

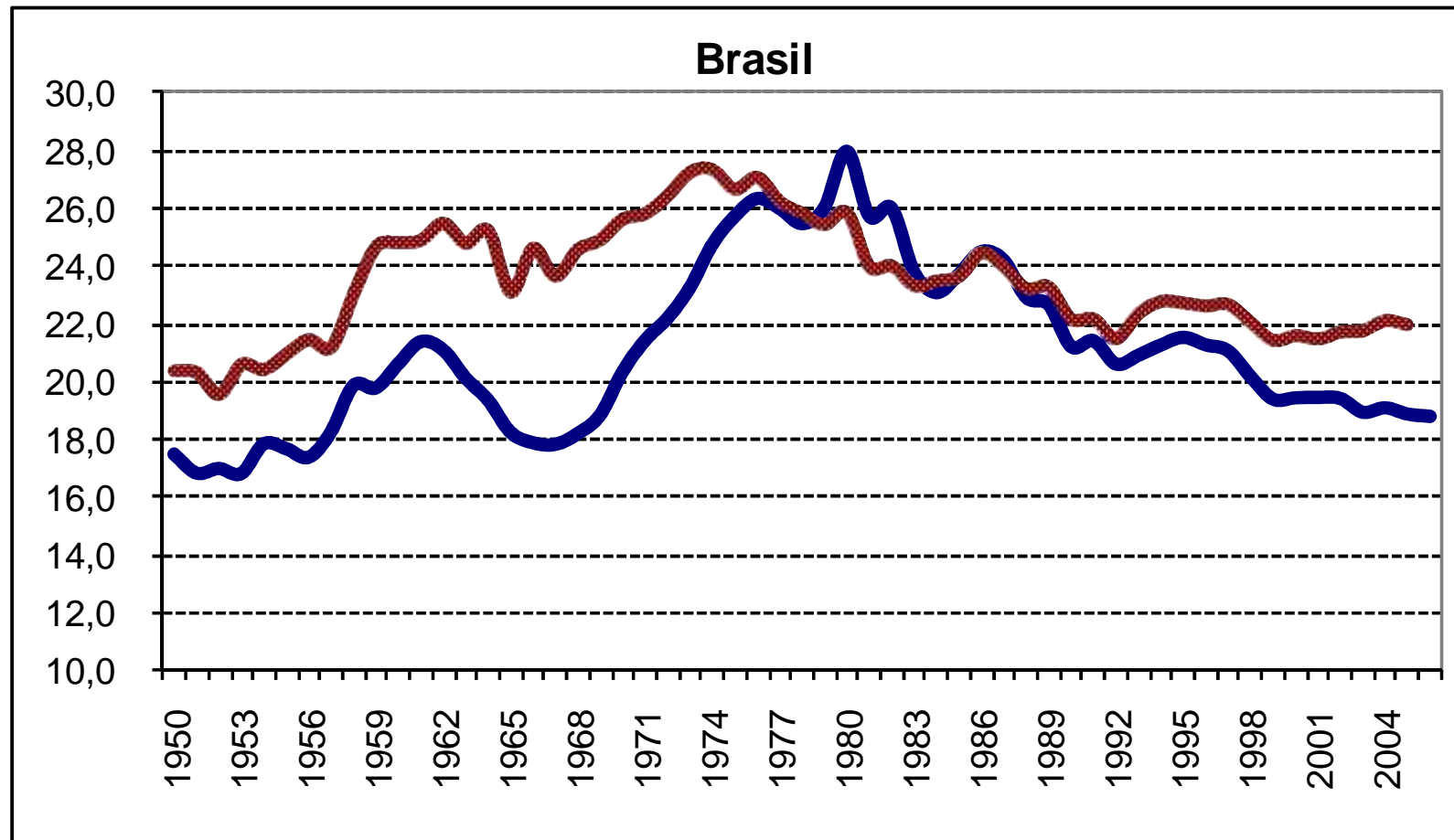


Manufacturing Development in Brazil: recent trends and challenges for the industrial policy

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Long Term Perspective on the Brazilian Manufacturing Development



Relative per capita GDP
EUA = 100

Manufacturing in the GDP

Does Manufacturing still matter?

- The issue of industrial development regained importance in recent years.
 - Due to the intense displacement of manufacturing activity to Asian countries.
 - Because of the perception in advanced countries that a strong manufacturing industry is key to innovation and to the generation of income and good quality jobs, especially after the crisis.
- For Example: Locke, R. and Wellhausen, R. L. (2014), Pisano, G. and Shih, (2012), European Commission Communication on Industrial Policy (2012), Veugelers, R. (2013).

The Brazilian Debate

Also in the Brazilian debate, the importance of the manufacturing industry and the occurrence of a deindustrialization process is at the center of the discussion, but with different visions

- Correction of excessive industrialization of the IS period
- Dutch Disease and criticism on the exchange rate level
- Criticism on the process of export specialization on commodities
- Lack of dynamism of technology-intensive sectors

But the current analysis do not encompass adequately some important questions related to the transformation that has occurred in the global economy, including :

- The reorganization of transnational corporations
- The growing influence of China in the Global Economy

And specially after the global crisis:

- The effects of the crisis in the international competition
- The pursuit of advanced countries in revitalizing their industry and move forward their process of technological innovation

The reorganization of multinational companies

- Formation of global value chains
- But in a very selective and hierarchical way
 - Intense transfer of manufacturing activities to developing countries, particularly to Asia
 - But with a parallel process of centralization of capital globally, with high barriers to entry in many branches and segments where the capture of the created value are more intense

Share of countries and regions in the total manufacturing value added - in%

Share in World	1980	1990	2000
World	100	100	100
Developed Countries	77,2	75,5	71,8
Developing Countries	14,2	16,7	24,1
Latin American	6,7	5,3	5,2
Brazil	2,9	2,2	1,9
East Asia	4,1	7,2	13,9
East Asia excluding China	2,7	4,6	6,8
China	1,5	2,7	7,1
Share in Developing Countries	1980	1990	2000
Developing Countries	100,0	100,0	100,0
Latin American	46,9	31,6	21,8
Brazil	20,0	12,7	7,9
East Asia	29,2	43,3	57,7
East Asia excluding China	18,9	27,3	28,3
China	10,2	15,9	29,3

Source: Unido

Share of Countries and Regions in the EPO Patents (%)

Origin	1980-1989	1990-1999	2000-2009
Developed Countries	99,8	98,9	94,6
USA	31,8	32,2	26,6
Japan	25,3	24,6	23,0
Germany and France	23,5	22,8	23,5
Europe – Others	18,6	18,1	19,7
OECD – Others	0,6	1,2	1,9
Developing Countries	0,1	1,0	5,2
Asia	0,1	0,9	5,0
Coreia do Sul	0,0	0,7	3,5
China	0,0	0,0	0,8
Taiwan	0,0	0,1	0,4
Índia	0,0	0,0	0,2
Cingapura	0,0	0,0	0,1
Malásia	0,00	0,00	0,01
Hong Kong	0,02	0,02	0,01
Other	0,1	0,1	0,2
Brasil	0,0	0,1	0,1
Rússia	-	0,01	0,02
México	0,00	0,01	0,03
África do Sul	0,07	0,06	0,04
Remaining 137	0,1	0,1	0,2
Total (%)	100,0	100,0	100,0
Number of Patens	234.569	497.159	835.201

R&D expenditure of Top Global Companies 2011

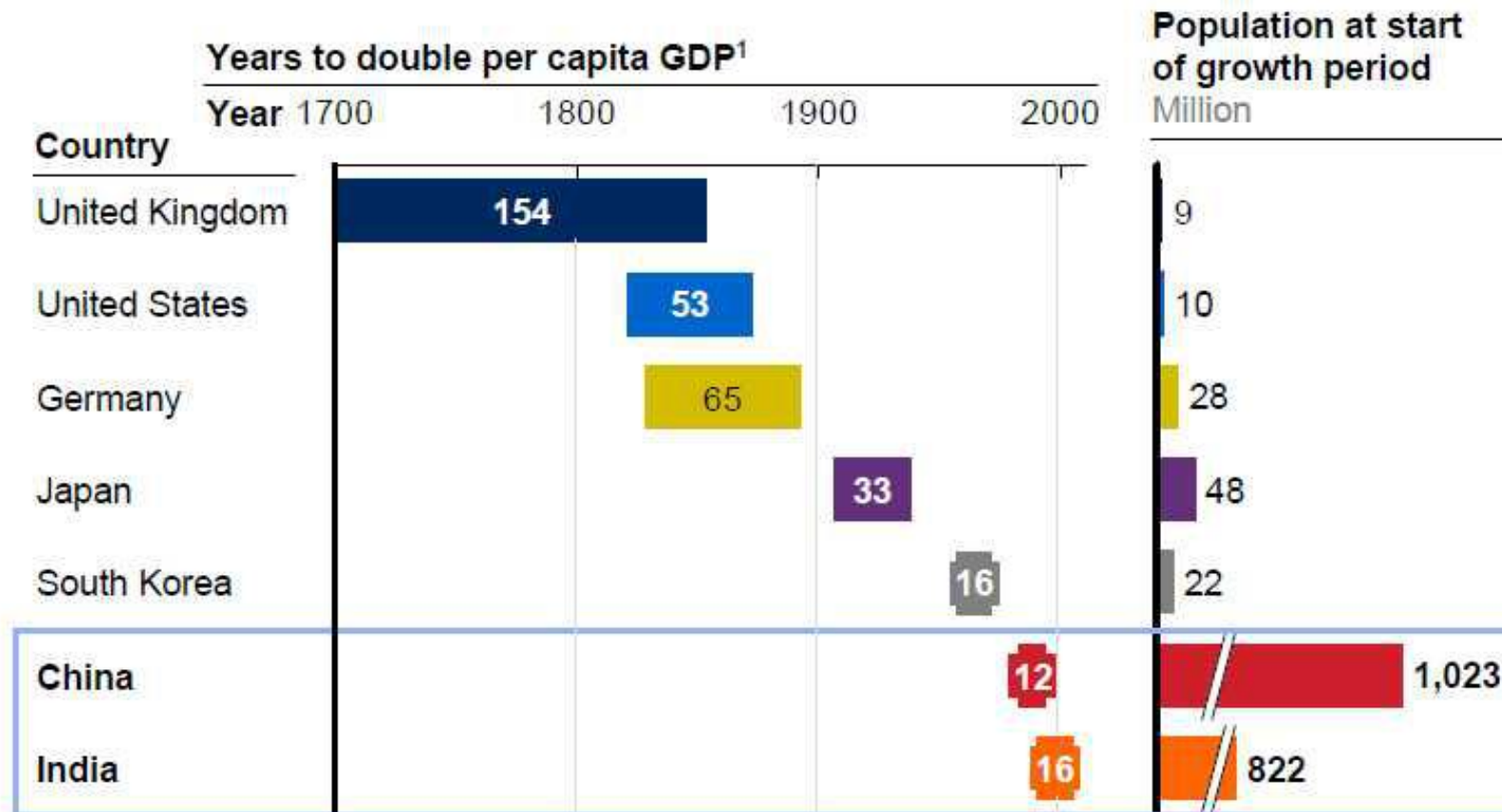
TOP	Acumulated R&D expenditure	Share in the TOP 1.500	Share in the Global R&D
50	214.884	42,0%	19,2%
100	291.276	57,0%	26,0%
250	384.150	75,2%	34,3%
500	441.296	86,3%	39,4%
1000	488.015	95,5%	43,5%
1500	511.156	100,0%	45,6%

Source: RDI Scoreboard and NSF

Changes in the early 2000 and the impacts of China

- Strong impact of China in the Global Economy
- From a strategy FDI dependent and export oriented, China changed to a more autonomous model
- Growing importance of urban infrastructure investment
- Impact in the relative prices of commodities and manufacturing prices
- More recently, a strong policy directed to Science, Technology and Innovation

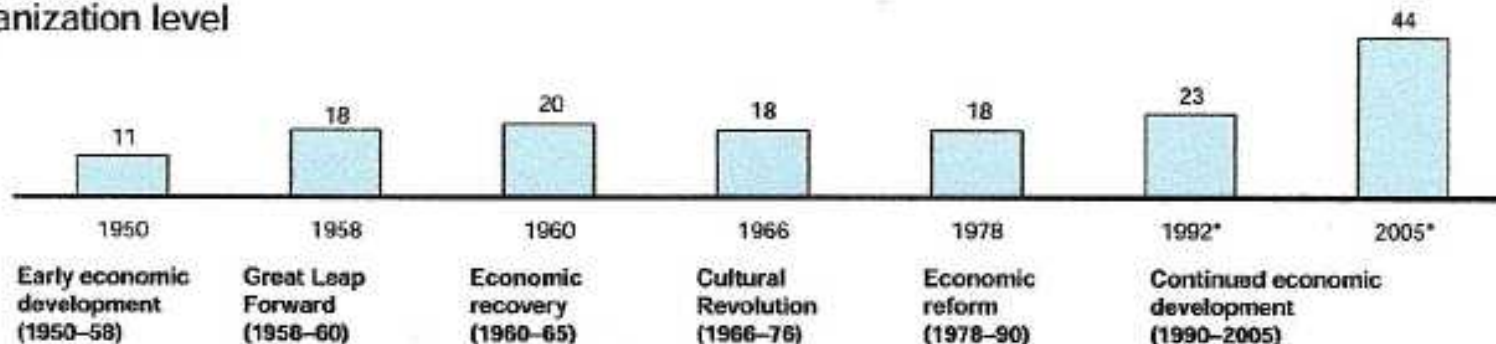
Incomes are rising in developing economies faster—and on a greater scale—than at any previous point in history



¹ Time to increase per capita GDP (in PPP terms) from \$1,300 to \$2,600.
SOURCE: Angus Maddison; University of Groningen; McKinsey analysis

Both policy and events have influenced urbanization in China over the past 50 years

Urbanization level
%



Year	Key Event/Period	Highlights
1950-52	Early economic development (1950-58)	Farmers granted arable land
1951-58	Early economic development (1950-58)	Government establishes separate urban and rural <i>Hukou</i> (living permits) to restrict and control migration
1953-58	Early economic development (1950-58)	Planned economy system officially kicks off under 1st 5-year plan
1958-60	Great Leap Forward (1958-60)	Economy suffers big blows
1958	Great Leap Forward (1958-60)	Sino-USSR relationship deteriorates, and over 600 large industrial projects stall
1964	Economic recovery (1960-65)	Many factories were moved from coastal and big cities to underdeveloped areas
1966-76	Cultural Revolution (1966-76)	This period saw a ransacked economic and social structure
1966-76	Cultural Revolution (1966-76)	14 million-17 million Chinese youth (<i>Zhi Qing</i>) sent to rural areas to be "reeducated"
1978	Economic reform (1978-90)	General policy reforms and early economic liberalization initiated
1979 and 1980s	Economic reform (1978-90)	Special economic Zones (SEZ) formed and many cities in coastal regions opened to foreign investment
1980s	Economic reform (1978-90)	<i>Hukou</i> system relaxed and surge of peasants begin to migrate to cities
1992	Continued economic development (1990-2005)	Market economics becomes mainstream
2000-05	Continued economic development (1990-2005)	Further relaxation of <i>Hukou</i> system leads to acceleration of rural migration to cities; market economics further strengthens after China joins World Trade Organization

* Estimates for these years are from the McKinsey Global Institute China All City model.

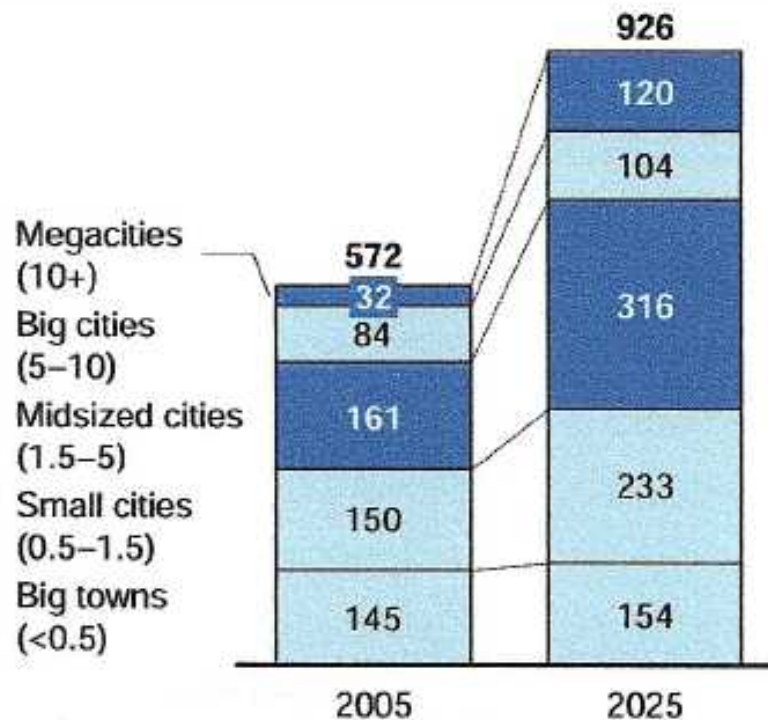
Source: China Compendium of Statistics 1949-2004; World Market Monitor database; literature search; McKinsey Global Institute China All City model; McKinsey Global Institute analysis

China is moving toward an urban billion by 2030

Population by city size

TRENDLINE FORECASTS

Millions of people



Compound annual growth rate, 2005-25

%

2.4

6.9

1.1

3.4

2.2

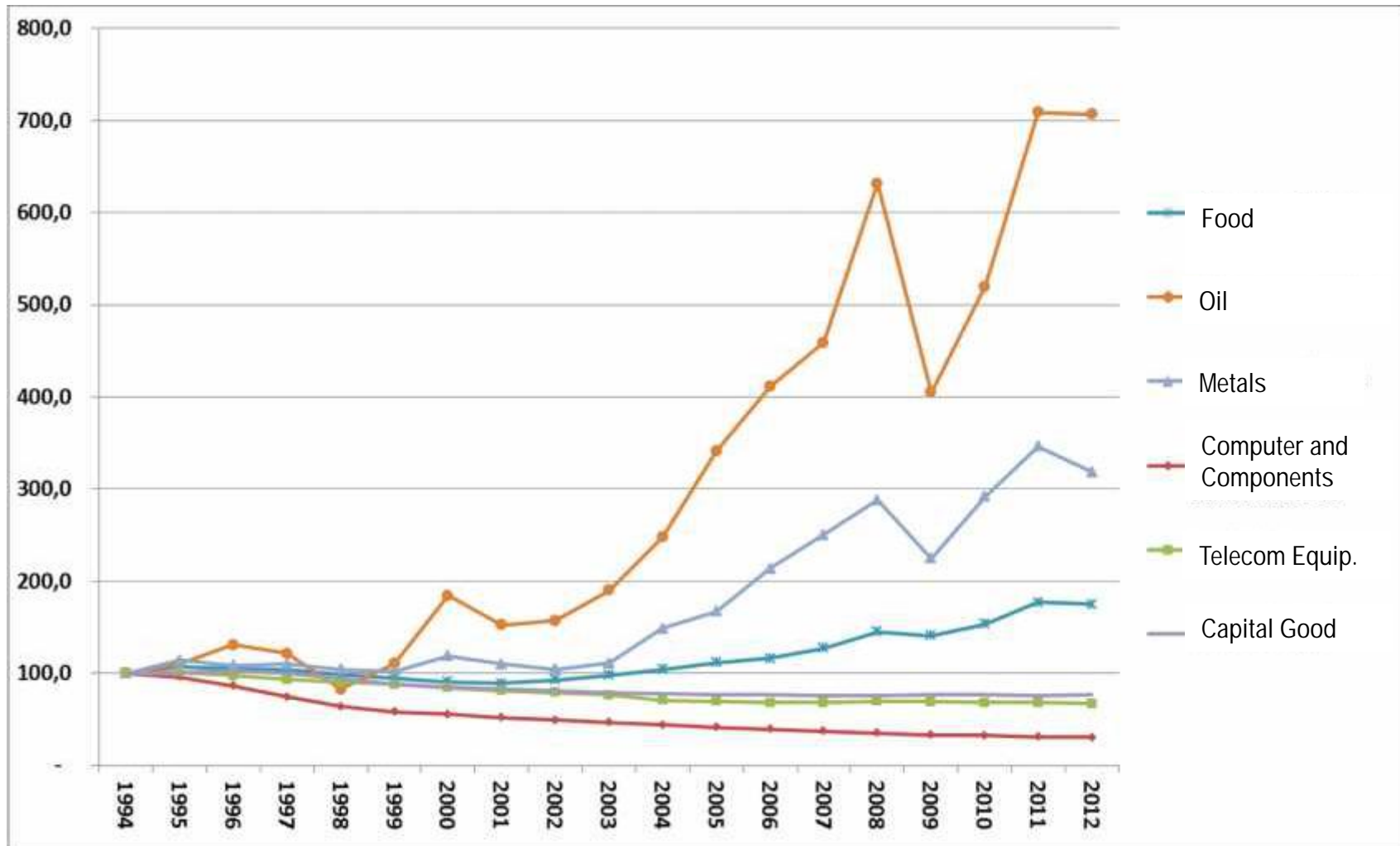
0.3

- Mega- and midsized city populations will grow faster over the next 20 years
- An urban billion will be attained by 2030

Note: Numbers may not sum due to rounding.

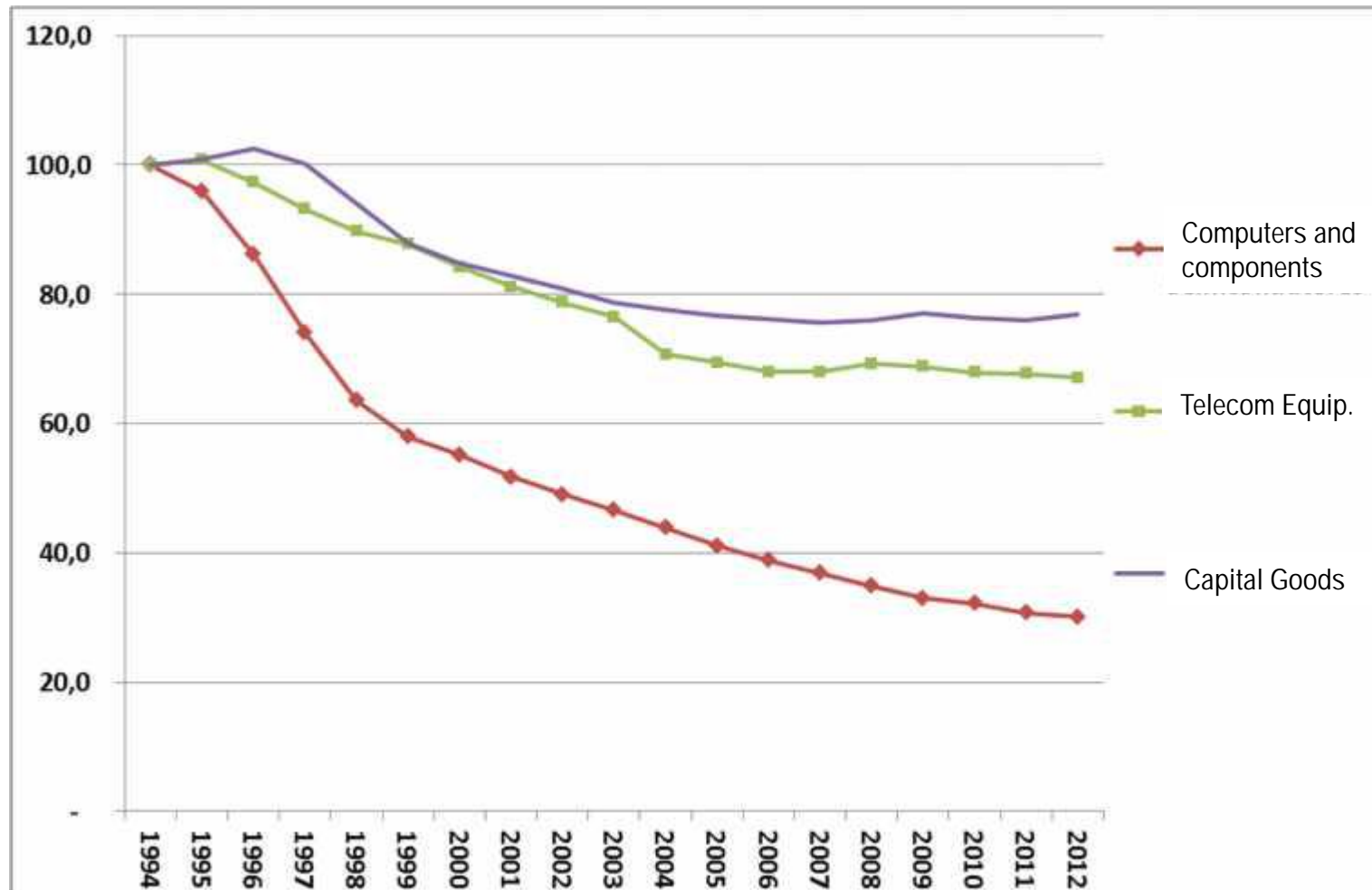
Source: McKinsey Global Institute China All City model; McKinsey Global Institute analysis

USA import price index 1994 = 100



Source: BLS

USA import price index, 1994 = 100



Source: BLS

Challenges for the Brazilian Manufacturing Industry

- High demand for primary commodities
- Pressure for exchange rate overvaluation
- Fierce competition on global manufacturing products markets



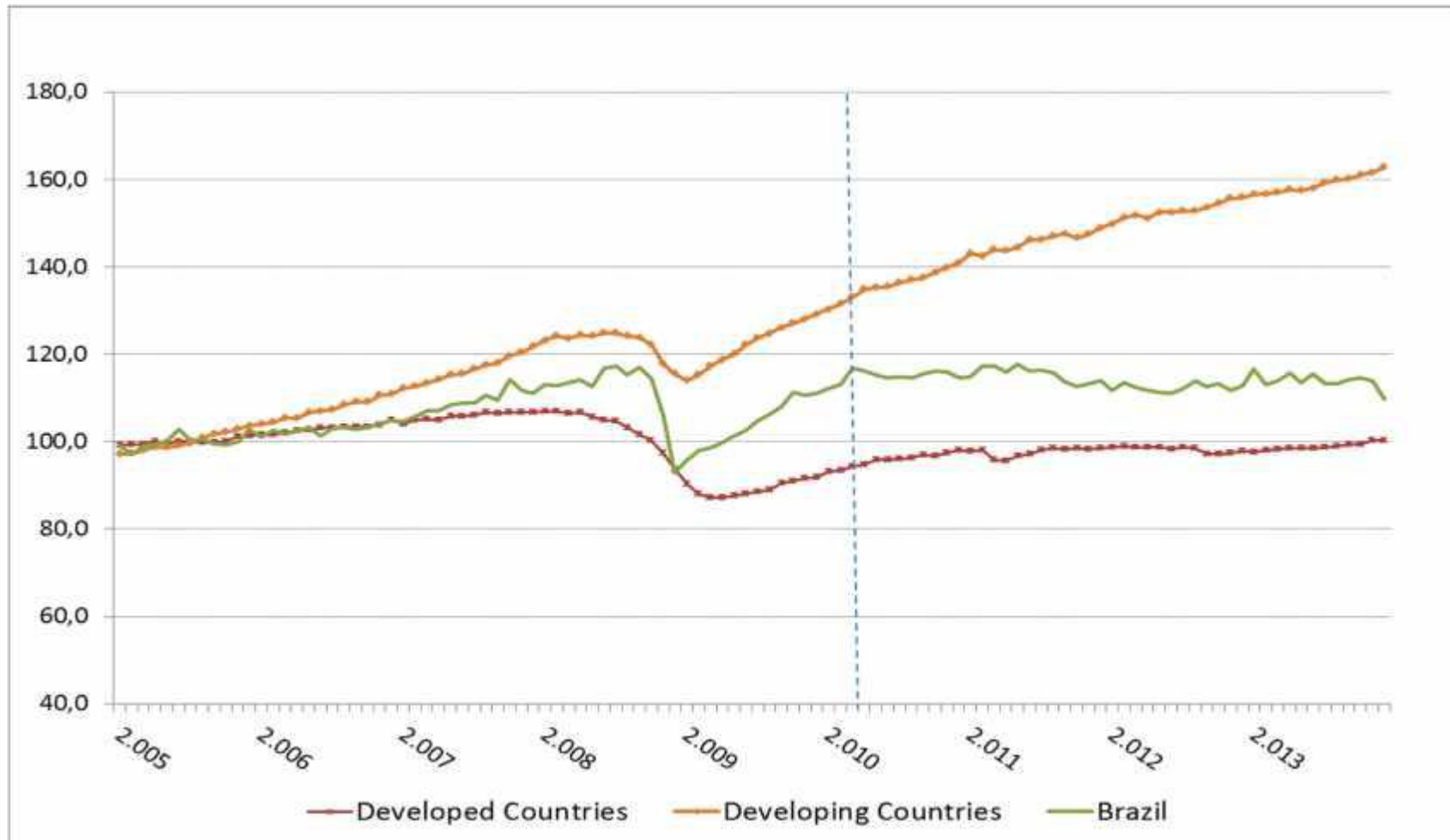
Change in the relative profitability in primary and services activities X manufacturing

- The pursuit of advanced and developing countries in revitalizing their industry and move forward their process of technological innovation
- High barriers to entry in the core activities in the global value chain imposed by global companies

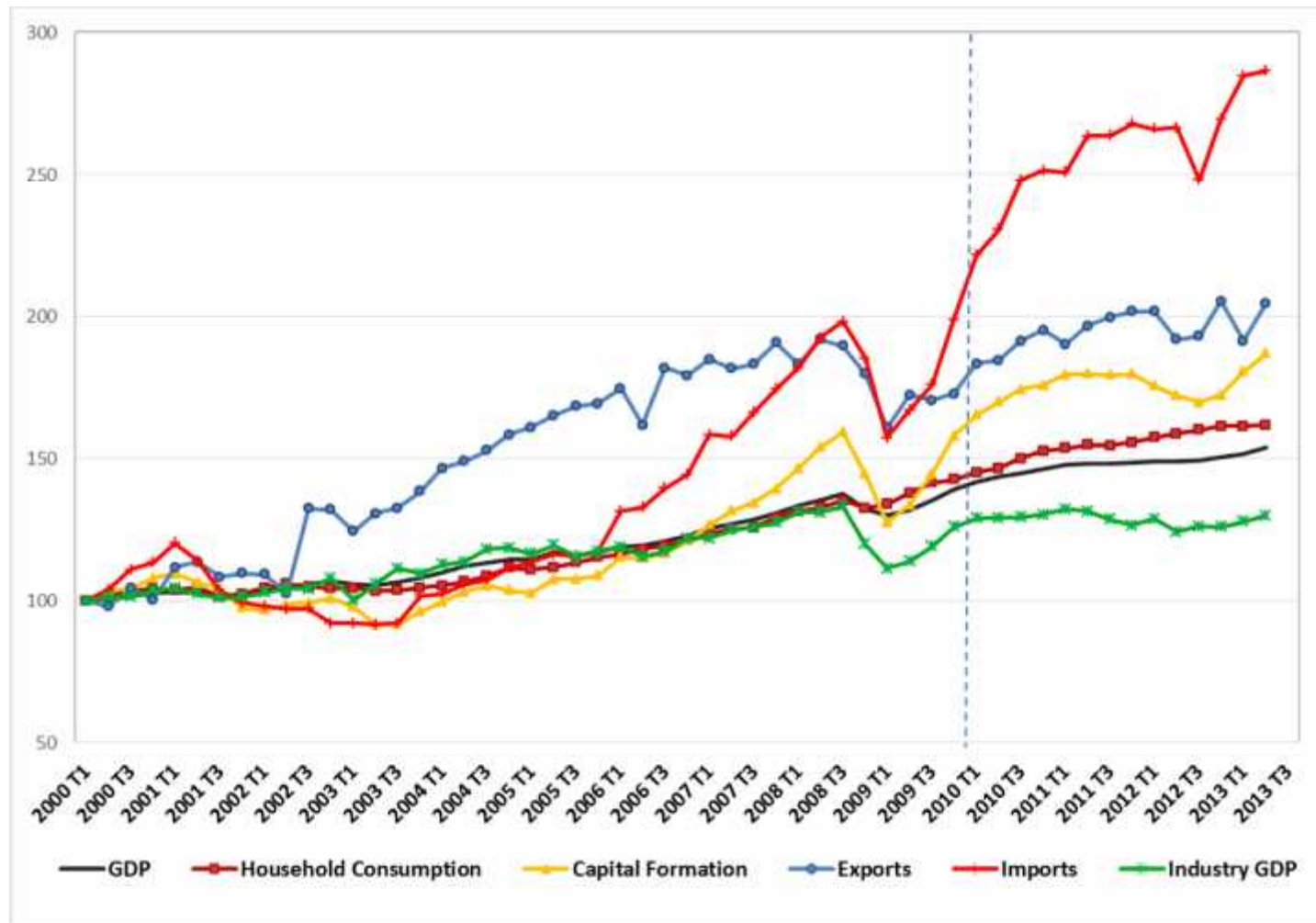
Brazilian Manufacturing Industry – Recent Evolution

- Lower external fragility, combined with expansion of credit, incomes policies and improvement in the labor market has led the industry to perform well until the crisis
- Resurgence of more active industrial policies
- But the global scenario of synchronous growth until the crisis decreased the effects of competition for manufactured products
- The situation changed completely after the crisis

Industrial Production Index, 2005 = 100



Brazil – evolution of selected indicators- index, jan;2000 = 100



Final Remarks

- For growth with structural change will require redoubled effort to articulate the demand expansion with reorganization of the productive structure
- Combine domestic demand with manufacturing restructuring requires a much more active industrial policy in this scenario of fierce competition.
- In the last 10 years Brazil recovered several instruments of industrial and technology policy
- Incentives, Credit and Regulation are important, but Coordination should be the central element of industrial policy
- Devaluation is essential, but non sufficient
- It will be important to clarify counterparts of domestic and foreign private sector in exchange for incentives and access to drivers of demand growth.

- Favorable prospects for various investment growth drivers, especially in infrastructure
- Greater attention to invest in "social consumer goods" is necessary
 - Health Complex
 - Sewage and sanitation
 - Education
 - Urban Mobility
 - Housing
- Represents demand, can represent innovative industrial production, and can free up income to foster demand for private consumption goods

Forecast of (Total) investments (2014-17)

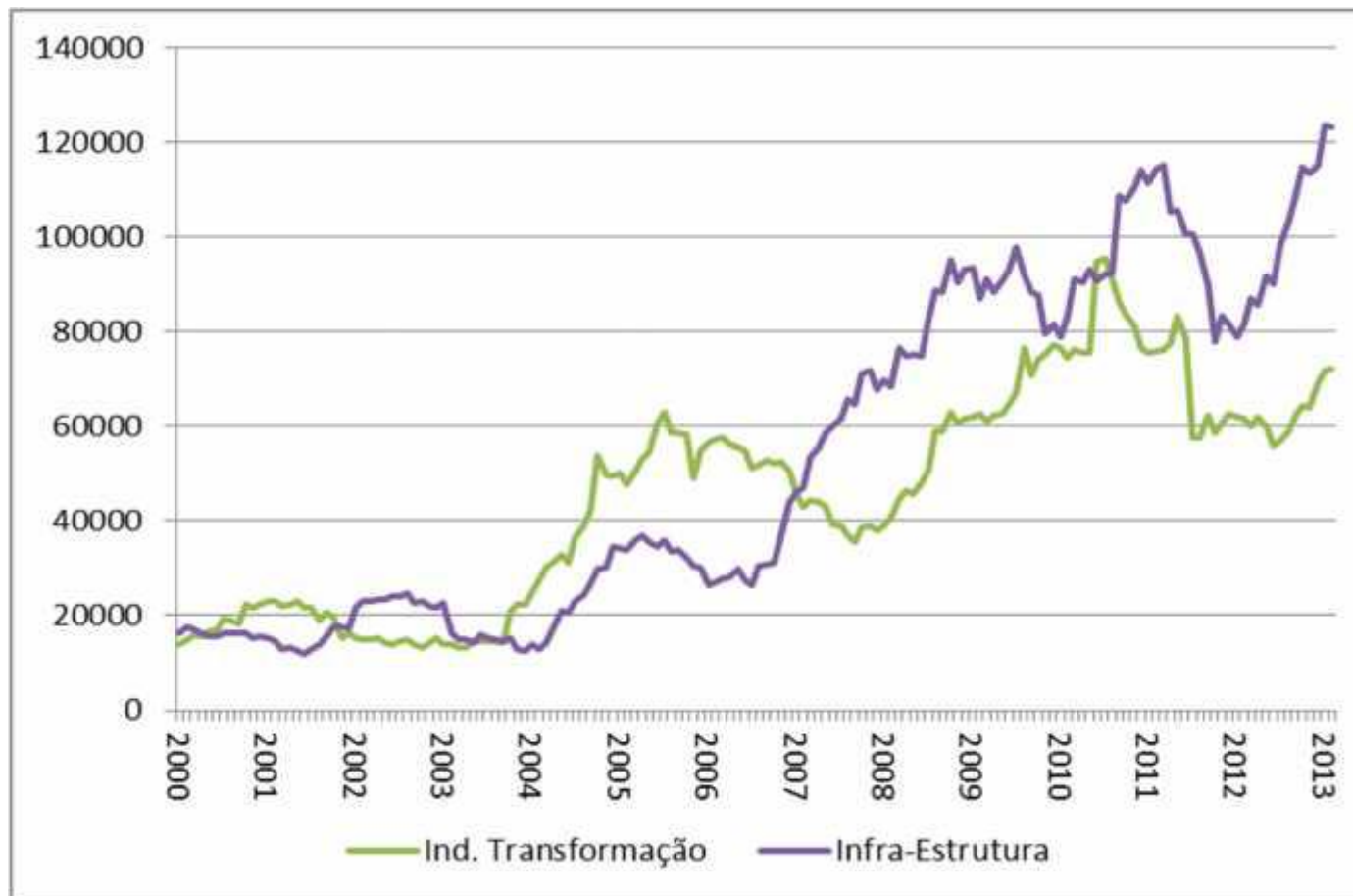
(US\$ billion - Constant prices)

Sectors	2009-2012	2014-2017	Δ%
Industry	421.4	523.9	24.3
Infrastructure	194.4	242.7	24.8
Housing	338.6	413.1	22.0
Agriculture & Service	547.6	716.7	30.9
Total	1,502.0	1,896.3	26.3

(*) Note: BNDES Investment Outlook direct research covers 66% of industrial investments and 100% of investments in infrastructure, totaling about 58% of investments in the economy. Housing, agriculture and services investment estimates were based on queries to Sectorial entities and/or econometric forecast.

Source: BNDES

BNDES consults – Manufacturing and Infrastructure – Accumulated in 12 months, US\$ millions



Fonte: BNDES