas Schild*	Head, Chile	nschild@santander.cl	5622-336-3361
Valder Nogueira*	Head, Brazil	jvalder@santander.com.br	5511-3012-5747
Cecilia Jimenez*	Head, Mexico	mcjimenez@santander.com.mx	5255-5269-2228

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