

# **Digitalized Finance:**

The role of ICT in the process of financialization of the  
Brazilian economy

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**21 April, 2017**

**London - UK**

A high-contrast, black and white close-up of a US dollar bill, focusing on the intricate patterns and textures of the paper and the partial view of a person's face.

# **A FINANÇA DIGITALIZADA**

CAPITALISMO FINANCEIRO E REVOLUÇÃO INFORMACIONAL

EDEMILSON PARANÁ

*“The innovation in financial data acceleration is arriving from all areas of software and hardware research. Financial services institutions are always willing first adopters, as competitiveness affects profitability”.*

**Larry Tabb**  
CEO, Tabb Group

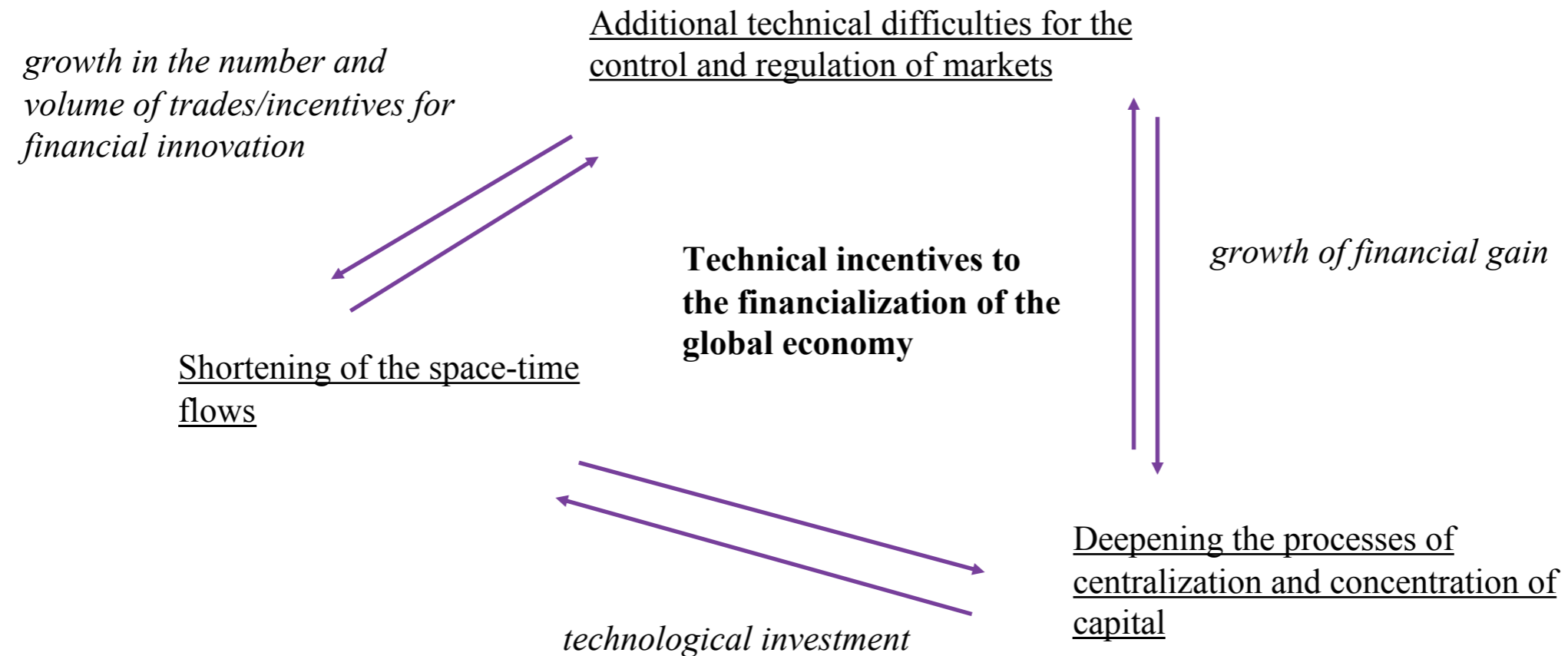
*“Tell me what the rules are and I’ll figure out how we can make money around them”.*

**Jeffrey C. Sprecher**  
CEO, Intercontinental Exchange - ICE

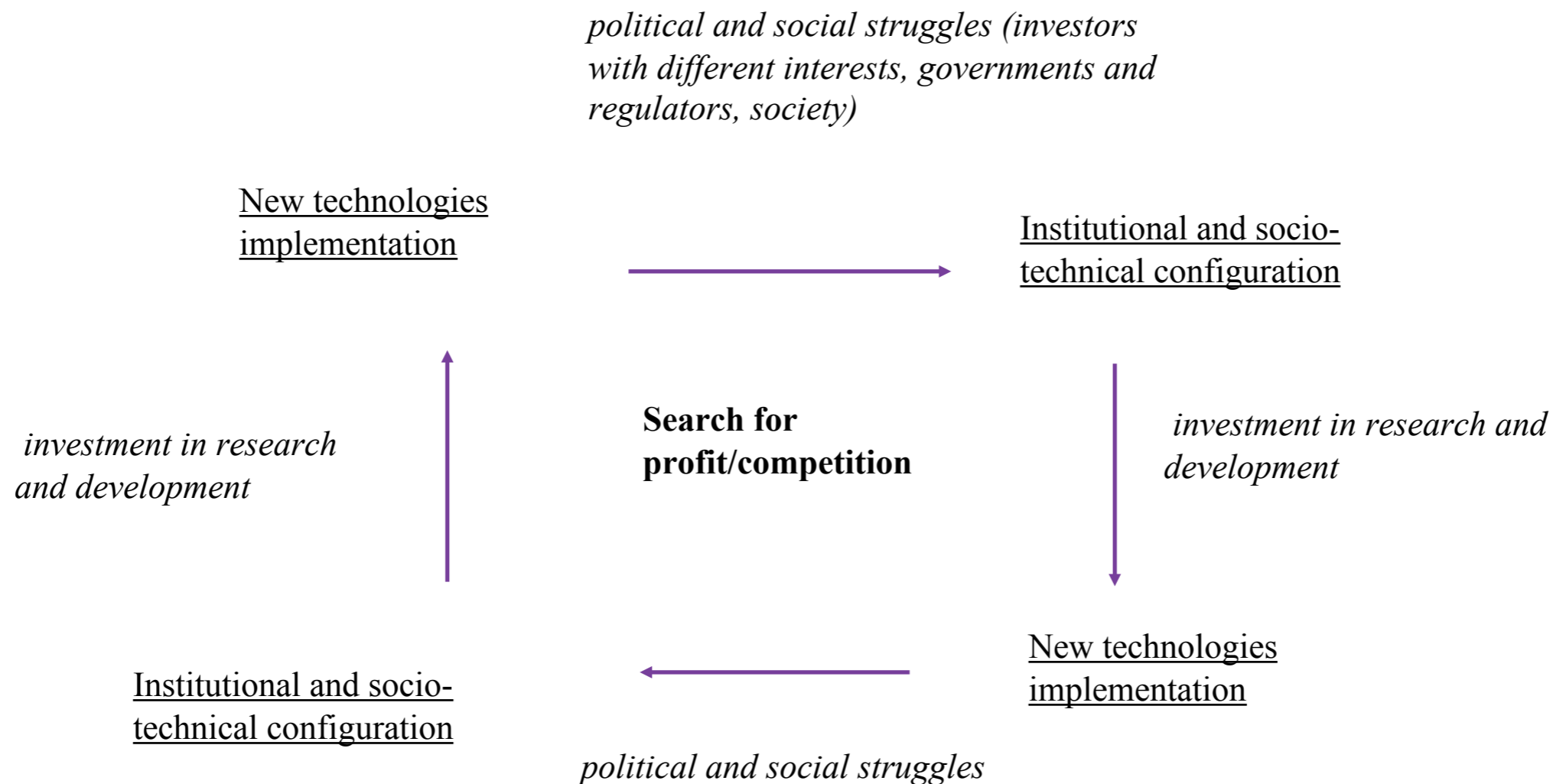
“Thus, while capital must on one side strive to tear down every spatial barrier to intercourse, i.e. to exchange, and conquer the whole earth for its market, it strives on the other side to annihilate this space with time, i.e. to reduce to a minimum the time spent in motion from one place to another. The more developed the capital, therefore, the more extensive the market over which it circulates, which forms the spatial orbit of its circulation, the more does it strive simultaneously for an even greater extension of the market and for greater annihilation of space by time”

**Karl Marx**  
(2013, p. 538- 539)

# Digitalized Finance cycle of operation

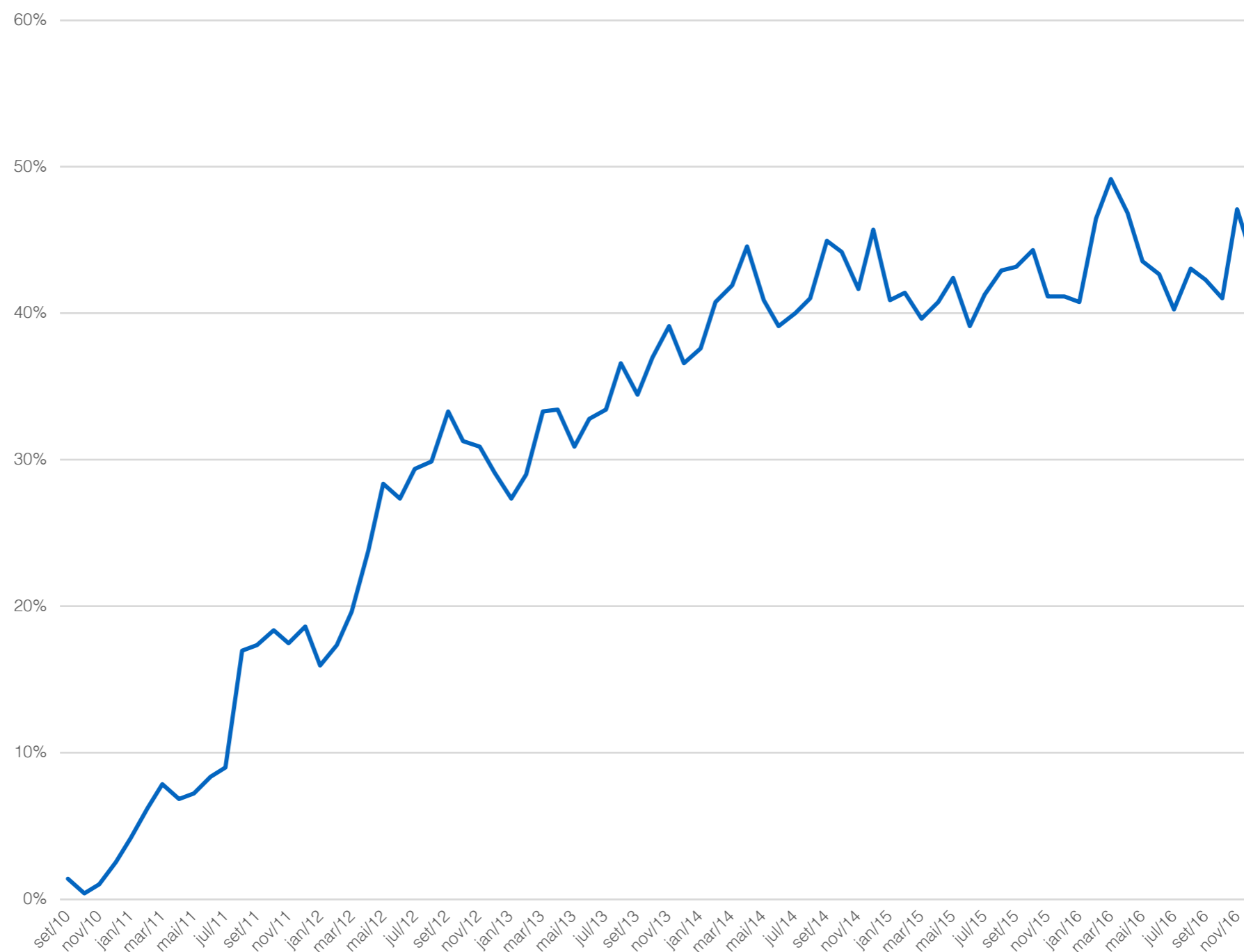


# Digitalized Finance spiral of complexity



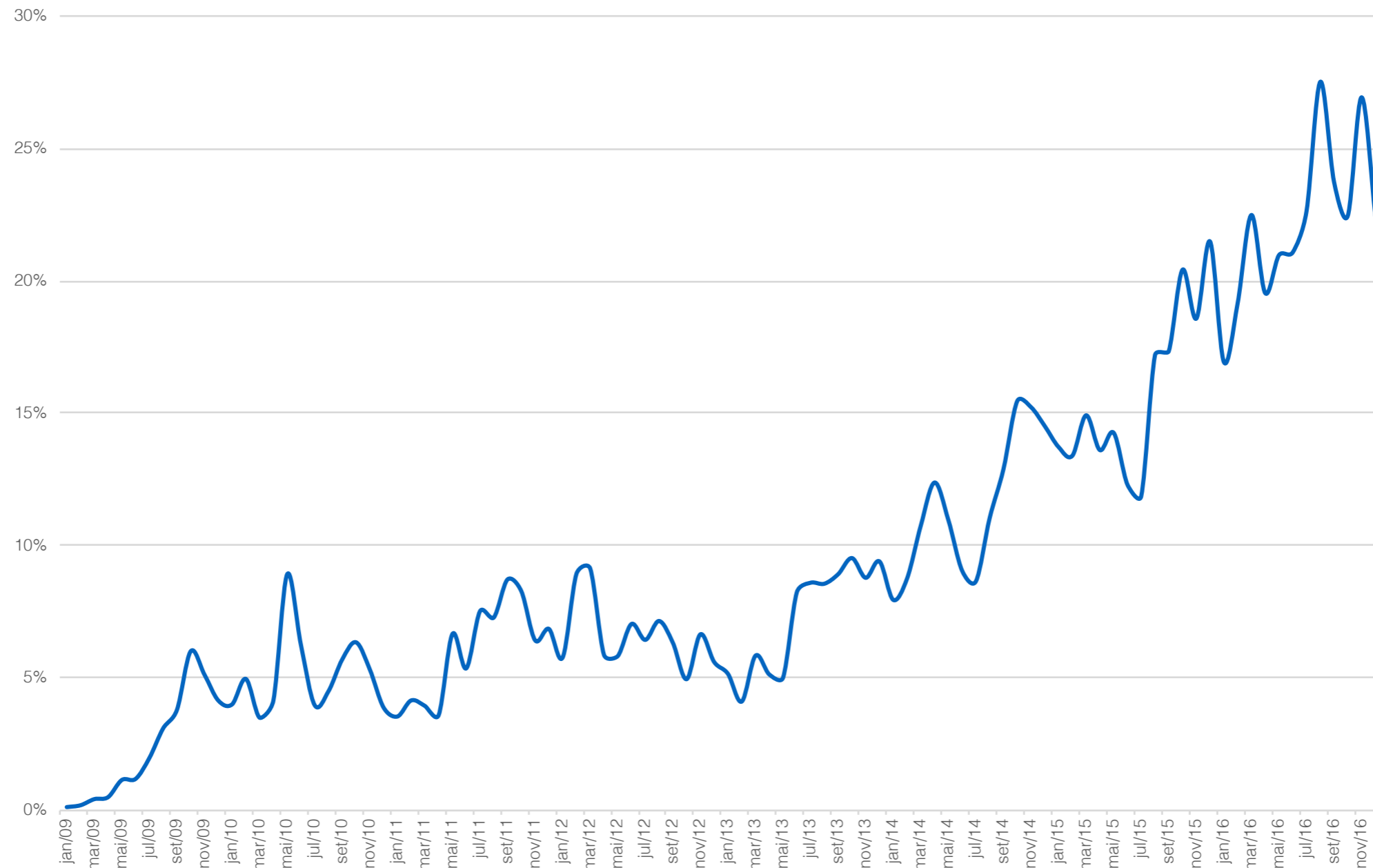
# Transactions carried out using algotrading in the Brazilian stock market (%)

Gráfico 1: Co-location (número de negócios) - segmento Bovespa – 2010 - 2016



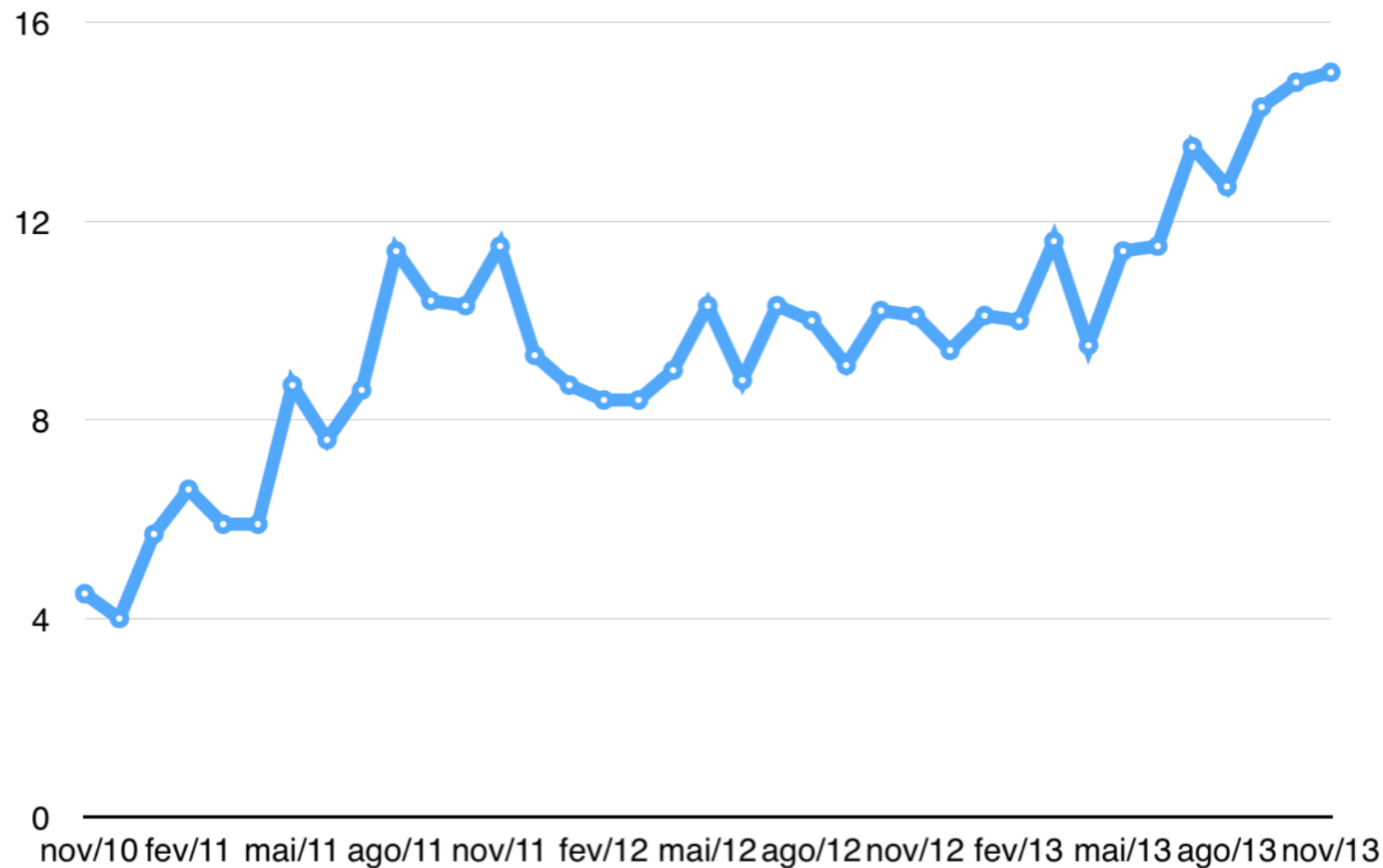
# Transactions carried out using HFT in the Brazilian derivatives market (%)

Gráfico 2: HFT (segmento BM&F)  
número diário de contratos - 2009 - 2016



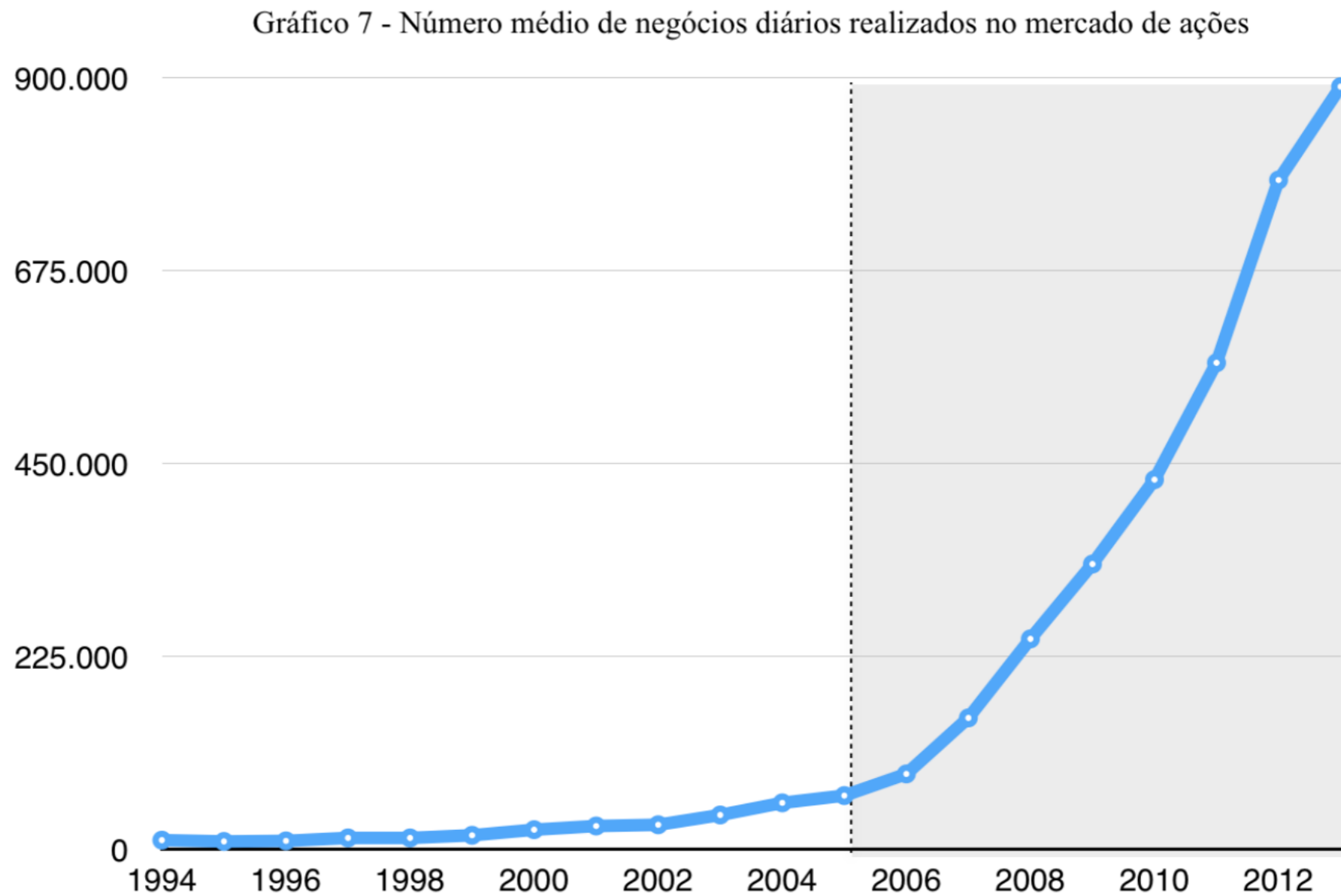
# Financial volume traded by HFT in the Brazilian stock market (%)

Gráfico 3 - Volume financeiro movimentado por HFTs no mercado de ações brasileiro (% do total)



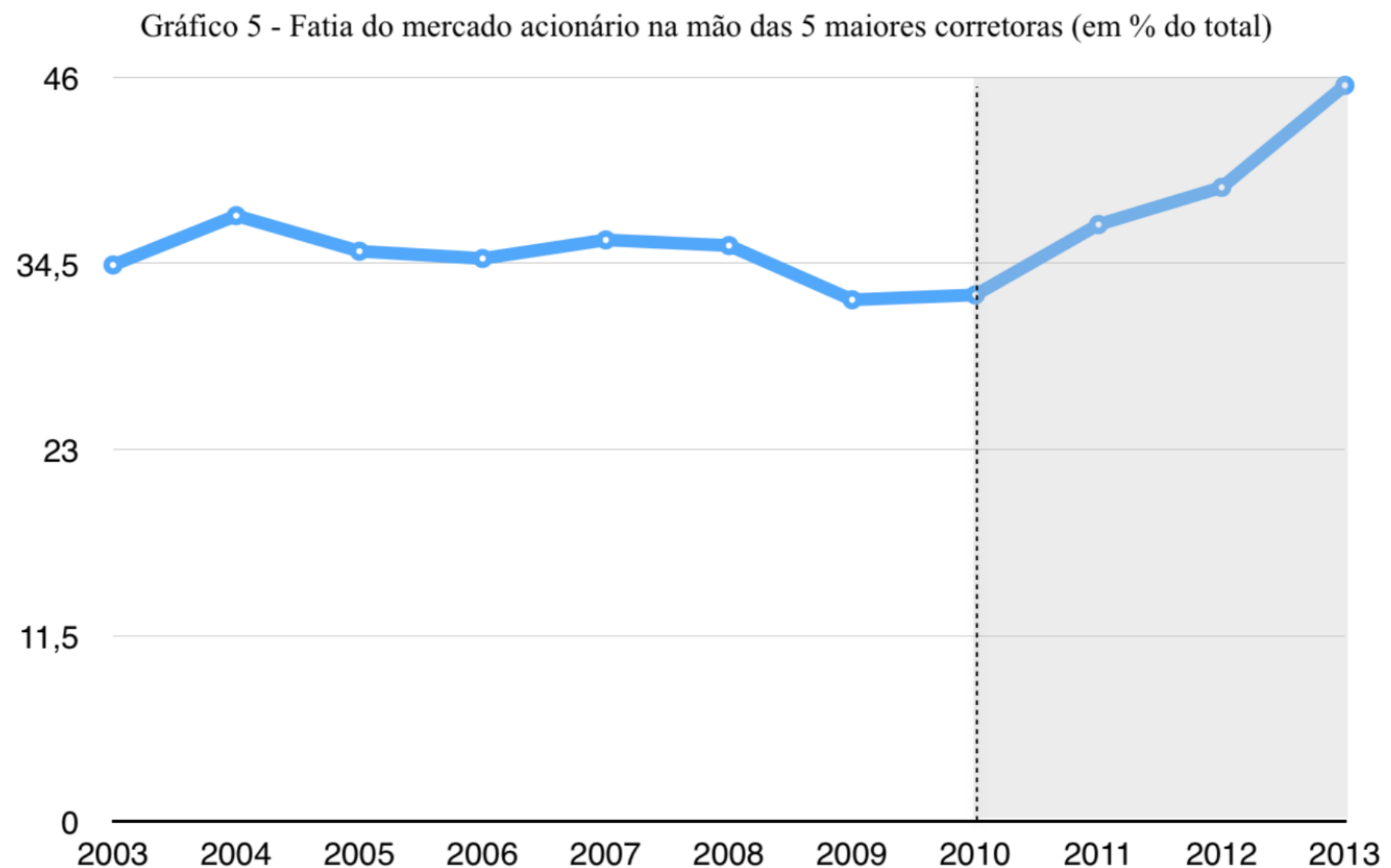
Fonte: BM&FBovespa; elaboração própria.

# Daily number of trades



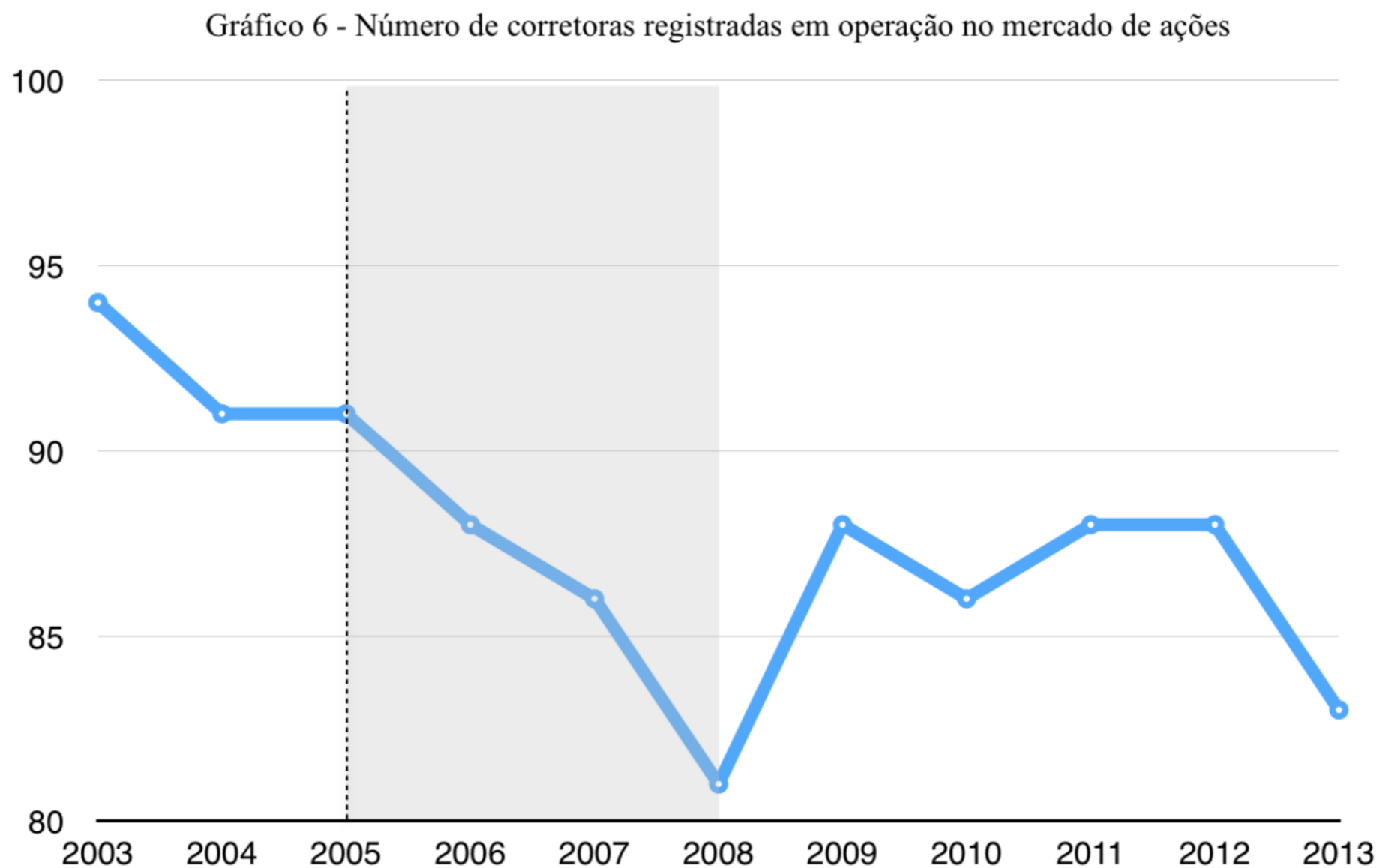
Fonte: BM&FBovespa; elaboração própria.

# Concentration (% of market share in the hands of 5 biggest brokers)



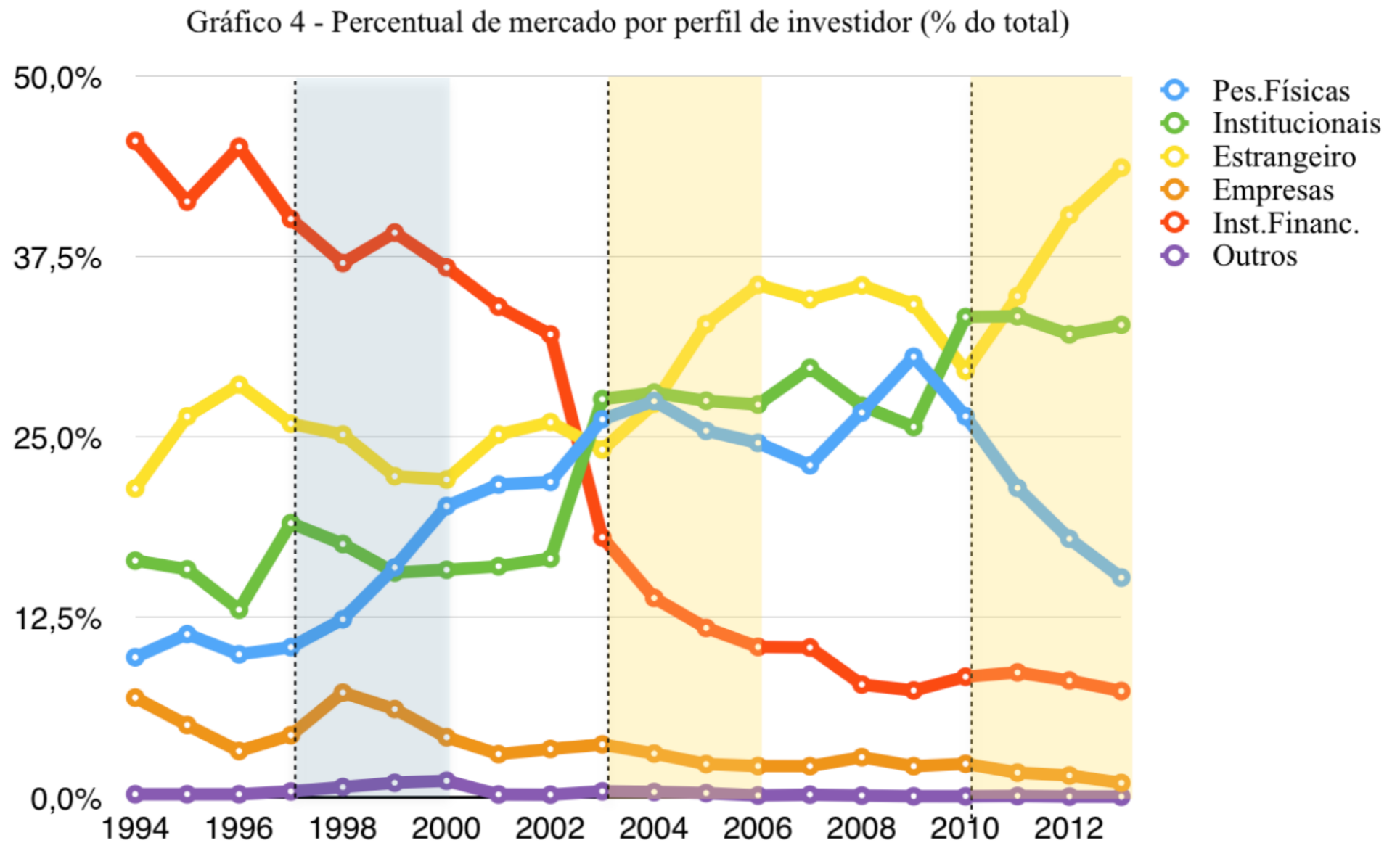
Fonte: Terminal Bloomberg, Plataforma Robô Trader; elaboração própria.

# Concentration (number of registered brokers)



Fonte: BM&FBovespa; elaboração própria.

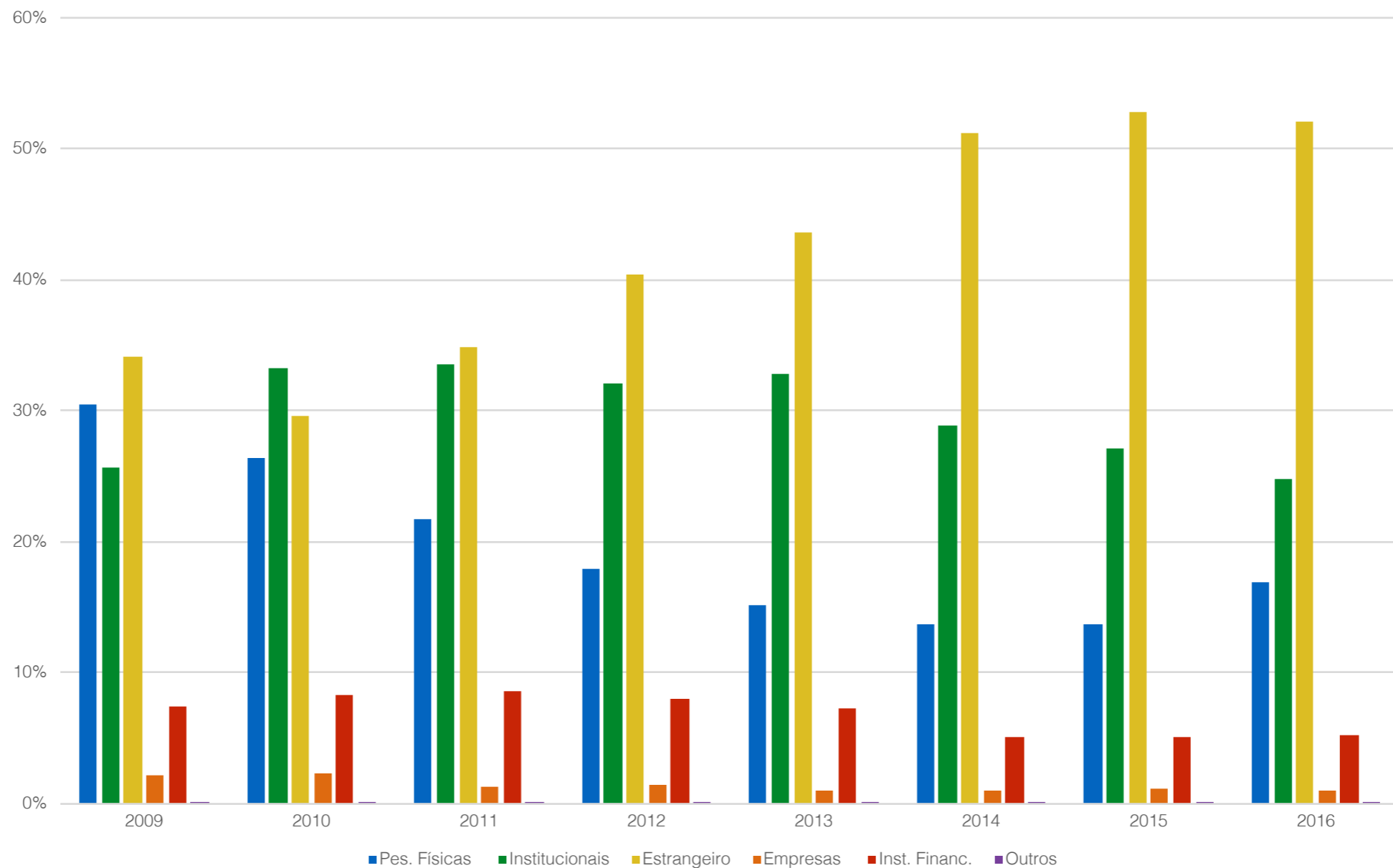
# Stock market composition by investors profile (%) – 1994 - 2012



Fonte: BM&FBovespa; elaboração própria.

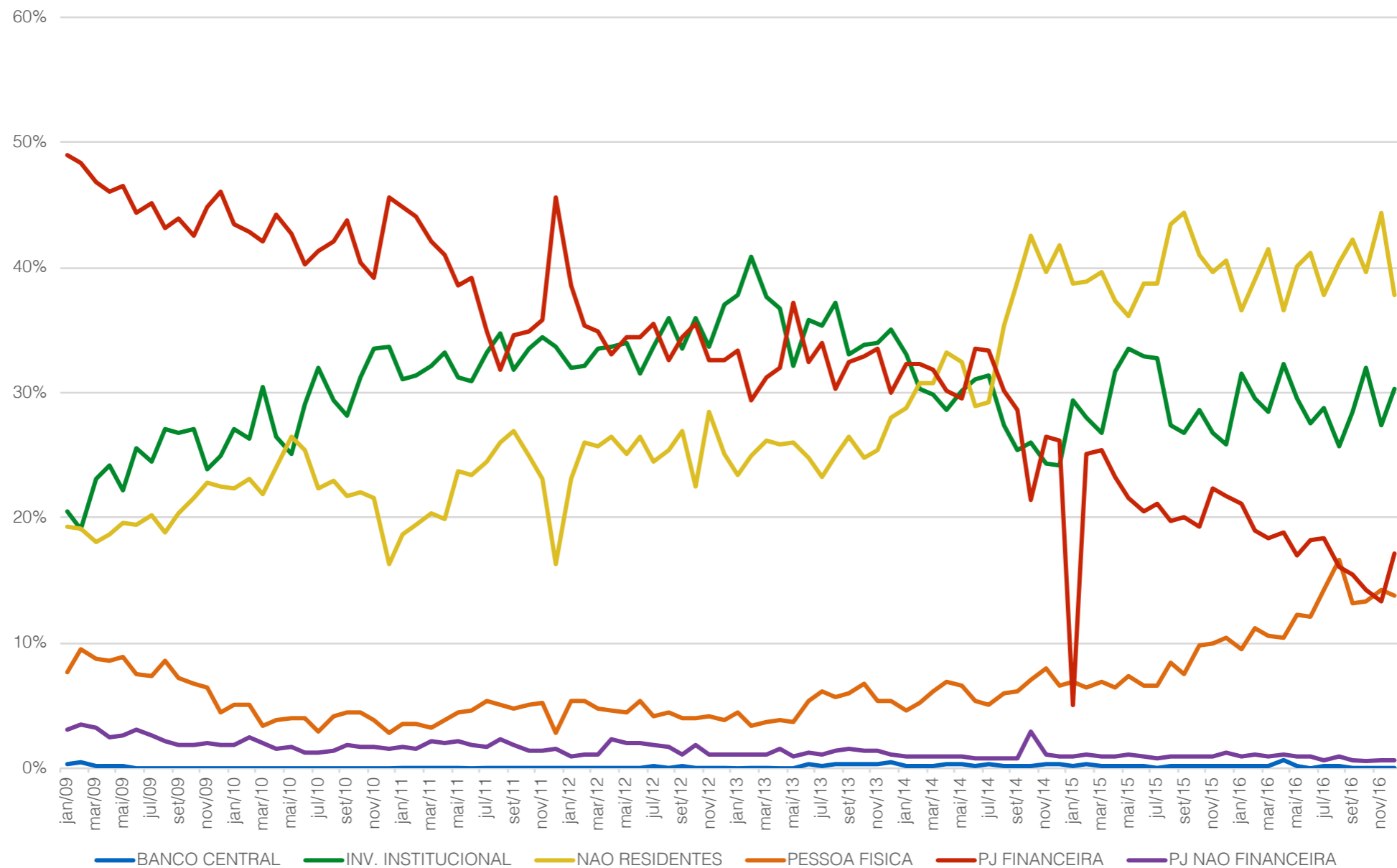
# Stock market composition by investors profile (%) – 2009 - 2016

Gráfico 3: Participação por tipo de investidor (volume financeiro) - segmento Bovespa



# Derivatives market composition by investors profile (%) – 2009 - 2016

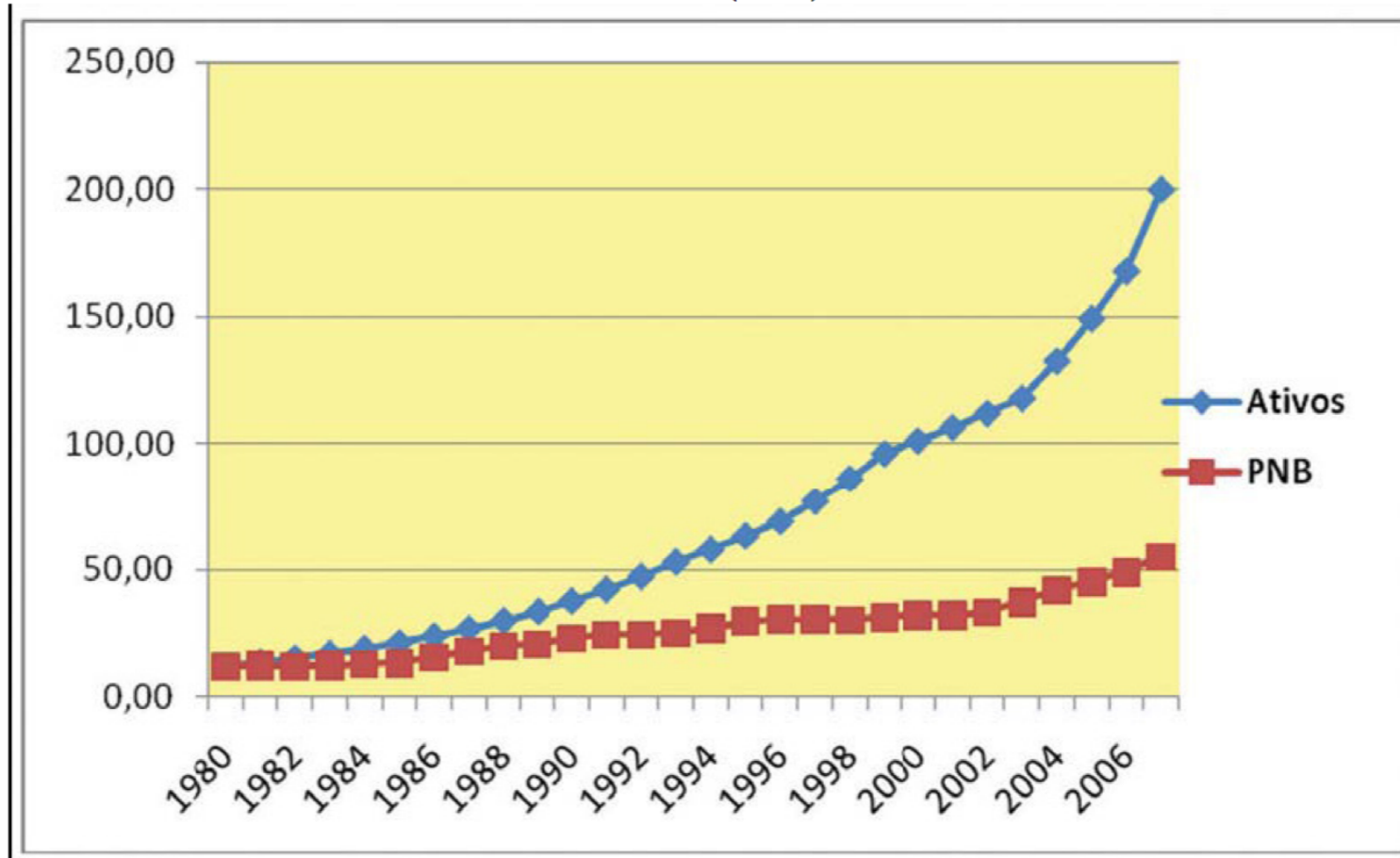
Gráfico 4: Participação por tipo de investidor (volume em contratos) - segmento BM&F



Other important informations

# Real x fictitious wealth (World GDP x global amount of financial assets)

Gráfico 1 – Riqueza fictícia (estoque mundial de ativos financeiros) e renda real mundial (PNB) US\$ trilhões.



Fonte: McKinseys Global Institute (Ativos) e FMI (PNB); elaboração própria [de Leda Paulani].

Obs.: Para a construção do gráfico, os valores do estoque mundial de ativos financeiros correspondentes aos anos para os quais [não] há dados disponíveis foram estimados como crescendo a uma taxa constante.

# High Frequency Lobbying (USA)

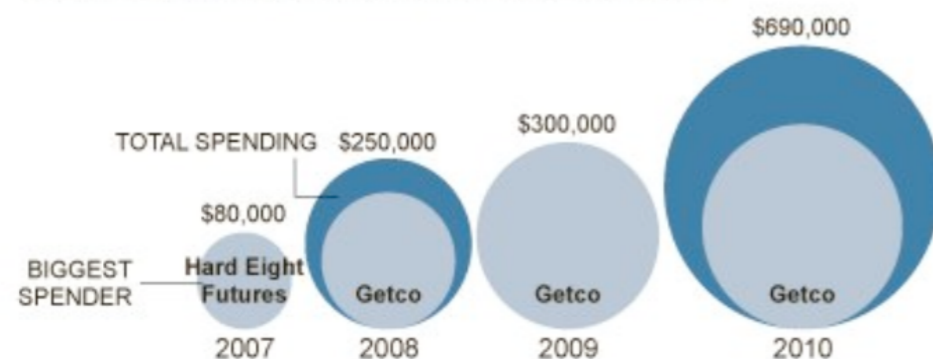
## High-Frequency Lobbying

High-frequency trading firms, which account for more than 60 percent of all stock trading and 30 to 40 percent of the futures market, are positioning themselves for greater influence through political contributions and through spending on lobbying.

Money given to candidates and party committees has risen sharply



A few firms make up most of the money spent on lobbying



Source: Center for Responsive Politics

Top political contributors, 2010

DRW Holdings	\$149,215
Chopper Trading	118,850
Getco	70,048
Allston Trading	43,450
WH Trading	42,950

Top lobbying spenders, 2010

Getco	\$360,000
Quantlab Financial	260,000
DRW Holdings	40,000
Infinium Capital Management	30,000

THE NEW YORK TIMES

## Lobbying

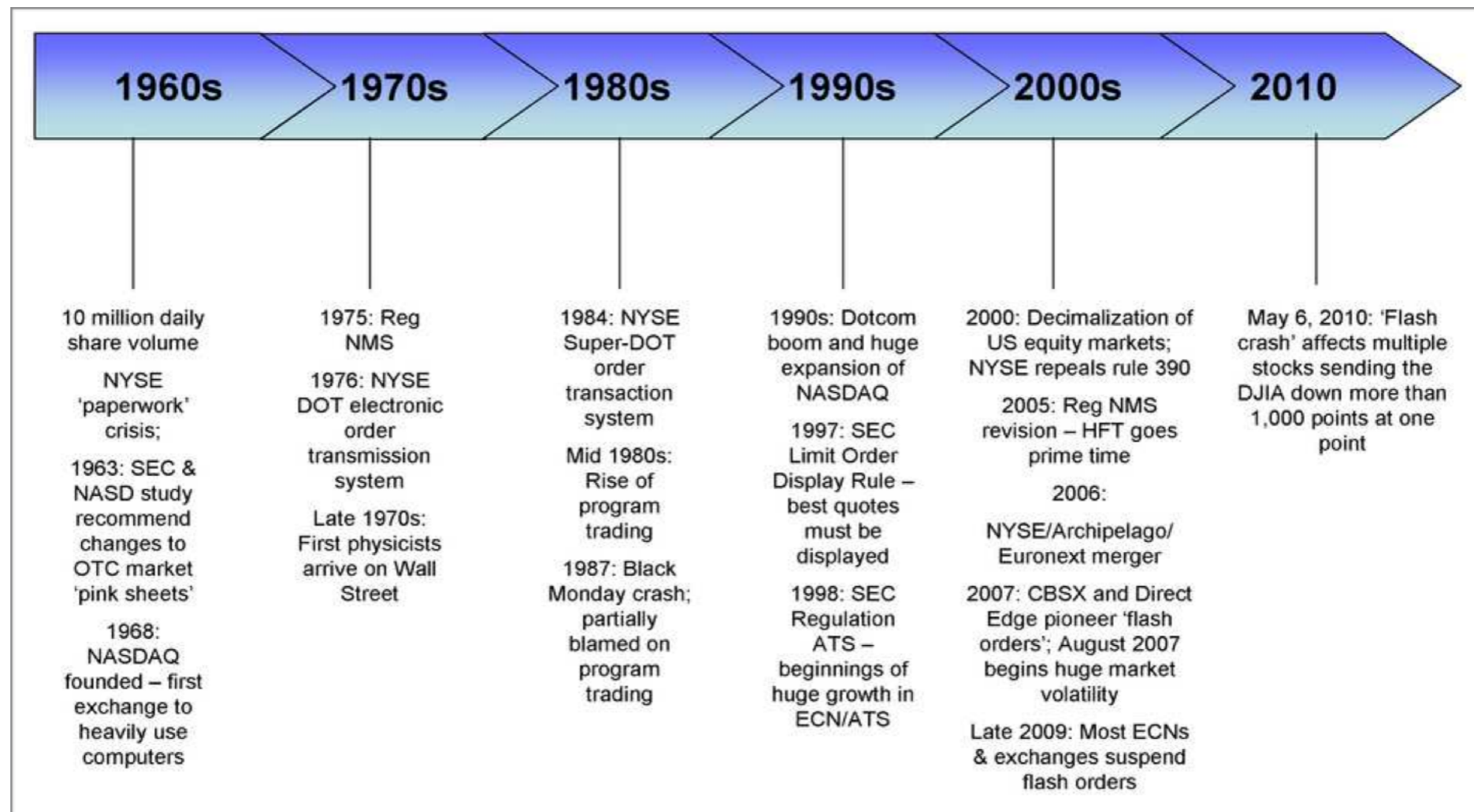
Amount spent by banks in Capitol Hill, 2012

Bank	Amount, \$m
Goldman Sachs	2.68
Morgan Stanley	2.57
Charles Schwab & Co.	1.88
Credit Suisse	1.32
Royal Bank of Canada	0.76
Deutsche Bank	0.71
Nomura	0.70
Lazard	0.47
UBS	0.45
Citigroup	0.22

Source: opensecrets.org

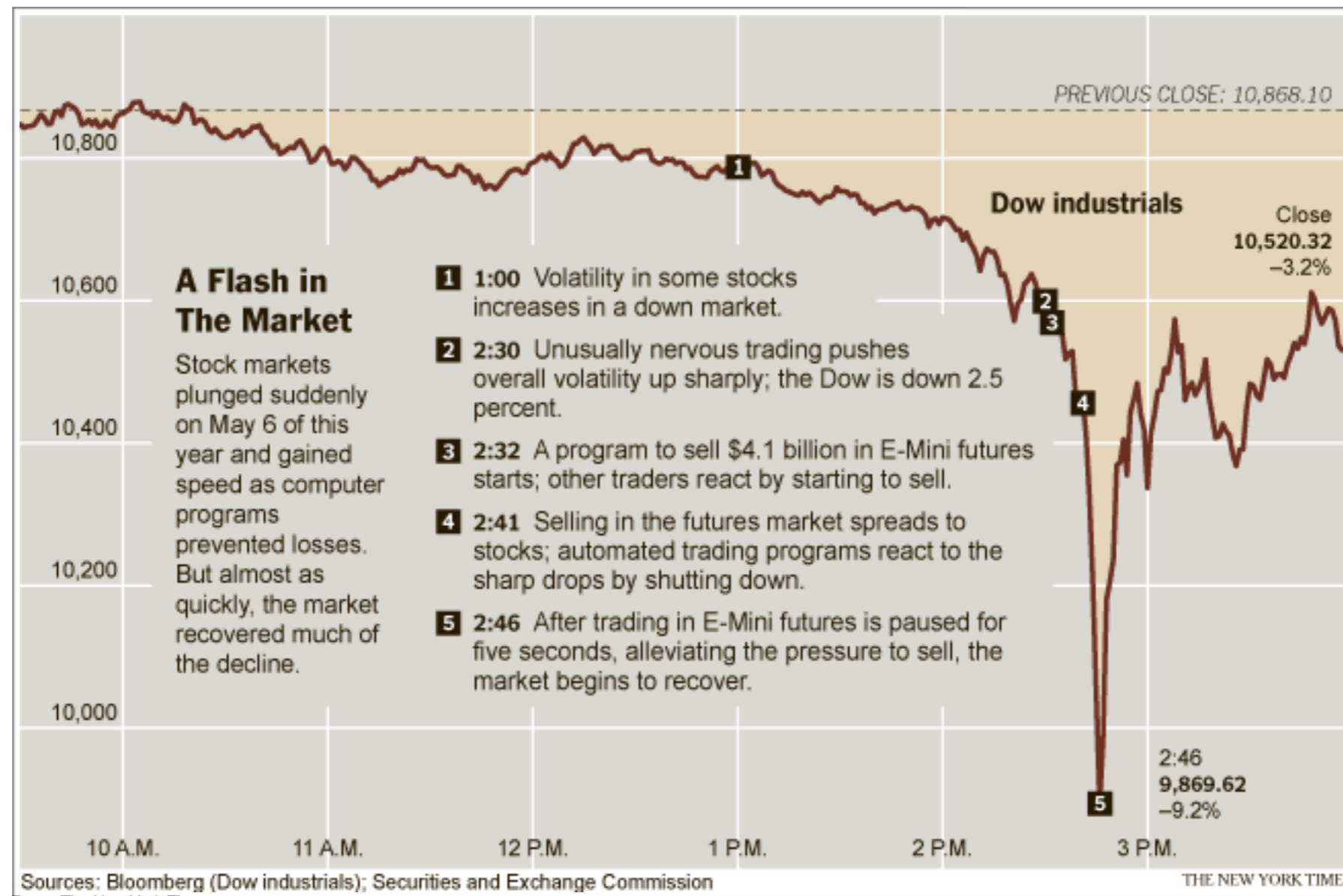
Fonte: The New York Times

# Technological evolution of US market



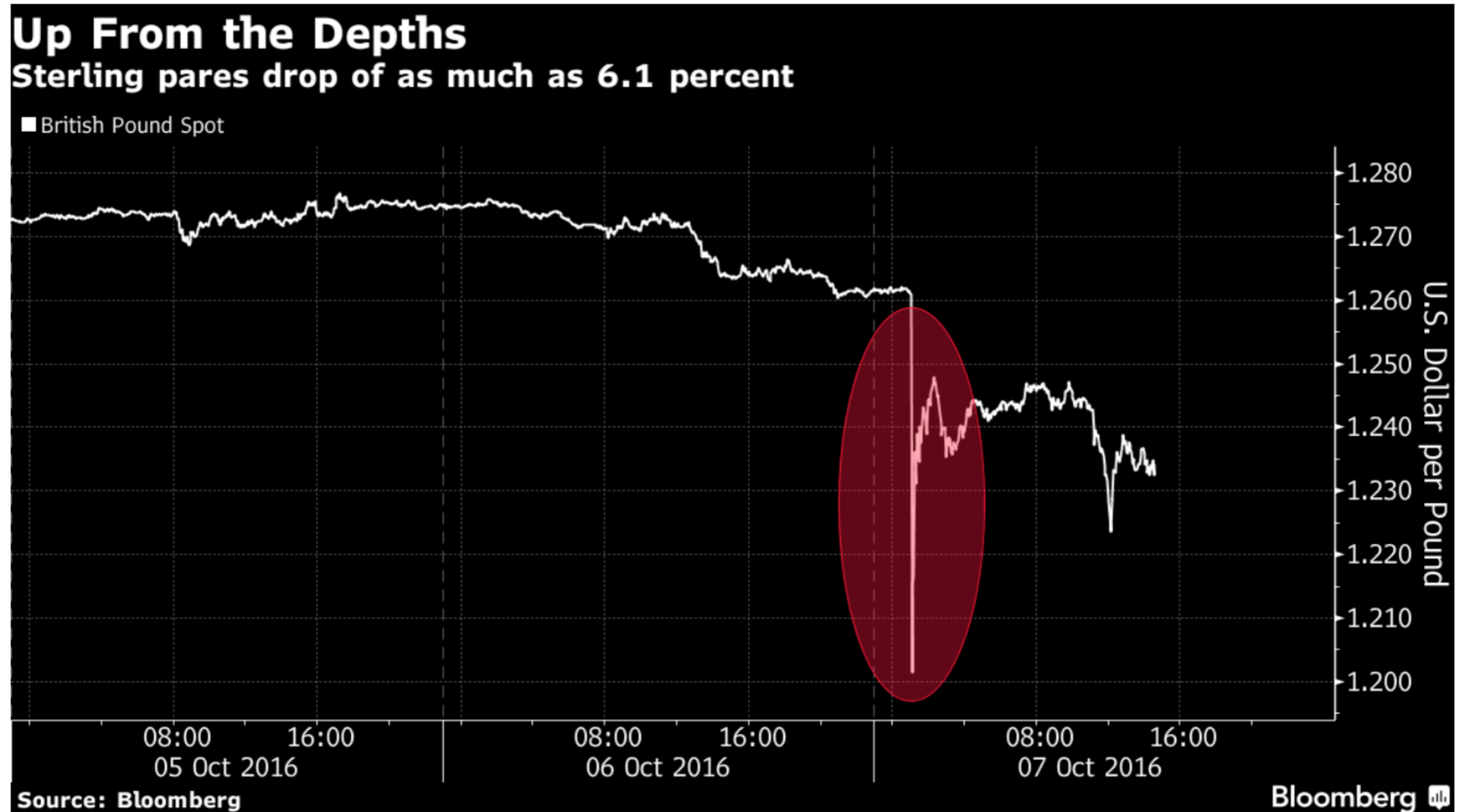
Fonte: SMITH, R. 2010, p.7. Is high-frequency trading inducing changes in market microstructure and dynamics? Cornell University Libery. Disponível em: < <http://arxiv.org/abs/1006.5490>>. Último acesso em 28 de julho de 2014.

# NYSE FLASH CRASH 2010 (Dow industrials)



Fonte: The New York Times

# STERLING FLASH CRASH 2016 (FX)



Thank you