

# Perspectives on Portuguese International Trade

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## Outline

### **The Dynamics of International Trade**

### **Strands in Empirical Trade Literature**

#### **Aggregate Analysis**

Revealed Comparative Advantage

Intra-Industry Trade

International Fragmentation of Production

#### **Firm-based Analysis**

#### **Export Market Shares**

#### **Overall Conclusions**

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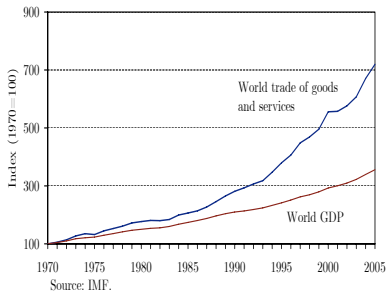
#### Firm-based Analysis

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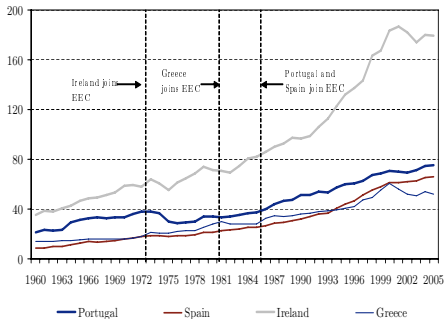
## Expansion of world trade

- ▶ There has been a strong expansion of international trade in the last decades
- ▶ ... contributing decisively to the worldwide levels of GDP per capita



## Trade openness in Portugal

- ▶ The EFTA accession (1960), the EEC preferential trade agreement (1972) and the EEC accession (1986) were major benchmarks in Portuguese trade liberalization



Source: European Commission and own calculations.

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## Empirical literature and stylized facts - I

- ▶ Revealed comparative advantage
  - ▶ Balassa, B. (1965), “Trade liberalization and revealed comparative advantage”, The Manchester School of Economic and Social Studies
- ▶ Intra-industry trade
  - ▶ Grubel, H. J. and Lloyd, P. (1975), “Intra-industry trade: The theory and measurement of international trade in differentiated products”, Macmillan
  - ▶ Fontagné, L. and Freudenberg, M. (1997), “Intra-industry trade: Methodological issues reconsidered”, WP 1997-01, CEPII
- ▶ International fragmentation of production
  - ▶ Feenstra and Hanson (1996), “Globalization, outsourcing and wage inequality”, AER
  - ▶ Hummels et al. (2001), “The nature and growth of vertical specialization in world trade”, JIE

## Empirical literature and stylized facts - II

- ▶ Firm-based analysis of international trade
  - ▶ Eaton, Kortum and Kramarz (2007), “An Anatomy of international trade: Evidence from French Firms”
  - ▶ Eaton, Eslava, Kugler and Tybout(2007), “Export Dynamics in Colombia: Firm-level Evidence”
  - ▶ Bernard, Redding and Schott (2006), “Multi-product Firms and Product Switching”



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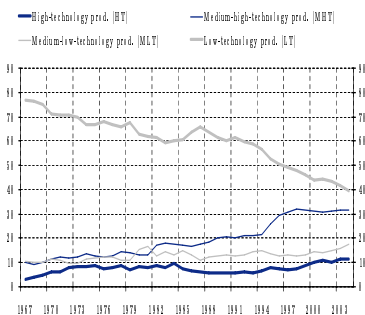
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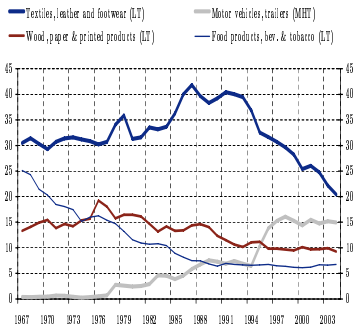
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## Portuguese manufacturing exports - Structure (Amador, Cabral and Ramos Maria, 2007)



Source: Chelen database and own calculations.



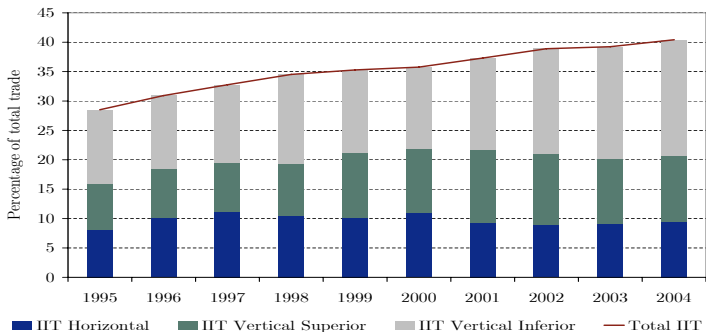
Source: Chelen database and own calculations.

## Portuguese manufacturing exports - The Balassa Index

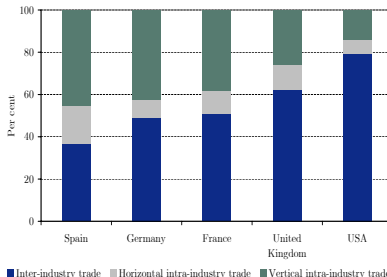
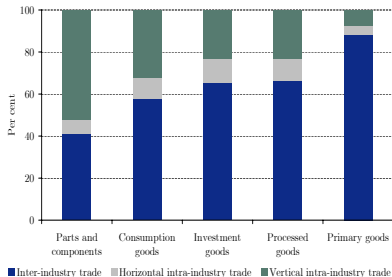
	1967-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04
<b>High-technology products</b>	<b>0.4</b>	<b>0.7</b>	<b>0.7</b>	<b>0.6</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>	<b>0.4</b>
Aircraft and spacecraft	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.3
Pharmaceuticals	0.9	0.9	0.7	0.7	0.5	0.3	0.3	0.4
Office, accounting and computing machinery	0.2	0.7	0.6	0.6	0.2	0.1	0.1	0.3
Radio, TV and communications equipment	0.6	1.2	1.1	1.0	0.6	0.6	0.6	0.6
Medical, precision and optical instruments	0.1	0.3	0.4	0.3	0.2	0.2	0.3	0.3
<b>Medium-high-technology products</b>	<b>0.3</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.5</b>	<b>0.6</b>	<b>0.8</b>	<b>0.9</b>
Other electrical machinery and apparatus	0.5	0.8	0.7	0.5	0.8	1.3	1.5	1.2
Motor vehicles, trailers and semi-trailers	0.0	0.0	0.1	0.3	0.5	0.6	1.2	1.3
Chemicals excl. pharmaceuticals	0.6	0.7	0.6	0.7	0.6	0.5	0.4	0.5
Railroad equipment and other transport equip.	0.5	0.7	0.4	0.4	0.3	0.4	0.8	0.7
Other machinery and equipment	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.6
<b>Medium-low-technology products</b>	<b>0.4</b>	<b>0.4</b>	<b>0.5</b>	<b>0.6</b>	<b>0.6</b>	<b>0.7</b>	<b>0.8</b>	<b>0.9</b>
Coke, refined petroleum prod. and nuclear fuel	0.3	0.5	0.3	0.7	0.6	0.9	0.7	0.6
Rubber and plastics products	0.7	0.6	0.3	0.3	0.5	0.6	0.8	1.1
Other non-metallic mineral products	1.8	1.6	1.5	1.7	2.2	2.7	2.6	2.6
Building and repairing of ships and boats	0.1	0.4	0.7	0.5	0.8	0.5	0.4	0.3
Basic metals	0.2	0.1	0.3	0.2	0.2	0.2	0.2	0.5
Fabricated metal products, excl. machinery	0.9	0.9	0.8	0.9	0.8	0.9	1.0	1.3
<b>Low-technology products</b>	<b>2.5</b>	<b>2.4</b>	<b>2.6</b>	<b>2.5</b>	<b>2.5</b>	<b>2.4</b>	<b>2.1</b>	<b>2.0</b>
Other manufacturing and recycling	2.2	1.8	0.8	0.9	0.6	0.7	0.7	0.9
Wood, pulp, paper and printed products	2.2	2.5	3.3	3.1	2.8	2.2	2.1	2.3
Food products, beverages and tobacco	2.1	1.6	1.6	1.2	1.0	0.9	0.9	1.1
Textiles, textile products, leather and footwear	3.3	3.5	3.9	4.0	4.4	4.3	3.7	3.1

Source: Chelem database and own calculations.

## Portuguese Intra-Industry Trade (Amador and Cabral, 2008)



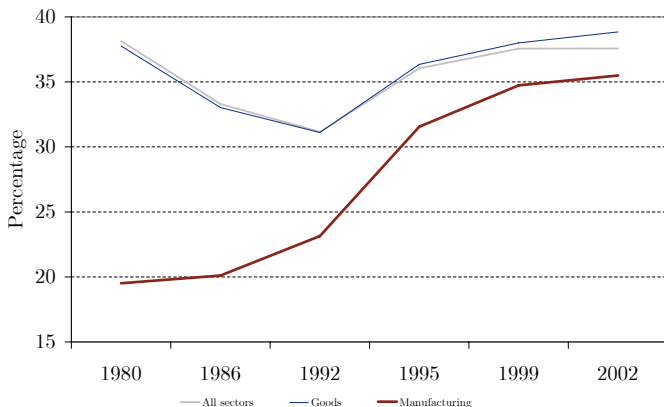
## Portuguese IIT by economic categories and main partners (2000-2004)



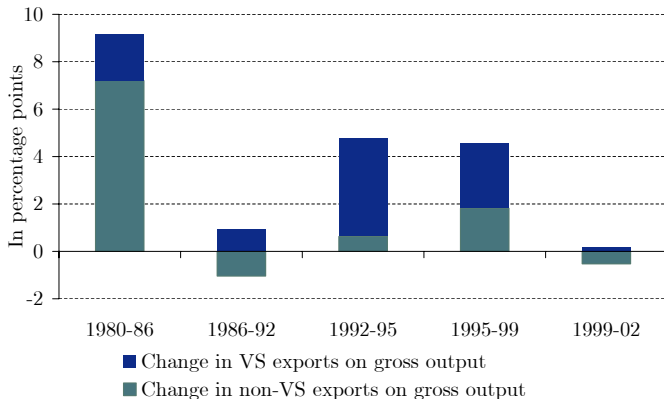
## Summing up

- ▶ Inter-industry trade is still dominant in the Portuguese transactions with the world
- ▶ ... but there is a substantial increase of IIT (accounts for 38.5 per cent of total trade in the 2000-04)
- ▶ This fact mostly resulted from the growth of trade in vertically differentiated goods, from 22.5 to 29.0 per cent of Portuguese trade in the period 2000-04.
- ▶ ... mainly of products with export prices lower than import prices (60.2 per cent of total).
- ▶ Most IIT is found in parts and components (58.8 per cent of total trade in these products in the 2000-04 period)
- ▶ Most IIT occurs with other EU15 countries (EU15 represents 76 per cent of total Portuguese trade in the 2000-04 period, but it accounts for 93.8 per cent of Portuguese IIT)

## Evolution of VS in Portugal (Amador and Cabral, 2008)

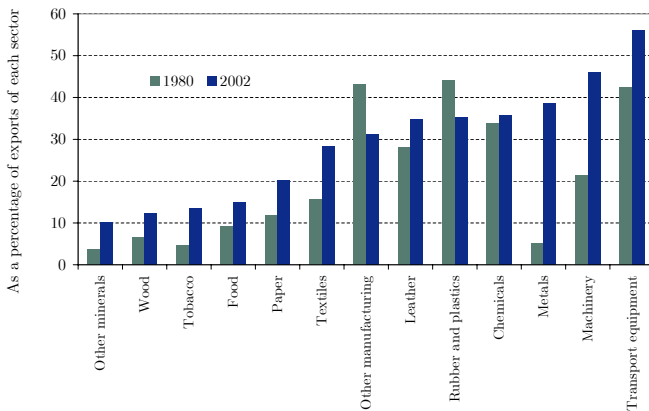


## Contribution to the change in the export/gross output ratio

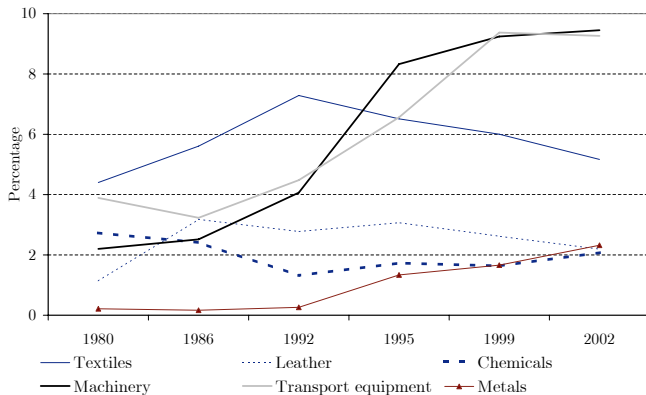




## VS intensity of each Portuguese manufacturing sector



## Sectoral contribution to VS share of total manufacturing exports



## Summing up

- ▶ VS is important in Portugal. It represented 35.5 per cent of manufacturing exports in 2002
- ▶ This is comparable (somewhat higher) than in other OECD countries
- ▶ Most sectors have become more VS intensive
- ▶ ... also some increase in the export share of the more VS intensive sectors
- ▶ Machinery and transport equipment play the leading roles (the latter with VS share exceeding 50 per cent)
- ▶ VS is especially important in trade with Germany (more than 40 per cent)

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## Descriptive statistics (Amador and Opromolla, 2008)

<b>Aggregate-level</b>	1996	1999	2002	2005
Number of Exporters	13,632	15,054	17,199	21,127
Number of Products	1,117	1,118	1,126	1,143
Number of Destinations	200	201	207	202
Export (Million Euro)	18,876	22,984	27,345	29,620
Export (% GDP)	.21	.20	.20	.20

## Joint probability of exporters and exports (1996-2005)

Destinations	Products						Total
	1	2	3	4-10	11-50	51+	
1	36.0	8.3	3.5	6.0	2.4	0.4	56.6
2	3.9	3.6	1.7	3.1	1.2	0.2	13.7
3	1.8	1.3	1.0	2.1	0.7	0.1	7.0
4-10	3.1	3.0	2.1	5.6	1.9	0.2	15.9
11-50	0.5	0.8	0.8	2.9	1.6	0.1	6.7
51+	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Total	45.3	17.0	9.1	19.7	7.9	1.0	100.0

Destinations	Products						Total
	1	2	3	4-10	11-50	51+	
1	2.4	1.0	0.5	1.3	1.1	0.2	6.5
2	1.1	0.7	0.5	1.6	1.0	0.1	5.0
3	0.8	0.7	0.5	1.4	0.6	0.1	4.1
4-10	2.5	3.9	2.3	9.3	5.0	0.3	23.3
11-50	2.0	3.2	3.3	16.3	26.5	4.7	56.0
51+	0.0	0.1	0.2	2.1	1.9	1.0	5.3
Total	8.9	9.7	9.2	31.8	35.2	5.4	100.0

## Firm margin

	Aggregate Growth	Extensive Margin			Intensive Margin
		Net	Entering Firms	Exiting Firms	Cont Firms
1997-1998	6.2	0.9	2.2	-1.3	5.3
1998-1999	3.4	1.7	3.1	-1.4	1.7
1999-2000	13.6	2.9	4.1	-1.2	10.7
2000-2001	2.0	-0.3	2.9	-3.2	2.4
2001-2002	1.8	1.3	2.9	-1.6	0.5
2002-2003	2.4	0.9	2.5	-1.6	1.6
2003-2004	5.2	2.3	3.6	-1.3	2.9
2004-2005	0.4	0.8	3.0	-2.2	-0.5
Average	4.4	1.3	3.1	-1.8	3.1

## Destination and product margins

	Cont Firms	Extensive Margin			Intensive Margin
		Net	Added Dest	Dropped Dest	Cont Dest
1997-1998	5.3	0.8	3.9	-3.1	4.5
1998-1999	1.7	0.0	2.9	-2.9	1.8
1999-2000	10.7	0.0	2.9	-2.9	10.7
2000-2001	2.4	-1.5	2.7	-4.2	3.9
2001-2002	0.5	0.2	3.0	-2.8	0.3
2002-2003	1.6	0.9	3.3	-2.4	0.7
2003-2004	2.9	0.9	3.1	-2.2	2.0
2004-2005	-0.5	-1.2	2.8	-4.0	0.8
Average	3.1	0.0	3.1	-3.1	3.1
	Cont Dest	Extensive Margin			Intensive Margin
		Net	Added Prod	Dropped Prod	Cont Prod
1997-1998	4.5	-0.1	3.2	-3.3	4.6
1998-1999	1.8	0.2	2.9	-2.7	1.6
1999-2000	10.7	0.8	3.7	-2.9	10.0
2000-2001	3.9	0.6	3.0	-2.4	3.4
2001-2002	0.3	-0.4	2.8	-3.2	0.7
2002-2003	0.7	0.4	3.6	-3.2	0.3
2003-2004	2.0	1.1	3.9	-2.8	1.0
2004-2005	0.8	-0.7	2.4	-3.1	1.4
Average	3.1	0.2	3.2	-3.0	2.9



## Summing up

- ▶ Multi-product and multi-destination firms are crucial
- ▶ Firm's portfolio is very diversified
- ▶ ... and product and destination switching is widespread
- ▶ New destinations are accessed mostly through the introduction of new products
- ▶ Intensive margin is important but gross entry and exit of both destinations and products is as important as the gross entry and exit of firms

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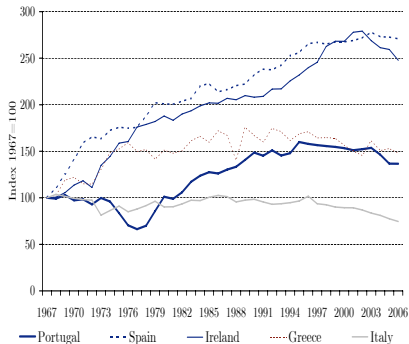
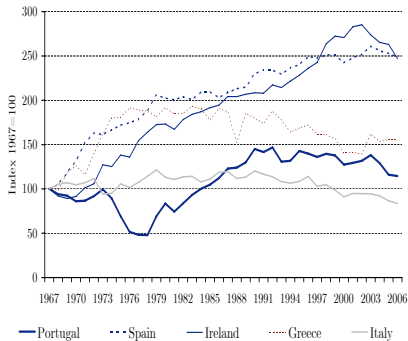
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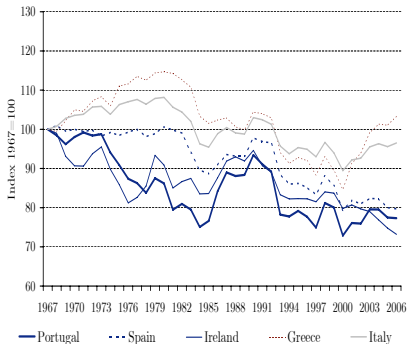
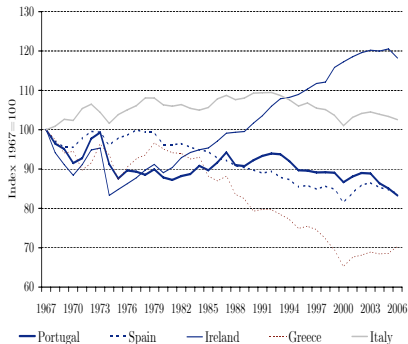
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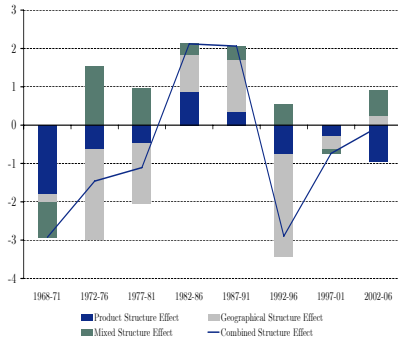
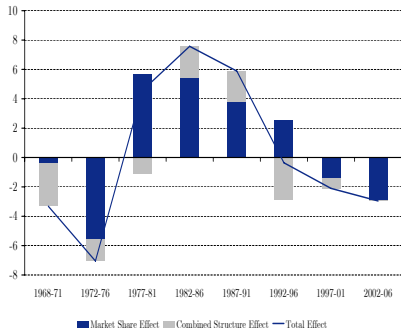
## Total and market share effects (Amador and Cabral, 2008)



## Product and geographical structure effects



## Portugal - market share effect and combined structure effect



## Summing up

- ▶ Over the average of the last forty years, there was an annual increase of total market share of 0.4 per cent
- ▶ ... contrasts with the ones observed in Ireland and Spain, whose shares in world exports had an average annual growth of 3.8 per cent from 1968 to 2006.
- ▶ Over 1968-2006, the relative product composition and geographical distribution of Portuguese exports had a negative impact in the evolution of total shares in world exports.
- ▶ The market share effect is dominant in explaining the total change in exports shares, though this is not uniform over the past 40 years
- ▶ ... three distinct sub-periods are identifiable: one period of effective gain of market share (1977-96) and two periods of effective losses (1968-76 and 1997-06)

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- ▶ Portuguese international trade is comparable to that of other EU countries in many ways . . .
  - ▶ Increasing openness
  - ▶ Some reorientation towards medium-high and high technology goods
  - ▶ Increased share of IIT
  - ▶ Significant importance of vertical specialization
  - ▶ Demography of firms reflects significant activity in terms of entry and exit of firms and also along the product and destination dimensions
- ▶ Nevertheless, when looking into more detail, some concerns exist
  - ▶ Low technology goods still have a significant importance in exports
  - ▶ Most IIT is vertical and (within this type of flows) it is mainly of products with export prices lower than import prices
  - ▶ Participation in international production chains is less evident than in other countries (for instance East Asia and Central and Eastern Europe)
  - ▶ Export market shares show a somewhat disappointing performance
  - ▶ The sectoral and geographical orientation of exports has not been beneficial