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Leonardo Ghezzi

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Bangkok, 2015

OUTLINE OF THE PRESENTATION

i) **Where do we come from?** The INFORUM international system of models

ii) Main features of **the new dataset**

iii) The **share equations:** theoretical specification and estimation

iv) **Scenario analysis** to test the model potential

v) **Next steps**

Main features of Bilateral Trade Model

	Type-I model 1975 -1995	**Type-II model 1995 -present**
i) **The linking system of national models through BTM**	Multi-lateral flows; links trough World Prices	Bi-lateral flows
ii) **a detailed disaggregation of commodity classification**	120 sectors; 9 countries + 1 group	120 sectors; 13 countries + 3 groups
iii) **econometric estimation of import shares**	Relative prices	Relative prices + relative capital stocks

Main features:

- Data sources: **EU – COMEXT and UN - COMTRADE**
- Classification: **two-digits SITC classification**
- Flows: **Imports in US Dollars (current prices)**
- Countries: **14 countries + 4 areas**
- Coverage: **1999-2012 (for the first 90 importers)**

Type-II model

The general equation to predict the evolution of M matrix is

$$S_{i,j,t} = \beta_{i,j,0} \cdot \left(\frac{P_{e,i,t}}{P_{w,j,t}} \right)^{\beta_{i,j,1}} \cdot \left(\frac{K_{e,i,t}}{K_{w,j,t}} \right)^{\beta_{i,j,2}} \cdot e^{\beta_{i,j,3} \cdot T_t}$$

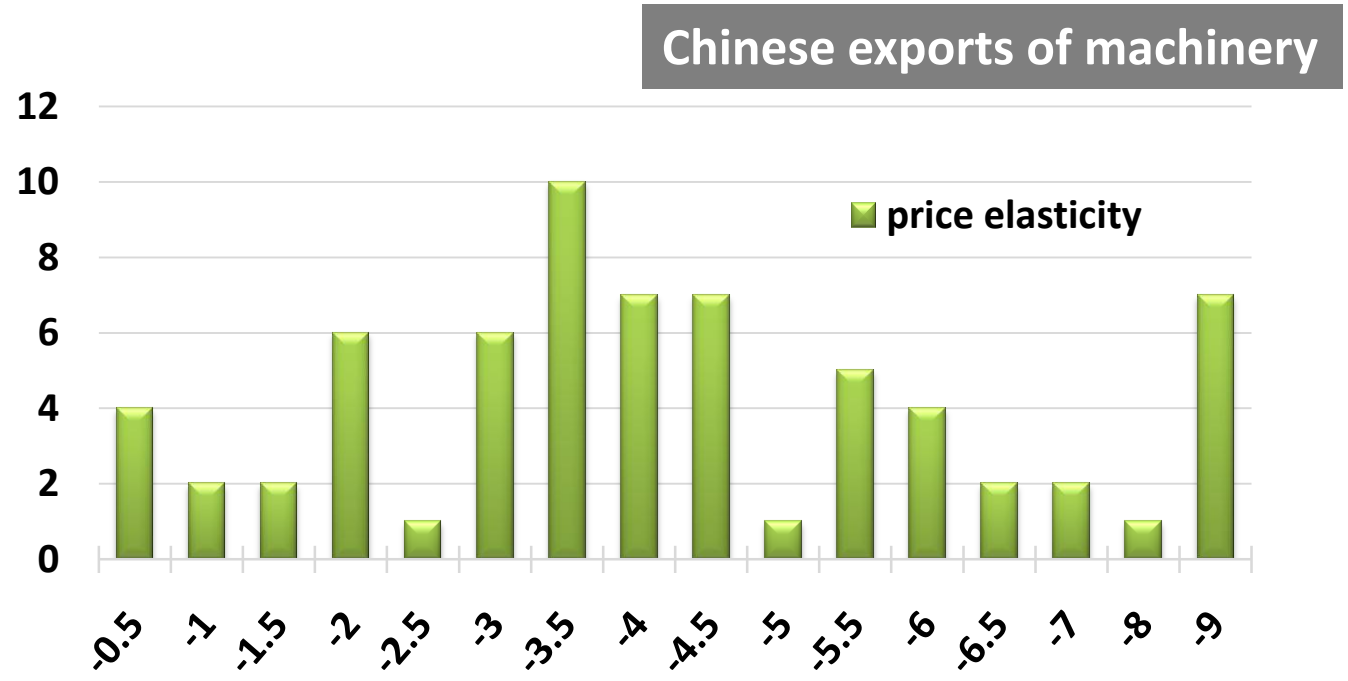
- $P_{i,j,t}$ is the relative price of the origin country i in market j; the relative price is a ratio between the domestic price in i (adjusted with the exchange rate), $P_{e,i,t}$, and the world price as seen from the country j of destination of the flows, $P_{w,j,t}$.
- Domestic prices are weighted average of the present price and the four years-before price.
- The system of weights varies among different commodities.

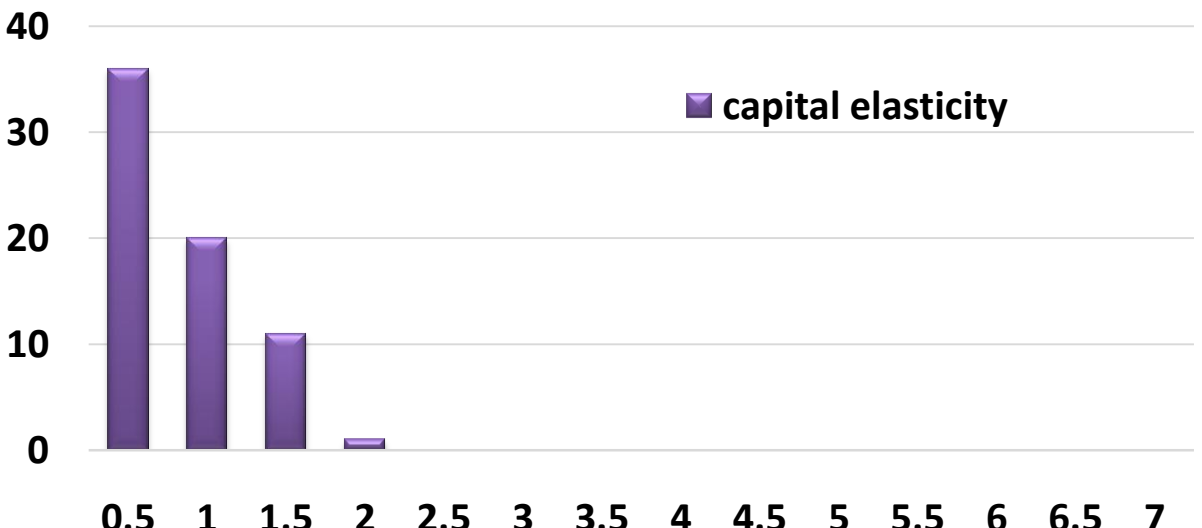
III) EMPIRICAL SPECIFICATION OF SHARE EQUATIONS

Specification	# equations		
P, K, T	5295	30.9%	
P, K	3026	17.6%	
P, T	3841	22.4%	
K, T	2298	13.4%	
P	936	5.5%	
K	749	4.4%	
T	993	5.8%	
Constant	18	0.1%	
Total # estimated equations	**17156**	**100.0%**	**84.1%**
zero shares	846		4.1%
not enough observations	2392		11.7%
# of potential bilateral flows	**20394**		**100.0%**

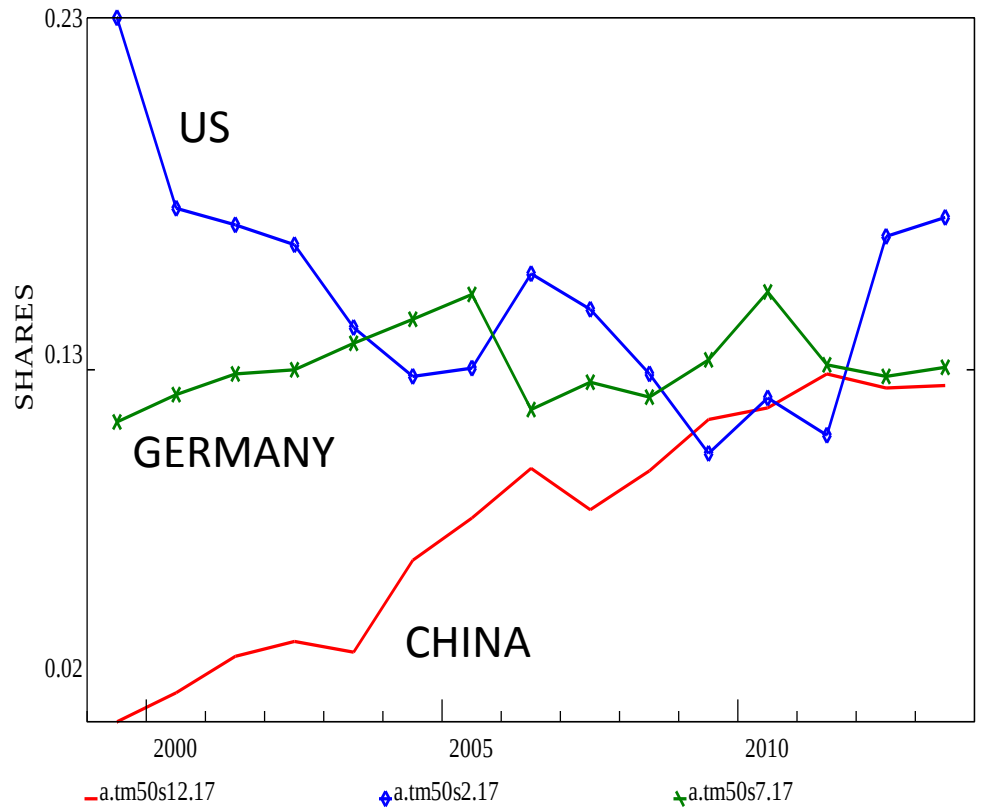
- **Relative price is a key explanatory variable in 76.3% of the shares**
- **Relative capital stock is a key explanatory variable in 66.3% of the shares**

III) ESTIMATION RESULTS: SHALL WE CONSTRAIN PARAMETERS?

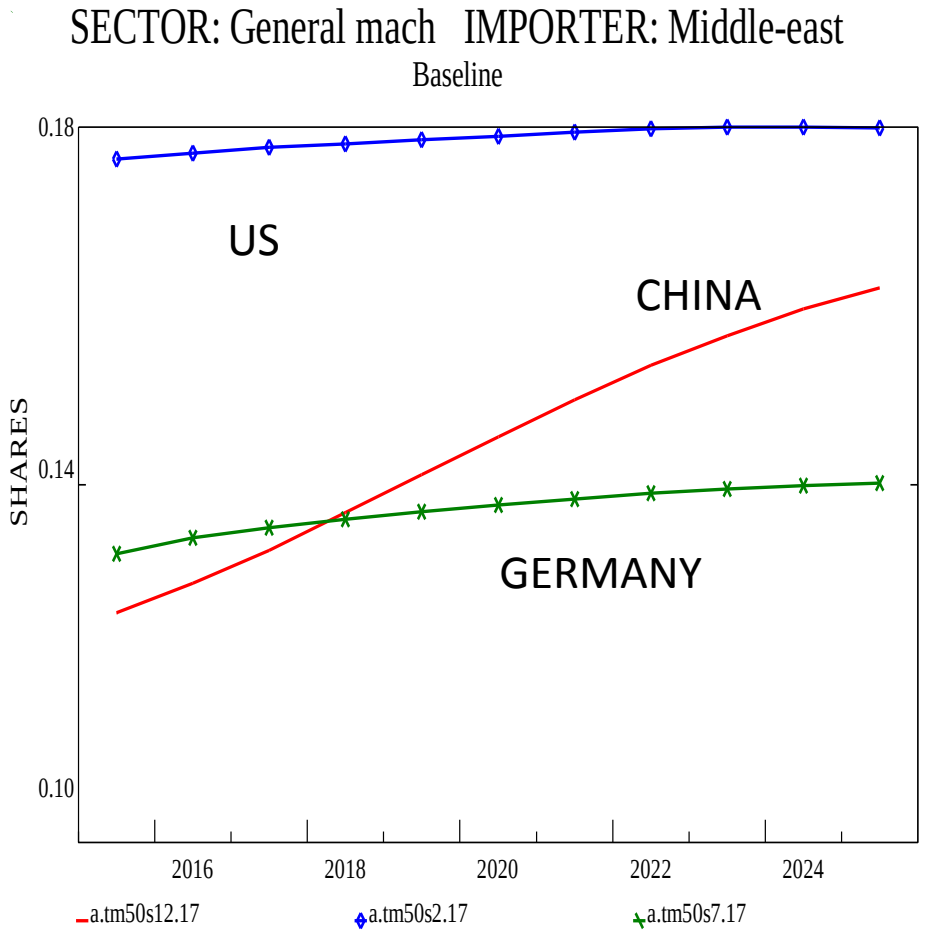




IV) TO PREPARE THE BASELINE SCENARIO



	Constant	Price el.	Capital el.	Nyhus trend
USA	-1.91	-1.908	0	-0.052
Germany	-2.041	-2.022	0.093	0.008
China	-2.616	-4	0.627	0.0



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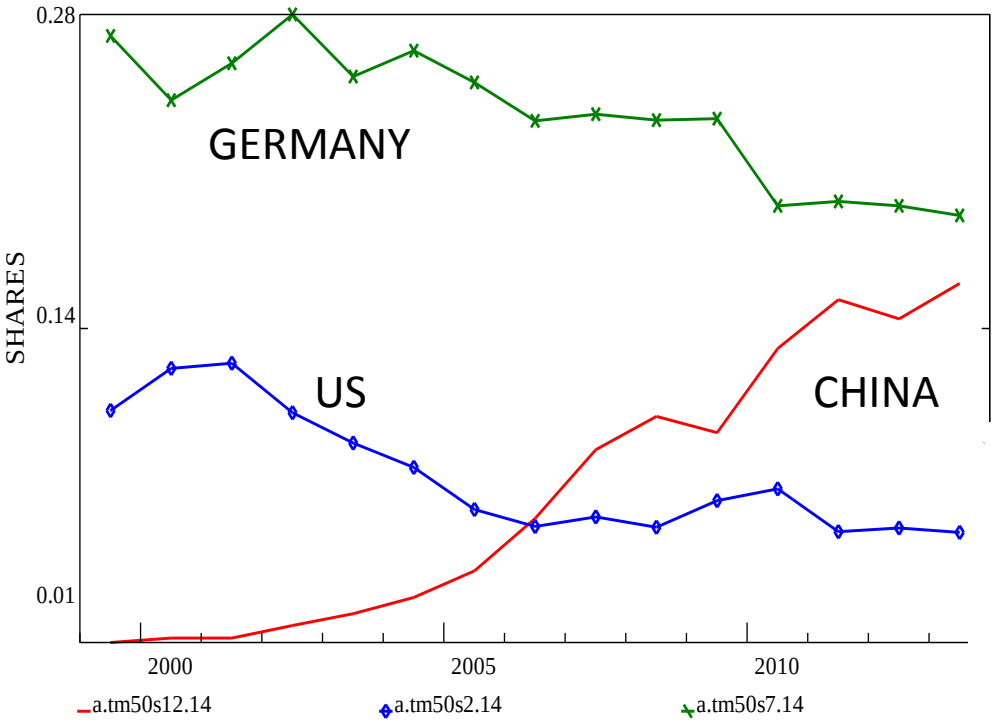
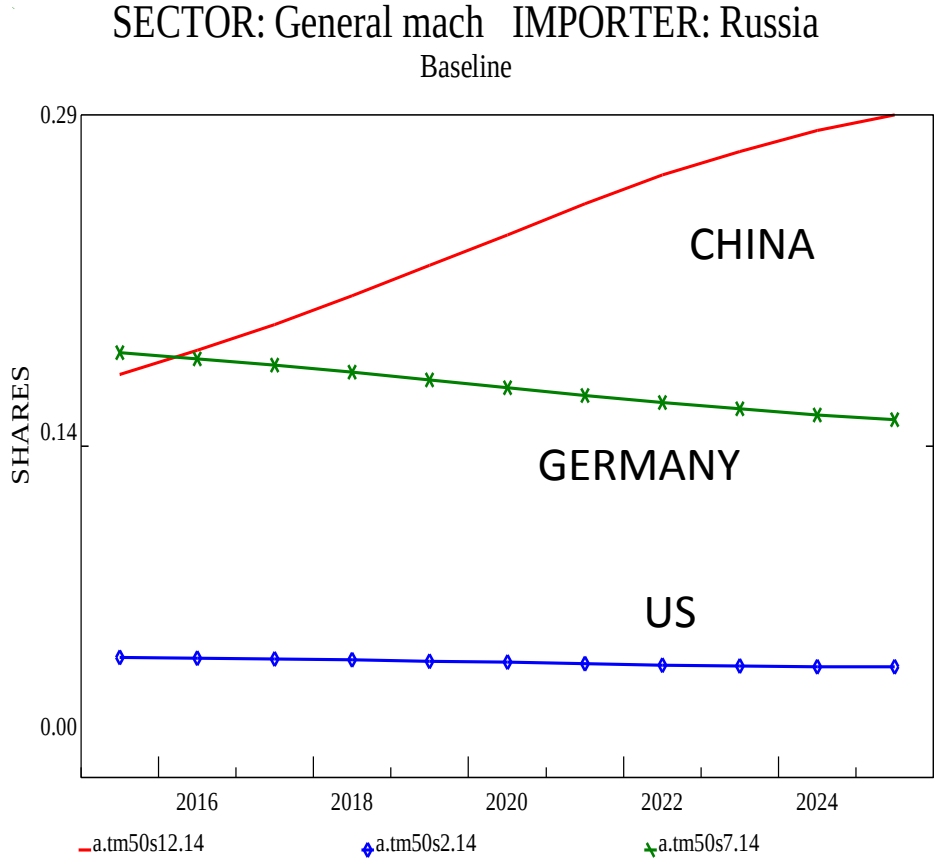


	Constant	Price el.	Capital el.	Nyhus trend
USA	-2.634	0	1.264	0
Germany	-1.364	-1.701	0.891	-0.026
China	-3.119	-4	1.66	0



IV) SOME RESULTS FOR THE FASHION INDUSTRY IN THE JAPANESE MARKET

Leather and Leather manufacturing				
Exporter	*intercept*	*Price elasticity*	*capital stock elasticity*	*Nyhus time trend*
France	-3.187	-1.316	4	0.085
Italy	-2.12	-2.147	1.024	0.036
China	-1.263	-4	4	-0.226
Apparel Clothing				
Exporter	*intercept*	*Price elasticity*	*capital stock elasticity*	*Nyhus time trend*
France	-4.831	-1.441	1.173	0
Italy	-3.206	-0.816	0.666	0
China	-0.157	-1.64	2.095	-0.17

Imports from China are very sensitive to price competitiveness, especially for leather goods

Imports from China are very sensitive also to non-price competitiveness; so also in this traditional sector the role of investment process has been a key factor for Chinese producers

French Leather goods are not so linked to price with respect to Italy; the opposite is true for clothes and apparel

There are no chanches in the Japanese market in the future for European fashion industry

A scenario analysis: an example

The situation in Europe

Aggregate demand deficit: the actual level of investment is not sufficient to reduce the level of unemployment in Europe. (Secular Stagnation?).

In the medium term an high level of inflation is not a realistic scenario. The risk of deflation is higher than that of rising inflation

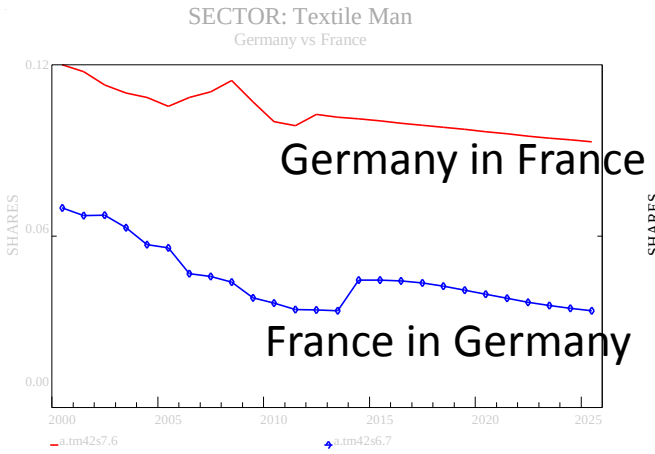
In Europe we have a problem called *internal current account imbalances*

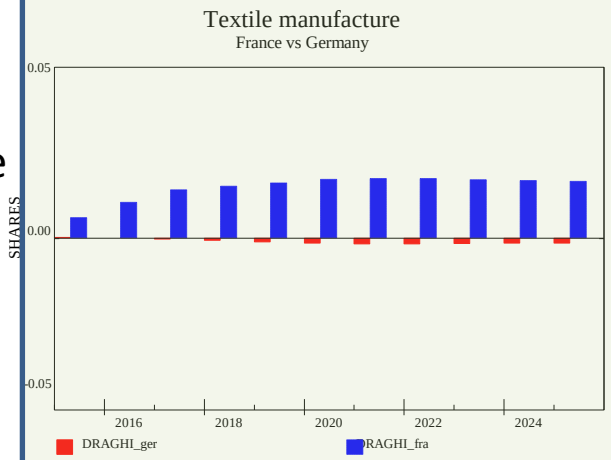
A solution for Europe

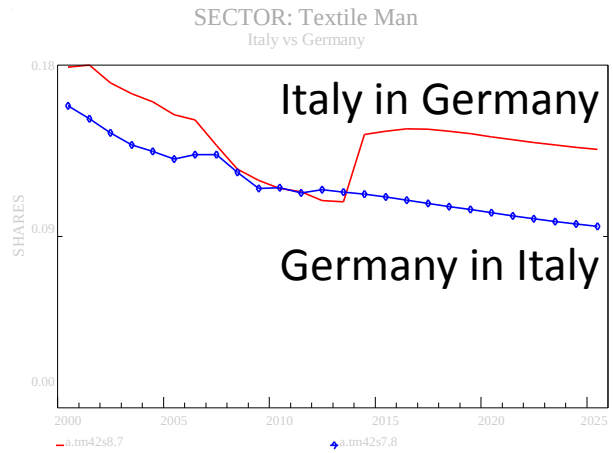
To increase the wage rate in Germany. The consequence for Germany, respect to baseline, is an higher level of:
- Imports;
- inflation

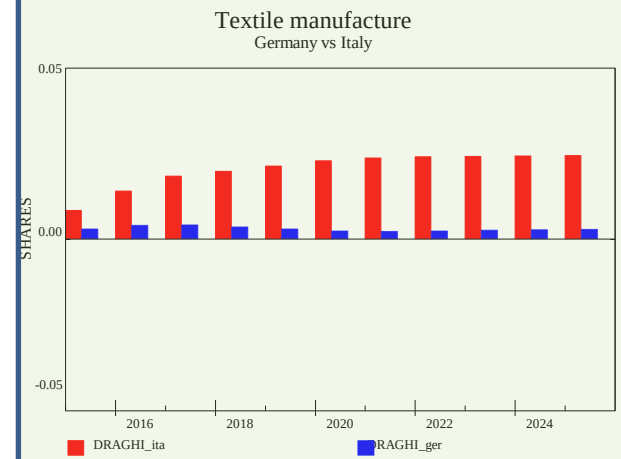
A big push to investment planned in order to increase the potential output in countries experienced a big drop in GDP

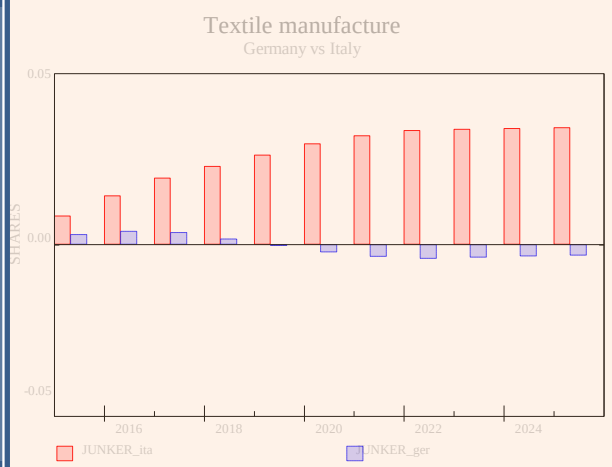
INTRA EZ: TEXTILE MANUFACTURES









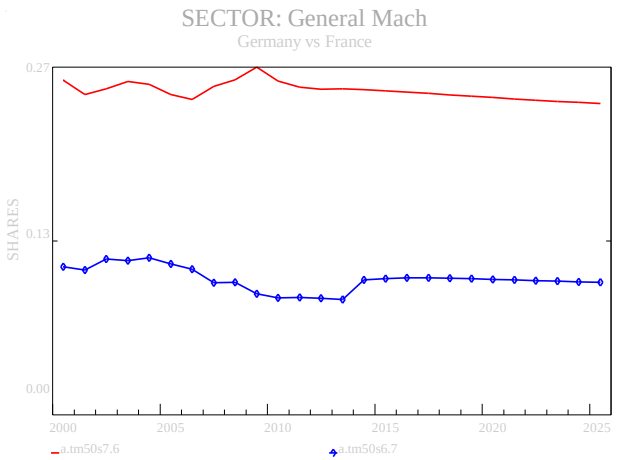


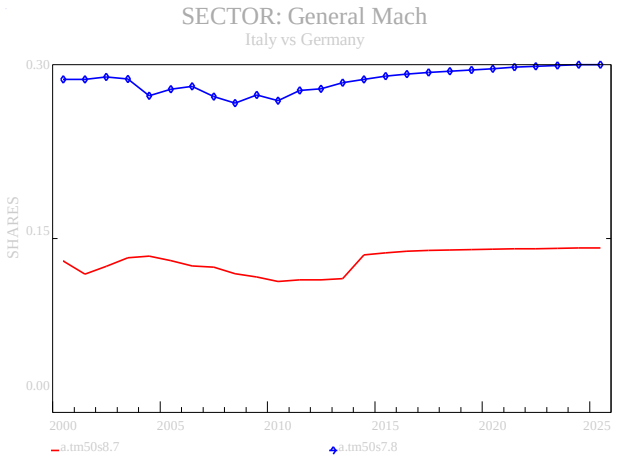
Baseline

domestic prices for EZ
2015: -10%;
2016-2020: -1%

Capital stock for EZ
2016-2020: +3%

INTRA EZ: GENERAL MACHINERY





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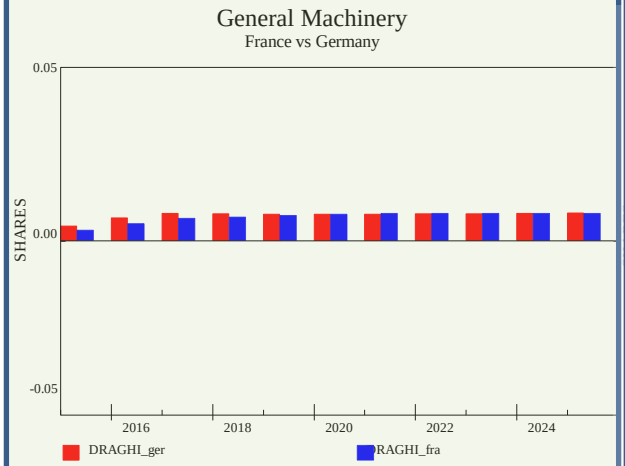

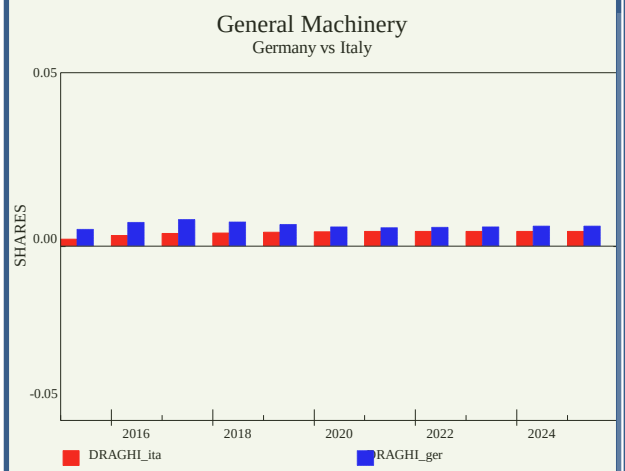

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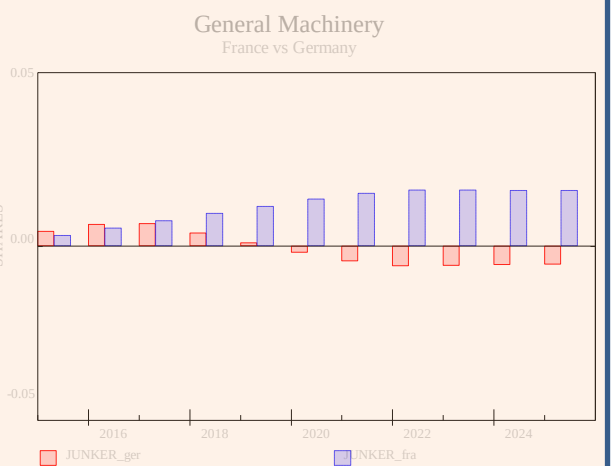
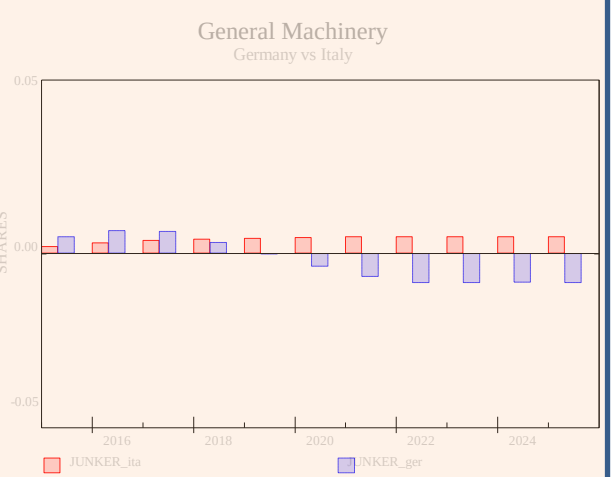
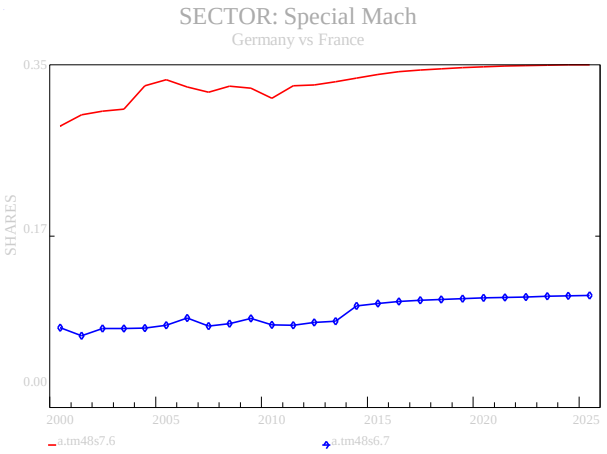
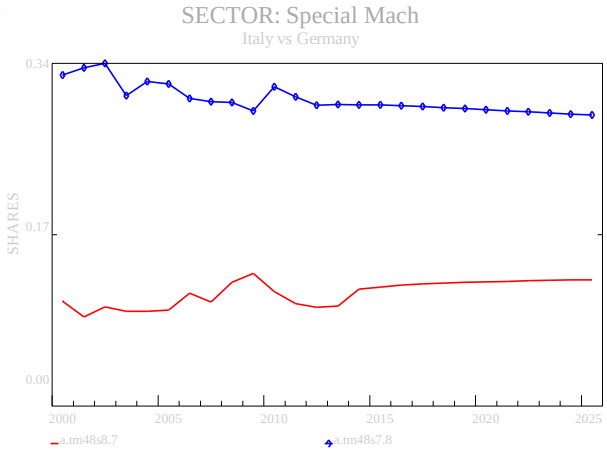




Capital stock for EZ
2016-2020: +3%

INTRA EZ: SPECIAL MACHINERY





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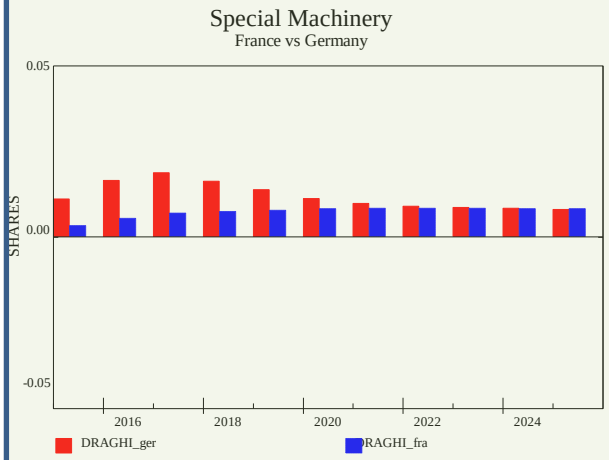

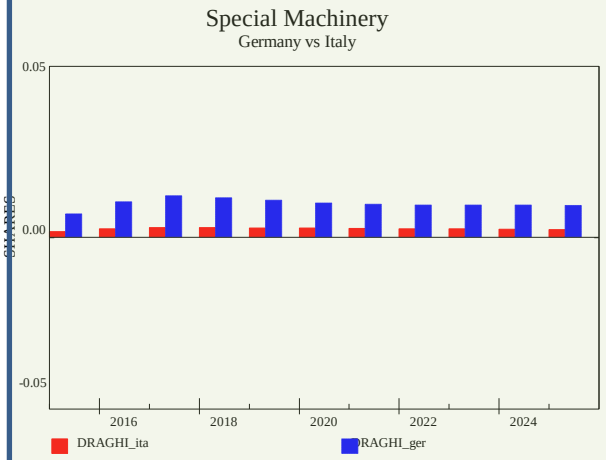

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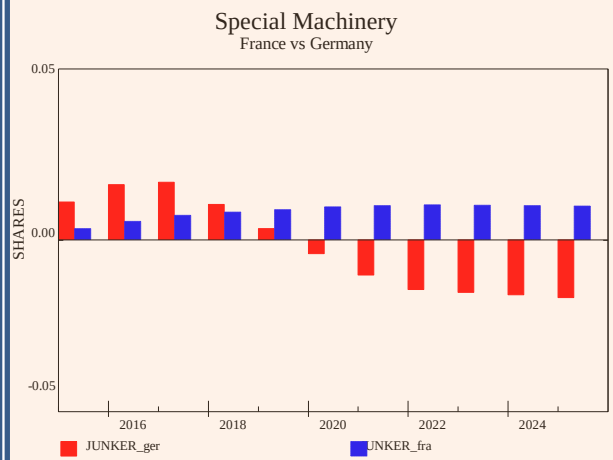
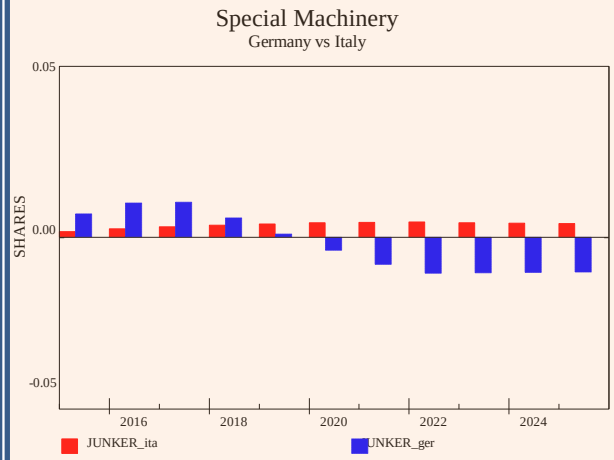
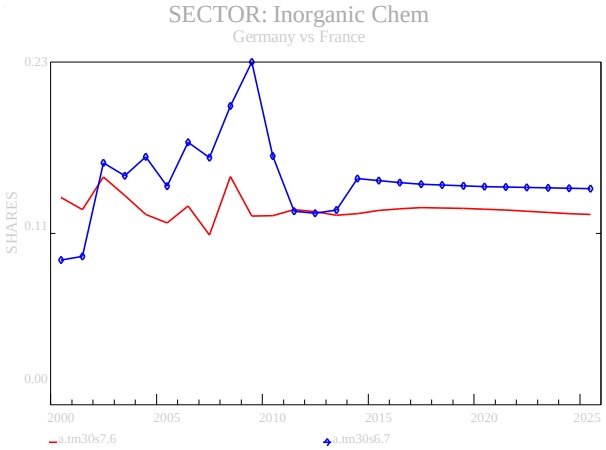
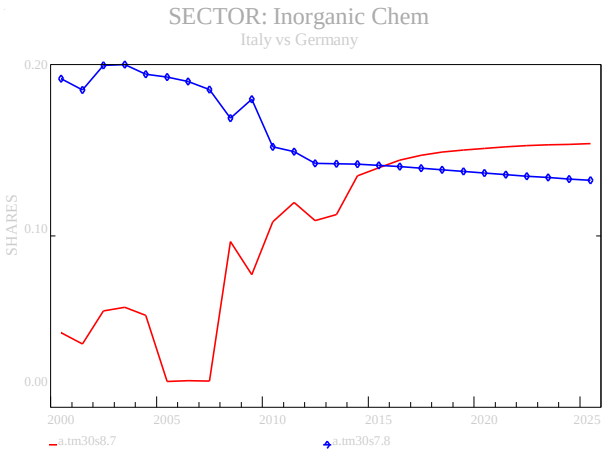




Capital stock for EZ
2016-2020: +3%

INTRA EZ: INORGANIC CHEMICALS





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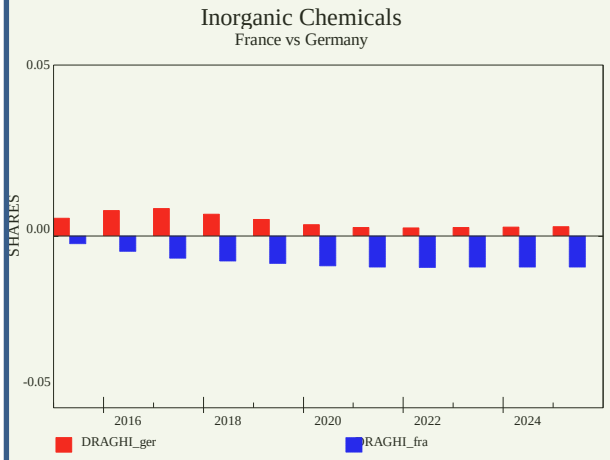

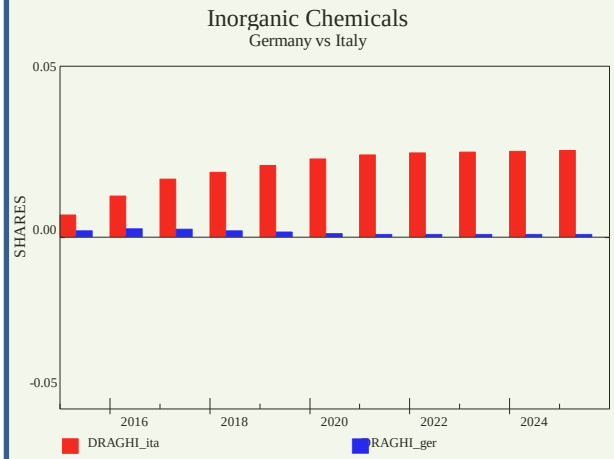

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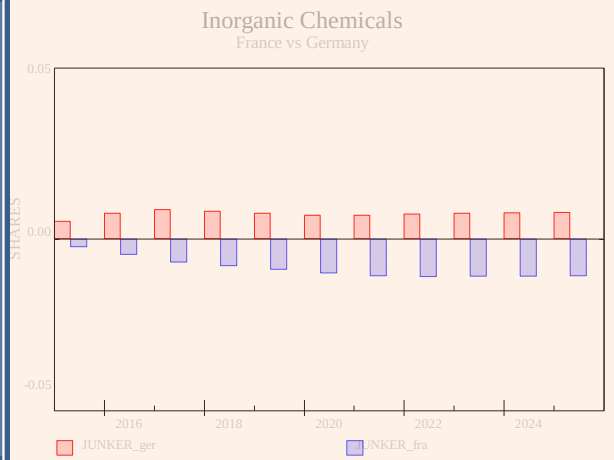
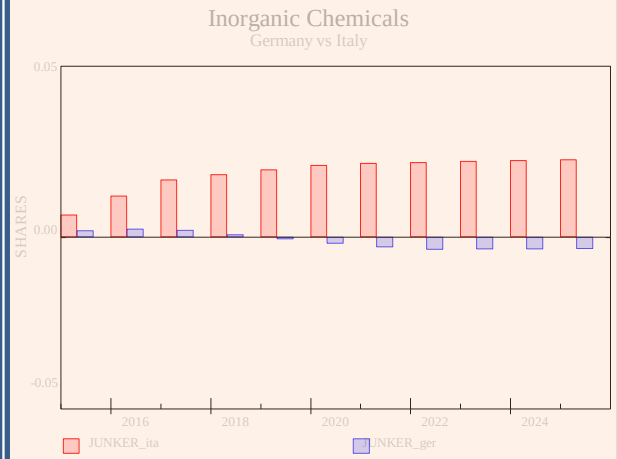
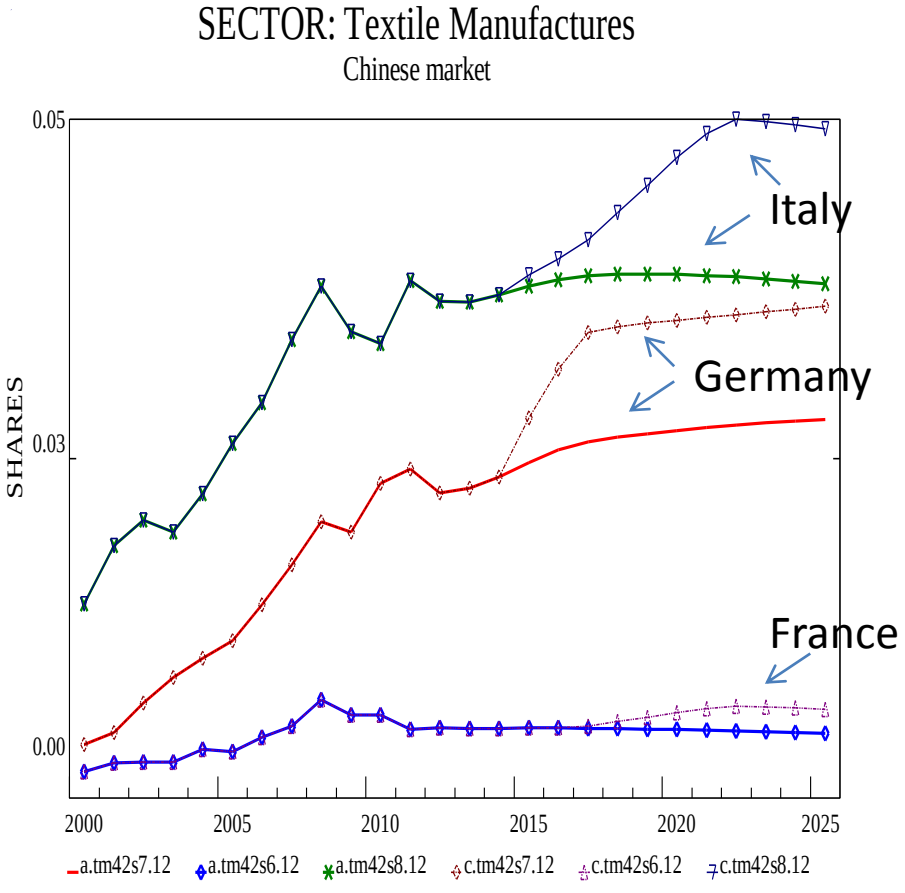
2016-2020: -1%





Capital stock for EZ
2016-2020: +3%


SECTOR: Textile Manufactures
Chinese market
SHARES
0.05
0.03
0.00
2000
2005
2010
2015
2020
2025
Italy
Germany
France
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a.tm42s6.12
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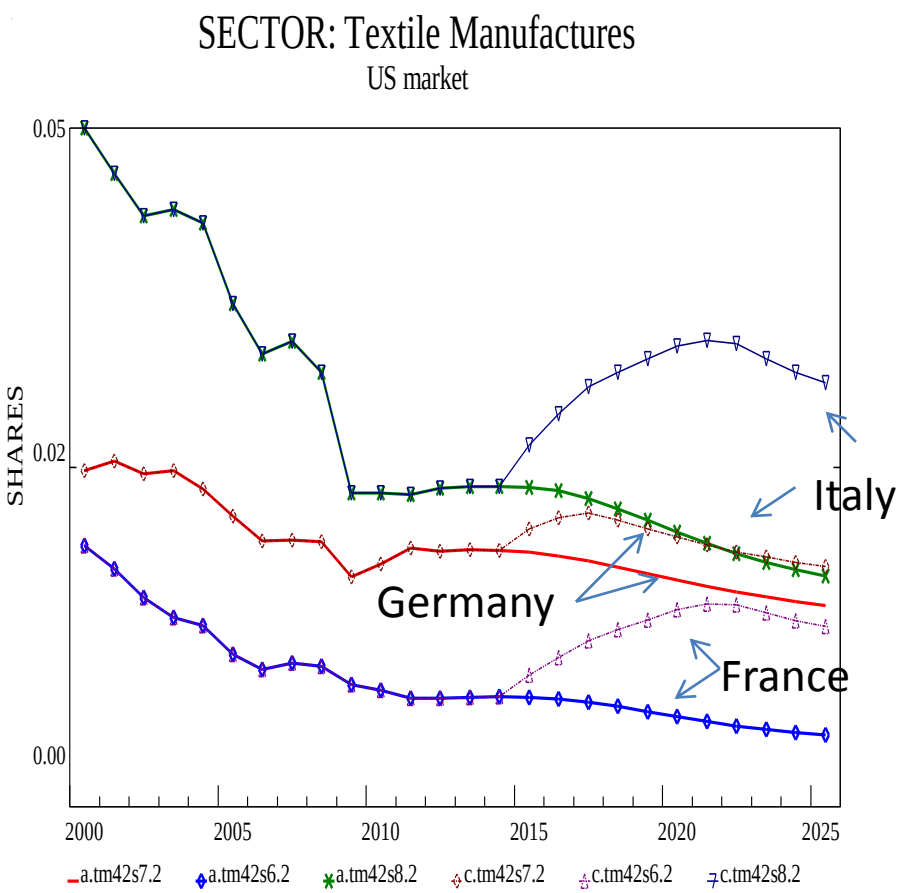
c.tm42s8.12


SECTOR: Textile Manufactures
US market
SHARES
0.05
0.02
0.00
2000
2005
2010
2015
2020
2025
Italy
Germany
France
a.tm42s7.2
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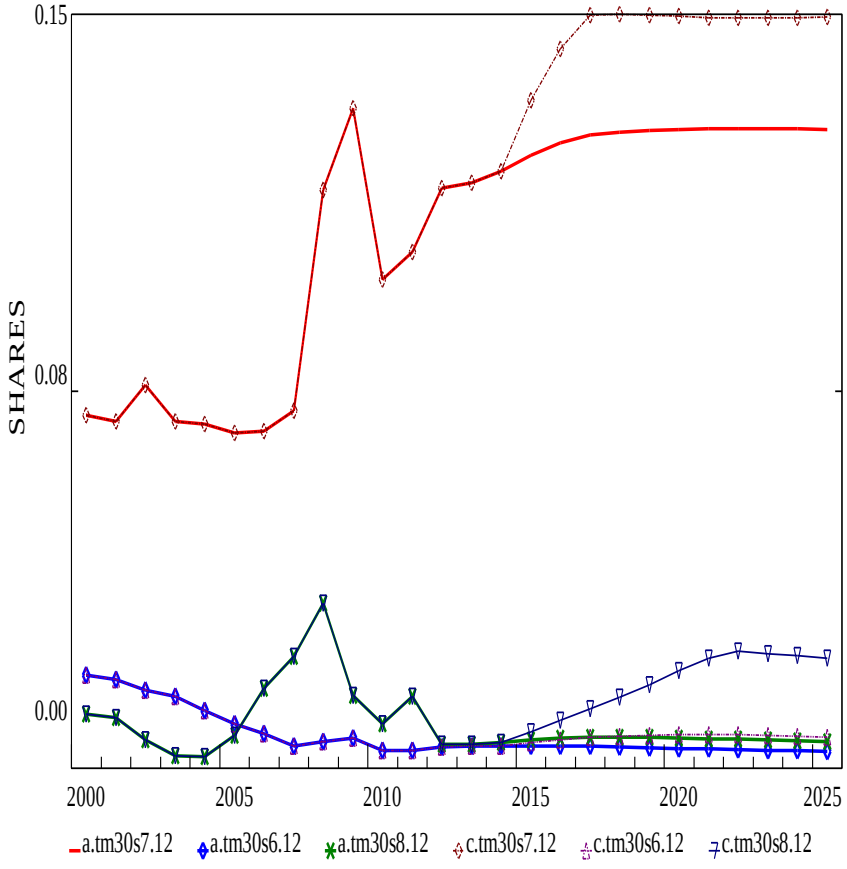
c.tm42s8.2

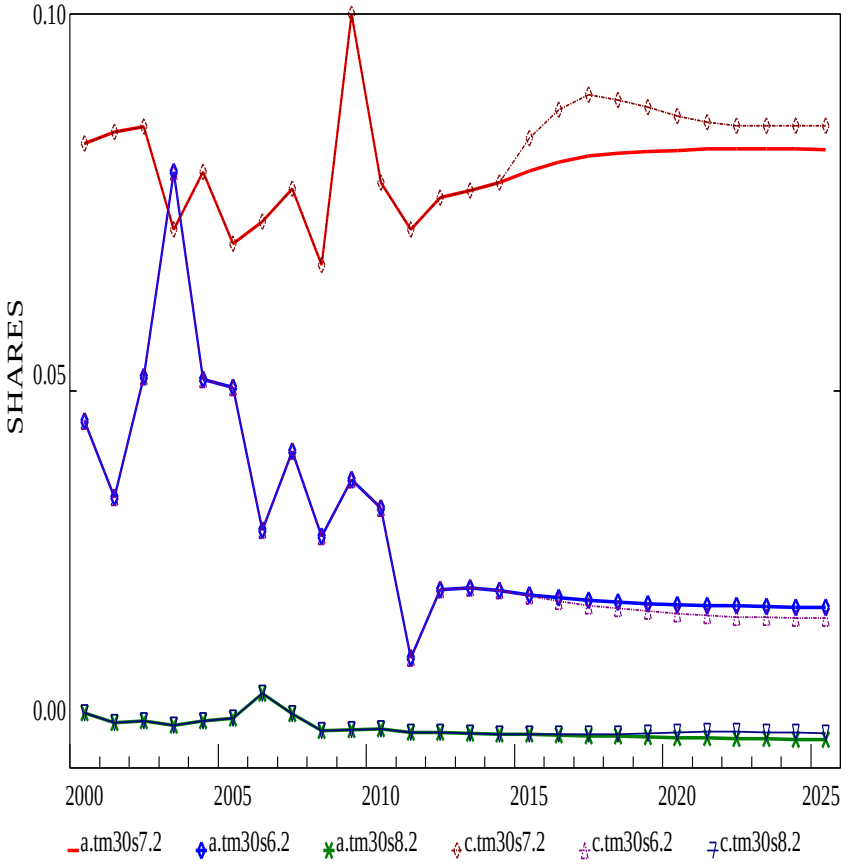
SECTOR: Inorganic Chemicals

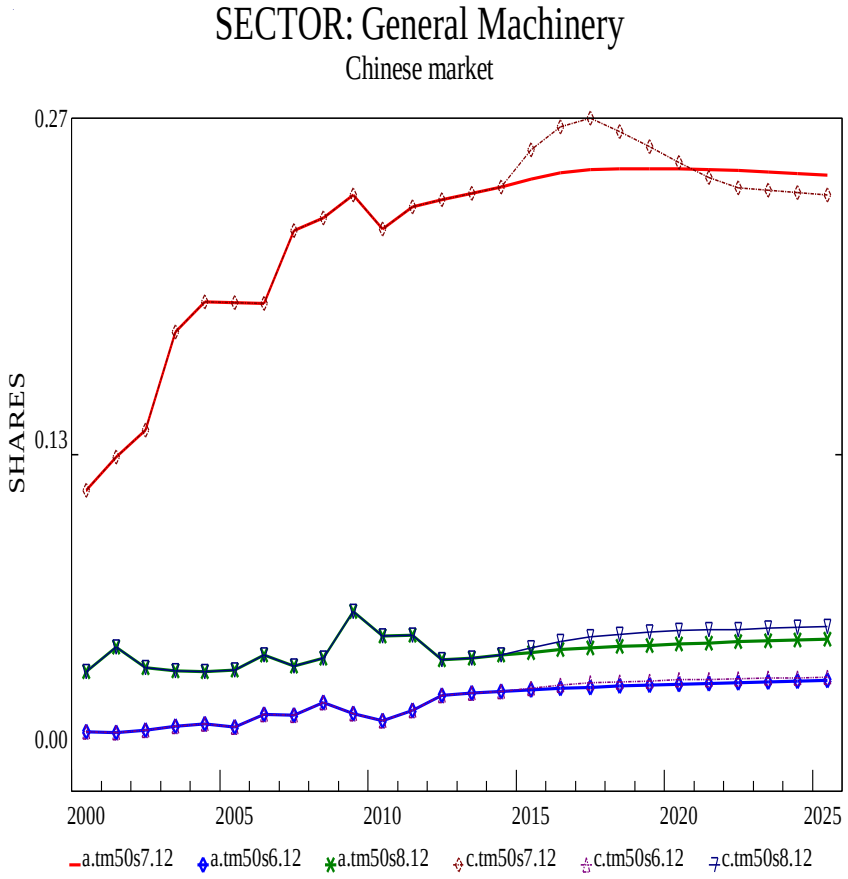
Chinese market



SECTOR: Inorganic Chemicals

US market




SECTOR: General Machinery
Chinese market
SHARES
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0.13
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2005
2010
2015
2020
2025
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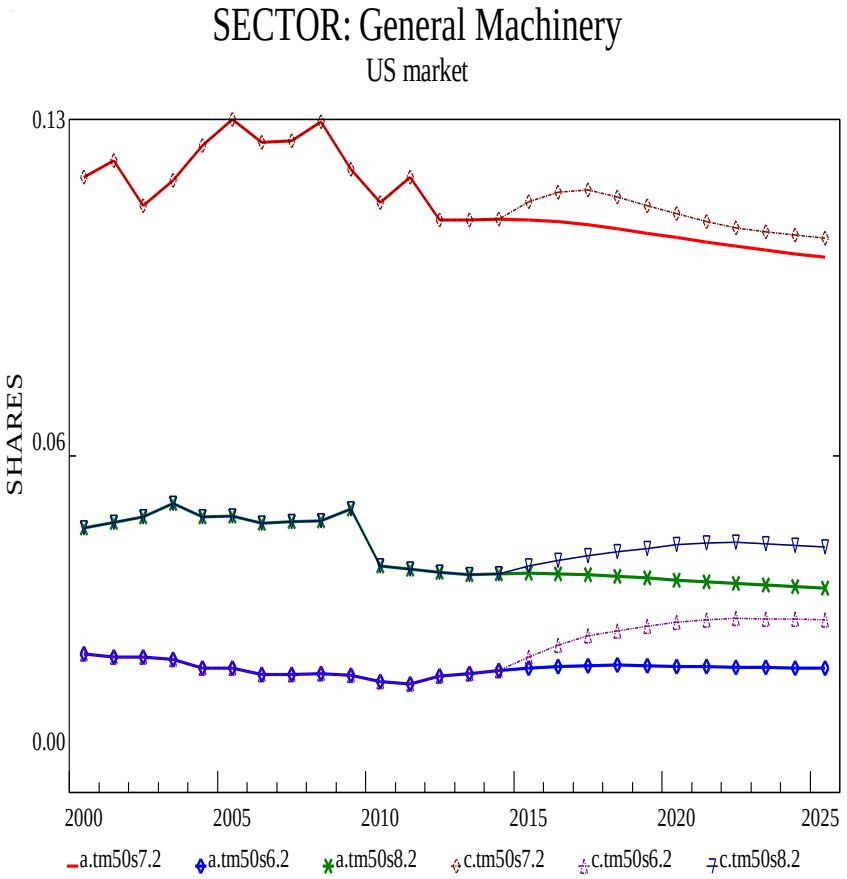
SECTOR: General Machinery
US market
SHARES
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2015
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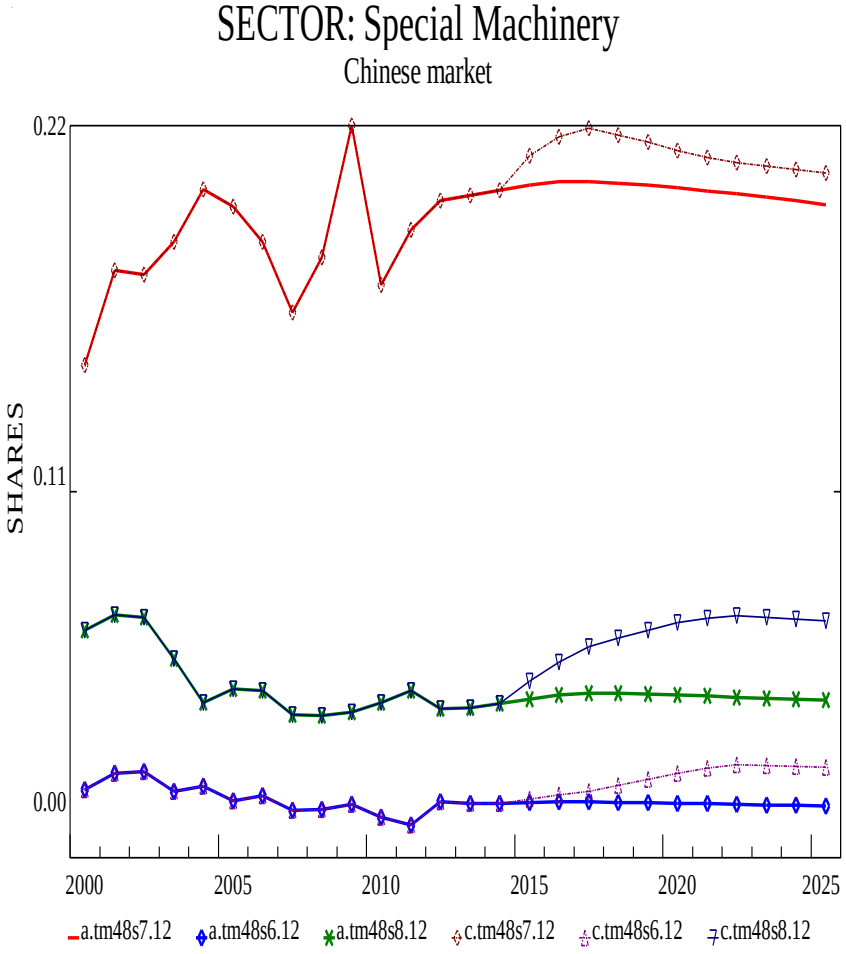
SECTOR: Special Machinery
Chinese market
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2000
2005
2010
2015
2020
2025
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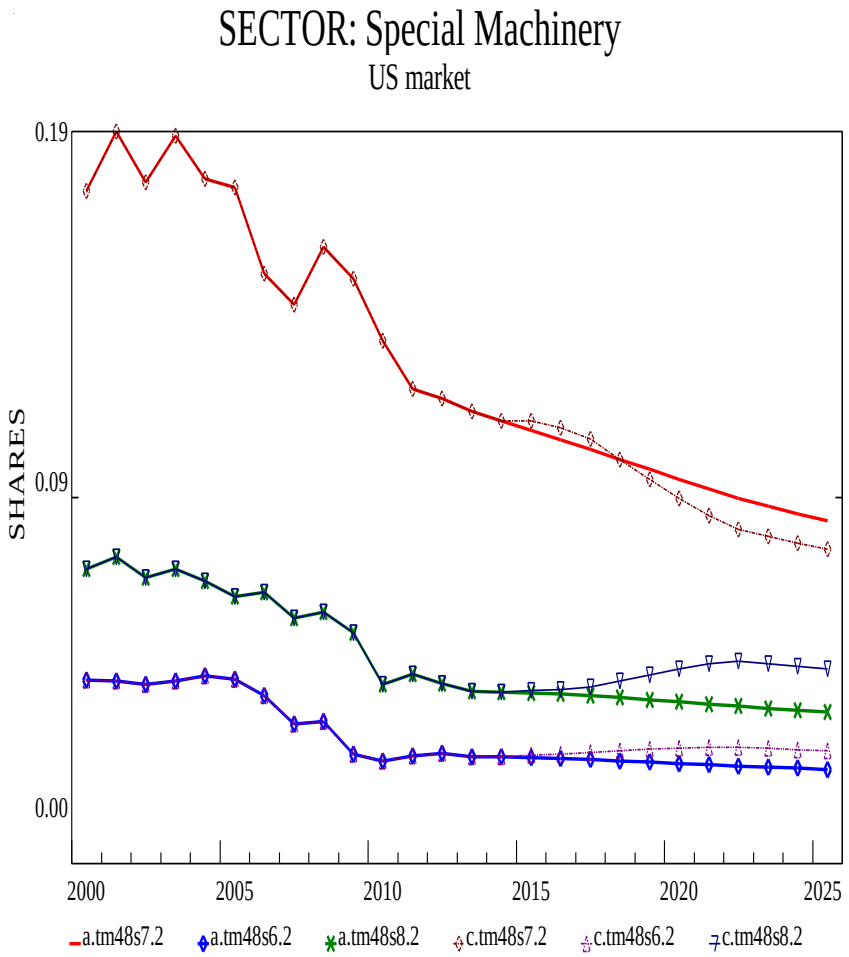
SECTOR: Special Machinery
US market
SHARES
0.19
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2010
2015
2020
2025
a.tm48s7.2
a.tm48s6.2
a.tm48s8.2
c.tm48s7.2
c.tm48s6.2
c.tm48s8.2

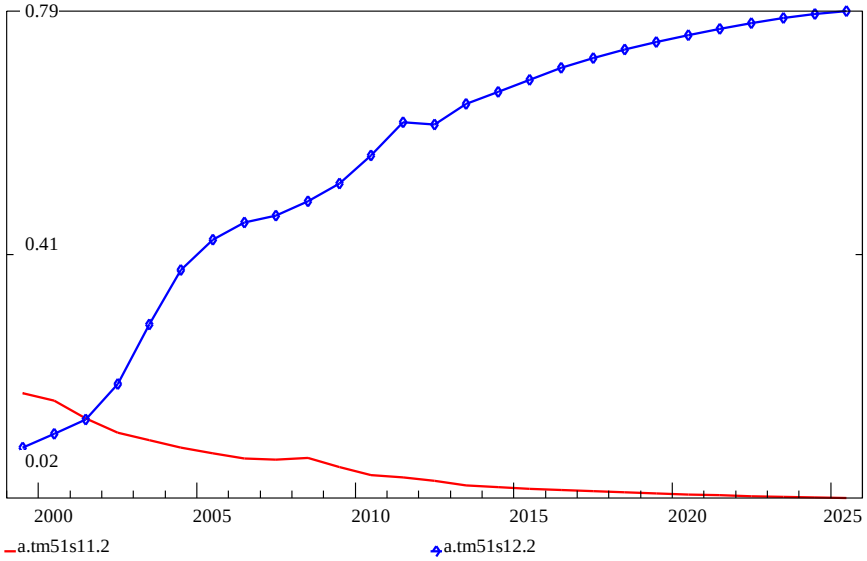
THIS KIND OF POLICY DRIVES EUROPE TOWARDS A MORE SUSTAINABLE PATH OF INTERNAL TRADE FLOWS. ACCORDING TO OUR ESTIMATION THE CURRENT ACCOUNT IMBALANCES SHOULD DECREASE

AT THE SAME TIME THIS POLICY IS ABLE TO IMPROVE THE EXTERNAL COMPETITIVENESS OF ALL EUROPEAN COUNTRIES. GERMANY WILL INCREASE ITS SHARES WITH RESPECT TO NON-EURO MARKET. THE SAME FOR ITALY AND FRANCE

v) NEXT STEP

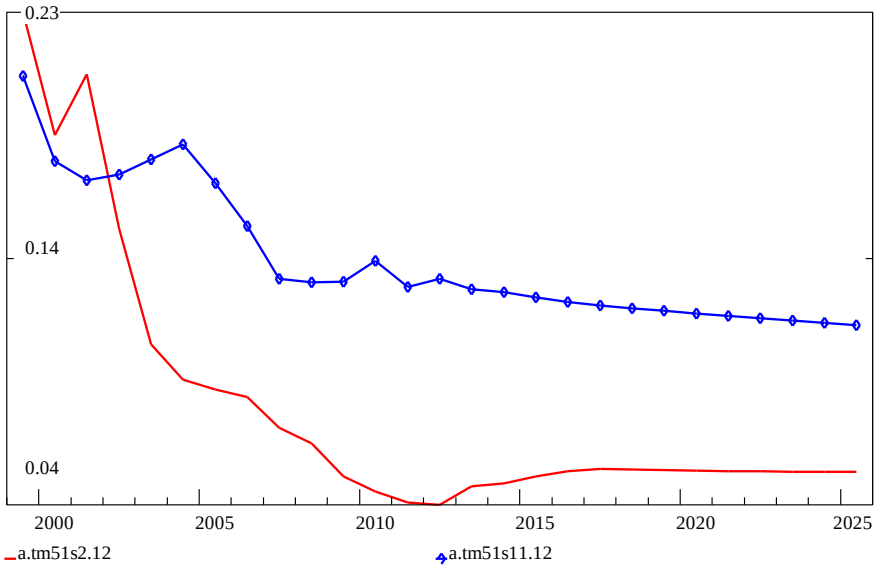
SECTOR: Office mach IMPORTER: USA

Baseline



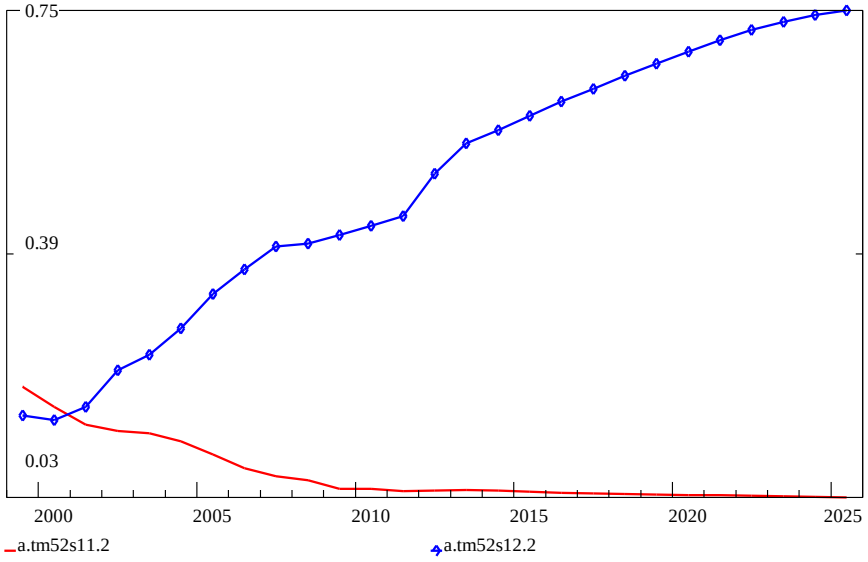
SECTOR: Office mach IMPORTER: China

Baseline



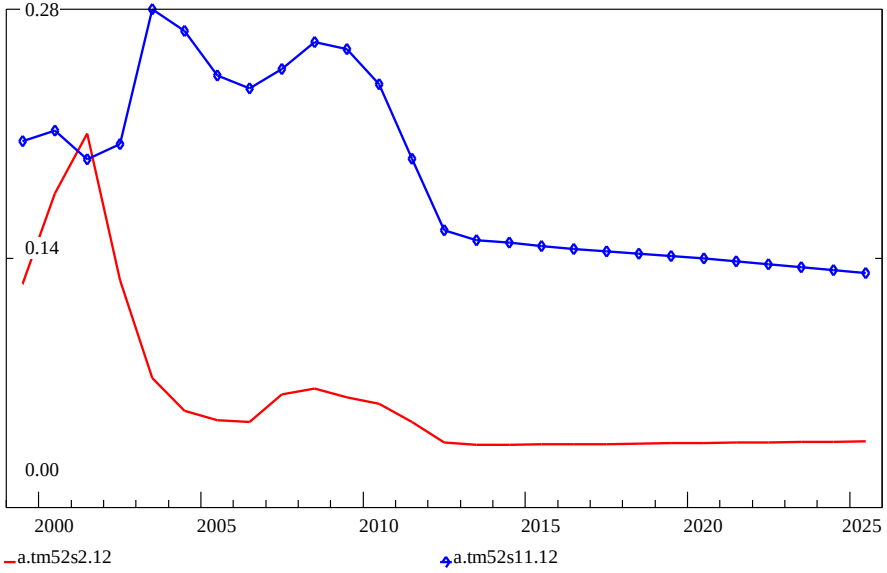
SECTOR: Telecom IMPORTER: USA

Baseline



SECTOR: Telecom IMPORTER: China

Baseline



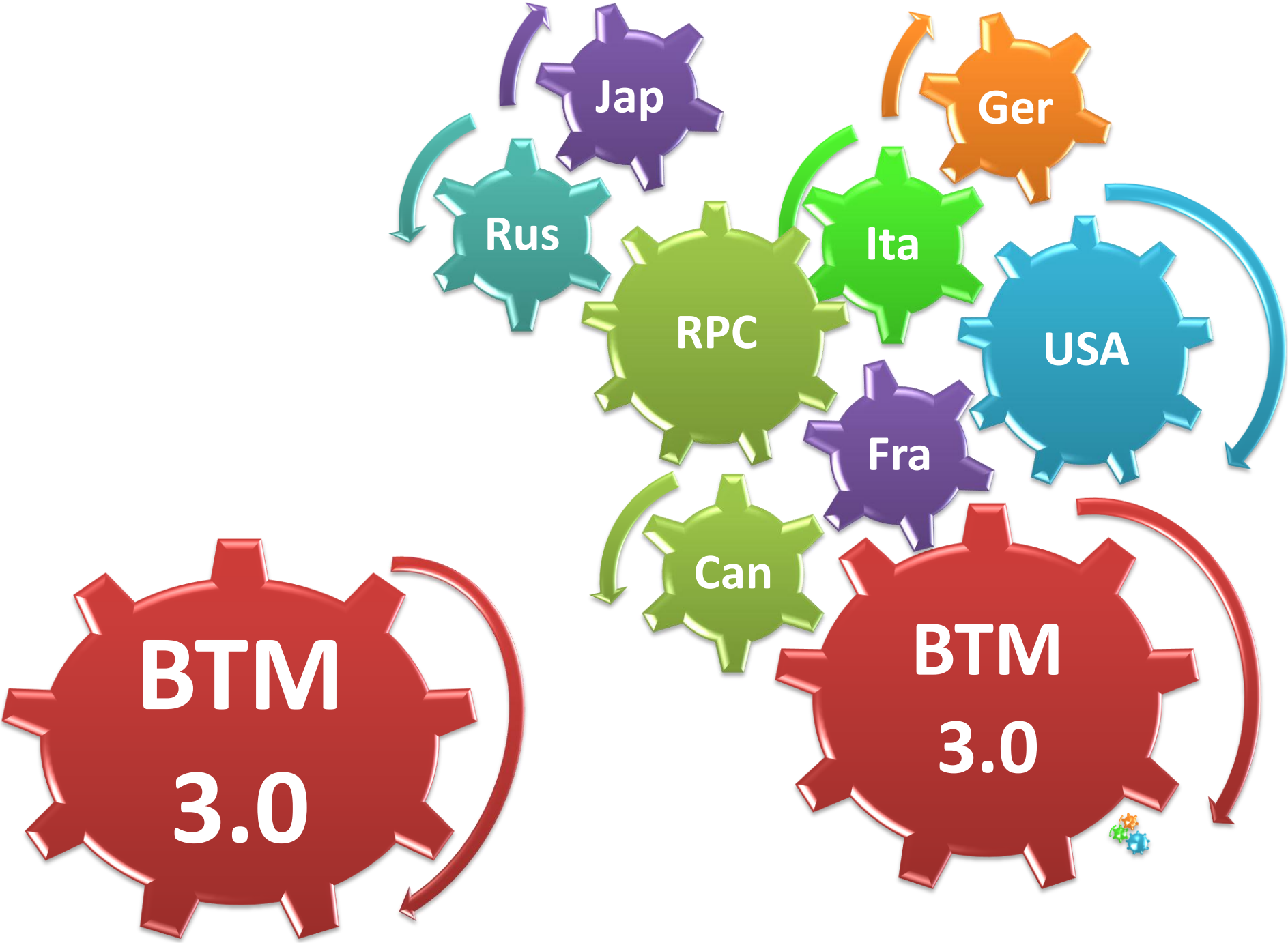
WHAT'S THE VALUE ADDED GENERATED IN US IN TELECOM AND OFFICE SECTOR?

WHAT'S THE VALUE ADDED OBTAINED BY CHINA IN THESE SECTORS?

WHAT'S THE IMPACT OF THIS TRADE RELATION ON THE PRODUCTIVITY OF THE OTHER US INDUSTRIAL SECTORS?

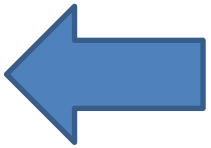
WHAT'S THE IMPACT ON DOMESTIC PRICES ALL AROUND THE WORLD?

It's impossible to give an answer to these questions using just the BILATERAL TRADE MODULE. We need to complete the project linking the BILATERAL TRADE MODULE to a GROUP OF NATIONAL DISAGGREGATED MODEL


Jap
Ger
Rus
Ita
RPC
USA
Fra
Can
BTM
3.0
BTM
3.0

1	00 - Live animals
2	01 - Meat
3	02 - Dairy products
4	03 - Fish
5	04 - Cereals
6	05 - Vegetables and fruit
7	06 - Sugars, and honey
8	07 - Coffee, tea, cocoa, spices
9	08 - Feeding stuff for animals
10	09 - Miscellaneous edible products
11	11 - Beverages
12	12 - Tobacco
13	21 - Hides, skins and furskins, raw
14	22 - Oil-seeds and oleaginous fruits
15	23 - Crude rubber
16	24 - Cork and wood
17	25 - Pulp and waste paper
18	26 - Textile fibres (other than wool)
19	27 - Crude fertilizers,and minerals (excluding coal, petroleum)
20	28 - Metalliferous ores and metal scrap
21	29 - Crude animal and vegetable materials, n.e.s.
22	32 - Coal, coke and briquettes
23	33 - Petroleum,and related materials
24	34 - Gas
25	35 - Electric current
26	41 - Animal oils and fats
27	42 - Fixed vegetable fats and oils
28	43 - Animal or vegetable fats and oils, waxes
29	51 - Organic chemicals
30	52 - Inorganic chemicals
31	53 - Dyeing, tanning and colouring materials
32	54 - Medicinal and pharmaceutical products
33	55 - Essential oils and resinoids and perfume materials; toilet, p
34	56 - Fertilizers (other than those of group 272)
35	57 - Plastics in primary forms
36	58 - Plastics in non-primary forms
37	59 - Chemical materials and products, n.e.s.
38	61 - Leather, leather manufactures, n.e.s., and dressed furskins
39	62 - Rubber manufactures, n.e.s.
40	63 - Cork and wood manufactures
41	64 - Paper
42	65 - Textile yarn, fabrics
43	66 - Non-metallic mineral manufactures, n.e.s.
44	67 - Iron and steel
45	68 - Non-ferrous metals
46	69 - Manufactures of metals, n.e.s.
47	71 - Power-generating machinery and equipment
48	72 - Machinery specialized
49	73 - Metalworking machinery
50	74 - General industrial machinery and equipment, n.e.s.,
51	75 - Office machines
52	76 - Telecommunications
53	77 - Electrical machinery
54	78 - Road vehicles
55	79 - Other transport equipment
56	81 - Prefabricated buildings; sanitary, plumbing, heating and lighting
57	82 - Furniture
58	83 - Travel goods, handbags and similar containers
59	84 - Articles of apparel and clothing accessories
60	85 - Footwear
61	87 - Professional, scientific and controlling instruments
62	88 - Photographic apparatus
63	89 - Miscellaneous manufactured articles, n.e.s.
64	93 - Special transactions
65	96 - Coin (other than gold coin), not being legal tender
66	97 - Gold, non-monetary (excluding gold ores and concentrates)

	EU	Other Countries
EU	data from COMEXT - imports - exports	data from COMEXT - exports
Other Countries	data from COMEXT -imports	no data from COMEXT

Ordered Country list

CA ; "Canada"
US ; "United States of America"
MX ; "Mexico"
AT ; "Austria"
BE ; "Belgium"
FR ; "France"
DE ; "Germany"
IT ; "Italy"
ES ; "Spain"
GB ; "Great Britain"
JP ; "Japan"
CN ; "China, RPC
KR ; "Korea"
RU ; "Russia"
REZ ; "Rest of Euro Zone, Finland - Ireland - Netherland - Portugal - Greece - Lux"
REU ; "Rest of EU, Bul- Cyp- Hro- Den- Est- Lat- Mal- Pol- Cze- Rom- Slo- Slo- Swe- Hun"
OIL ; "Oil Producers, United Arab Emirates - Iraq - Iran - Qatar - Saudi Arabia - Kuwait"
RoW ; "Rest of the World"