Trade Policy in Brazil in the era PTAs, NTBs and Global Value Chains

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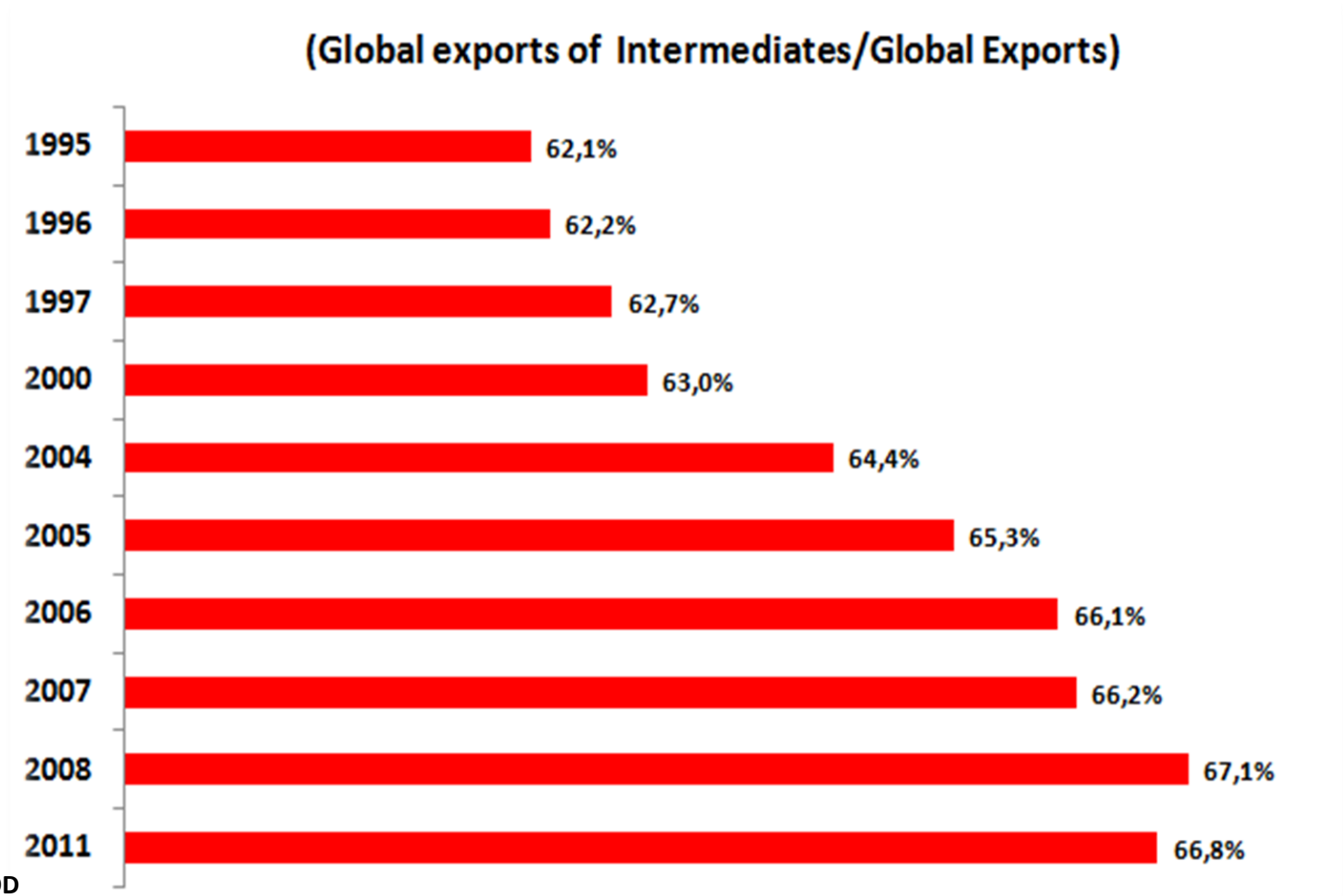
Outline

1. A brief perspective on the growing global trade in intermediates
2. The Brazilian economy in the era of GVCs: Are there any signs of integration?
3. The role of PTAs
4. Mega Regionals and the relevance of NTBs
5. The role of Infrastructure and Trade facilitation;
6. Final Remarks

Some recent facts on trade in intermediates …

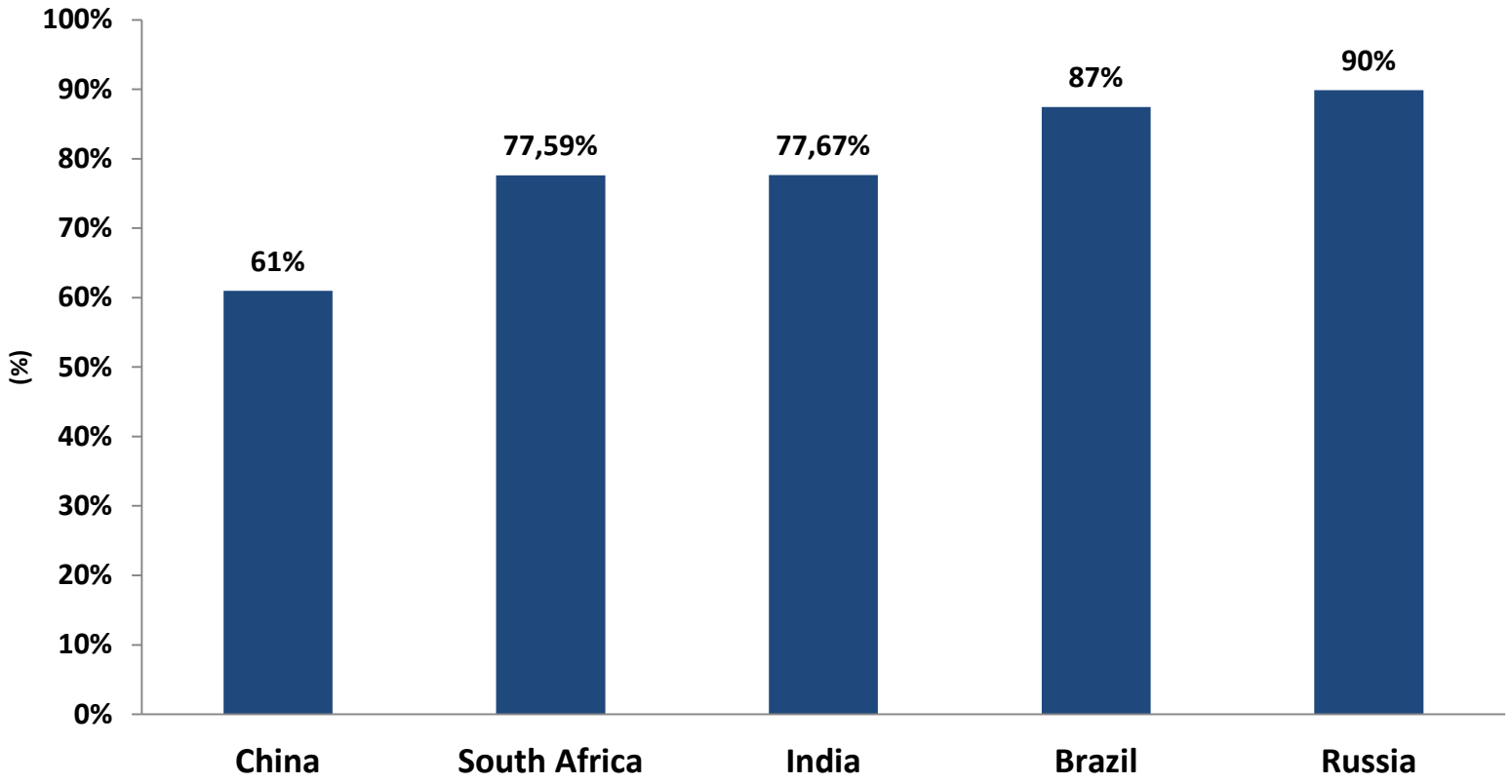
1. The growing number of regional/global value chains has accelerated international trade in intermediates…

(Grossman & Rossi-Ransberg, 2008; Johnson & Noguera, 2012; Baldwin & Nicoud, 2014)



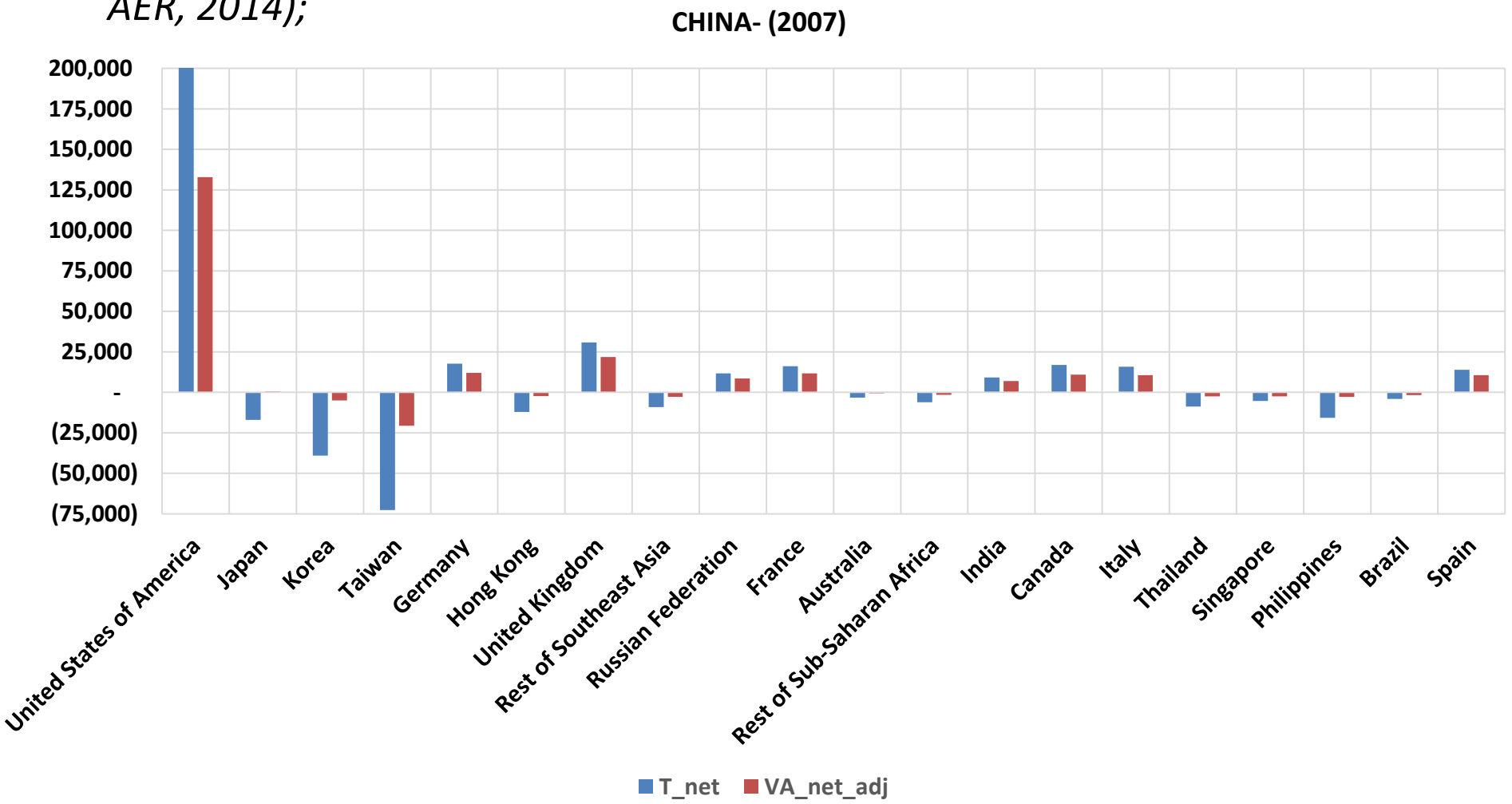
Source: WIOD

2. *The growing trade in intermediates resulted in a high foreign content embedded in national exports (Johnson & Noguera, JIE, 2012), meaning lower domestic valued added for each dollar exported….*



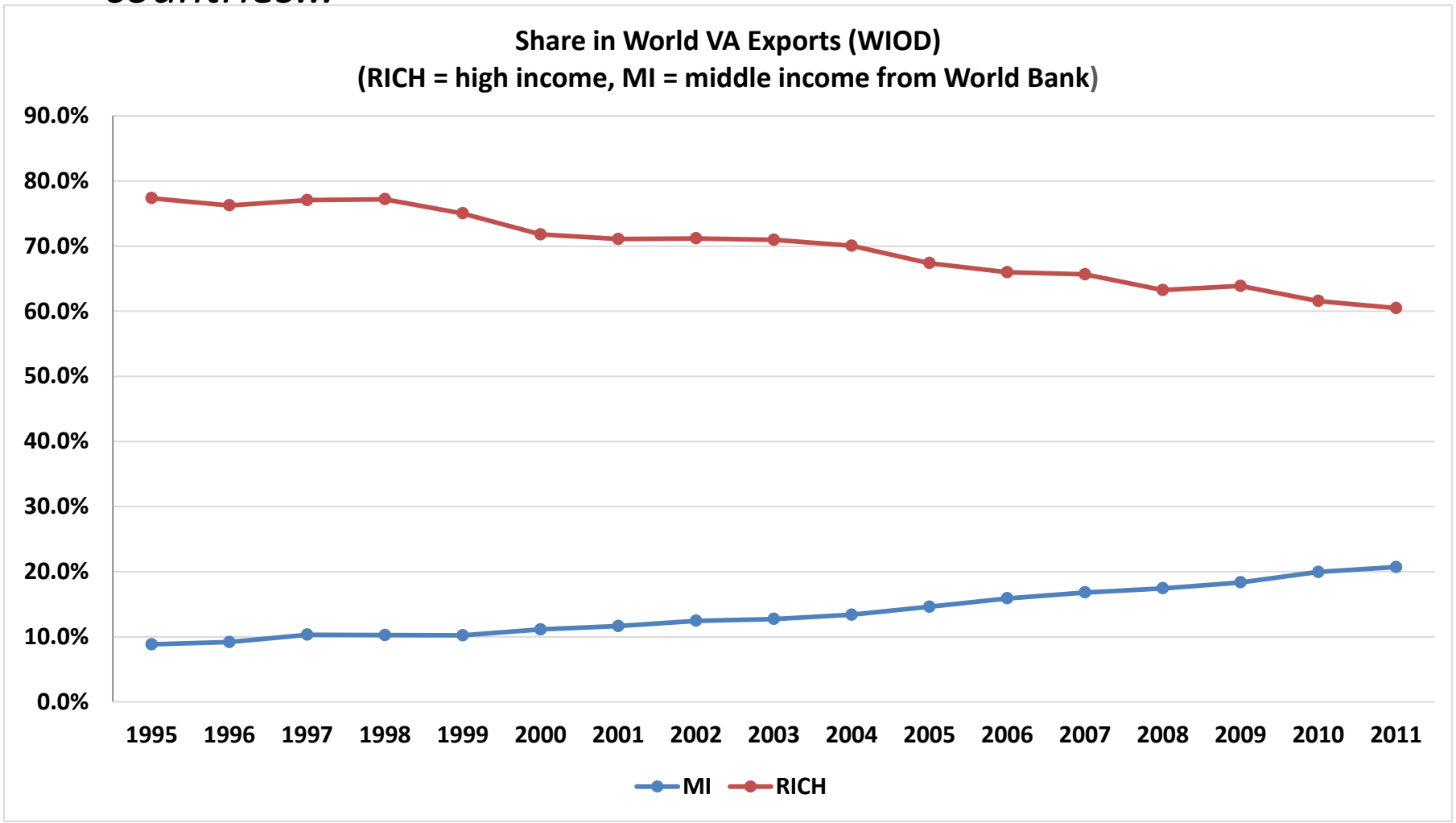
For each dolar exported by China, only 61 cents corresponds to payments to domestic factors such as labor, capital and land. The rest corresponds to payments to foreign content embedded in its exports…

3. As a consequence, traditional trade statistics based on gross trade may be misleading as a measure of the competitiveness of a country (Koopman et al, AER, 2014);



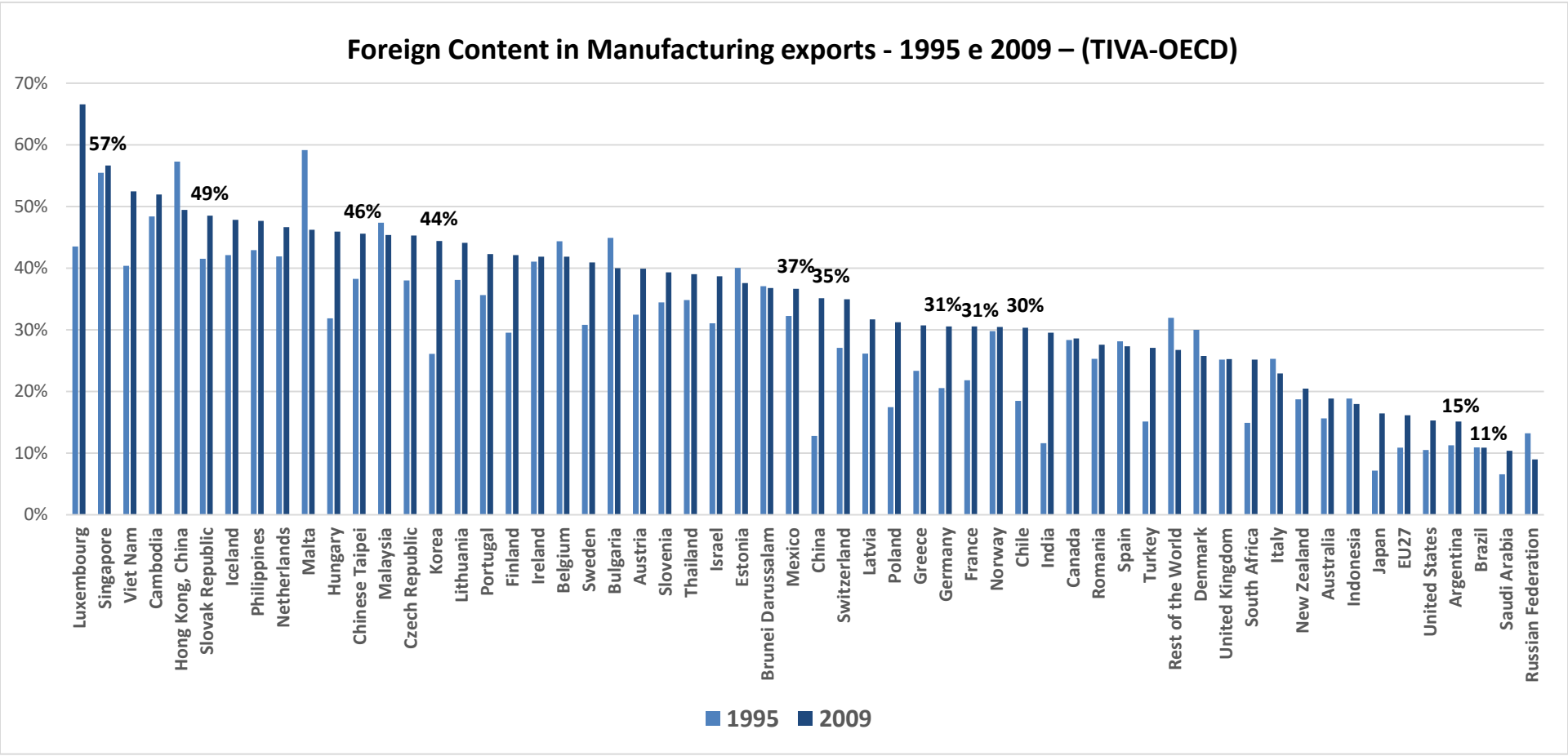
Trade surplus between China and the USA is around 40% lower in value-added ...

4. *Developing countries have increased their share in global value added generated by global exports at the expense of developed countries...*

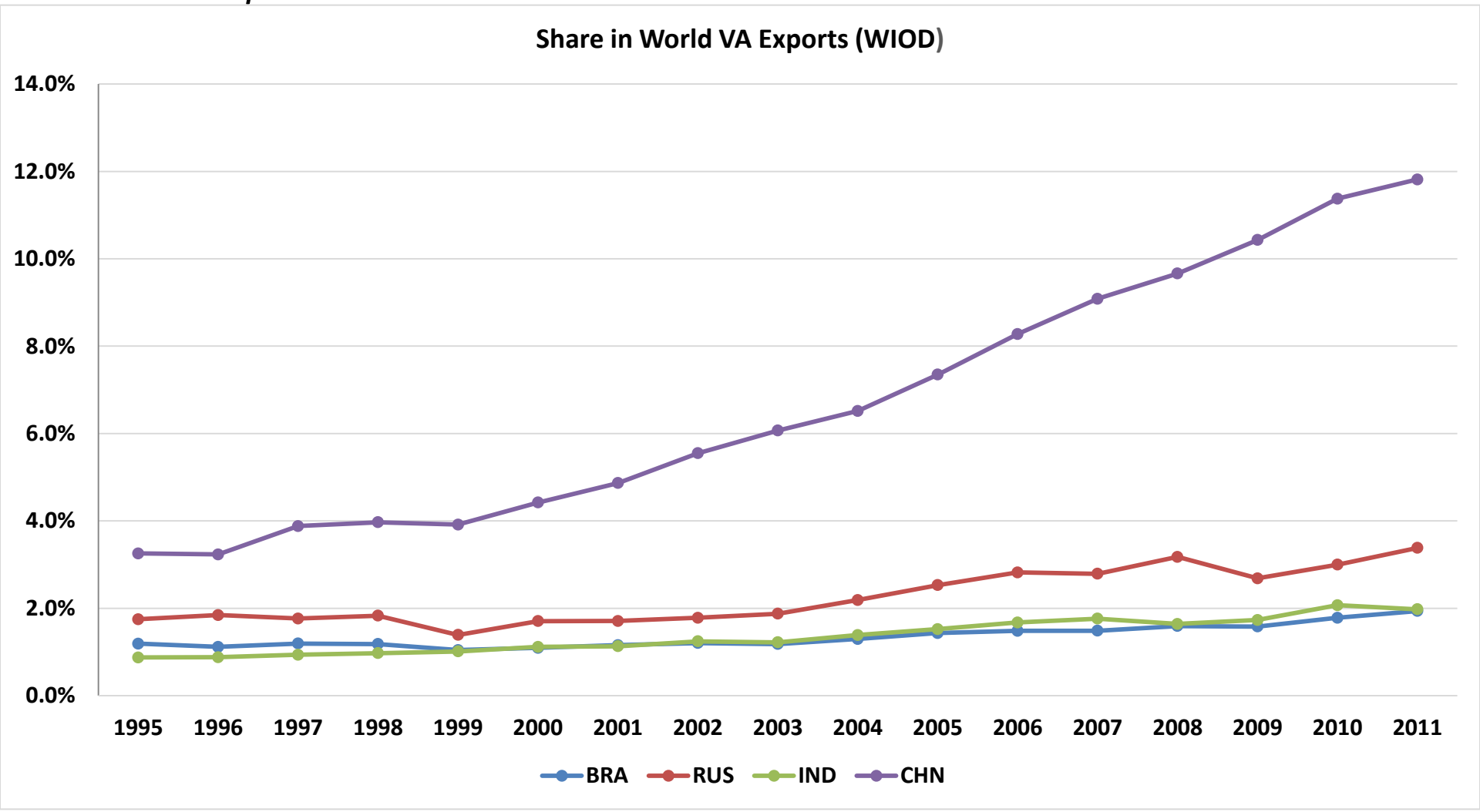


Possibly suggesting that fragmentation has been more beneficial to developing countries....

5. Foreign content in manufacturing exports has increased as a consequence of global fragmentation of production...

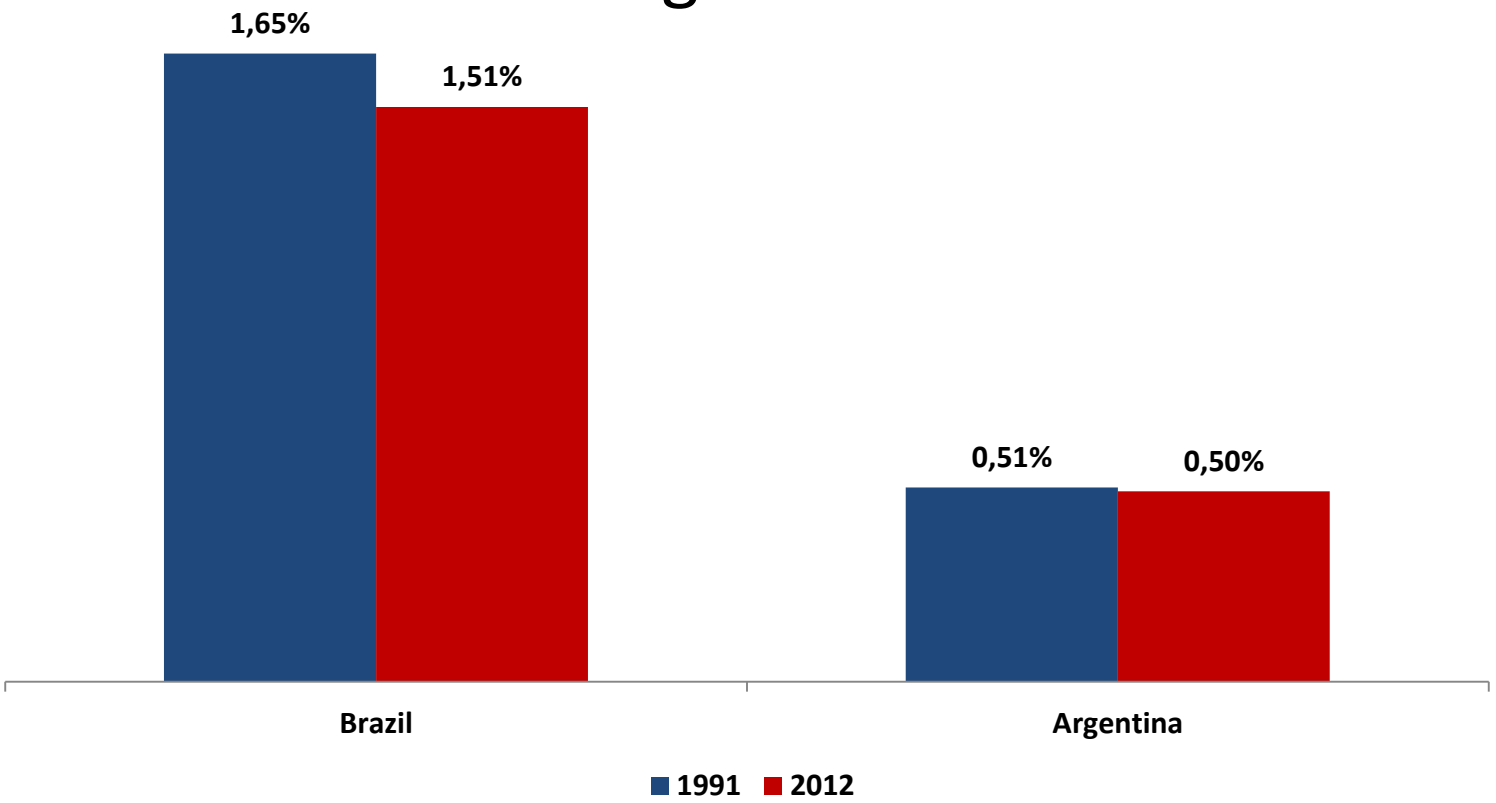


6. As the most integrated in Global Value Chains, China has benefited the most among BRICS economies, despite its lower value added per dollar exported...



The Brazilian Economy in the era of Global Value Chains: Are there any signs of integration?

1. Since the creation of Mercosur, Brazil has reduced its participation in Global Trade, while Argentina's stagnated…



2. How open is the domestic industry in Brazil/Argentina to trade in final goods and intermediates?

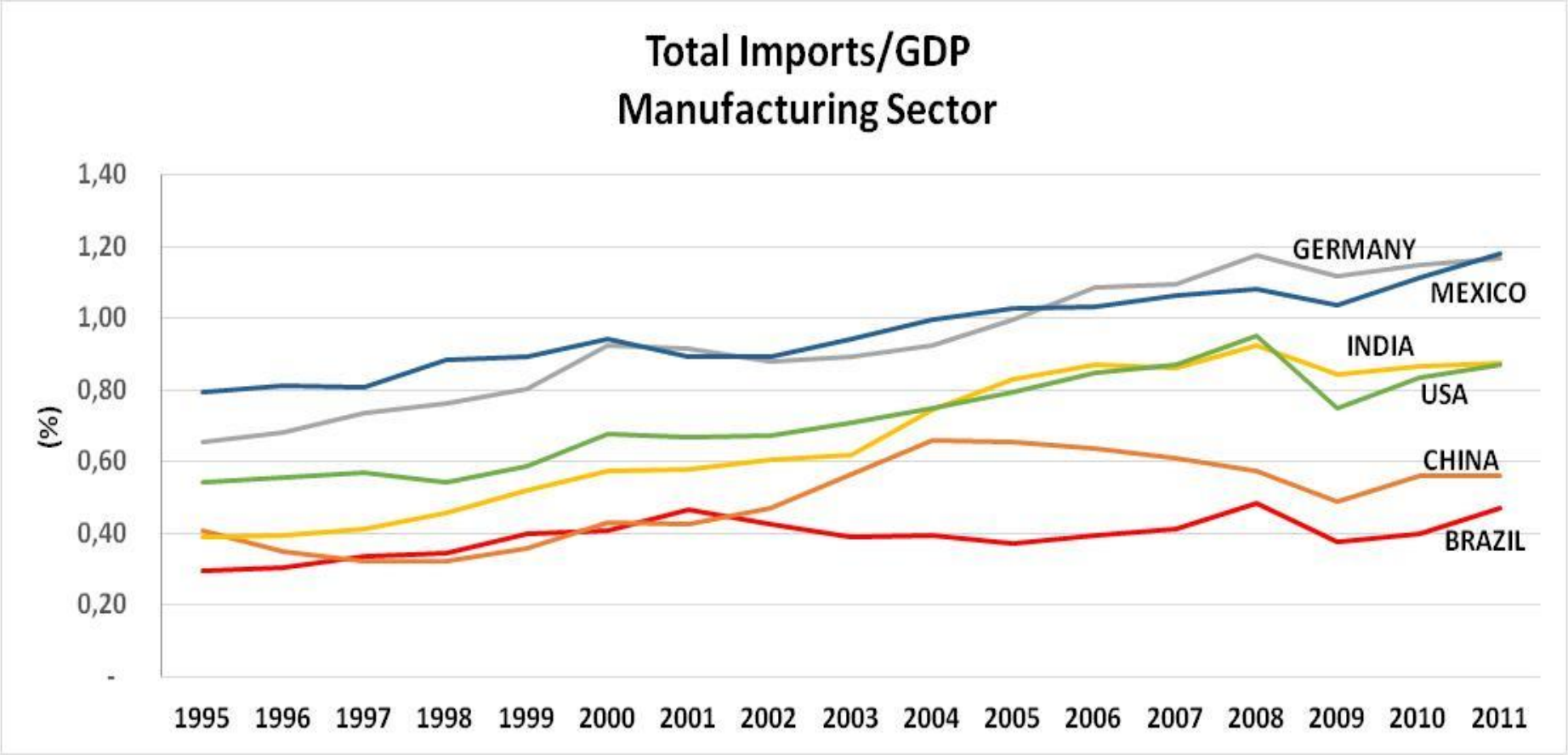
Year	Country	Total Imports/GDP	Ranking
2007	Brazil	11%	133/133
2007	Argentina	20%	127/133

Year	Country	(Imports of intermediates)/(Manufacturing GDP)	Ranking
2007	Brazil	27%	122/133
2007	Argentina	48%	84/133

Year	Country	Exports of intermediates/Manufacturing GDP	Ranking
2007	Brazil	27%	119/133
2007	Argentina	63%	59/133

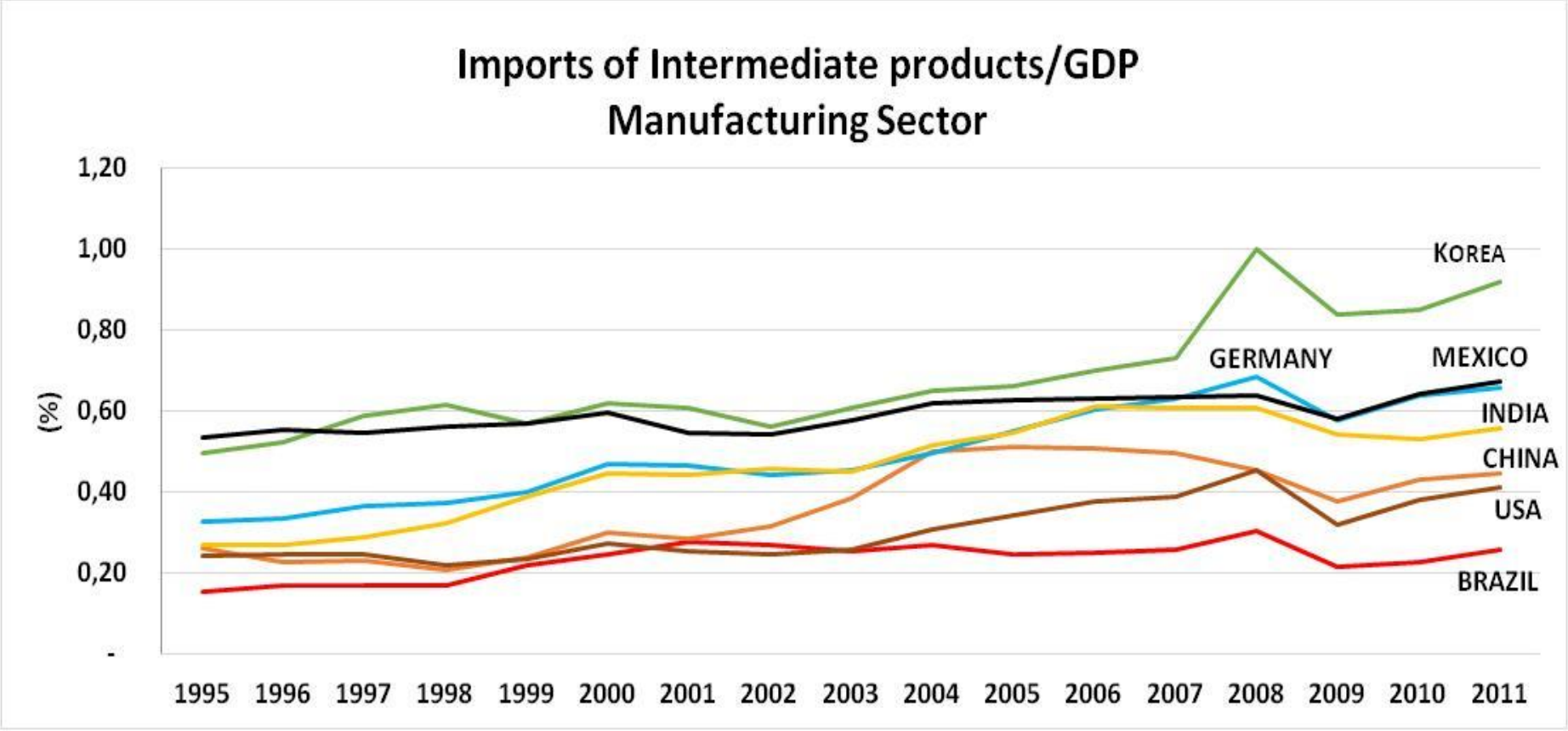
Source: GTAP 8 data base

3. A closer look at the Brazilian manufacturing sector reveals that total import penetration has increased slightly over the last years, but still far below the levels observed for countries like China, India, Mexico, USA and Germany…



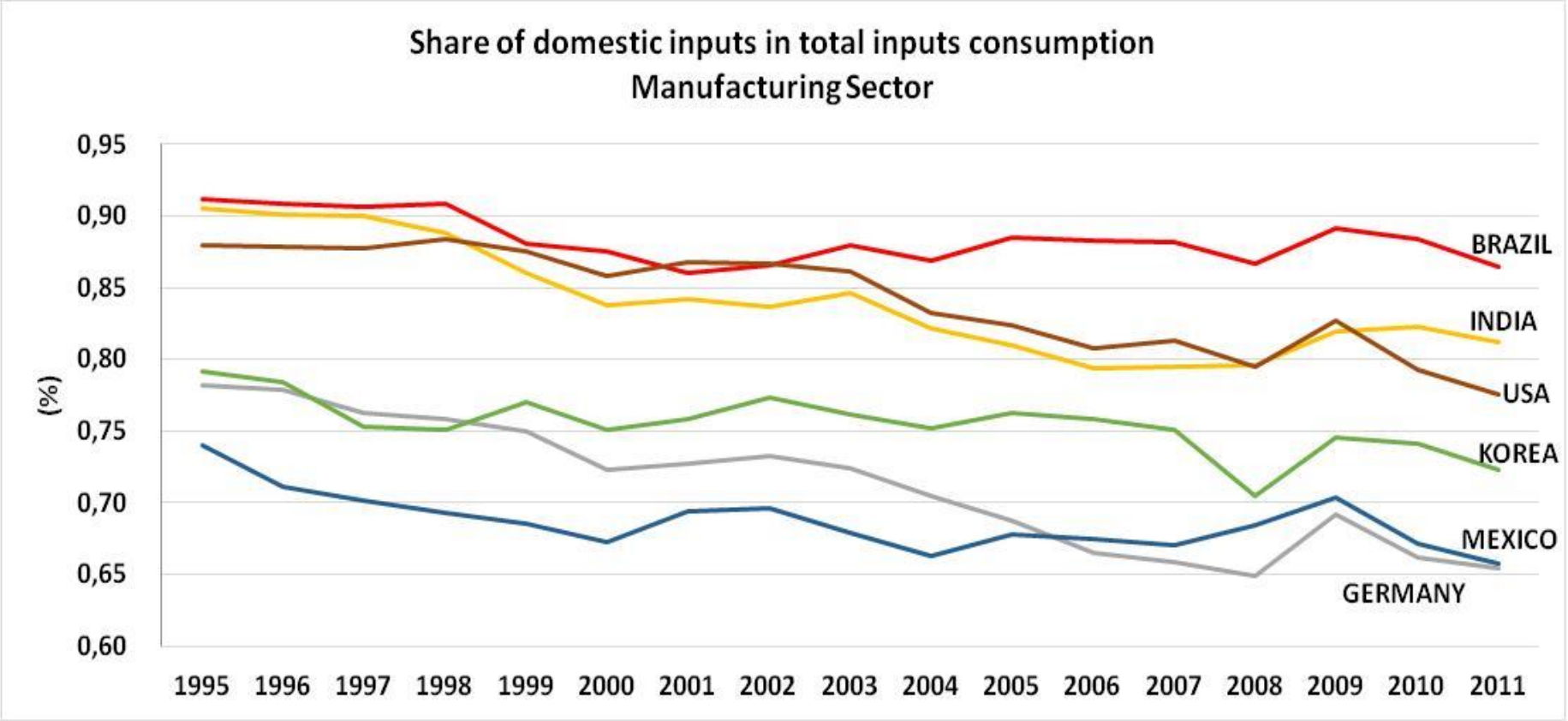
Source: WIOD

4. The same remarks are also valid for the profiles of total import penetration of intermediate goods into the Brazilian manufacturing sector…



Source: WIOD

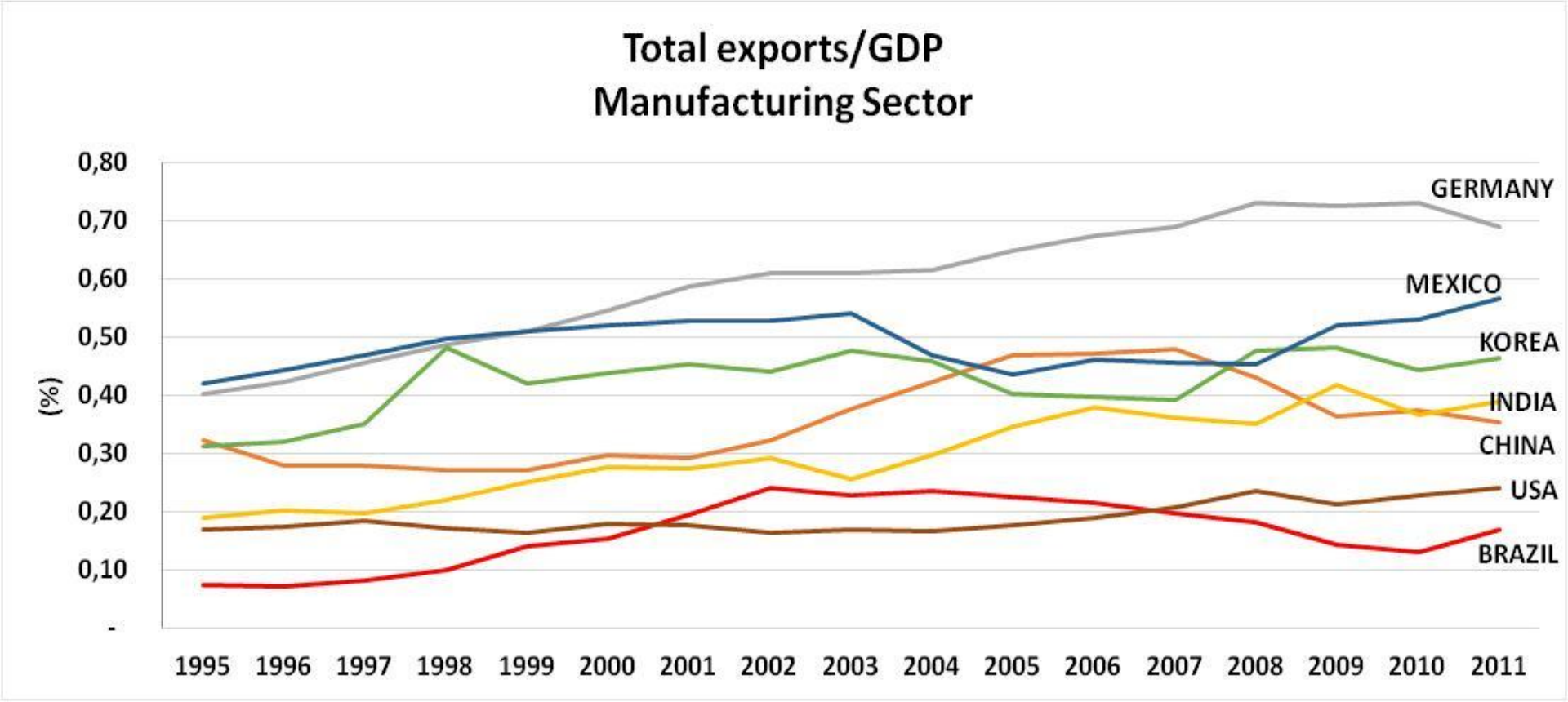
5. As a consequence, despite a slightly decrease over the period, the share of domestic inputs in total inputs consumption by the Brazilian manufacturing sector is still far above the rates observed for many emerging and developed countries…



Low participation of imported intermediate inputs in total inputs consumption suggests low levels of integration in global/regional value chains…

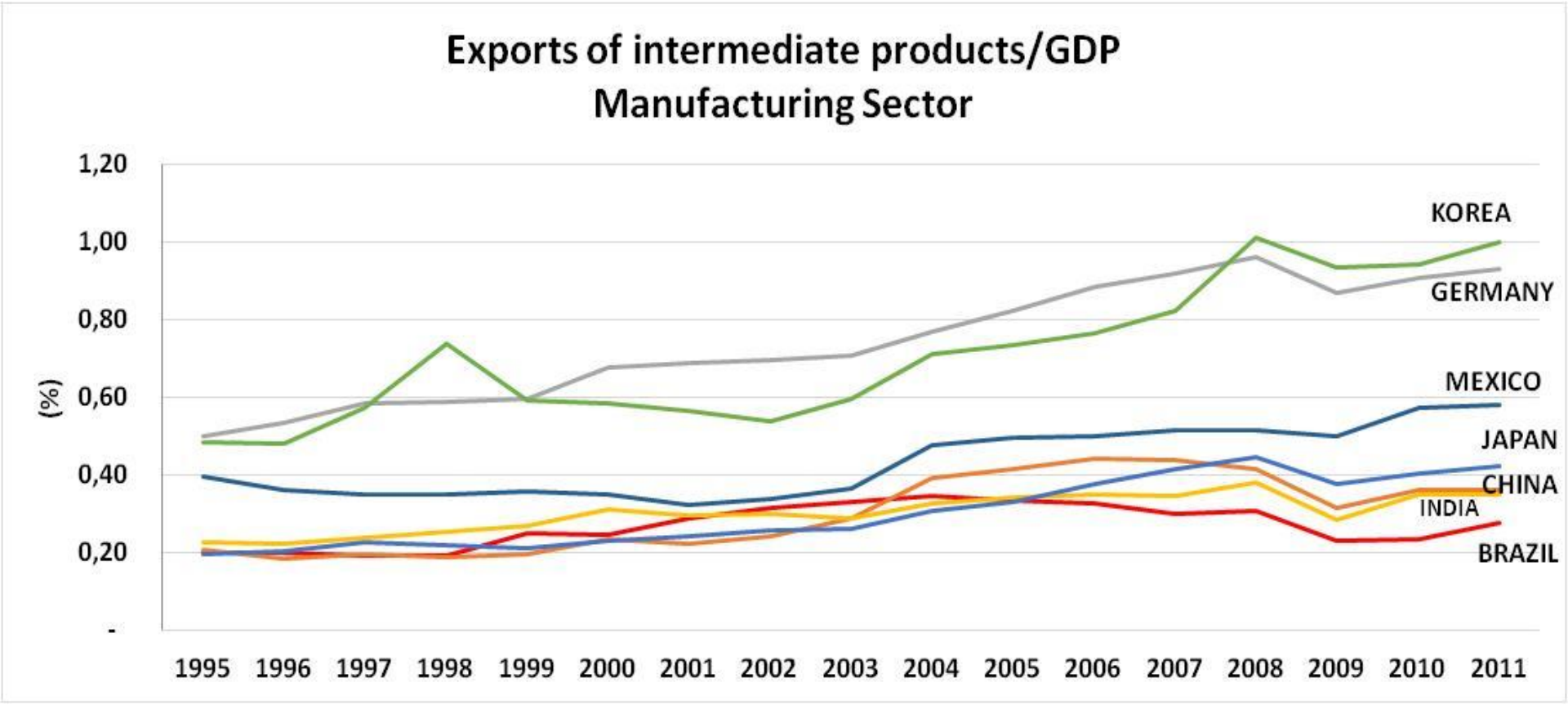
Source: WIOD

6. The profile for total exports over GDP for the Brazilian Manufacturing sector is also disappointing in comparison to other emerging and developed countries…



Source: WIOD

7. The same can be said about the profiles for total exports of intermediate products over GDP, suggesting low levels of connections to global/regional value chains from exports...

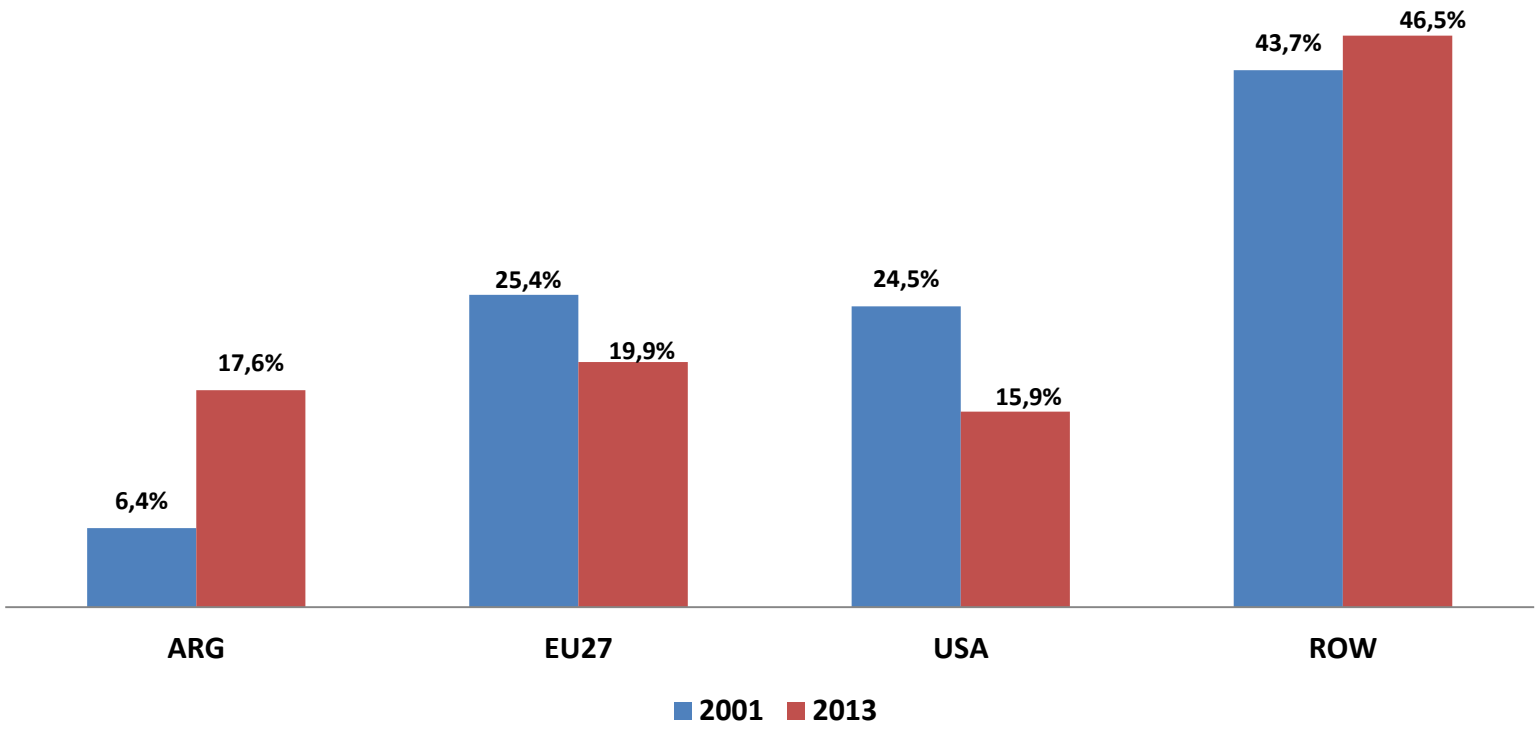


Source: WIOD

Are there signs of a regional value chain under formation in Mercosur?

1. The growing importance of Argentina as the destination of manufactured exports from Brazil, coincides with the loss of competitiveness of Brazilian exports in traditional markets such as the USA and UE_27

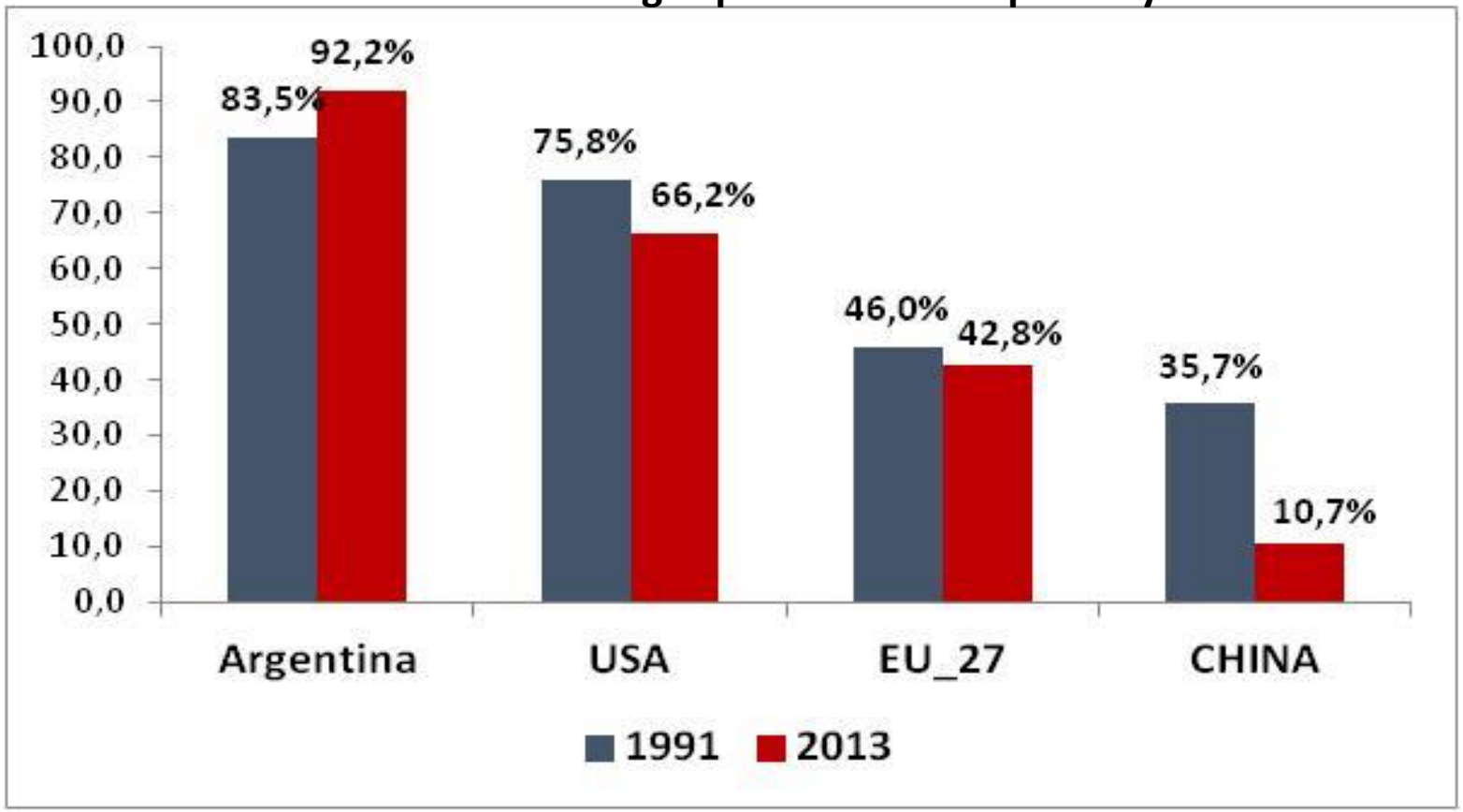
Share of each destination in total Brazilian exports of manufactured goods



Source: WIOD

2. More than 90% of Brazilian exports to Argentina corresponds to manufactured products…

Share of Brazilian manufacturing exports in total exports by destination



Source: WIOD

3. Bilateral trade in manufacturing is highly concentrated in JUST two sectors (2012), corresponding to more than 60% of exports to Argentina..

Manufacturing	BRA-Exports	BRA-Imports
Textiles	2,2%	0,9%
Wearing apparel	0,1%	0,2%
Leather products	1,2%	0,1%
Wood products	1,1%	0,3%
Paper products, publishing	2,7%	1,4%
Petroleum, coal products	1,4%	7,9%
Chemical, rubber, plastic pro	**17,2%**	**15,4%**
Mineral products n.e.c.	1,1%	0,2%
Ferrous metals	4,7%	0,8%
Metals n.e.c.	2,4%	2,0%
Metal products	2,2%	0,7%
Motor vehicules and parts	**45,3%**	**54,6%**
Transport equipment n.e.c.	0,7%	0,1%
lectronic equipment	1,7%	0,2%
Machinery and equipment n.e.c	13,0%	4,0%
Manufactures n.e.c.	0,3%	0,0%
Agrobusiness	2,7%	11,4%

Source: WIOD

4. Despite the high concentration of bilateral trade in manufactured products, the evidence of a regional value chain under formation in Mercosur is still weak…

Value Chain in Mercosur	
Brazil exports to:	
Argentina	
Argentina	77,2%
Brazil	5,5%
Uruguay	0,4%
Paraguay	0,3%

Value Chain in Mercosur	
Argentina exports to:	
Brazil	
Brazil	83,0%
Argentina	2,0%
Paraguay	0,2%
Uruguay	0,2%

Source: GTAP 8 data base

5. The Figures for Global/Regional Value Chains in Europe, Asia and Nafta seem to be much more impressive…

Value Chain Europe	
Germany exports to:	
Czech Republic	
Czech Republic	51,8%
Germany	11,5%
UK	3,4%
France	3,3%

Value Chain in NAFTA	
USA exports to	
Mexico	
Mexico	75,1%
USA	18,2%
Canada	1,0%
Germany	0,6%

Transpacific Value Chain	
KOREA exports to:	
China	
China	62,4%
USA	11,2%
Japan	3,3%
Germany	2,4%

Source: GTAP 8 data base

Can PTAs help Brazil to foster integration to regional/global value chains???

1. Some facts…

- Over the last 25 years, the Mercosur has been the only significant PTA signed by Brazilian authorities;

- More recently, the focus of trade policy in Brazil has clearly changed from traditional North-South trade relations to the formation of shallow PTAs with developing/poor countries such as Egypt, Marroco, Peru and India…

2. The Empirical literature

- Few recent studies available points out to a ***positive correlation*** between PTAs and production linkages across countries:
  - **Blyde, J, A Graziano and C Volpe Martincus (2013)**, "Economic Integration Agreements and Production Fragmentation: Evidence on the Extensive Margin." Inter-American Development Bank, unpublished document. Washington, DC.
  - **Johnson and Noguera (2012**) "Fragmentation and Trade in Value Added Over Four Decades", NBER Working Paper No. 18186;
  - **Hayakawa, K and N Yamashita (2011)** "The Role of Preferential Trade Agreements (PTAs) in Facilitating Global Production Networks", IDE Discussion paper No. 280;
  - **Orefice, G and N Rocha (2011)** "Deep Integration and Production Networks: an Empirical Analysis", WTO, Staff Working Paper ERSD-2011-11.

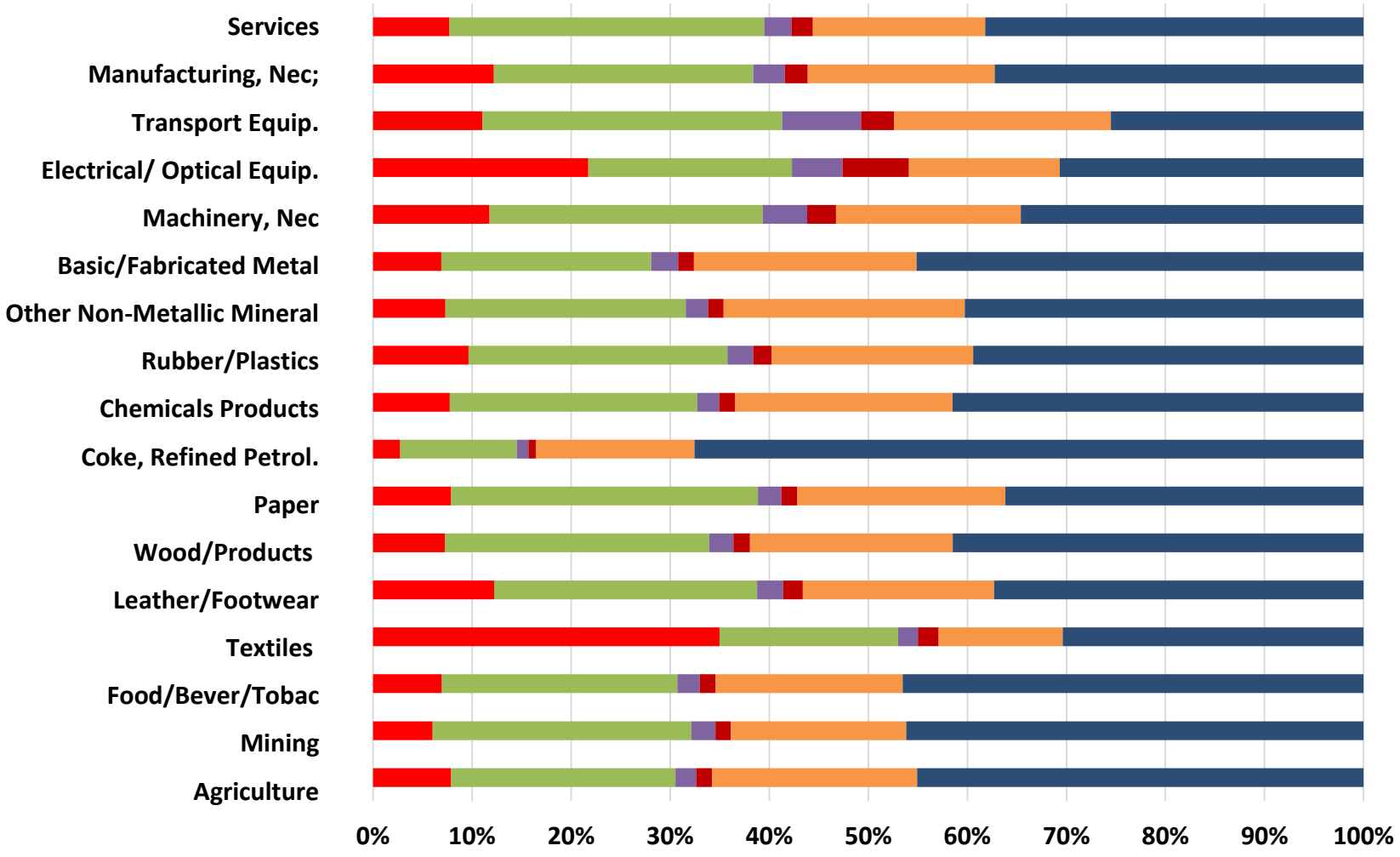
- Main challenges for the empirical literature (Blyde, 2013):
  - **Reverse causality:** While PTAs may induce the formation of production networks, existing production networks might also generate demand for the formation of PTAs;
  - **Not all trade and FDI flows are part of GVCs:** Integration agreements can affect both trade in intermediate inputs and vertical FDI – which are typically associated with GVCs – and trade in final goods and horizontal FDI – whose links with GVCs are considered weak

3. Brazil should prioritize the formation of PTAs with its "Natural Trade Partners" according to the logic of Global Value Chains…

- **Backward Linkages:** The larger the relevance of a given country as a ***source of intermediate goods to Brazil's exports,*** the higher the potential to the creation of a **international supply chain involving Brazil;**

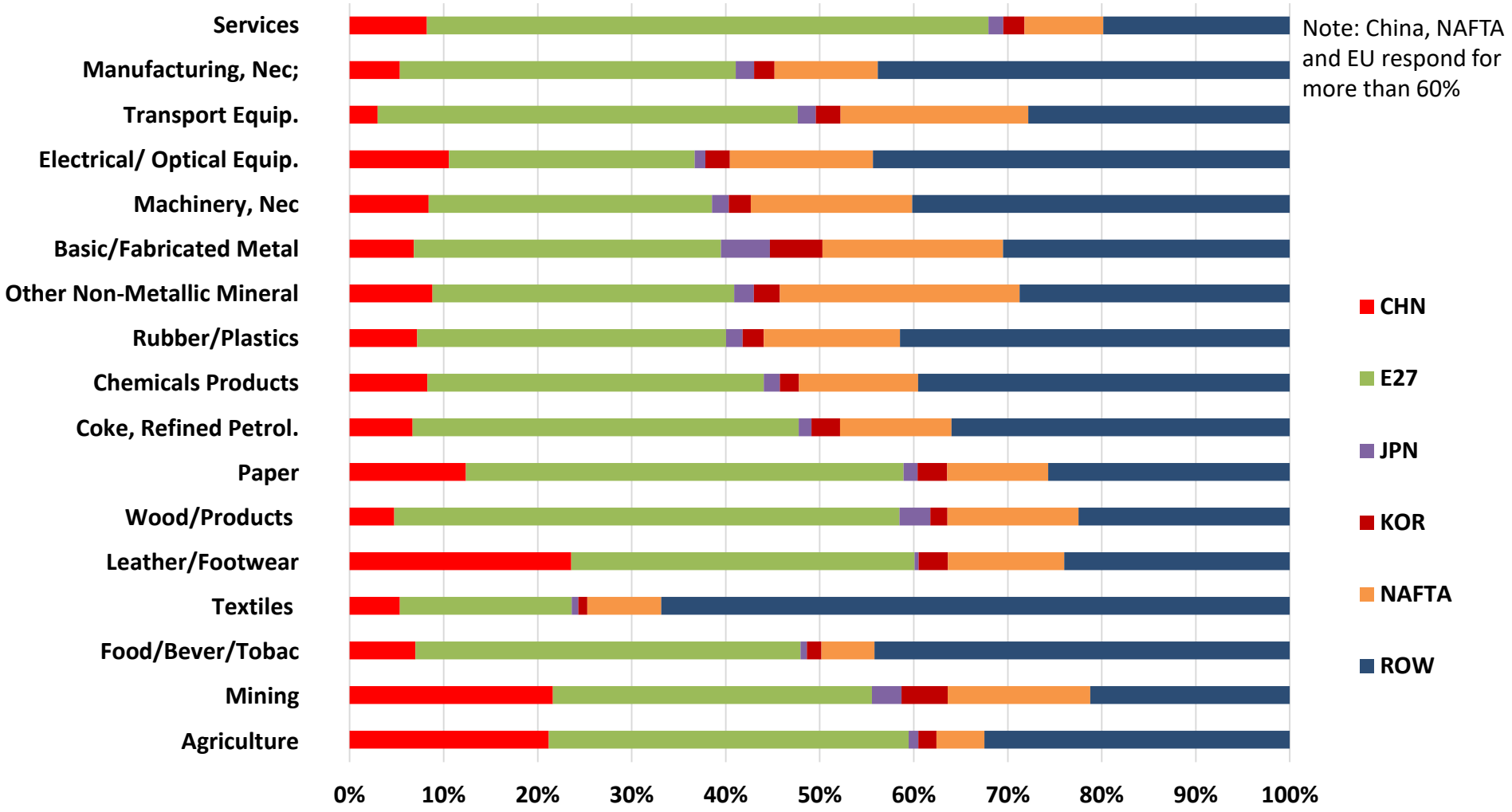
- **Forward linkages:** The larger the relevance of ***Brazil as source of intermediate goods to the exports of a given country***, the higher the potential to the creation of a international supply chain involving Brazil;

4. Who are Brazil's natural trade partners when it comes to Backward linkages?



Note: China, UE and NAFTA respond for more then 50% when it comes to foreign content in Brazilian exports

5. Who are Brazil's natural trade partners when it comes to Forward linkages?



6. Some signs of value chain integration after the agreement between Brazil and UE_27:

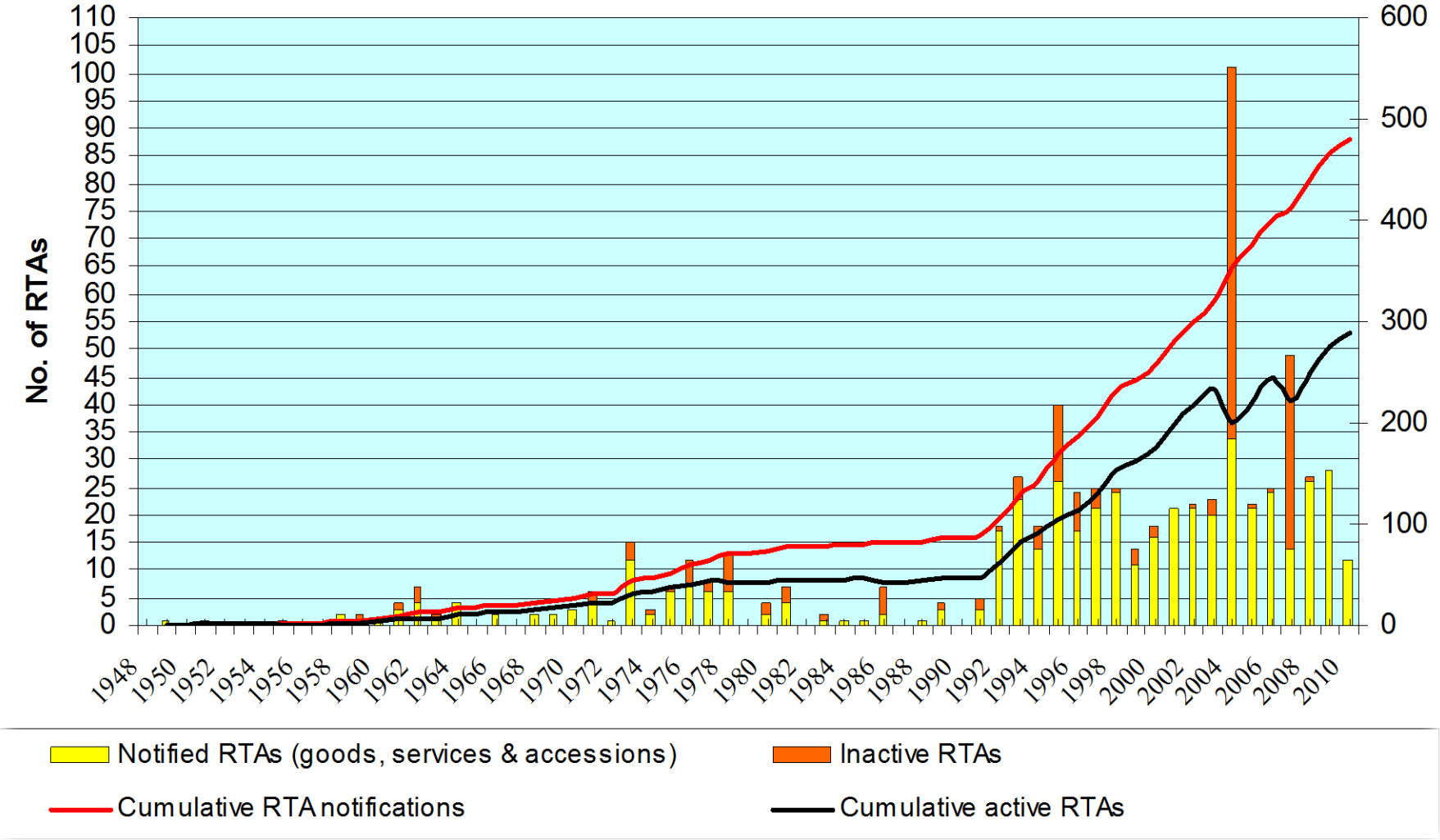
Brazil exports to EU_27	
Increase reprocessing back to Brazil:	
Hungary	37,20%
Poland	22,60%
Slovakia	19,20%
Czeck Republic	15,50%
Germany	19,70%
Finland	17,30%
France	13,30%

7. Some signs of value chain integration after the agreement between Brazil and UE_27:

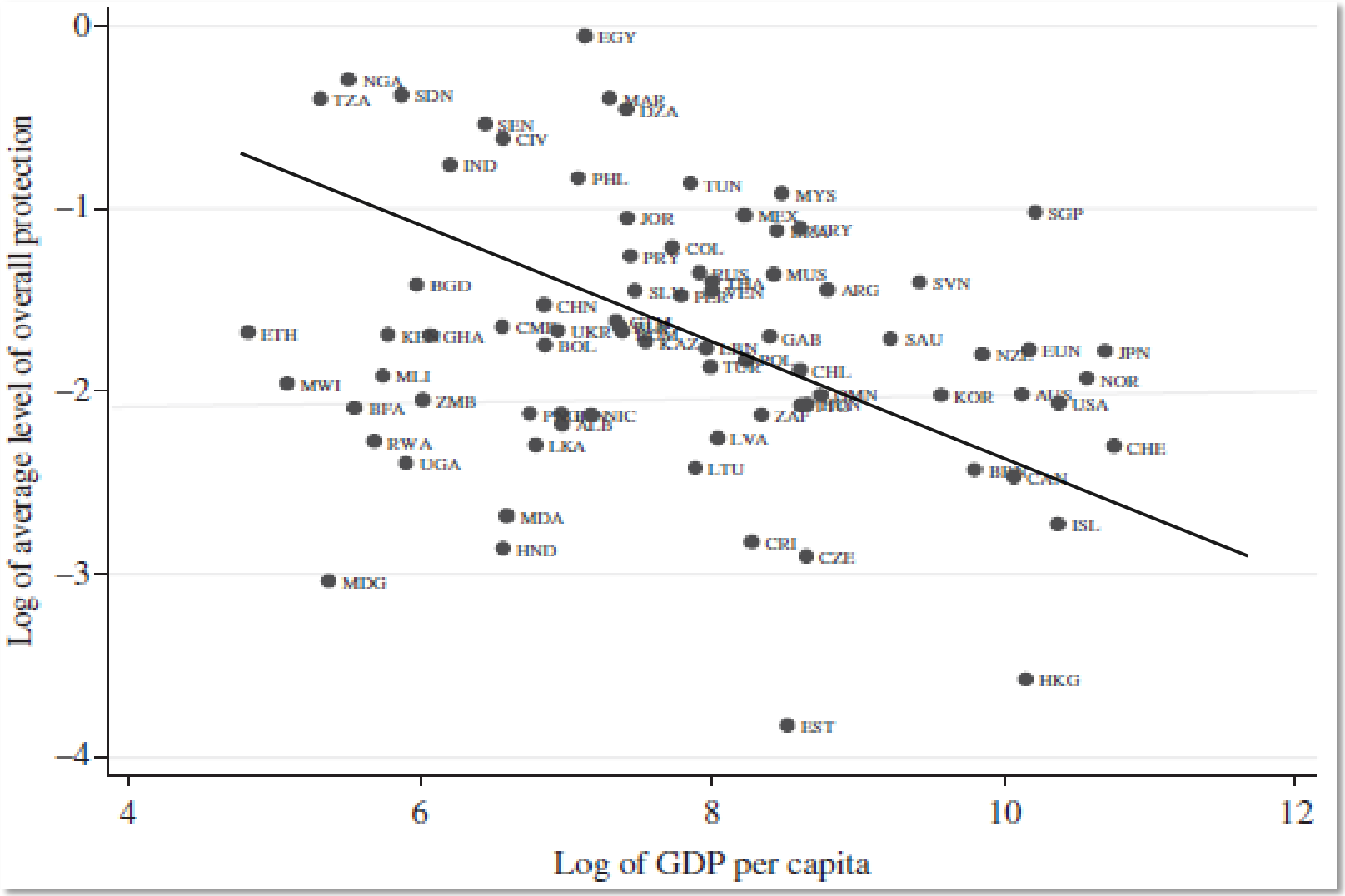
European Countries export to Brazil	
Increase reprocessing back to Europe	
Hungary	19,63%
Poland	13,88%
Slovakia	28,95%
Czeck Republic	15,50%
Germany	21,90%
Finland	17,60%
France	14,40%
Italy	21,69%
UK	27,83%
Nederlands	29,80%

3. The MERCOSUR in the era of Mega Regionals: The role of NTBs…

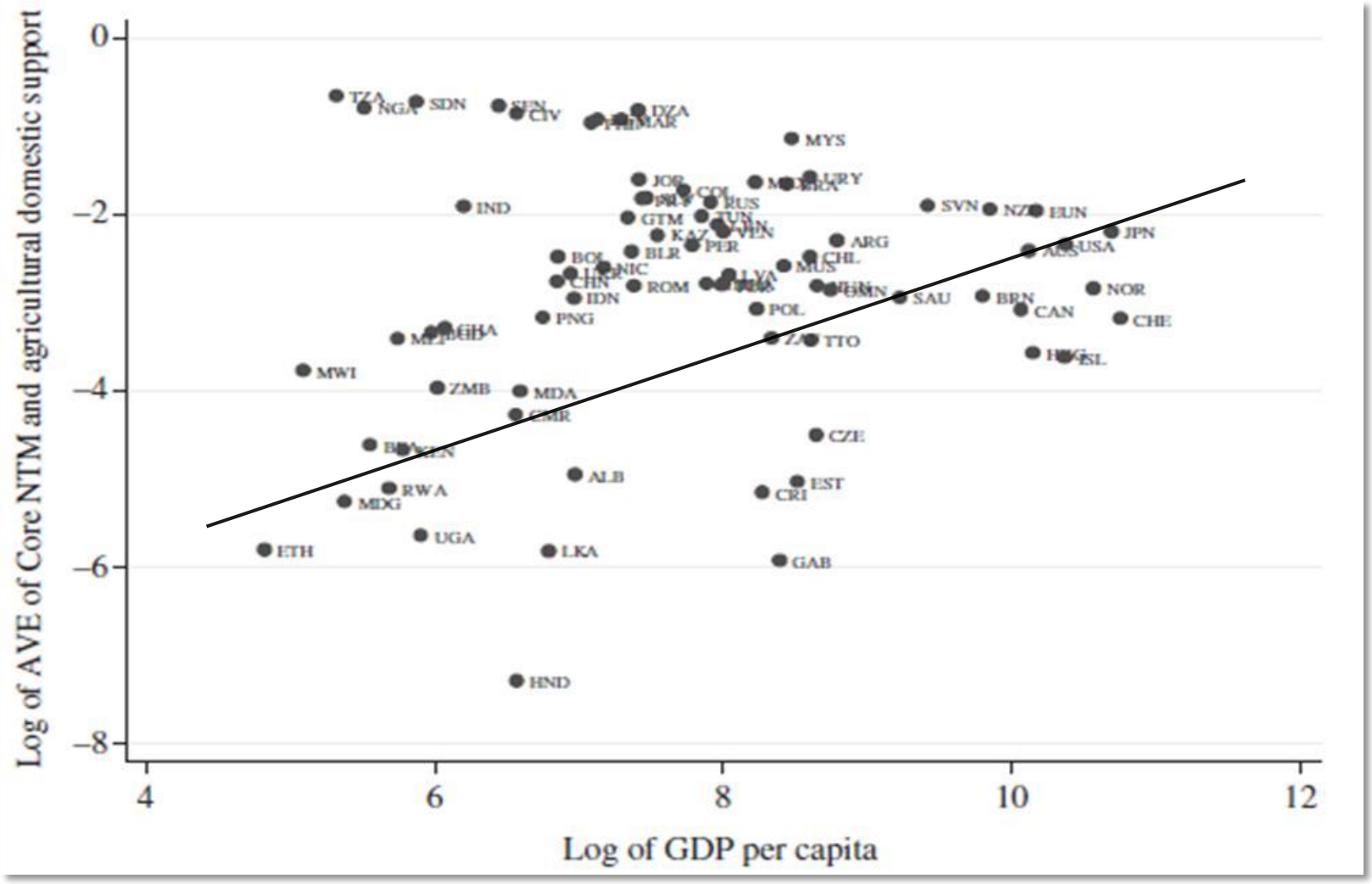
1. Regionalism has been progressively replacing Multilateralism : More than 400 notifications of PTAS over the last 20 years



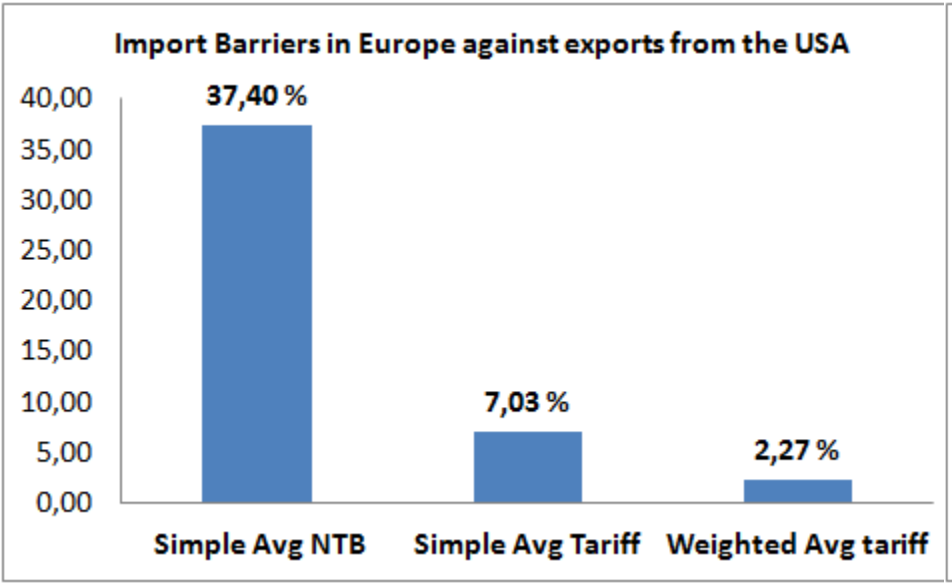
2. Nowadays, Developed Economies are the ones with the lowest average import tariff levels (Kee et al, 2009).

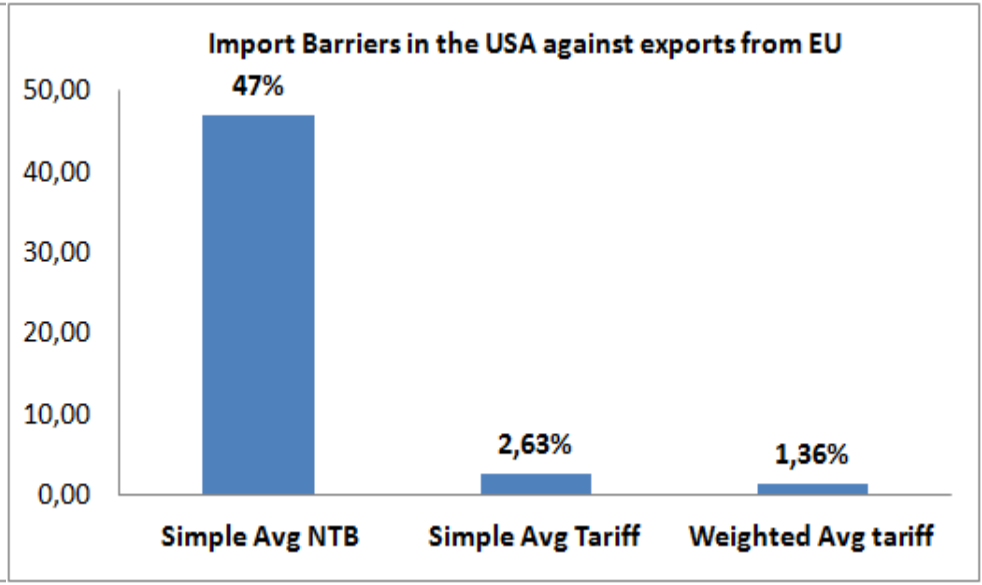


3. However, there is some convincing empirical evidence suggesting import tariffs were replaced by NON tariff barriers in rich countries (Kee et al, 2009)



4. Not surprisingly, the ***Transatlantic Trade and Investment Partnership*** *(TTIP), under negotiation,* ***is much more about reducing NTBs than Tariff Barriers…***





Source: WITS/ECORYS, 2009

A brief view over the likely Impacts of TTIP on Brazil and Argentina...

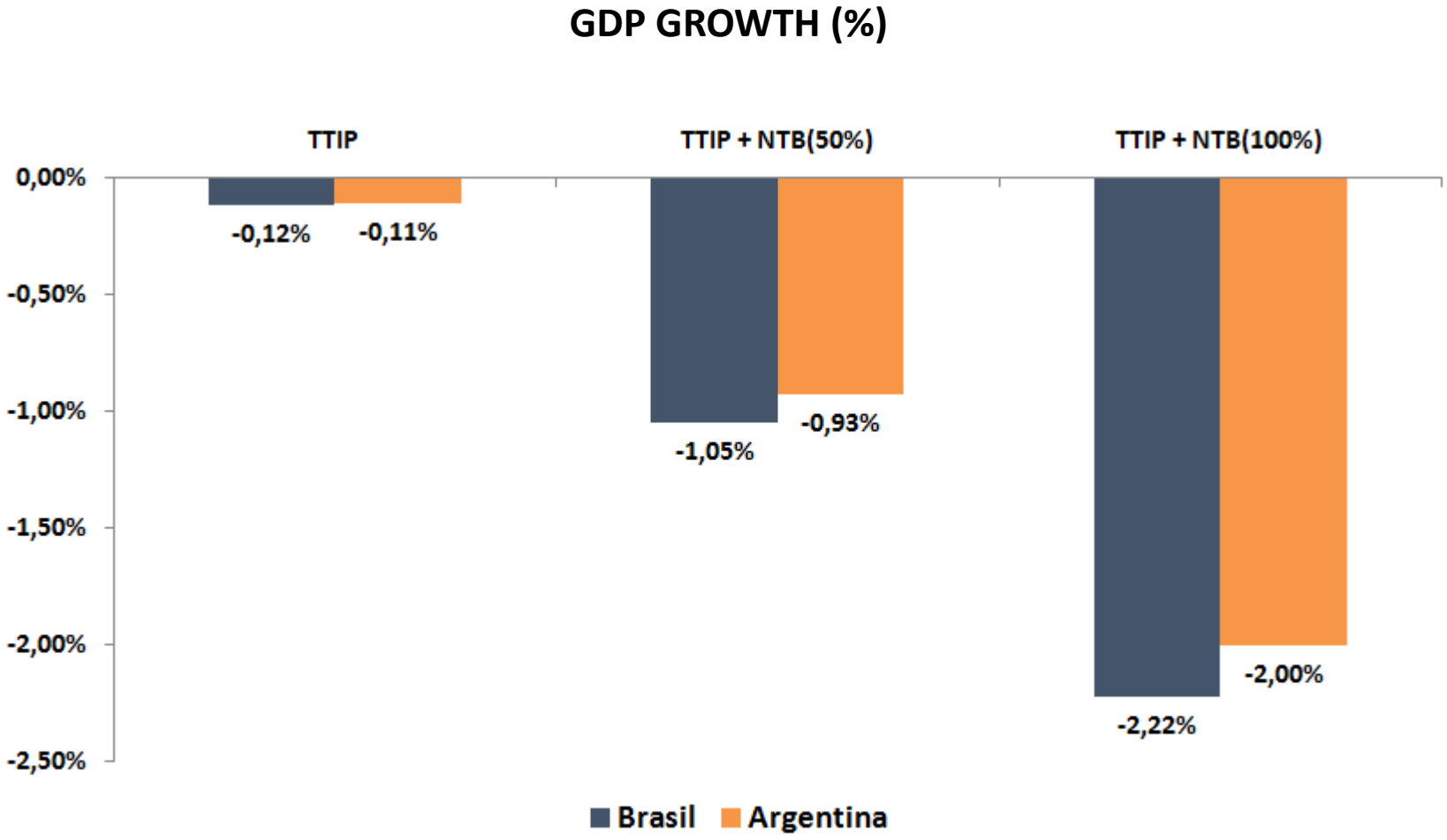
The CGE modeling of Mega Regional Agreements is included in the context of a more ambitious project that will be approached in 3 STEPS:

- 1. CGE Static model with perfect competition, generating results under the trade in value added logic;
- 2. A Dynamic CGE model with imperfect competition;
- 3. A Dynamic CGE model with imperfect competition and heterogeneous firms;

The GTAP model

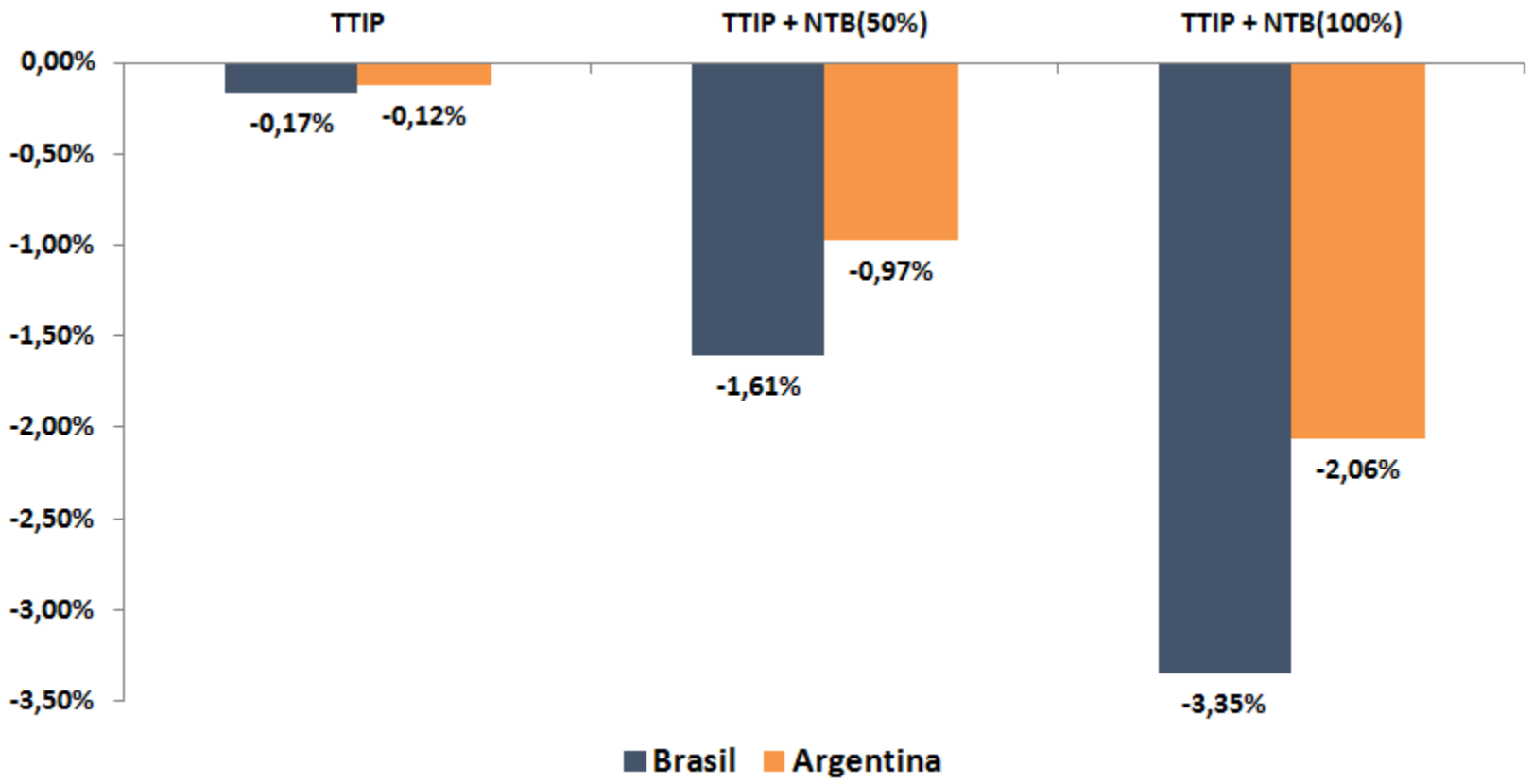
- Data base: GTAP – 8 (Last one available);
- Model accomodates the 134 economies and 57 sectors;
- Market Structure: Perfect Competition;
- GTAP Import Tariffs were compared to the values reported on WITS (World Integrated Trade System) ;
- Reductions in Bilateral NTBs (Ecorys) were simulated as efficiency shocks on bilateral imports;
- Closure: Free mobility of factors of production except natural resources; Investment is fixed;

5. CGE simulations suggest that, when NTBs are taken into consideration, the TTIP can be more harmful for GDP growth in Brazil and Argentina…



Source: GTAP 8

6. CGE simulations suggest that, when NTBs are taken into consideration, the TTIP can be more harmful for total Exports in Brazil and Argentina…



Source: GTAP 8

7. In both countries, losses are relatively more concentrated in land intensive sectors…

Returns on Production Factors (%)

Brazil	TTIP	TTIP + NTB(50%)	TTIP + NTB(100%)
Return of land	**-0,37%**	**-2,75%**	**-6,27%**
Return of capital	**-0,01%**	**-0,06%**	**-0,13%**
Return of labor	-0,01%	-0,04%	-0,07%

Argentina	TTIP	TTIP + NTB(50%)	TTIP + NTB(100%)
Return of land	**-0,10%**	**-0,99%**	**-2,57%**
Return of capital	**-0,01%**	**-0,01%**	**-0,02%**
Return of labor	-0,01%	-0,04%	-0,09%

Source: GTAP 8

8. *This is confirmed by sectoral GDP results in Brazil…*

Sectoral GDP (%) – Land Intensive Sectors

Agriculture & Agribusiness	TTIP	TTIP + NTB(50%)	TTIP + NBT (100%)
Paddy rice	-0,01	-0,01	-0,04
Other cereals	-0,14	-0,68	-1,32
Other crops (unprepared)	-0,19	-1,52	-3,51
Cattle, horses, sheeps	-0,15	-0,26	-0,73
Animal products	-0,28	-1,25	-2,5
Meat: cattle, sheeps, horses	-0,18	-0,33	-0,91
Meat products	-0,55	-2,44	-4,86
Vegetables oils and fats	-0,01	-0,12	-0,51
Food products (animal feed)	-0,04	-0,23	-0,5
Beverage, Tobacco products	-0,01	-0,43	-0,68
Dairy products	-0,03	-0,01	0,03
Vegetables/fruits	0,01	-0,13	-0,31
Oil seeds	0,24	-0,01	-0,44
Processed rice	0	0	-0,01
Raw milk	-0,02	0	0,04
Wheat	0,21	1,4	2,61
Sugar (cane&beet)	0,02	0,17	0,42
Plant fibres	0,01	0,72	1,52
Wool, silk	0	0,01	0,01
Forestry products	0,06	0,59	1,26
Sugar	0,02	0,14	0,37

Losses in 60,3% of the results

Sectoral GDP (%) – Capital Intensive Sectors

Manufacturing and Extractive	TTIP	TTIP + NTB(50%)	TTIP + NBT (100%)
Petroleum products	-0,03	-0,32	-0,61
Apparel	-0,01	-0,02	-0,04
Leather products	-0,47	-0,55	-0,77
Mineral (non-metallic)	-0,19	-0,59	-0,94
Manufactures	0	-0,06	-0,15
Transport equipament	0,12	-3,28	-6,51
Iron, steel	0,1	-0,13	-0,35
Fishing	0	-0,05	-0,1
Textiles	-0,06	0,07	0,19
Motor vehicles and parts	-0,02	0	0,01
Wood products	0,15	1,4	3,01
Paper products	0,06	0,52	1,11
Chemical, rubber, plastics	0,02	0,25	0,57
Metals (non-ferrous)	0	0,39	0,75
Metal products	0,04	0,29	0,58
Electronic equipment	0,07	0,38	0,75
Machinery and equipment	0,16	0,58	1,06
Coal	0,04	0,26	0,5
Oil	0,03	0,02	0,01
Gas	0,01	0,08	0,19
Minerals	0,04	0,07	0,14

Losses in 35,0% of the results

9. *And also in Argentina…*

Sectoral GDP (%) – Land Intensive Sectors

Agriculture & Agribusiness	TTIP	TTIP + NTB (50%)	TTIP + NTB (100%)
Paddy rice	-0,11	-0,72	-1,66
Other cereals	-0,03	-0,18	-0,19
Vegetables/fruits	-0,06	-0,49	-0,95
Sugar (cane&beet)	-0,04	-0,23	-0,44
Plant fibres	-0,05	-0,04	-0,08
Other crops (unprepared)	-0,24	-2,41	-5,25
Cattle, horses, sheeps	-0,34	-1,11	-2,72
Animal products	-0,43	-2,71	-5,31
Raw milk	-0,28	-0,5	-0,5
Meat: cattle, sheeps, horses	-0,41	-1,32	-3,24
Meat products	-0,48	-3,47	-6,62
Vegetables oils and fats	-0,07	-0,97	-2,31
Dairy products	-0,3	-0,54	-0,54
Processed rice	-0,08	-0,46	-0,94
Sugar	-0,04	-0,27	-0,52
Food products (animal feed)	-0,11	-0,58	-1,23
Beverage, Tobacco products	-0,02	-0,65	-1,04
Wool, silk	0,14	0	-0,71
Forestry products	0,04	0,08	0,21
Oil seeds	0,11	0,16	0,2
Wheat	0,4	2,41	4,61

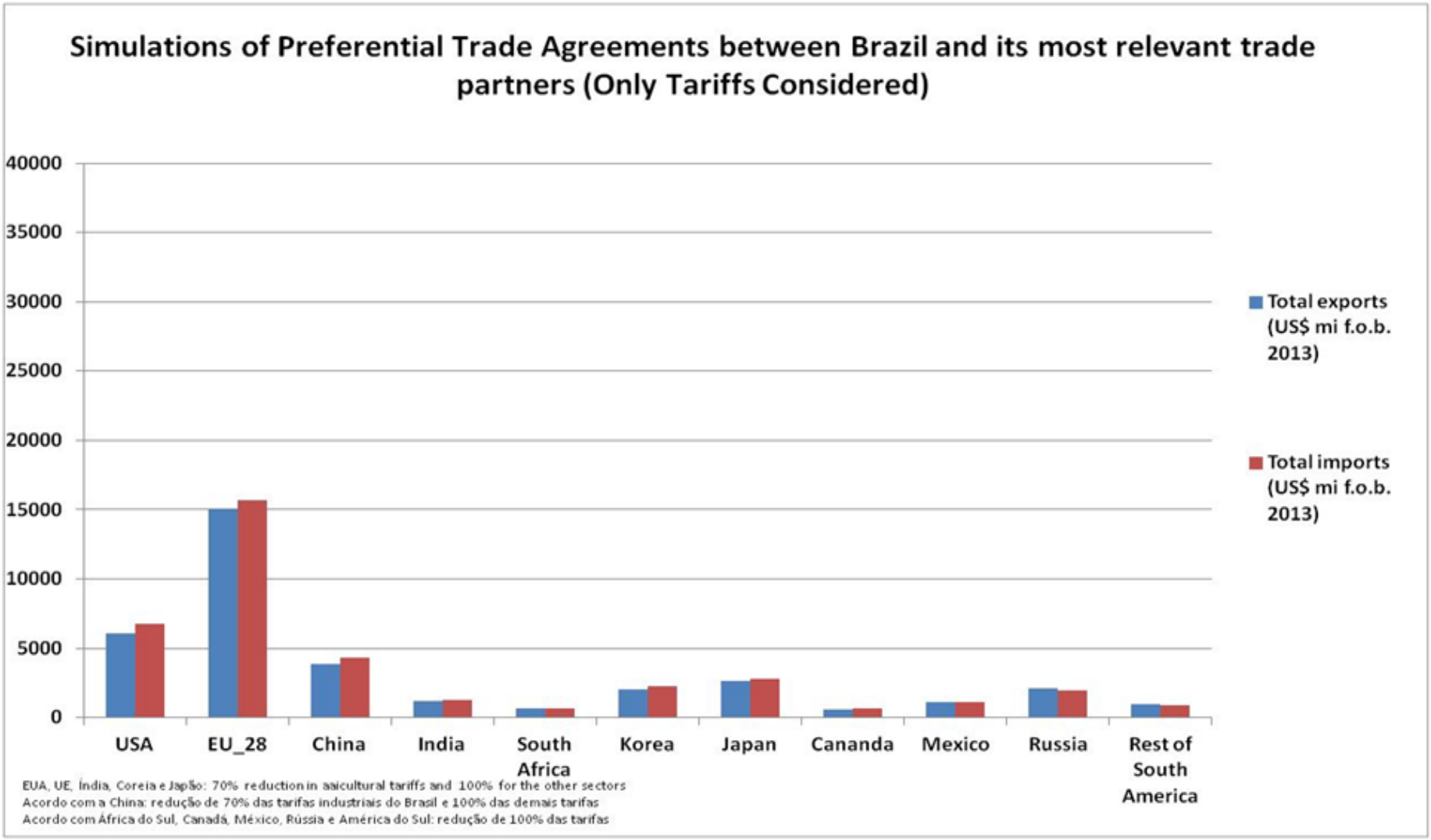
Losses in 82,5% of the results

Sectoral GDP (%) – Capital Intensive Sectors

Manufacturing and Extractive	TTIP	TTIP + TBT (50%)	TTIP + TBT (100%)
Fishing	-0,09	-0,41	-0,86
Coal	0,03	0,03	0,04
Oil	0,02	-0,06	-0,15
Gas	0,01	0,04	0,1
Minerals	0,02	-0,04	-0,09
Textiles	-0,06	0,08	0,22
Apparel	-0,03	0,02	0,06
Leather products	-0,42	-0,98	-1,66
Wood products	0,05	0,35	0,77
Paper products	0,02	0,28	0,61
Petroleum products	-0,01	-0,26	-0,49
Chemical, rubber, plastics	0	0,06	0,28
Mineral (non-metallic)	-0,04	-0,1	-0,12
Iron, steel	0,11	0,48	0,96
Metals (non-ferrous)	0	-0,14	-0,35
Metal products	0,03	0,32	0,67
Motor vehicles and parts	-0,03	-0,08	-0,16
Transport equipament	0,15	0,53	1,07
Electronic equipment	0,09	0,22	0,37
Machinery and equipment	0,2	1,18	2,36
Manufactures	0,01	0,07	0,12

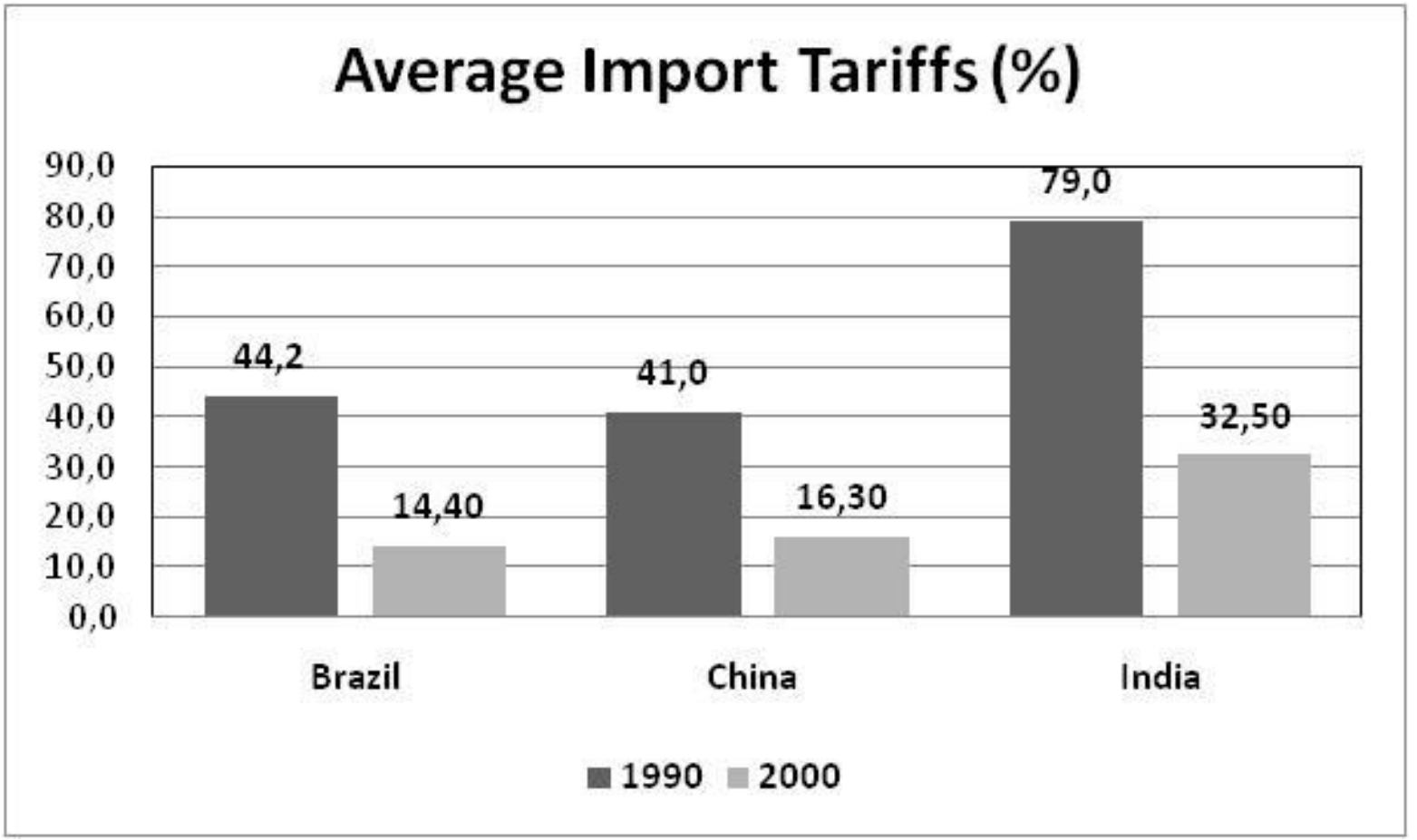
Losses in 36,5% of the results

10. CGE simulation exercises suggest Brazil can significantly improve its participation in international trade with the formalization of other FTAs, according to the "natural trade partner" perspective…

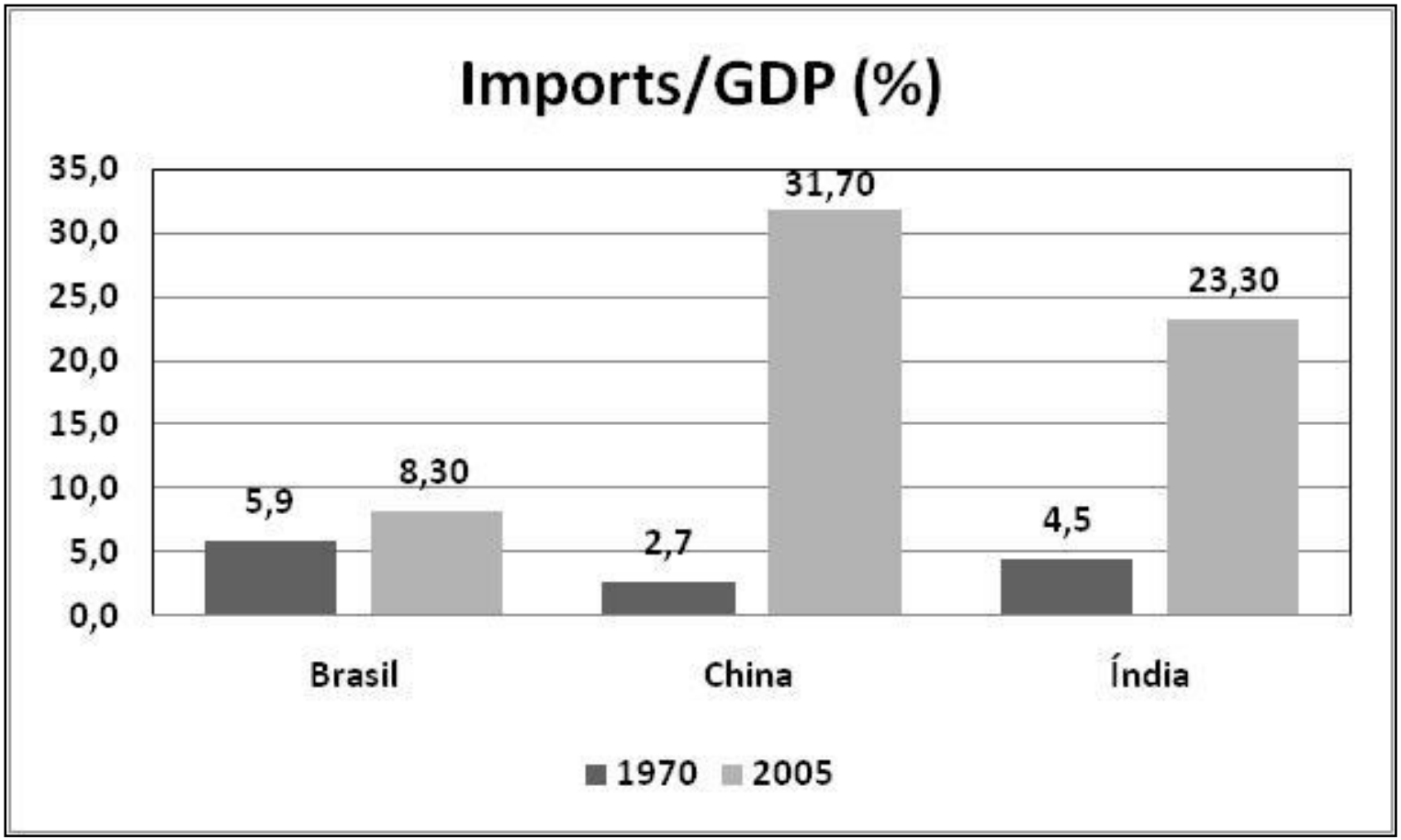


Searching for trade bottlenecks: The role of infrastructure...

1. In the nineties, trade openness in Brazil was even more radical then the ones verified in China or India: -67% in tariff cuts for Brazil, -60% for China and -59% for India…



2. Despite the strong openness to trade verified in the nineties, import penetration in Brazil evolved quite slowly, far away from the outstanding dynamics observed for China and India…



Possible factors that may justify Brazilian poor trade performance…

1. **Tax burden:** It is typically high in countries where society demands public expenses to be high **(society's decision);**

2. **Real Exchange rates:** High public and private expenses are **also society decision**s and results in low domestic savings in Brazil. As a consequence, Real exchange rates tend to be structurally valued;

Possible factors that may justify Brazilian poor trade performance…

3. **Geography:** Brazil is far away from the most relevant global trade flows and has its competitiveness harmed by high maritime transport costs (Ferraz, 2009).

4. **Infrastructure:** Becomes crucial for the competitiveness of a country mainly when the tax burden is high and real exchange rates are usually valued.

How distant is Brazil from the best practices in the world when it comes to transport and trade logistics?

1. According to the World Bank **(2014), Brazil ranks 65º out of 165 countries, when it comes to the quality of its transport and trade logistics;**

2. Brazil has dropped **20 positions in relation to the last ranking in** 2012, and is currently positioned below Argentina and the rest of the BRICS;

3. Brazil's worst performance is for **"customs and border procedures",** where it ranks **94º, below countries such as El Salvador, Paraguay e Ecuador**…

The **CGTI-FGV and FIESP** (São Paulo's Confederation of industries) took the initiative to measure the performance of Brazilian transport Infrastructure over 1990-2010...

- We considered the **50 largest metropolitan** regions in Brazil, covering over **50% of Brazilian population and GDP...**

- **We built 18 indicators, grouped in 4 categories: supply, quality, utilization and freight costs (following close a previous methodology developed by the US Chamber of Commerce);**

- The indicators considered **Roads, Railroads, River roads and Ports in Brazil, resulting in a panel of more than 10.000 data over 1990-2010;**

- The Brazilian indicators were compared with the best practices in a sample of **metropolitan regions in Europe, USA and Asia (the Benchmarks);**

Some infrastructure supply indicators for 2010...

Km of Roads/10.000 inhab.	2010
International Benchmark	4,78 Km/10.000 hab
BRAZIL	2,53Km/10.000 hab

Km of Railroads/10.000 inhab.	2010
International Benchmark	3,67 Km/10.000 hab
BRAZIL	0,61 Km/10.000 hab

Km of River roads/10.000 inhab.	2010
International Benchmark	1,91 Km/10.000 hab
BRAZIL	0,50 Km/10.000 hab

Some Infrastructure quality and cost indicators…

% Paved Roads	2010
International Benchmark	100%
BRAZIL	19%

Road Freight (US$/1000.ton.Km)	2010
International Benchmark	US$ 14.00
BRAZIL	US$ 51.75

Railroad Freight (US$/1000.TKU)	2010
International Benchmark	US$ 4,76
BRAZIL	US$ 74,67

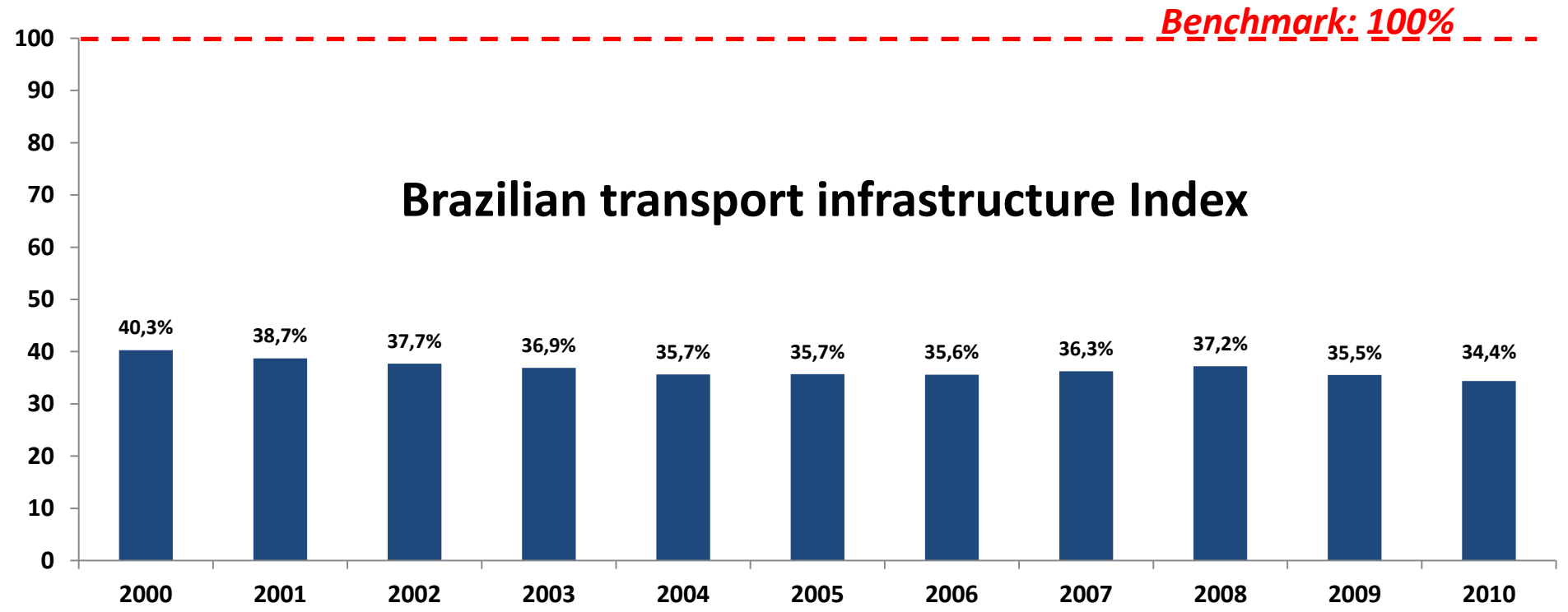
Some infrastructure quality and cost indicators…

Cost to export a 20 feet container (US$)	2010
International Benchmark	US$ 621
BRAZIL	US$1,790

Containerization	2010
International Benchmark	100%
Brazil	70%

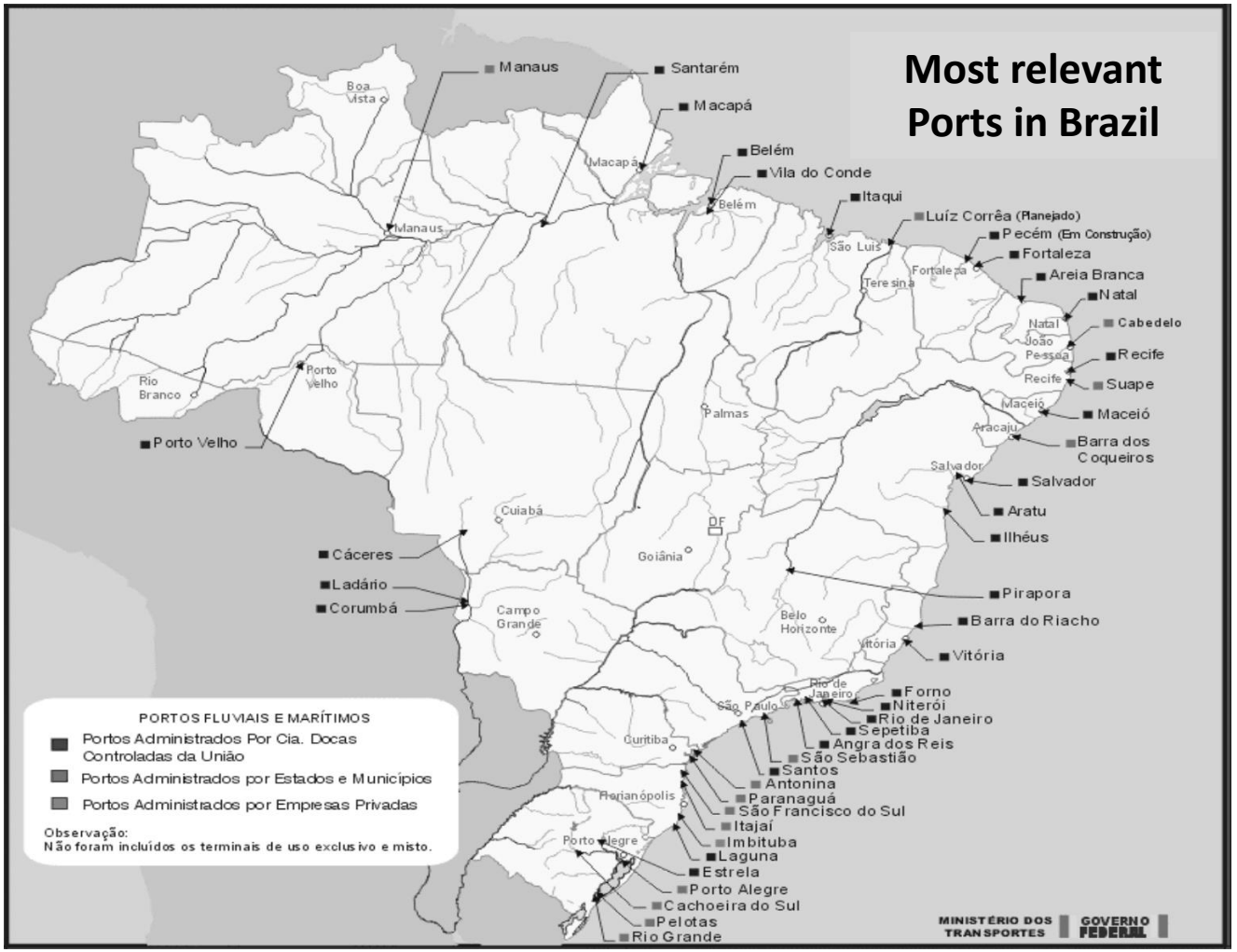
Customs clearance time in airports	2010
International Benchmark	5,4 hours
BRAZIL	2,6 days

The "performance gap" between Brazilian transport infrastructure and the best practices in the world is significant and has increased over the period…

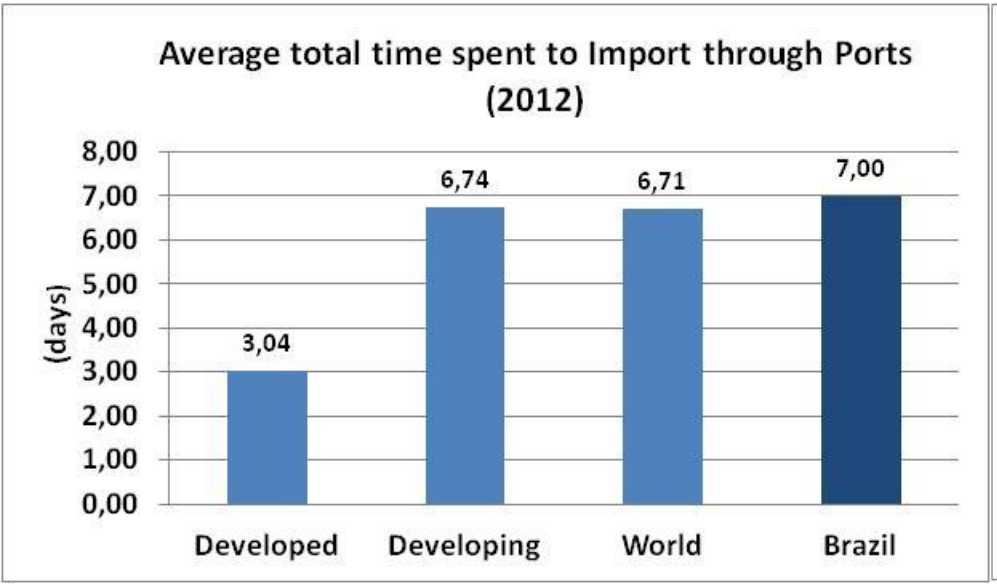


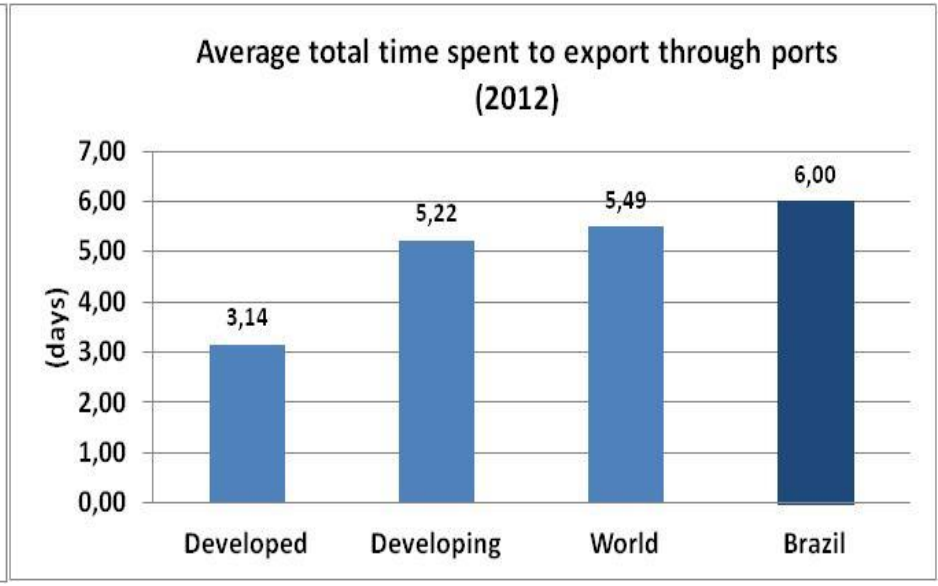
A closer look at Port Efficiency in Brazil: The costs of delays…

1. In 2013, Brazil ranked 124/188 in the World Bank's Trade Across Borders rank (Port Performance)



2. Average number of days required to import and export a cargo through Brazilian Ports (World Bank, 2012)



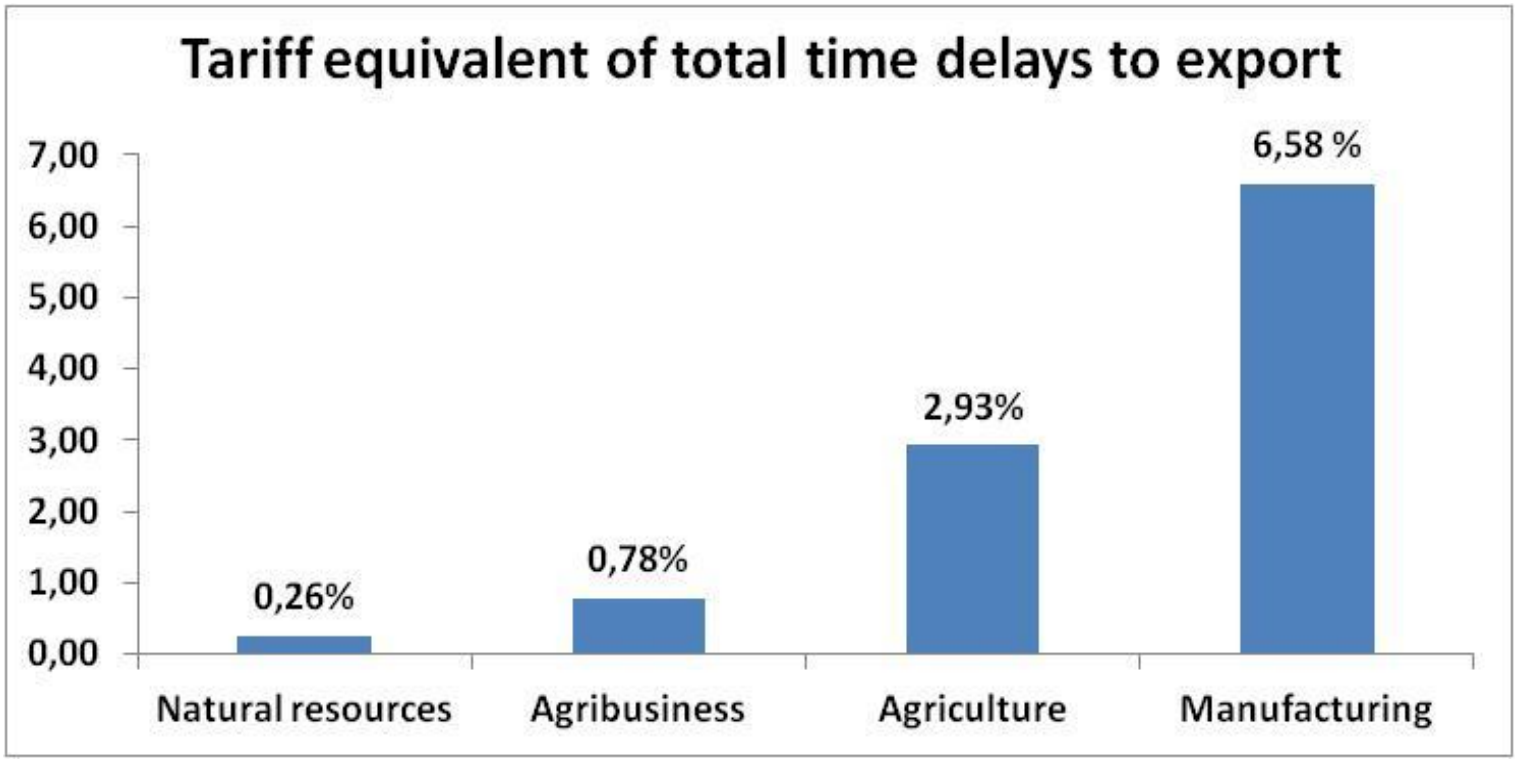


Nota: Clearence time and time spent to dock and unload
Source: World Bank

- According to Hummels (AER, 2013), each day in transit costs 0.6% to 2.1% of the value traded...

- Furthermore, parts and components are over **60% more sensitive to time delays than final goods, due to economic depreciation and lost business opportunities (Note: Value chains operate "just in time")**

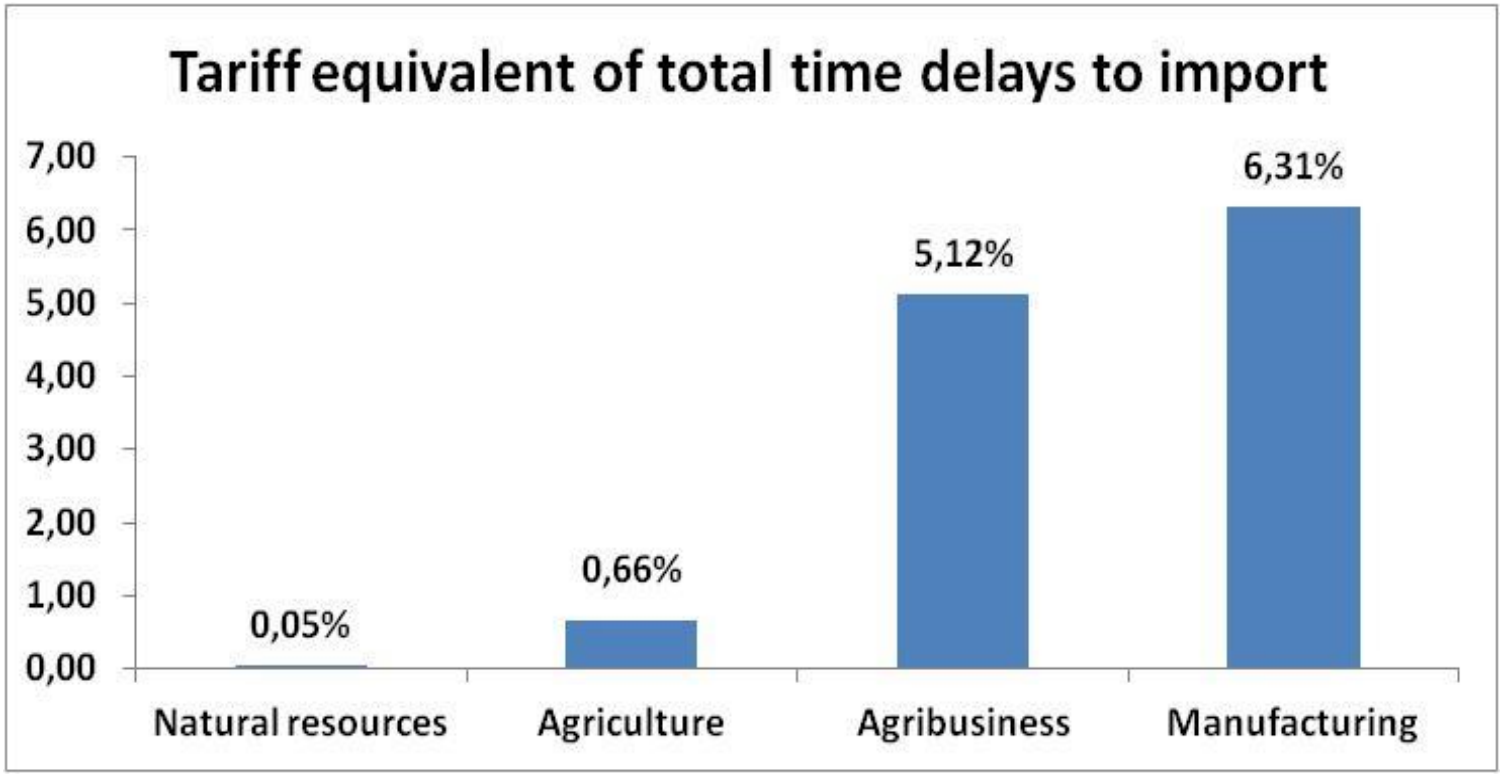
3. Time delays at Brazilian Ports represent an implicit additional barrier to Brazilian Exports, specially for manufactured products…



Note: 6,58% is a higher trade barrier then the ones Brazilian manufactured exports face in European and American markets (around 2,5%)…

Source: Hummels, 2013; GTAP 8

4. Time delays also work as implicit additional trade barriers to Brazilian imports, specially in manufacturing...



Note: Port inefficiency works as a significant trade barrier to imports, specially for manufactured products and agribusiness;

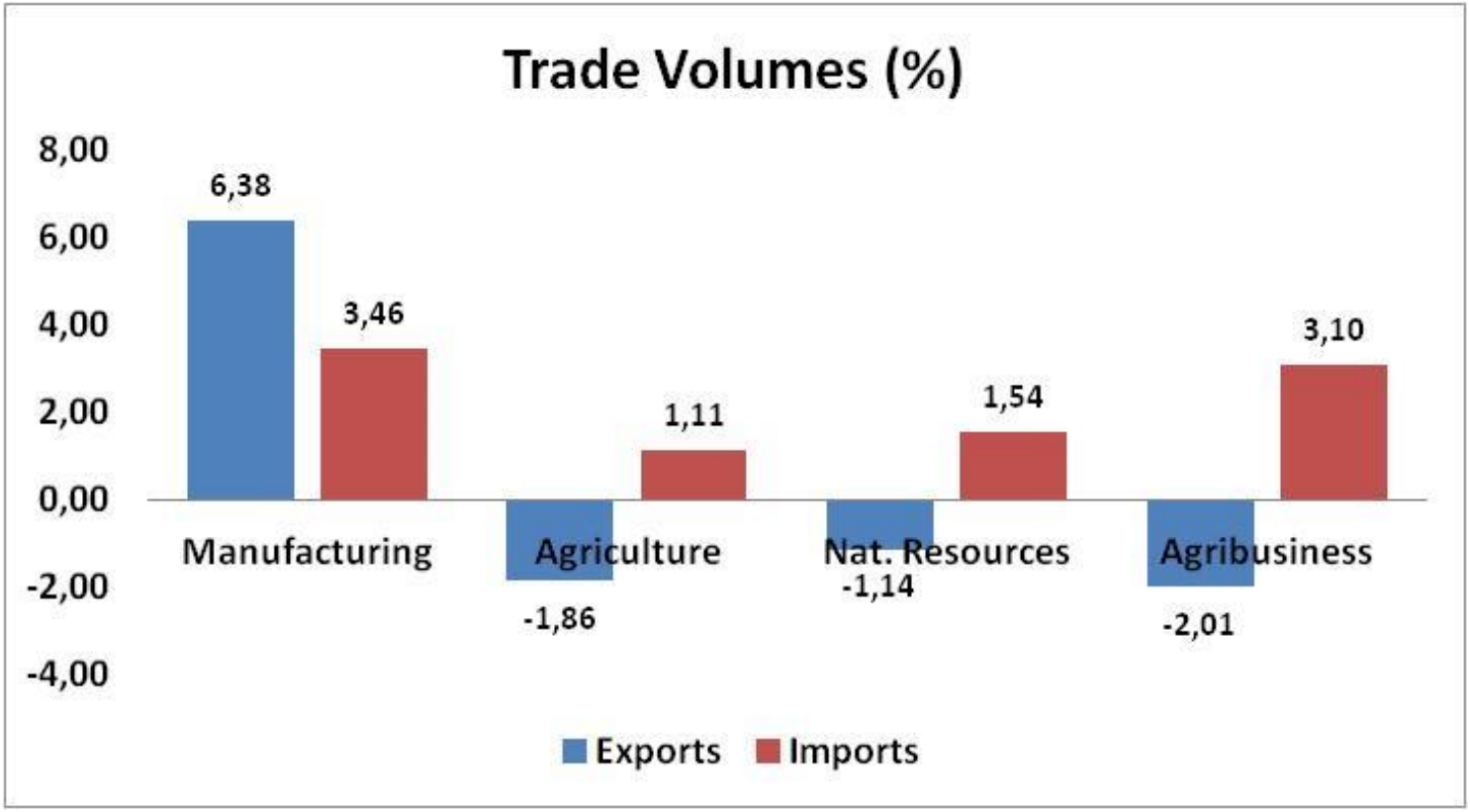
Source: Hummels, 2013; GTAP 8

5. A CGE exercise for a 50% reduction in clearance time in Brazilian Ports...

50% reduction in total customs clearance time	
Real GDP	0,21%
Terms of trade	0,53%
Export volume	2,27%
Import volume	2,79%
Real salary	0,27%
Returns on capital	0,29%
Returns on land	-1,46%

Significant effects over trade flows and GDP (over 5 billions in exports and imports, 2013)
More beneficial to capital intensive sectors

Sectoral Results for exports and imports...



Trade facilitation is more beneficial to manufacturing activity.

Final Remarks

1. **Despite significant import tariff reduction in the nineties**, comparable to China and India, the Brazilian economy is still "closed" for global standards, specially when it comes to the integration to Global Value Chains;

2. **Non trade barriers such as Port inefficiency** may help explaining why import penetration in Brazil is not so strongly correlated with tariff cuts as one would expect (Ferraz, 2010; Baldwin, 2013; Hummels, 2013, Timer, 2013);

3. **Joining regional trade agreements initiatives** involving countries/regions like USA, EU_28 and China, may pave the way for integration of the Brazilian Industry in significant global value chains. Trade gains may be potentialized if **reforms in the domestic business environment, qualification of labor force and improvements in trade infrastructure are correctly addressed…**

Final Remarks

4. In 2011, exports of manufactured products in Brazil **corresponded to 41,4% of total exports, against 16,2% for services;**

5. When measured in valued added, **the figures are 27,4% for manufactured products and 40,7% for services,** meaning a lot of service products are nowadays exported embedded in manufactured products;

6. Therefore, **a competitive manufacturing sector entails an efficient supply of high quality service sectors (transportation, banks, product design, energy supply, marketing, etc…)**

Thanks!

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