

**International Collaborative Initiative for Trade and Employment
(ICITE)**

**ICITE REGIONAL CONFERENCE
Latin American and Caribbean Labor Markets
and the Global Economy**

Session 2: Brazil Case Study

**Different Partners, Different Patterns:
Trade and Labour Market Dynamics in Brazil Post-Liberalization**

**David Kupfer, Marta Castilho, Esther Dweck,
Marcelo Nicoll and Daniela Carbinato**

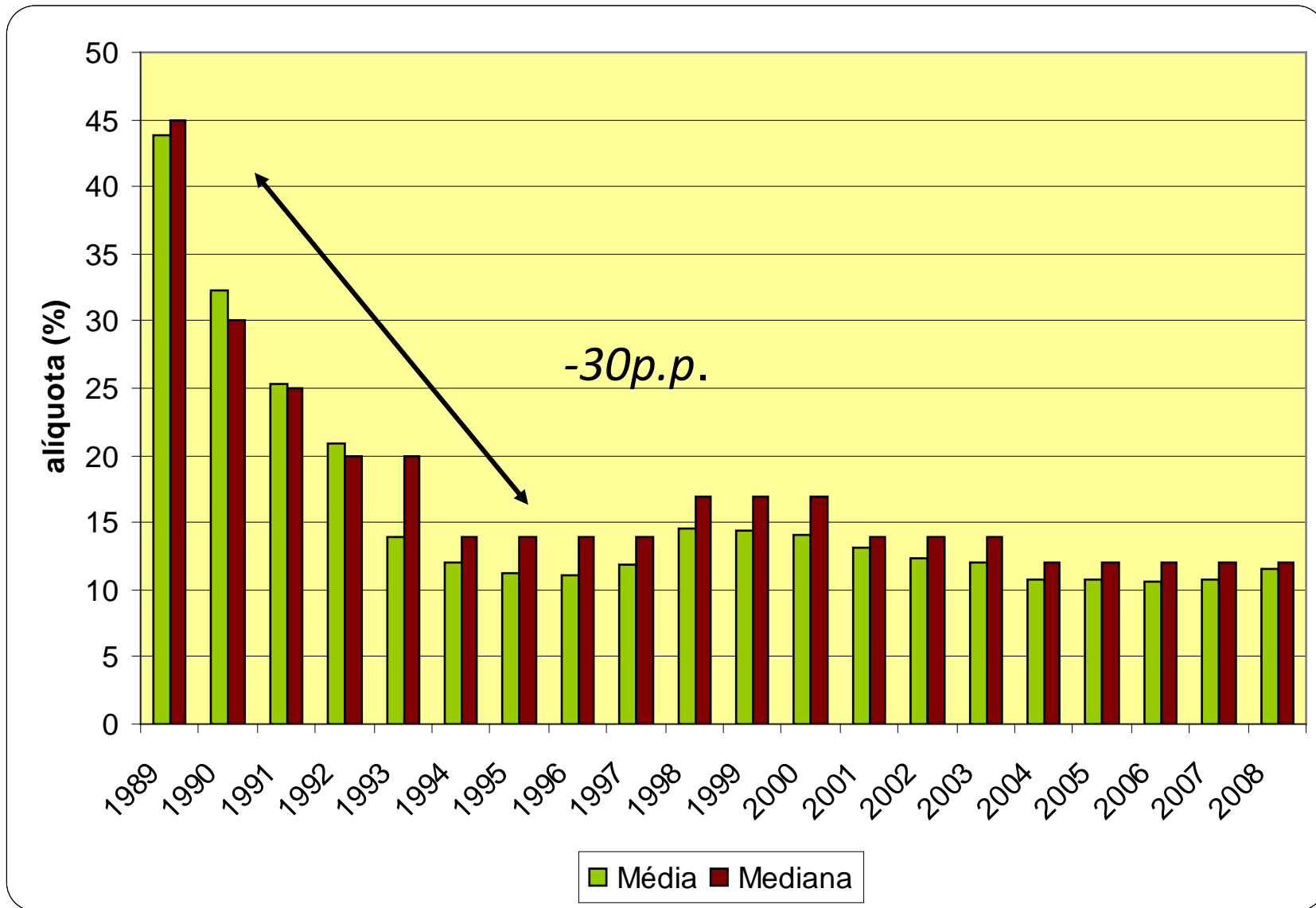


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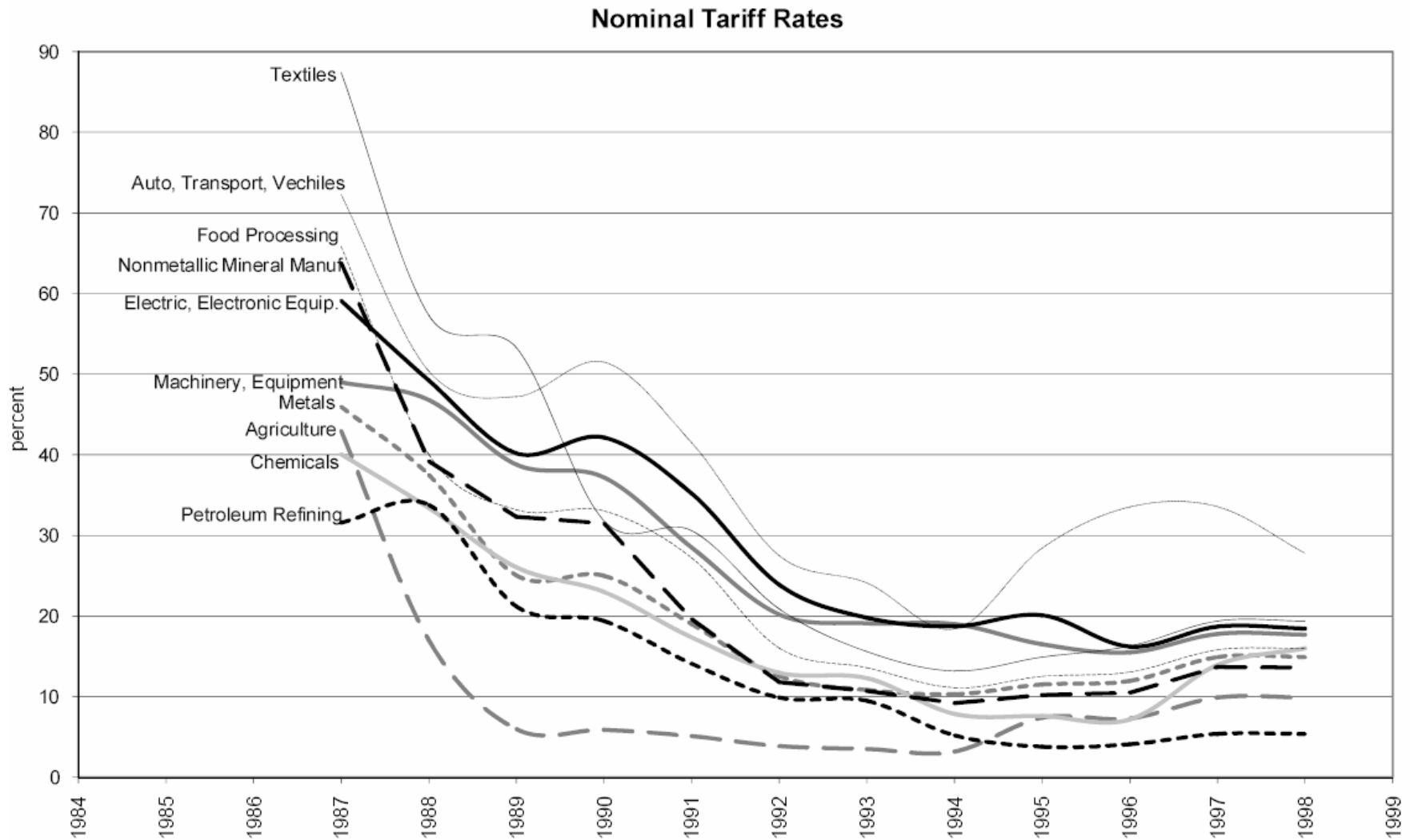
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Changes in the Competitive Regime

Brazil: Rapid Tariff Liberalization in the 1990s



Brazil: Rapid Tariff Liberalization in the 1990s



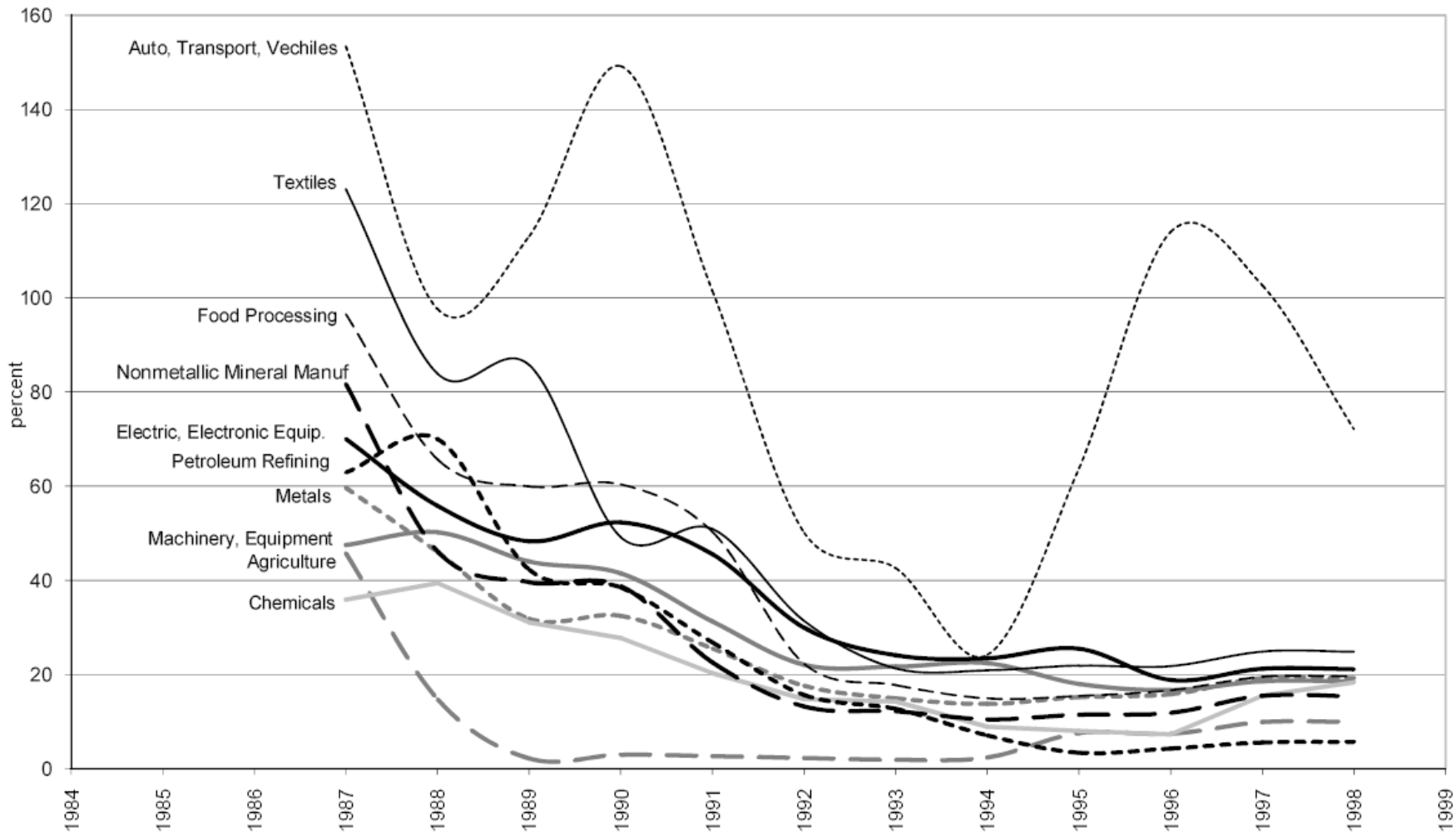
Source: Nominal tariffs at the nivel 50 level come from Kume et al. (2003)

Nivel 50 tariffs were aggregated for matching to individual-level data using the concordance presented in IBGE (2004), weighted by value added.

The sectors presented are the ten largest based on value added in 1990

Brazil: Rapid Tariff Liberalization in the 1990s

Effective Rates of Protection

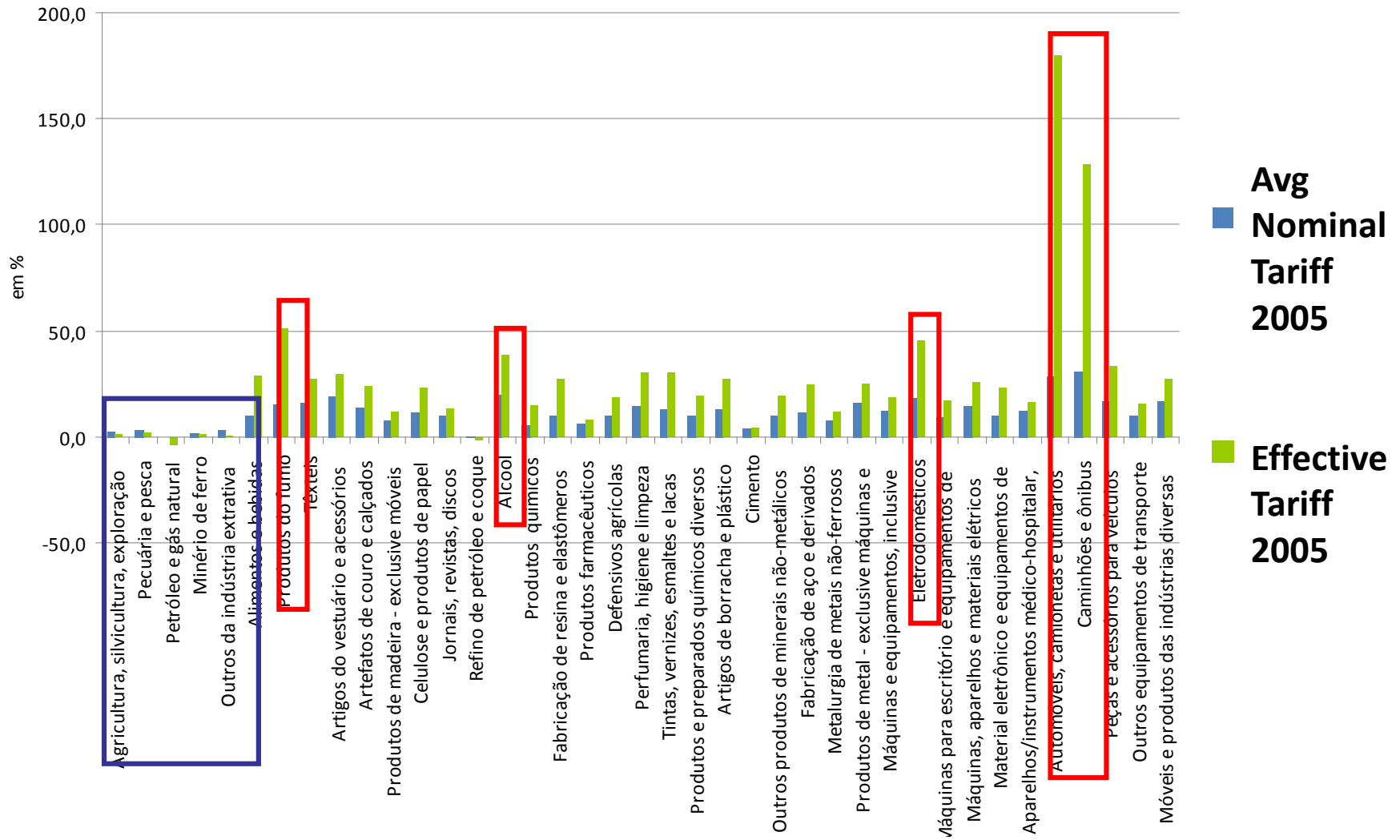


Source: Effective rates of protection at the nivel 50 level come from Kume et al. (2003)

Nivel 50 ERP's were aggregated for matching to individual-level data using the concordance presented in IBGE (2004), weighted by value added.

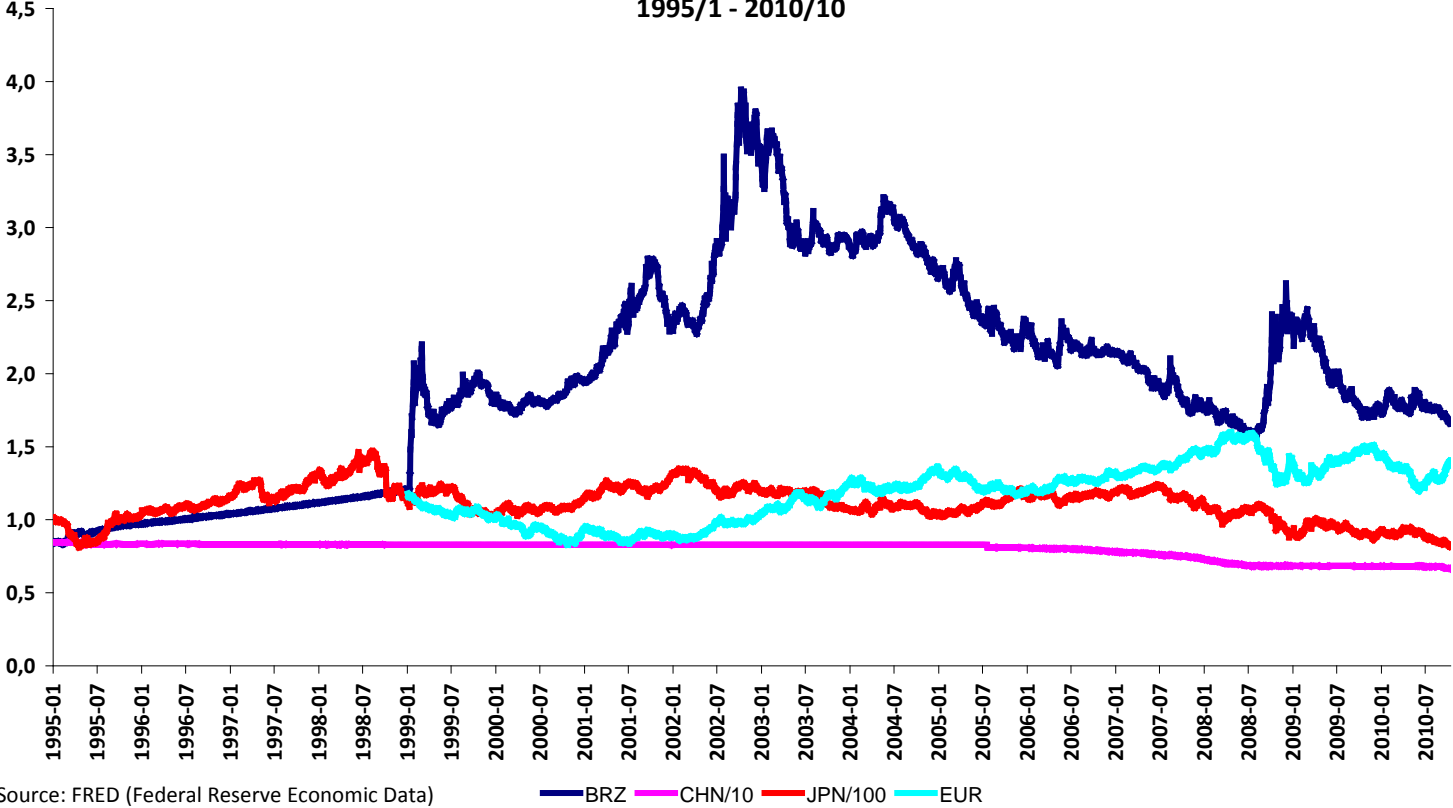
The sectors presented are the ten largest based on value added in 1990

Brazil: Nominal and Effective Tariff in 2005



Exchange Rate

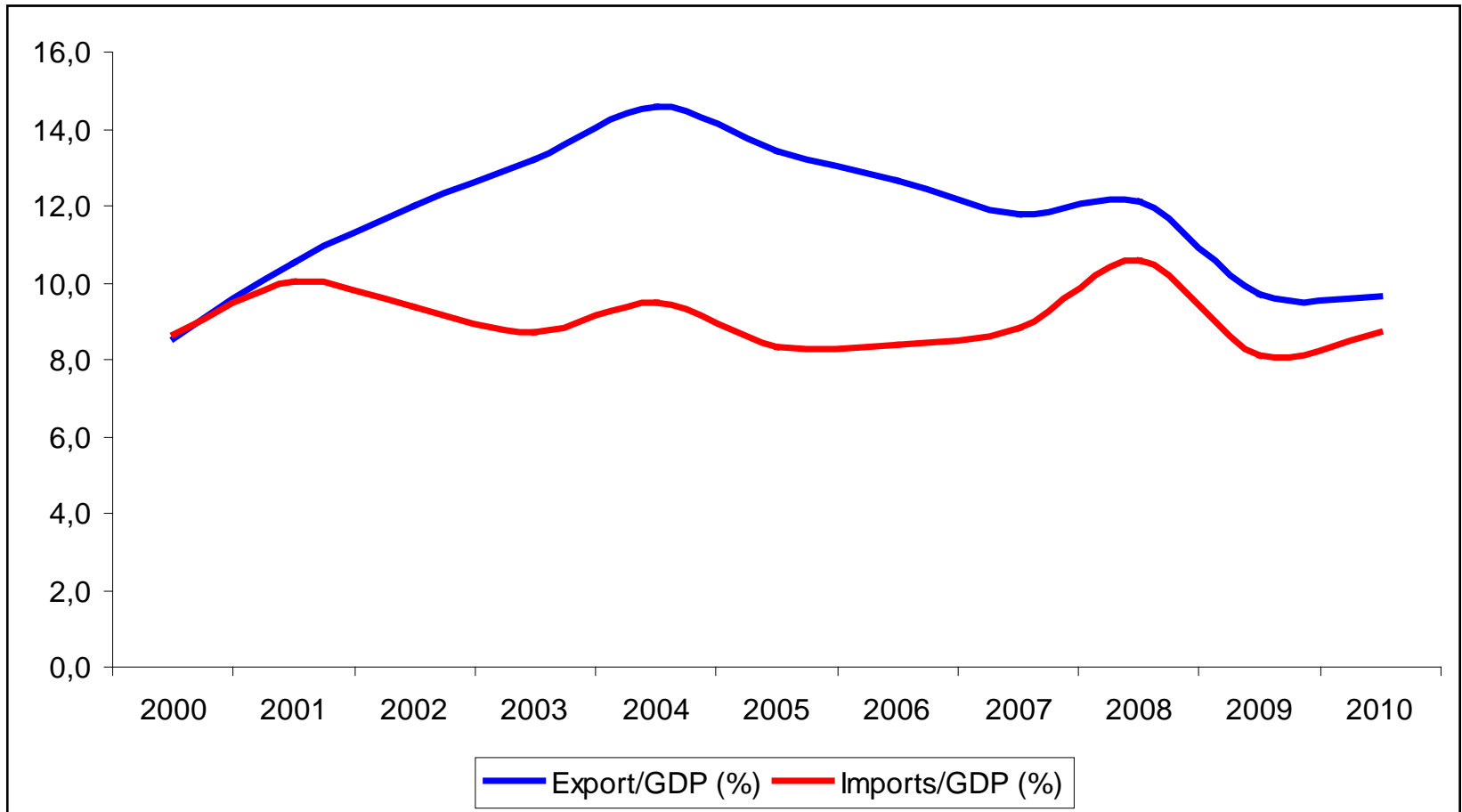
Nominal Exchange Rate \$/USD:
1995/1 - 2010/10



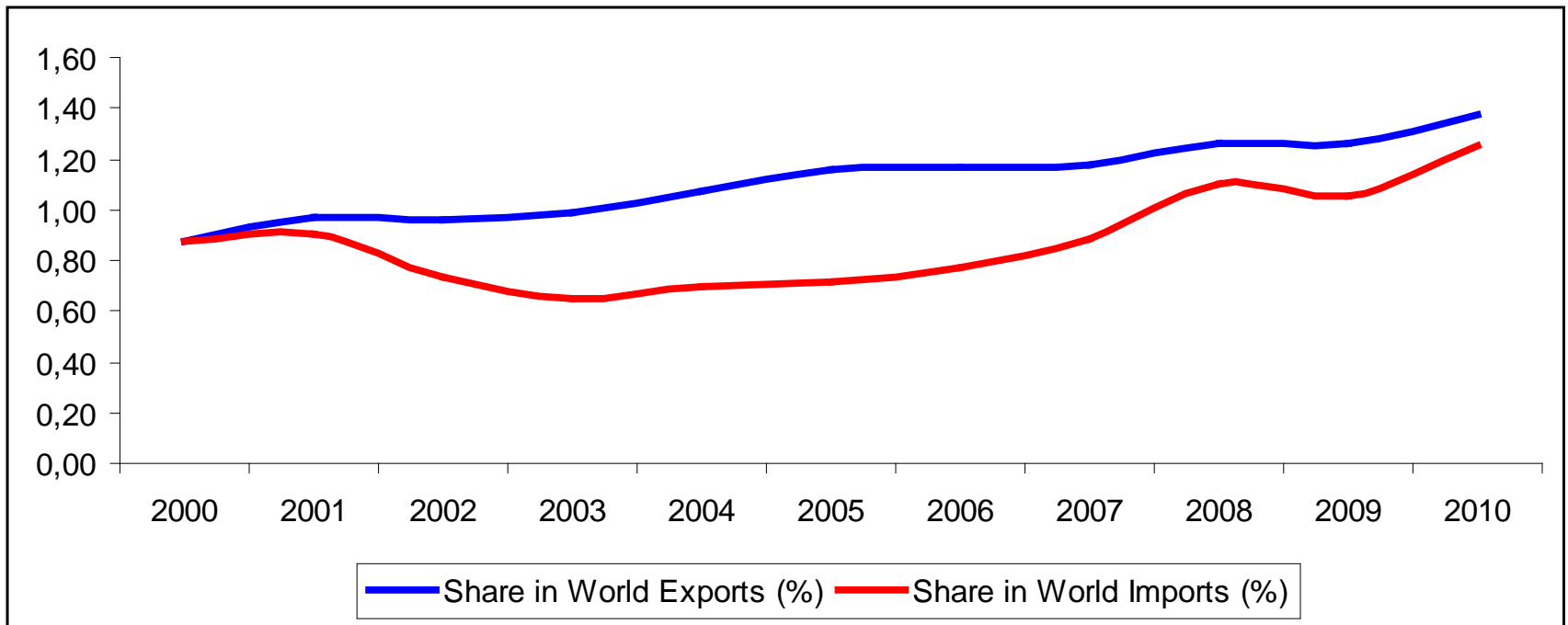
Source: FRED (Federal Reserve Economic Data)

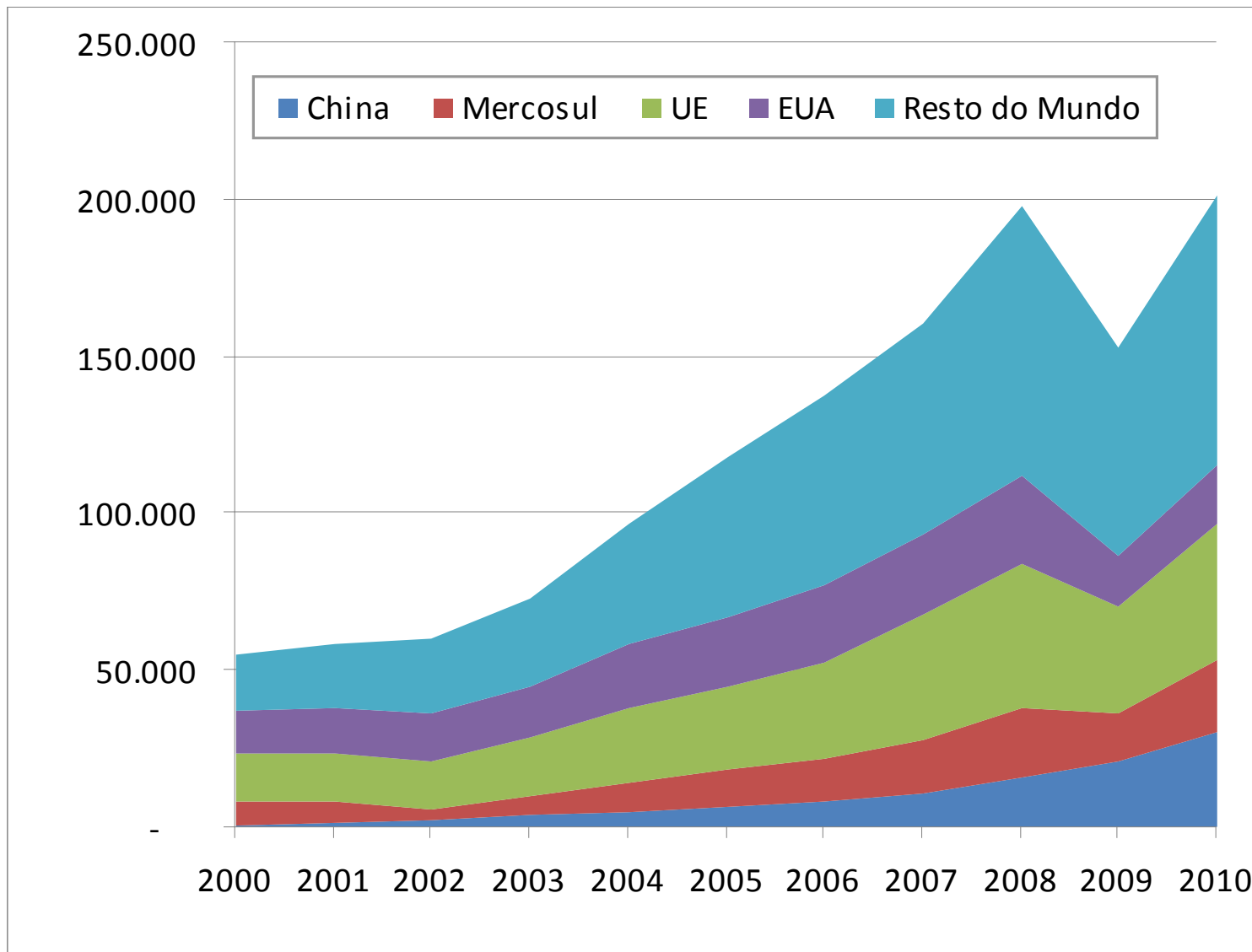
Changes in the Trade Pattern

Brazilian Export and Import to GDP Ratio: 2000 A 2010



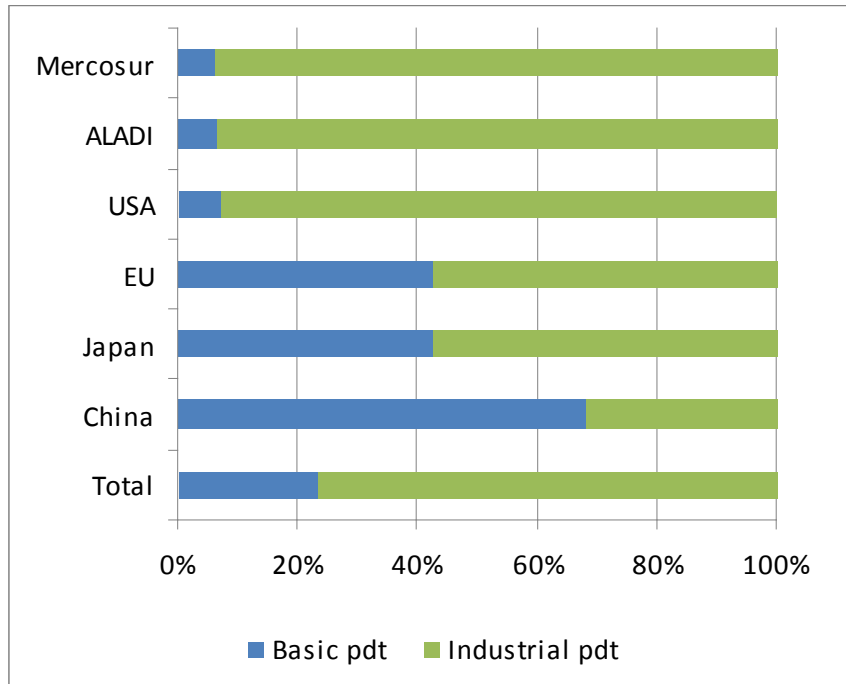
Brazilian Trade Share in World Exports and Imports: 2000 to 2010



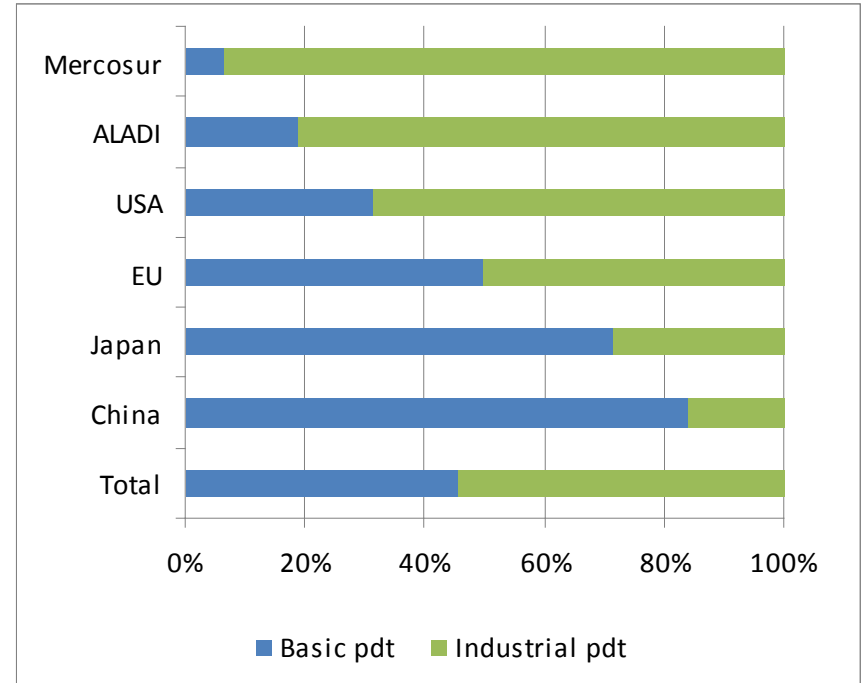


Fonte: SECEX, IBGE (Contas Nacionais).

Basic x Industrial Products in Brazilian Exports: 2000 x 2010

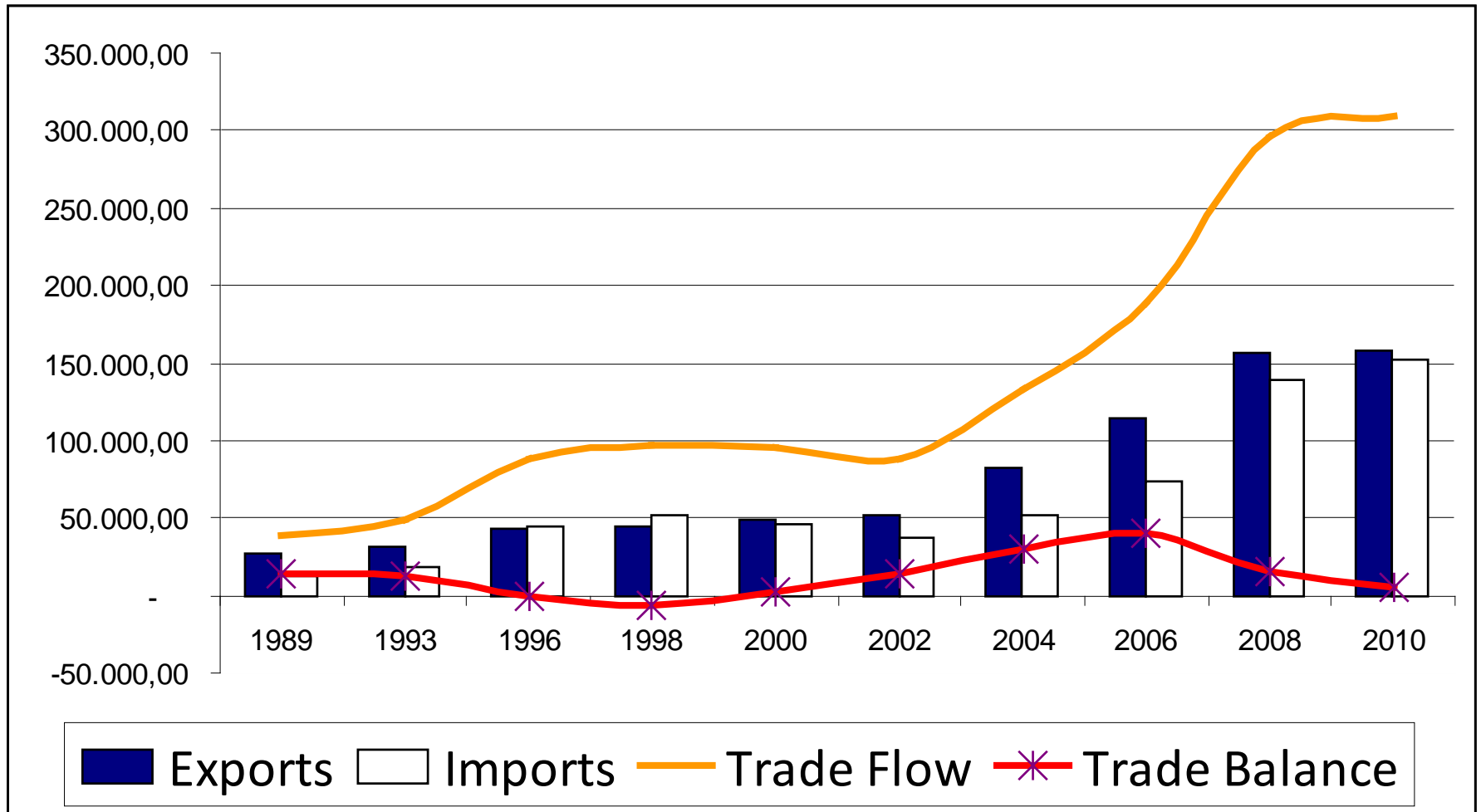


2000



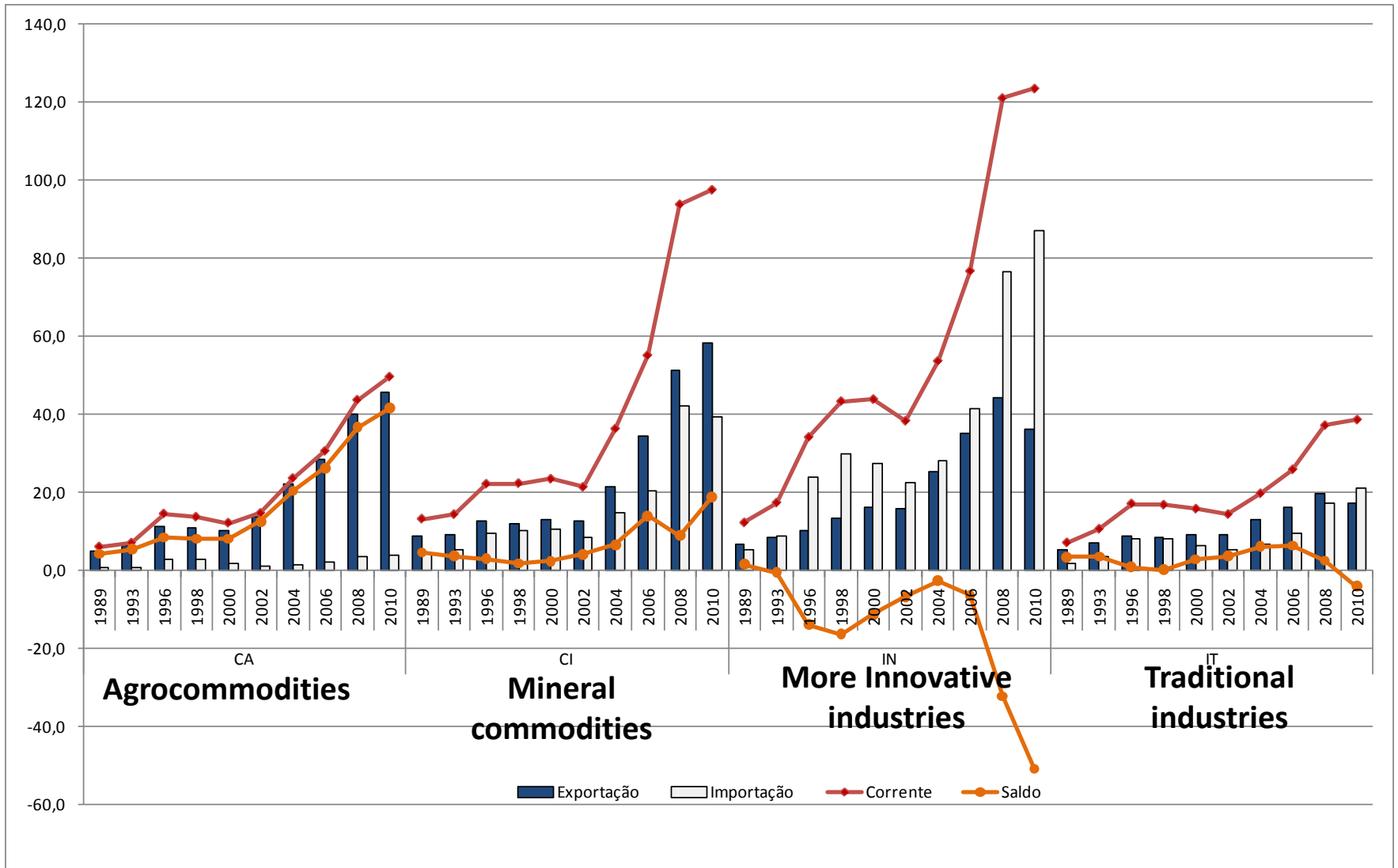
2010

Brazilian International Trade: 1989 a 2010

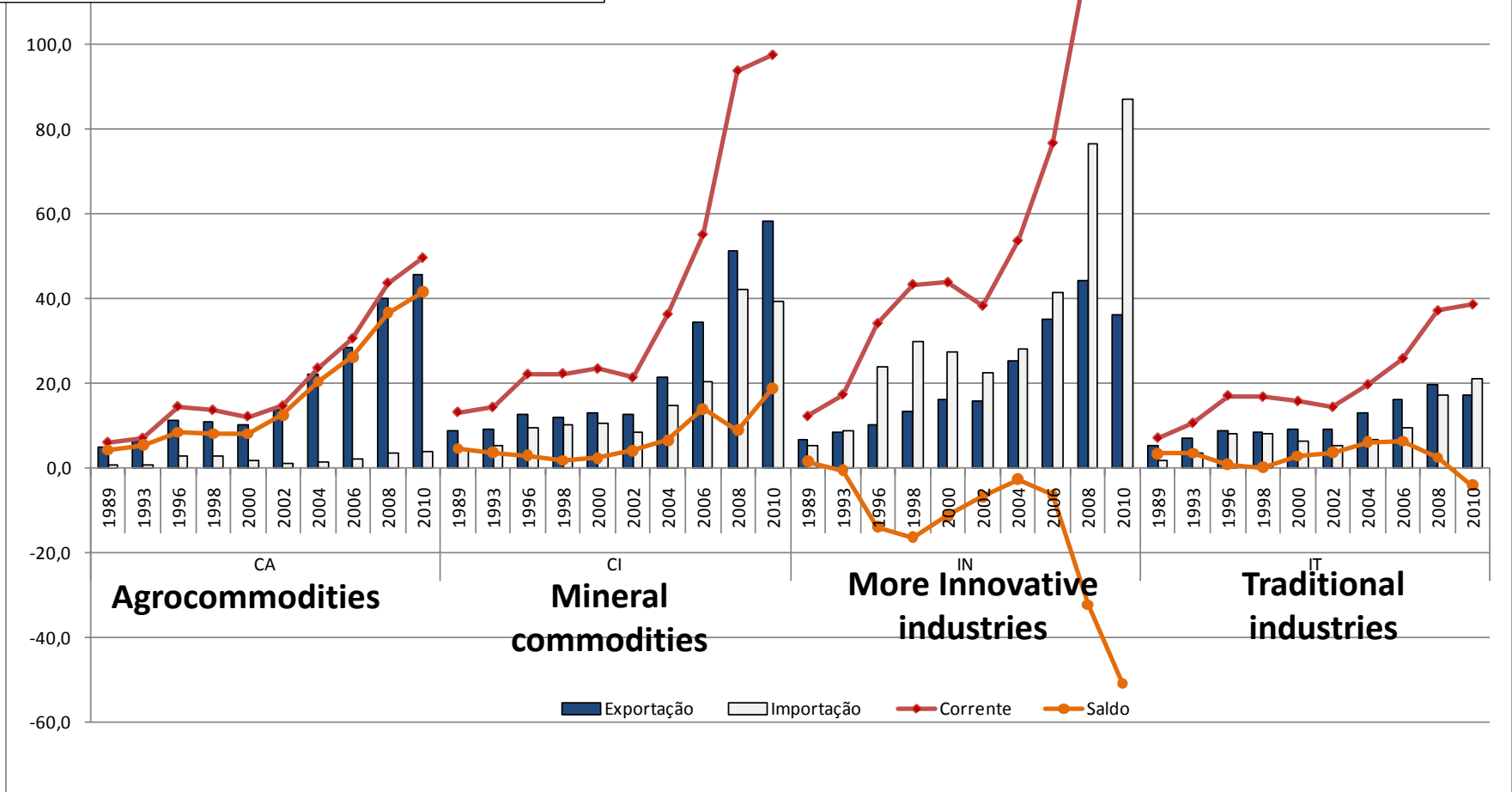
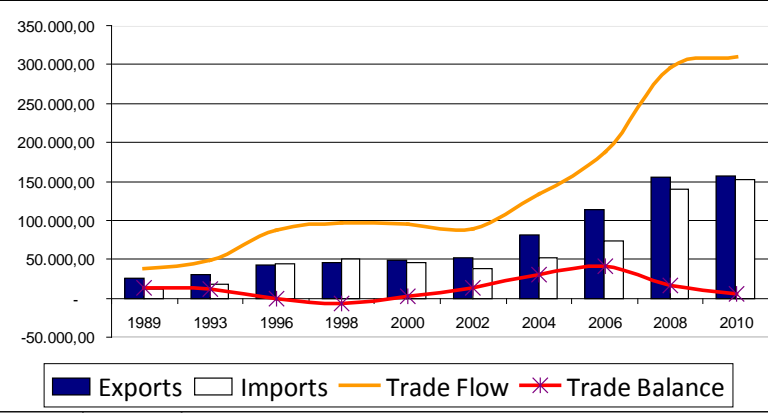


Fonte: SECEX, GIC-IE/UFRJ

Brazilian International Trade Patterns: 1989 a 2010

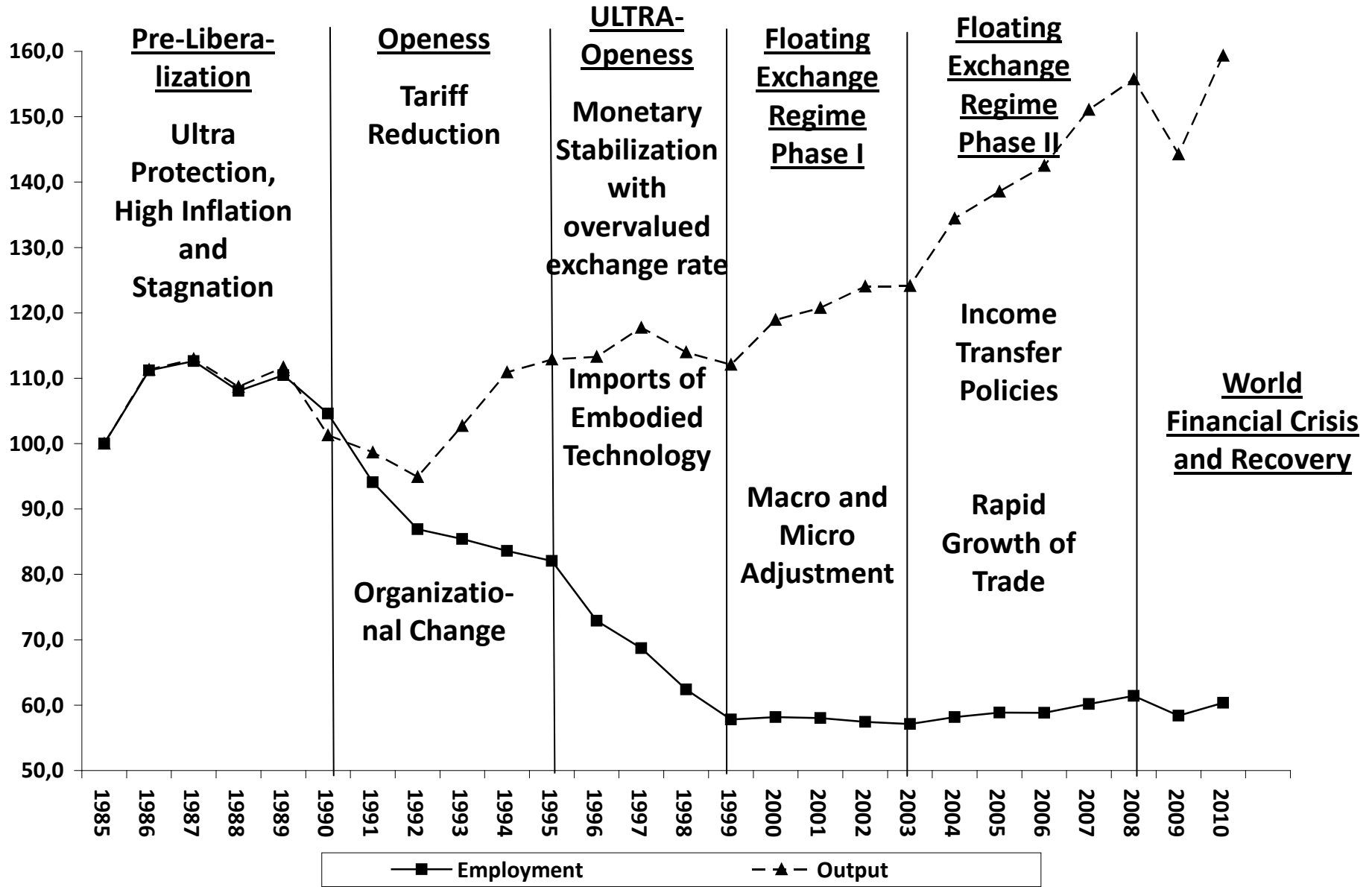


Brazilian International Trade Patterns: 1989 a 2010



Change in Employment Pattern

Industrial Output and Employment Index (1985=100 to 2010)



Employment Change: 2001 to 2007

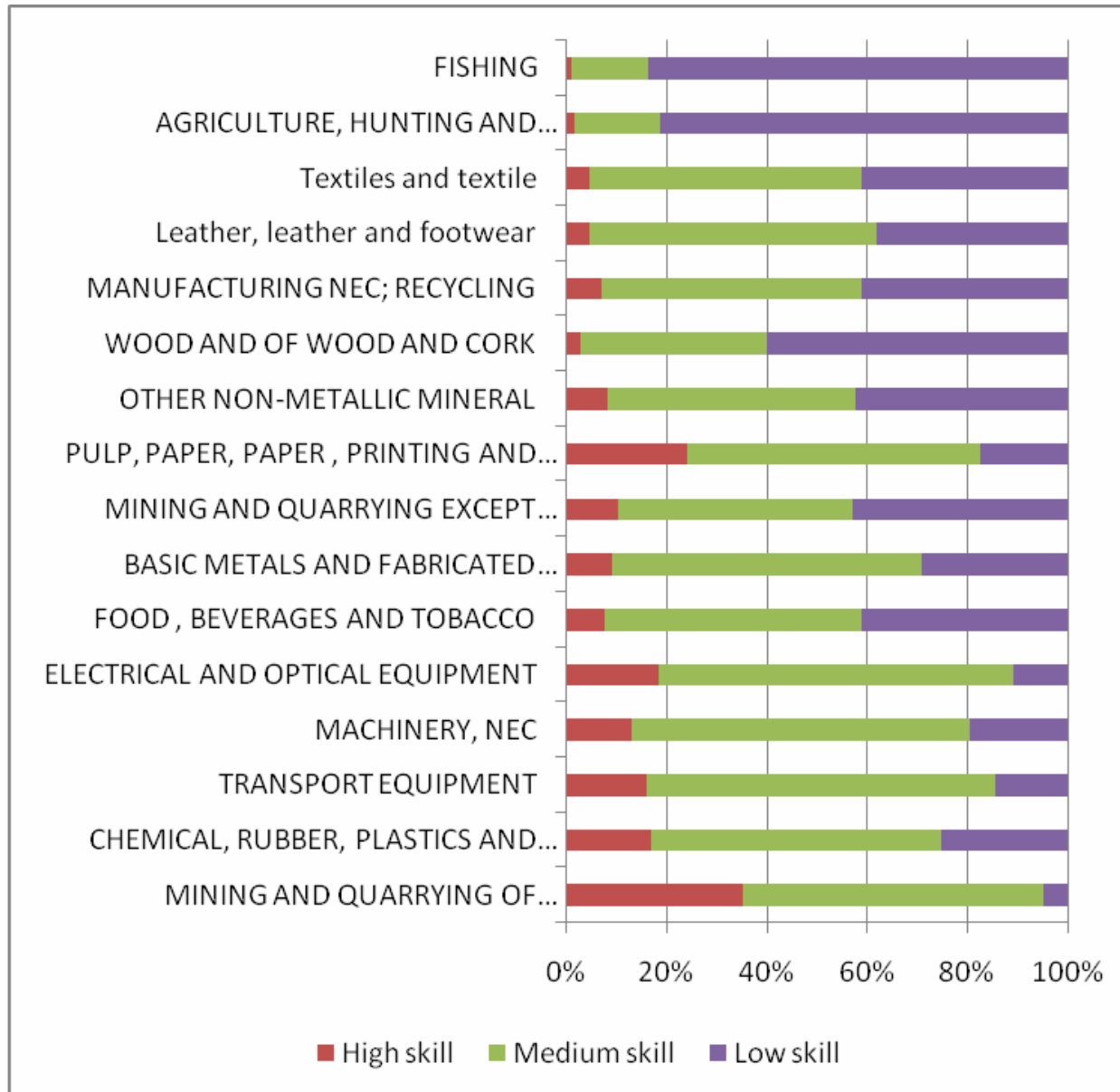
Activities KLEMS	Jobs		Change	
	2001	2007	Number	%
AGRICULTURA, CACERÍA Y SILVICULTURA	16.376.505	17.064.663	688.158	4,2%
PESCA	525.993	543.694	17.701	3,4%
MINERIA Y EXTRACCION PARA LA PRODUCCION DE E	215.161	261.880	46.719	21,7%
MINERIA Y EXTRACCION EXCEPTO PARA LA PRODUCC	19.724	32.579	12.855	65,2%
ALIMENTOS, BEBIDAS Y TABACO	1.694.234	2.290.305	596.071	35,2%
TEXTILES Y TEXTIL	2.338.174	2.889.892	551.718	23,6%
CUERO, ZAPATOS DE CUERO	538.511	641.374	102.863	19,1%
MADERA Y DE MADERA, CORCHO	433.399	496.669	63.270	14,6%
PULPA, PAPEL, PRODUCTOS DE PAPEL, IMPRESIONES	489.848	577.291	87.443	17,9%
QUMICOS, CAUCHO Y PLASTICOS	765.340	1.044.608	279.268	36,5%
OTROS MINERALES NO METÁLICOS	480.908	583.337	102.429	21,3%
METALES BÁSICOS Y PRODUCTOS FABRICADOS DE ME	761.392	1.021.791	260.399	34,2%
OTRAS MAQUINARIAS	417.700	619.518	201.818	48,3%
EQUIPOS ELÉCTRICOS Y ÓPTICOS	326.663	437.116	110.453	33,8%
EQUIPOS DE TRANSPORTE	351.604	580.420	228.816	65,1%
OTRAS MANUFACTURAS, RECICLAJE	754.485	912.633	158.148	21,0%
OFERTA DE ELECIRICIDAD	123.343	118.847	-4.496	-3,6%
OFERTA DE GAS Y OFERTA DE AGUA	233.924	270.066	36.142	15,5%
CONSTRUCCION	5.358.225	6.217.892	859.667	16,0%
VENTAS DEL COMERCIO AL POR MAYOR	14.430.878	17.790.428	3.359.550	23,3%
HOTELES Y RESTAURANTS	3.365.223	3.668.923	303.700	9,0%
TRANSPORTE Y ALMACENAMIENTO	3.337.218	4.054.092	716.874	21,5%
CORRESPONDENCIA Y TELECOMUNICACIONES	200.329	247.016	46.687	23,3%
INTERMEDIACIÓN FINANCIERA	856.978	969.991	113.013	13,2%
BIENES RAICES, RENTA Y ACTIVIDADES DE NEGOCIOS	8.668.276	11.273.233	2.604.957	30,1%
ADMINISTRACIÓN PÚBLICA Y DEFENSA; SEGURIDAD S	4.141.918	5.033.410	891.492	21,5%
EDUCACIÓN	4.084.886	5.173.984	1.089.098	26,7%
SALUD Y TRABAJO SOCIAL	2.606.054	3.148.754	542.700	20,8%
HOGARES PRIVADOS CON PERSONAS EMPLEADAS	5.647.519	6.749.503	1.101.984	19,5%
Total	79.544.412	94.713.909	15.169.497	19,1%

Labor content of production by activities KLEMS: direct employment to R\$ 1 million output ratio, by skill levels and sectors (in 2008 prices)

	2002				2008			
	Employment	High skill	Medium skill	Low skill	Employment	High skill	Medium skill	Low skill
AGRICULTURE, HUNTING AND FORESTRY	67,9	0,5	7,0	60,1	54,5	0,8	9,4	44,2
FISHING	95,5	0,6	10,4	84,3	102,2	1,0	15,4	85,5
MINING AND QUARRYING OF ENERGY PRODUCING MATERIALS	0,6	0,2	0,3	0,1	0,6	0,2	0,4	0,0
MINING AND QUARRYING EXCEPT ENERGY PRODUCING MATERIALS	12,1	0,7	3,4	7,8	7,6	0,8	3,5	3,3
FOOD , BEVERAGES AND TOBACCO	6,2	0,4	2,8	2,9	6,4	0,5	3,3	2,6
Textiles and textile	30,8	0,9	13,3	16,2	34,2	1,6	18,4	14,0
Leather, leather and footwear	23,5	0,7	9,6	13,0	30,8	1,4	17,6	11,7
WOOD AND OF WOOD AND CORK	26,0	0,6	7,8	17,3	21,8	0,6	8,0	12,9
PULP, PAPER, PAPER , PRINTING AND PUBLISHING	10,6	2,2	6,0	2,3	11,3	2,7	6,6	2,0
CHEMICAL, RUBBER, PLASTICS AND FUEL	2,9	0,5	1,5	0,9	2,6	0,4	1,5	0,7
OTHER NON-METALLIC MINERAL	17,5	0,8	6,1	10,5	13,1	1,0	6,5	5,5
BASIC METALS AND FABRICATED METAL	7,6	0,6	3,7	3,2	6,6	0,6	4,1	1,9
MACHINERY, NEC	6,2	0,8	3,4	2,0	4,3	0,6	2,9	0,8
ELECTRICAL AND OPTICAL EQUIPMENT	4,6	0,9	2,7	1,0	5,2	1,0	3,7	0,6
TRANSPORT EQUIPMENT	3,6	0,5	2,2	1,0	3,4	0,5	2,4	0,5
MANUFACTURING NEC; RECYCLING	23,2	0,8	11,0	11,0	23,1	1,6	12,0	9,4

Source: IBGE

Sectoral employment by skill level, 2008 (% of total)



Employment Content of Brazilian Exports by Activities KLEMS: 2002 x 2008

	2002				2008			
	Employment	High skill	Medium skill	Low skill	Employment	High skill	Medium skill	Low skill
AGRICULTURE, HUNTING AND FORESTRY	1.888.996	13.262	195.016	1.671.380	2.002.053	30.071	343.936	1.623.060
FISHING	17.760	112	1.937	15.685	5.358	54	806	4.480
MINING AND QUARRYING OF ENERGY PRODUCING MATERIALS	5.849	1.689	3.003	1.127	17.545	6.179	10.533	834
MINING AND QUARRYING EXCEPT ENERGY PRODUCING MATERIALS	175.707	10.701	49.016	113.236	228.908	23.106	106.522	97.988
FOOD , BEVERAGES AND TOBACCO	344.669	21.397	156.811	161.516	409.525	31.045	208.730	167.559
Textiles and textile	152.628	4.685	65.793	80.231	143.693	6.598	77.562	58.937
Leather, leather and footwear	269.241	8.013	109.628	149.199	203.949	9.111	116.588	77.281
WOOD AND OF WOOD AND CORK	215.290	5.119	64.741	142.902	109.108	3.057	40.029	64.799
PULP, PAPER, PAPER , PRINTING AND PUBLISHING	107.055	22.405	60.703	23.077	122.528	29.209	71.653	21.145
CHEMICAL, RUBBER, PLASTICS AND FUEL	96.446	16.013	49.140	30.171	118.441	19.659	68.453	29.609
OTHER NON-METALLIC MINERAL	78.511	3.689	27.270	46.978	52.013	4.154	25.667	21.936
BASIC METALS AND FABRICATED METAL	242.525	18.602	118.756	101.565	281.083	25.014	173.415	80.995
MACHINERY, NEC	96.212	12.194	52.626	30.422	84.165	10.891	56.618	16.426
ELECTRICAL AND OPTICAL EQUIPMENT	75.232	14.185	44.819	15.886	70.852	12.946	50.143	7.763
TRANSPORT EQUIPMENT	153.248	19.603	91.006	41.864	162.532	25.573	113.196	23.113
MANUFACTURING NEC; RECYCLING	93.765	3.182	44.468	44.658	65.447	4.486	33.962	26.753
TOTAL	4.013.135	174.850	1.134.733	2.669.895	4.077.200	241.151	1.497.810	2.322.679
<i>% of total employment (Brazil)</i> ¹	5,2	2,2	4,0	6,7	4,5	1,9	3,6	6,3

Notes: ¹ total employment (services included) of Brazilian economy. Source: IBGE.



2008 < 2002 (Employment)



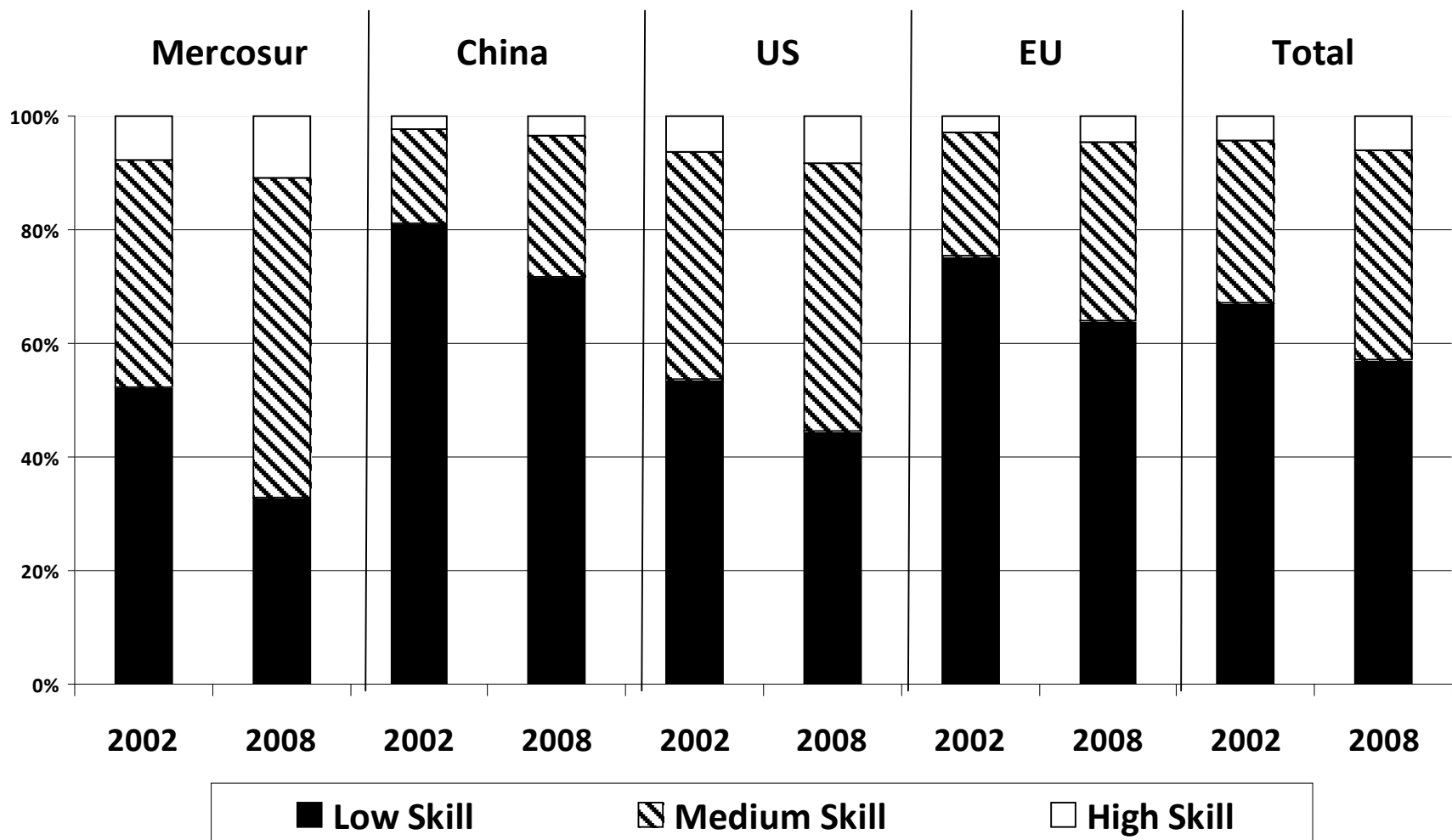
2008 > 2002 (High Skill)

Direct labor content of Brazilian exports by destination: 2002 x 2008

Mercosur					
	High Skill	Medium Skill	Low Skill	TOTAL	% total
2002	10.812	55.487	72.978	139.277	3,5
2008	28.132	145.943	85.658	259.733	6,4
China					
	High Skill	Medium Skill	Low Skill	TOTAL	% total
2002	8.016	59.009	290.975	358.000	9,0
2008	22.878	158.721	459.770	641.368	15,8
USA					
	High Skill	Medium Skill	Low Skill	TOTAL	% total
2002	49.191	308.201	415.712	773.104	19,4
2008	34.408	198.141	187.812	420.361	10,3
EU					
	High Skill	Medium Skill	Low Skill	TOTAL	% total
2002	43.907	329.054	1.137.069	1.510.029	37,9
2008	61.853	410.460	839.806	1.312.120	32,3
TOTAL					
	High Skill	Medium Skill	Low Skill	TOTAL	% total
2002	174.850	1.134.733	2.669.895	3.979.477	100,0
2008	241.151	1.497.810	2.322.679	4.061.641	100,0

Source: IBGE and Secex.

Direct labor content of Brazilian exports by destination: 2002 x 2008



Trade and Employment Dynamics

Structural Decomposition of Change in Employment in Brazilian Economy: 1990 to 2001

	Change in Employment 1990-2001
Domestic Demand(2)	11.969.389
Exports	3.589.156
Imports	-1.548.532
Technical Change	-10.763.212
Total	3.246.800

Nota: (1) exclusive setores “Intermediação Financeira”; “Aluguéis” e “Serviços Privados Não-Mercantis”

(2) inclui o efeito da variação de estoques

Fonte: Kupfer, D.; Freitas, F. e Young, C.E.F. (2003). Decomposição estrutural da variação do produto e do emprego entre 1990 e 2001 – Relatório de pesquisa para a CEPAL/Divisão de Indústria. IE/UFRJ. mimeo

Sectoral Decomposition of Change in Employment in Brazilian Economy: 1990 to 2001

Activity	Domestic Demand	Exports	Import Penetration	Technical Change	Grand Total
01 Agropecuário	4.713.438	1.425.104	-235.770	-8.983.273	-3.080.500
02 Mineração	65.840	47.199	-8.096	-192.944	-88.000
03 Indústria de transformação	2.765.043	748.470	-684.736	-3.633.578	-804.800
04 Eletricidade, gás e água - SIUP	103.906	13.725	-5.154	-233.077	-120.600
05 Construção civil	617.664	6.870	-4.221	-757.413	-137.100
06 Comércio	-1.459.088	885.831	-397.888	3.383.645	2.412.500
07 Transporte e comunicações	1.174.030	-37.760	21.094	-561.464	595.900
08 Serviços empresariais	467.046	297.447	-95.834	916.742	1.585.400
09 Serviços pessoais e sociais	2.661.719	152.083	-107.732	200.330	2.906.400
10 Administração pública	859.789	50.186	-30.194	-902.181	-22.400
Grand Total	11.969.389	3.589.156	-1.548.532	-10.763.212	3.246.800

Decomposition of Employment Change by Skill (number of jobs): 2001 to 2007

	Total
High Skill	4.152.905
Medium Skill	12.323.299
Low Skill	-1.306.708
Total	15.169.496

	Domestic Demand	
	Scale	Composition
High Skill	5.940.000	-89.921
Medium Skill	17.935.227	77.982
Low Skill	16.697.030	-63.470
Total	40.572.256	-75.409

	Technical Change
High Skill	-2.320.748
Medium Skill	-8.706.526
Low Skill	-21.598.919
Total	-32.626.193

	Net Export
High Skill	602.148
Medium Skill	2.911.978
Low Skill	3.693.972
Total	7.208.098

Decomposition of Employment Change by Skill (number of jobs): 2001 to 2007

Net Export	
High Skill	602.148
Medium Skill	2.911.978
Low Skill	3.693.972
Total	7.208.098

	Exports		Imports	
	Scale	Composition	Final Dem.	Interm.
High Skill	522.410	-4.777	21.343	63.171
Medium Skill	2.658.015	-100.762	104.857	249.868
Low Skill	3.415.785	-213.286	100.879	390.594
Total	6.596.210	-318.824	227.079	703.633

Employment Change due to Trade: 2001 to 2007

Employment Change due to Trade: 2001 to 2007

Nível de Qualificação	Net Export	Exports	Imports to Final Demand	Imports to Intermediary Consumption
High Skill	0,8%	0,7%	0,0%	0,1%
Medium Skill	3,7%	3,2%	0,1%	0,3%
Low Skill	4,6%	4,0%	0,1%	0,5%
% Change	9,1%	7,9%	0,3%	0,9%
Change in jobs	7.208.098	6.277.386	227.079	703.633

Decomposition of Employment Change by Skill due to Export and Partner (number of jobs): 2001 to 2007

	Total
Alta	517.633
Media	2.557.253
Baixa	3.202.499
Total	6.277.386

	EUA	
	Escala	Composição
Alta	84.361	29.696
Media	317.604	-5.144
Baixa	291.430	-8.092
Total	693.396	16.460

	União Européia	
	Scale	Composition
Alta	96.521	-12.773
Media	501.777	-43.347
Baixa	884.728	-78.040
Total	1.483.027	-134.160

	Mercocur	
	Scale	Composition
Alta	45.712	-372
Media	212.637	-22.584
Baixa	167.905	-50.899
Total	426.254	-73.855

	China	
	Escala	Composição
Alta	28.380	-221
Media	174.049	-2.114
Baixa	378.899	-6.066
Total	581.328	-8.400

	ROW	
	Escala	Composição
Alta	160.301	-12.436
Media	893.096	-44.744
Baixa	1.317.992	-101.943
Total	2.371.390	-159.123