

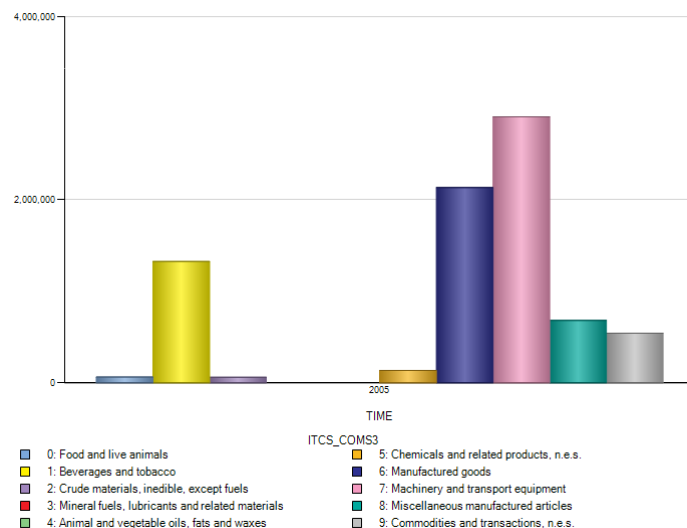
Neue Erkenntnisse der Außenwirtschaftstheorie – von Ricardo bis Melitz

Univ.Prof.DDr. Ingrid Kubin

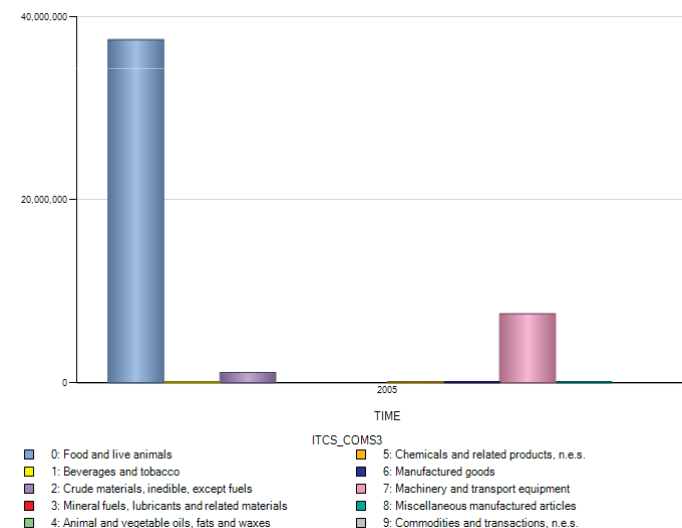
Institute for International Economics and
Development

Austria and Costa Rica

Interindustry Trade between different countries: Comparative Advantage – Ricardo + Heckscher Ohlin



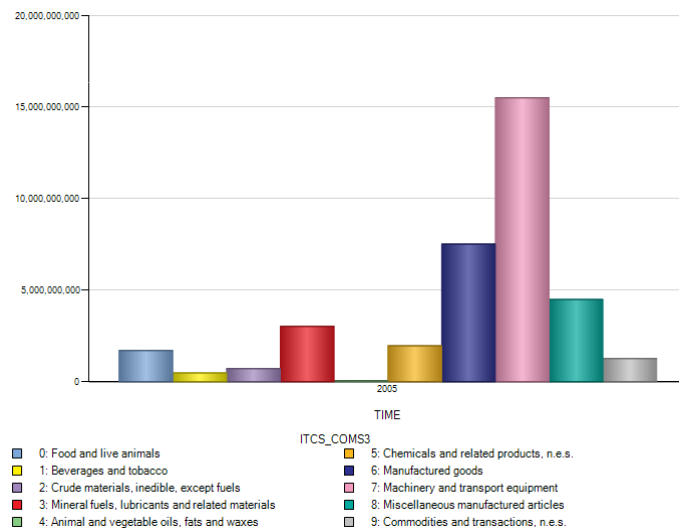
Austrian Exports



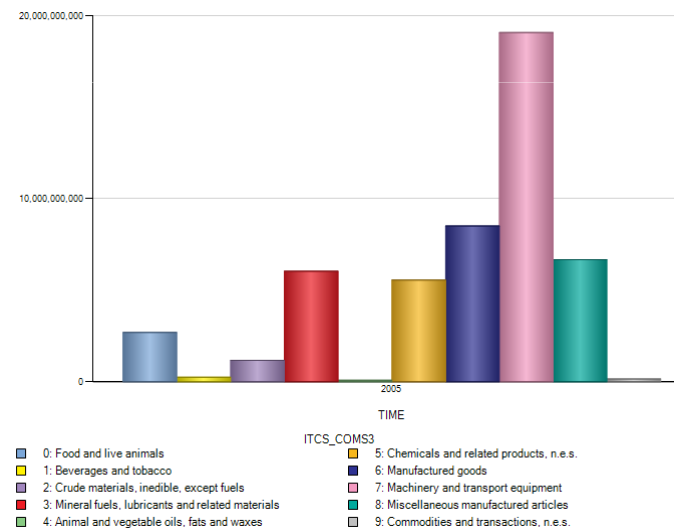
Austrian Imports

Austria and Germany

Interindustry Trade between similar countries: New trade theory – Krugman + Melitz



Austrian Exports



Austrian Imports

Gains from Trade

Lower prices because of lower costs!

Theories differ in focusing on different reason for lower costs

Traditional trade theories: Ricardo and Heckscher Ohlin

New trade theory: Krugman Melitz

Traditional Trade Theories

Ricardo: Differences in technology

Heckscher Ohlin: Differences in factor endowment



Differences in factor prices

Comparative , not absolute Advantage

Technology: Labour input

	1 unit of wine requires labour	1 unit of cloth requires labour
England	1.25	1
Portugal	0.5	1

Absolute advantage:
Portugal

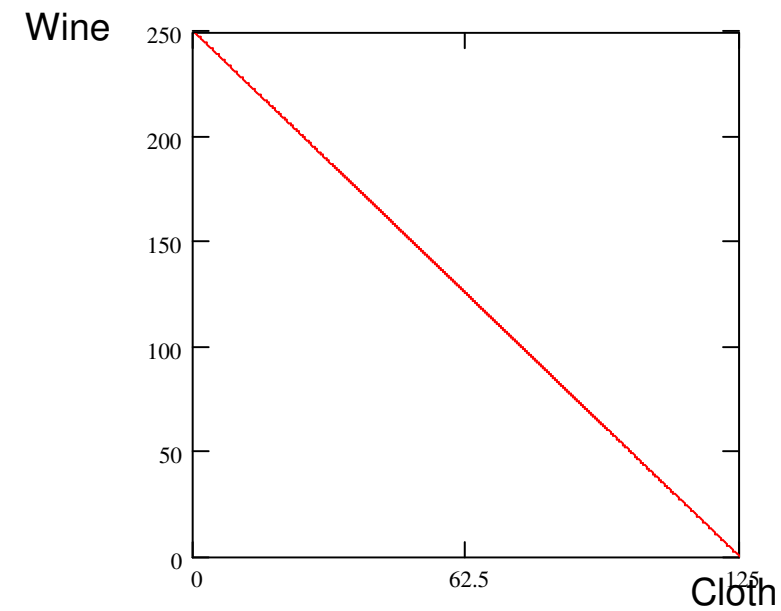
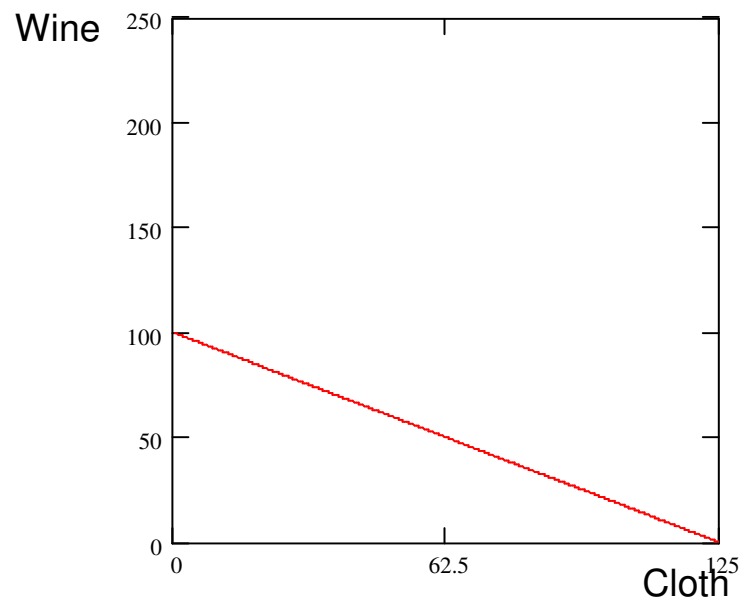
Comparative advantage:
Portugal – wine
England - cloth

Labour endowment: England = Portugal = 125

Production Possibility

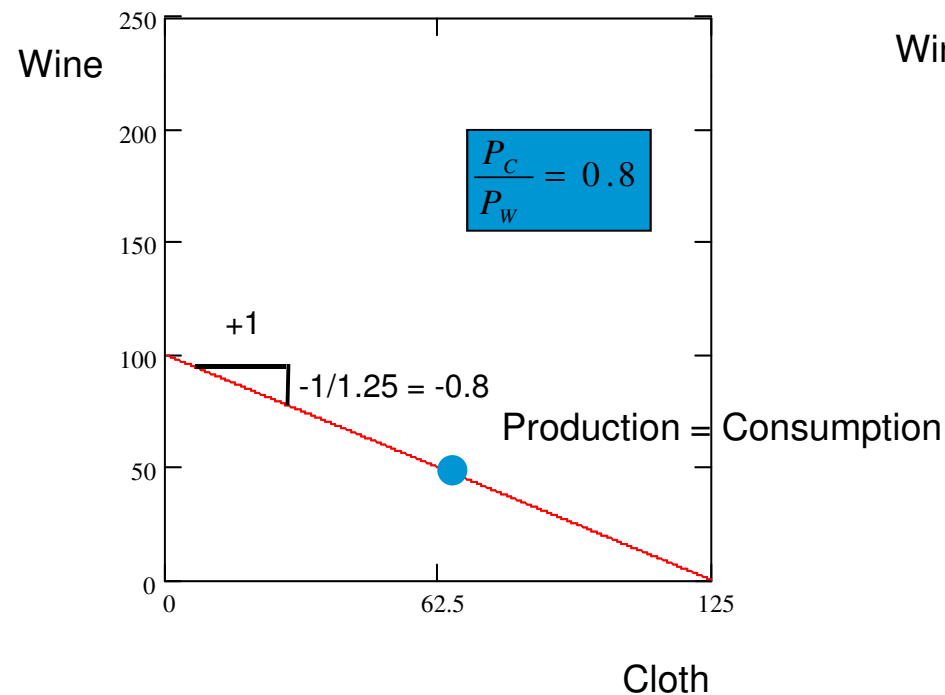
England	Wine	Cloth
Labour input per unit	1.25	1
Output	100	125

Portugal	Wine	Cloth
Labour input per unit	0.5	1
Output	250	125

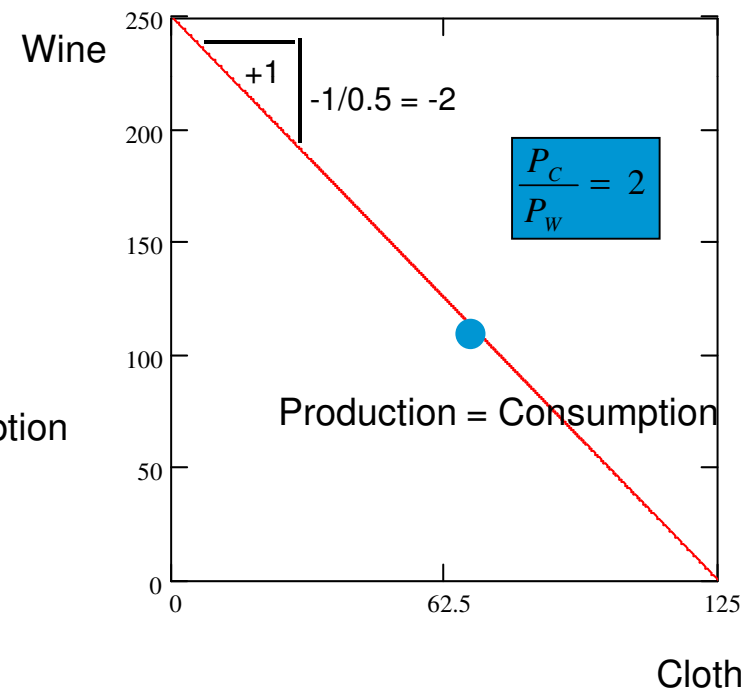


Relative prices without trade

	Wine	Cloth
England	1.25	1

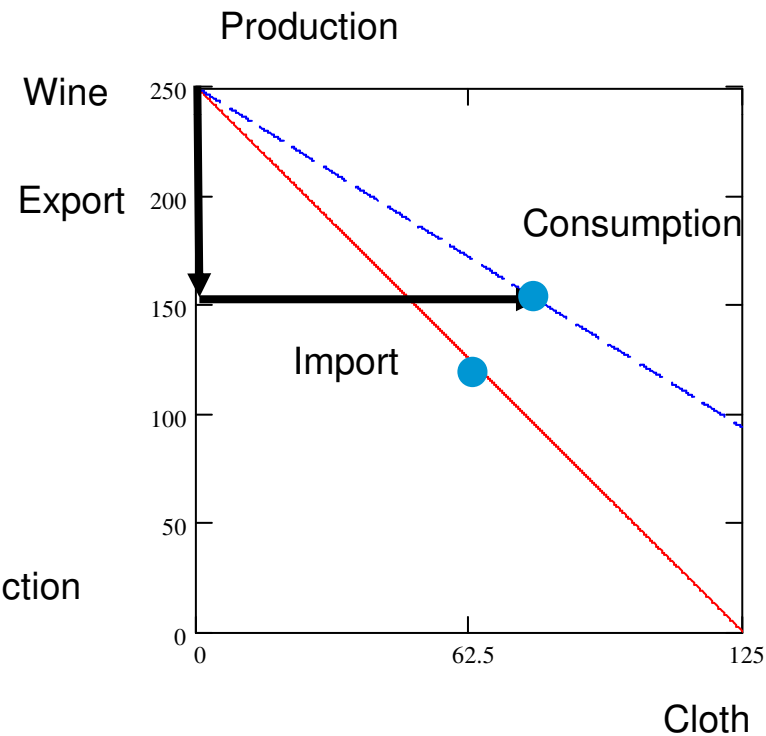
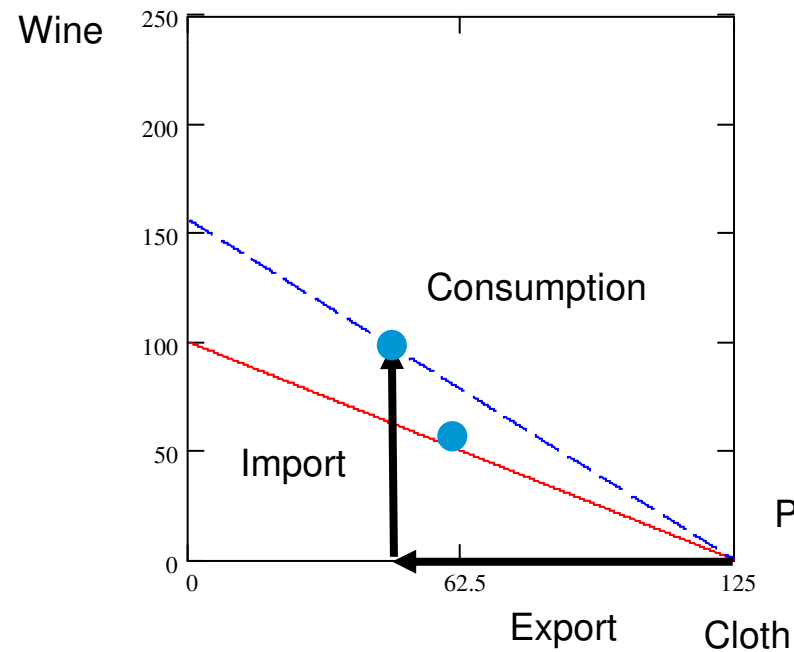


	Wine	Cloth
Portugal	0.5	1



International trade

$$0.8 = \left(\frac{P_C}{P_W} \right)^{England} < \left(\frac{P_C}{P_W} \right)^{World} = 1 < \left(\frac{P_C}{P_W} \right)^{Portugal} = 2$$



Comparative advantage: Consequences of international trade 1

- Specialisation in production: sector with comparative advantage is increased
- Trade pattern: commodity with comparative advantage is exported
- Welfare gain: consumption above production possibilities

Comparative advantage: Consequences of international trade 2

- Distribution of gains: might be uneven within a country
 factors in export sector gain
 factors in “import sector” loose

Upgrading

might be uneven between countries
 small countries gain more
 unequal factor remuneration
 between countries may persist

Comparative advantage: Consequences of international trade 3

- Adjustment requirements: workers have to switch sector
rigid wages –
unemployment –
lower gains
- Trade in components and trade in services
- Adjustment of factor remuneration versus
adjustment of (un)employment rates

Simple empirical tests-1: Seminal study by Stern (1962)

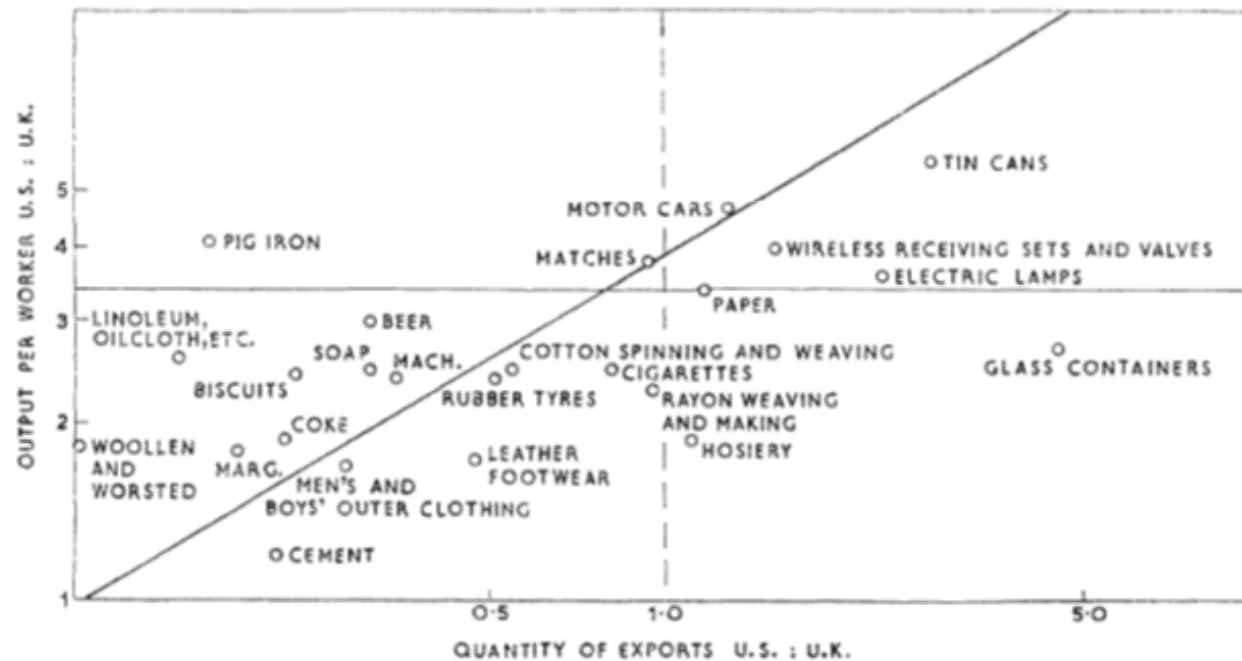
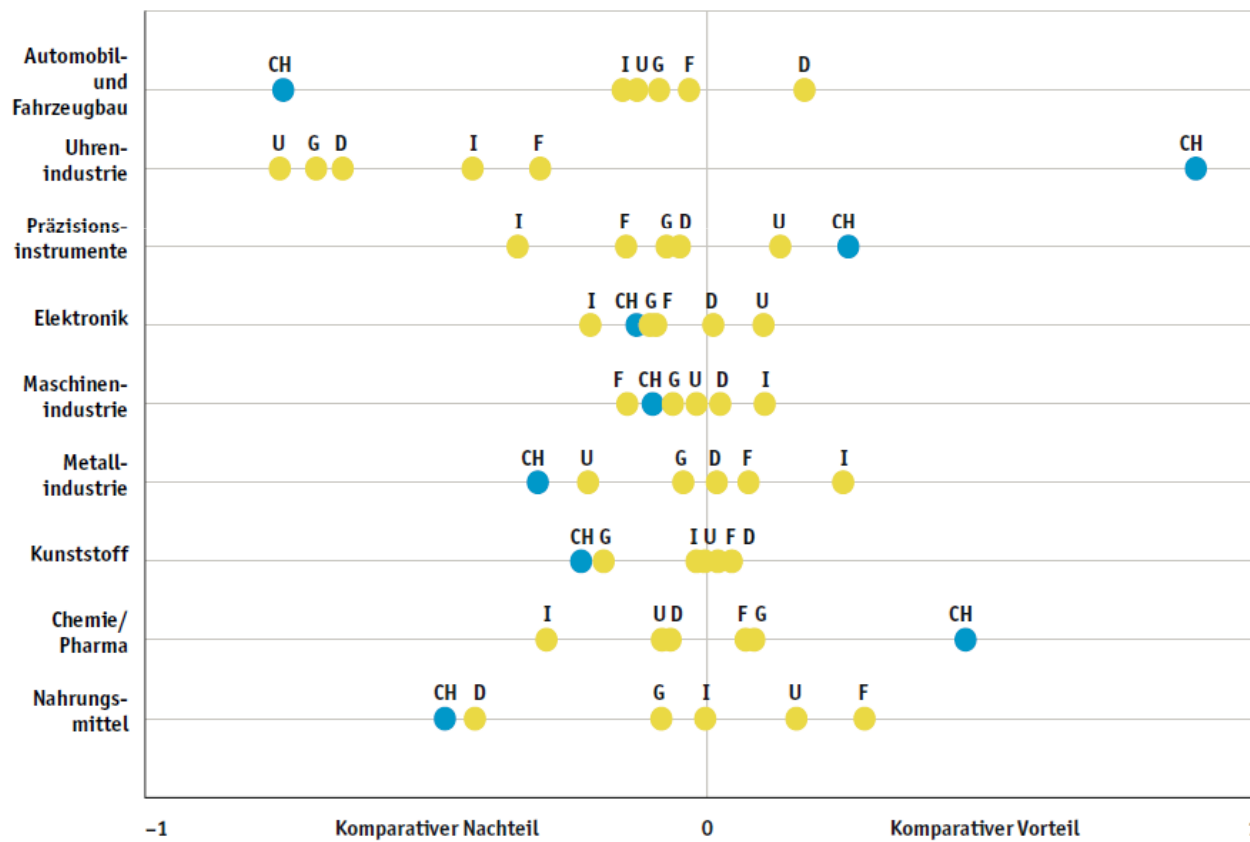


FIG. 1. Scatter diagram of American and British ratios of output per worker and quantity of exports, 1950.

Simple empirical tests-2: Revealed comparative advantage

Offenbarte komparative Vorteile nach Branchen im internationalen Vergleich (RCA*)



Brändle, Vautier:
Schweizer
Exportwirtschaft
langfristig gut
positioniert. Die
Volkswirtschaft,
2009)

New Trade Theory: Krugman (basic idea)

- Intraindustry Trade between similar countries
- International trade lowers prices because

Bigger markets – higher output
– lower per unit cost

Fixed costs – eg R&D

Monopolistic pricing

Simple empirics: Grubel Lloyd index of intra-industry trade

$$(\text{index of intra-industry trade}) = \frac{\text{Minimum of imports and exports}}{\frac{1}{2}(\text{Imports} + \text{exports})}$$

Product	Value of Imports (\$ millions)	Value of Export (\$ millions)	Index of Intra- Industry Trade (%)
Golf clubs	\$284	\$226	89%
Vaccines	2,027	2,763	85
Whiskey	1,166	752	78
Mattresses	133	48	53
Golf carts	29	86	50
Small cars	40,527	11,778	45
Natural gas	12,391	2,790	37
Sunglasses	848	184	36
Frozen orange juice	3	17	33
Apples	139	752	31
Large-passenger aircraft	4,955	31,322	27
Telephones	761	71	17
Men's shorts	542	9	3

US 2009;
Source:
Feenstra,
Taylor, 2011

Simple empirics: gravity equation

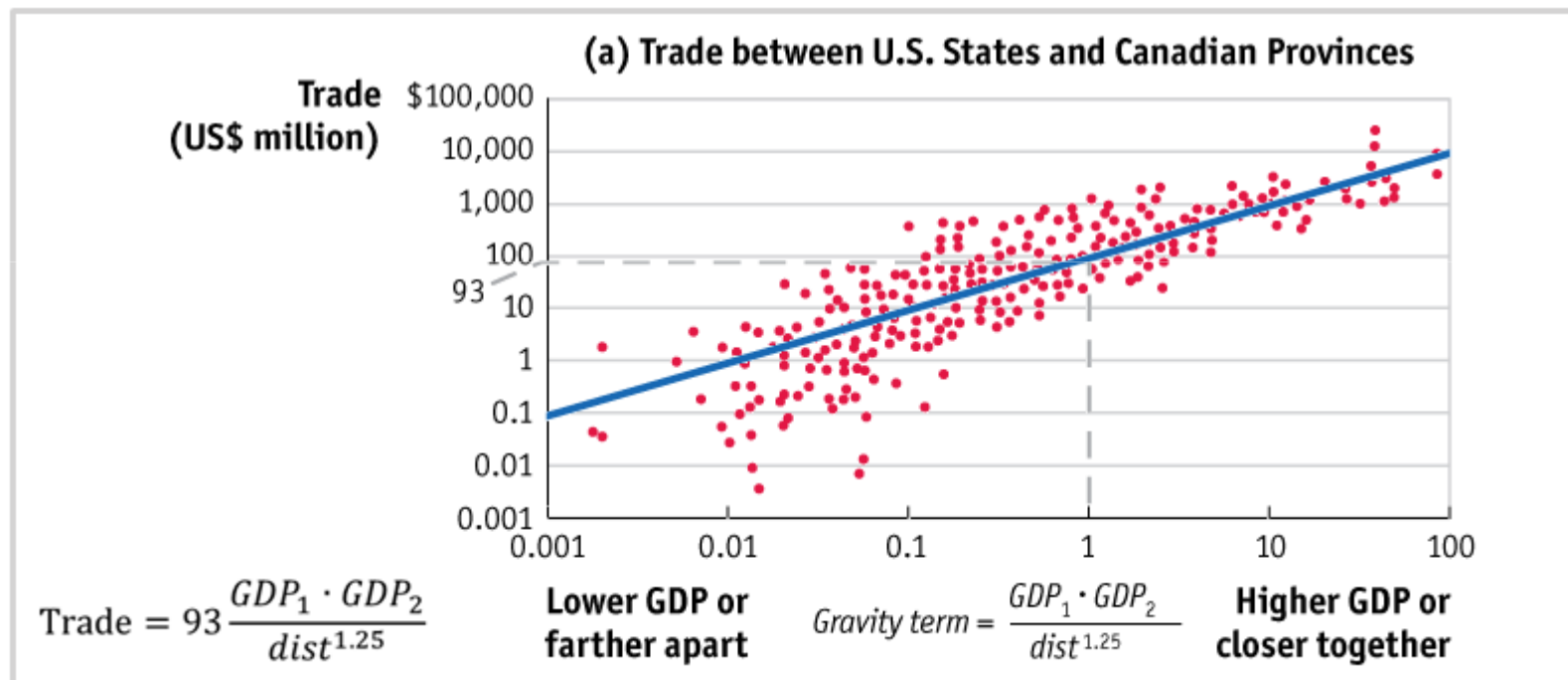
- Newton's law of gravitation:

$$F = G \frac{m_1 m_2}{dist^2}$$

- Trade analog:

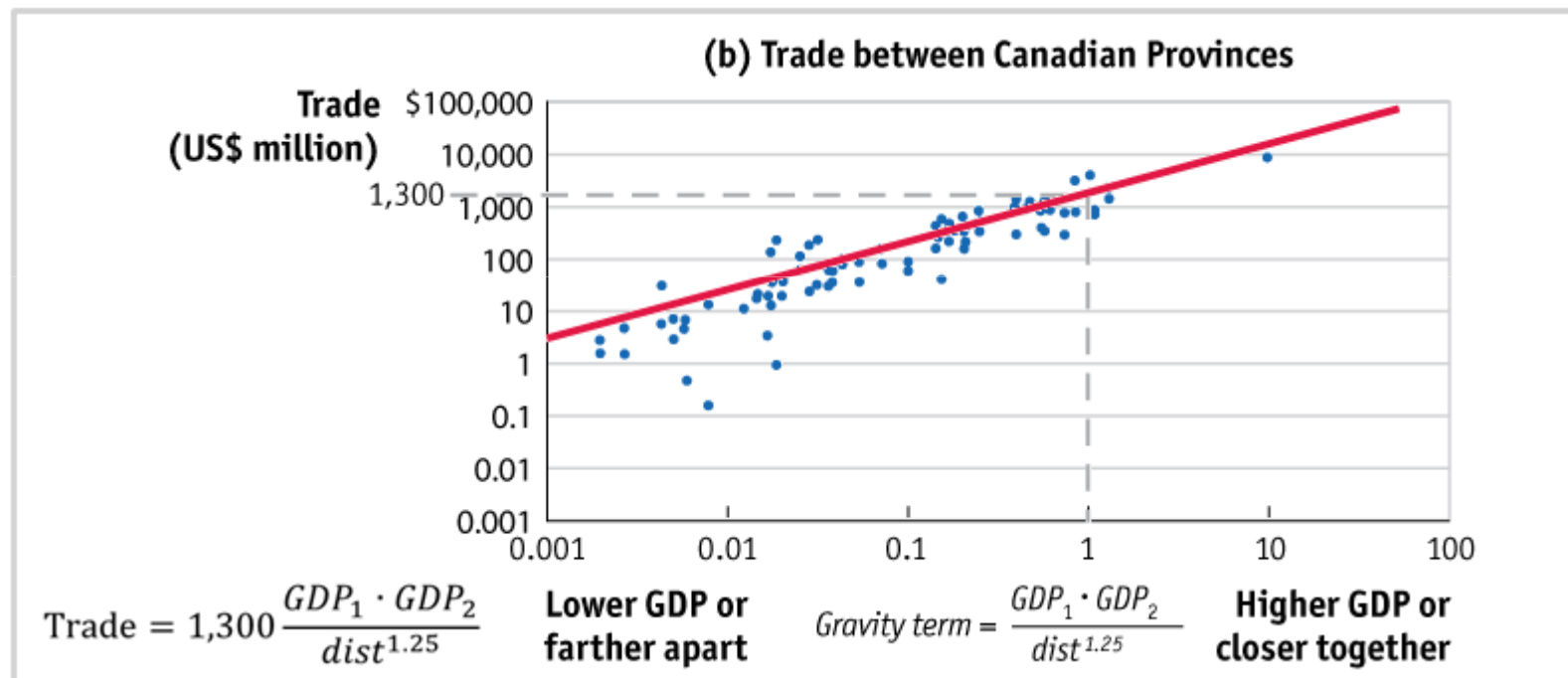
$$T_{ij} = c \frac{GDP_i \cdot GDP_j}{dist_{ij}^\gamma}$$

Simple empirics: gravity equation



Source: Feenstra, Taylor, 2011

Simple empirics: gravity equation



Source: Feenstra, Taylor, 2011

Melitz – Basic idea: Heterogenous firms

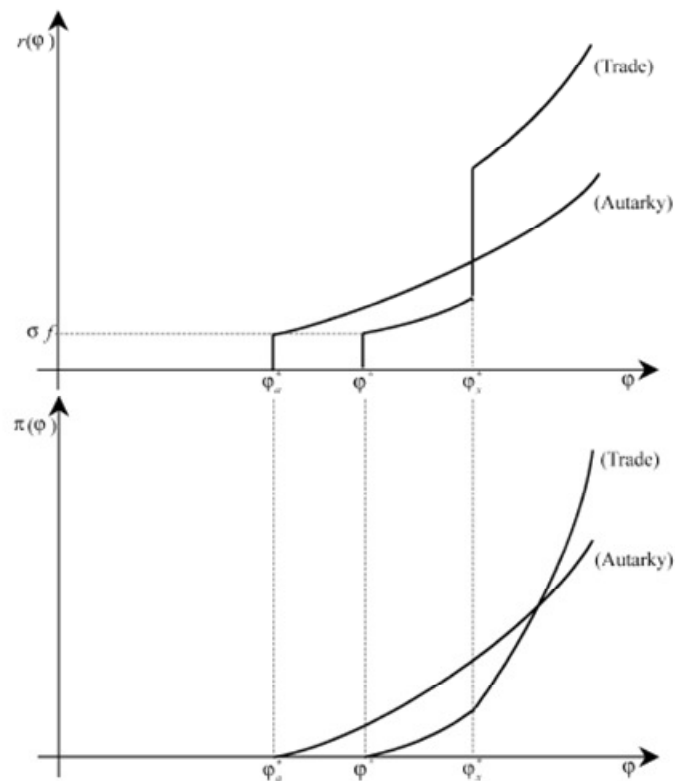


FIGURE 2.—The reallocation of market shares and profits.

- Firm productivity φ is distributed;
- Fixed entry cost $f \Rightarrow$ firms enter only if $\varphi \geq \varphi_a^*$ (zero cutoff productivity)
- Revenue and profits are increasing in firm productivity φ
- With trade: additional fixed cost to enter export market $f_x \Rightarrow$ firms enter export market only if $\varphi \geq \varphi_x^*$
- Zero cutoff profit increases $\varphi_a^* < \varphi_x^*$ (selection effect of trade)

Melitz – Consequences of international trade

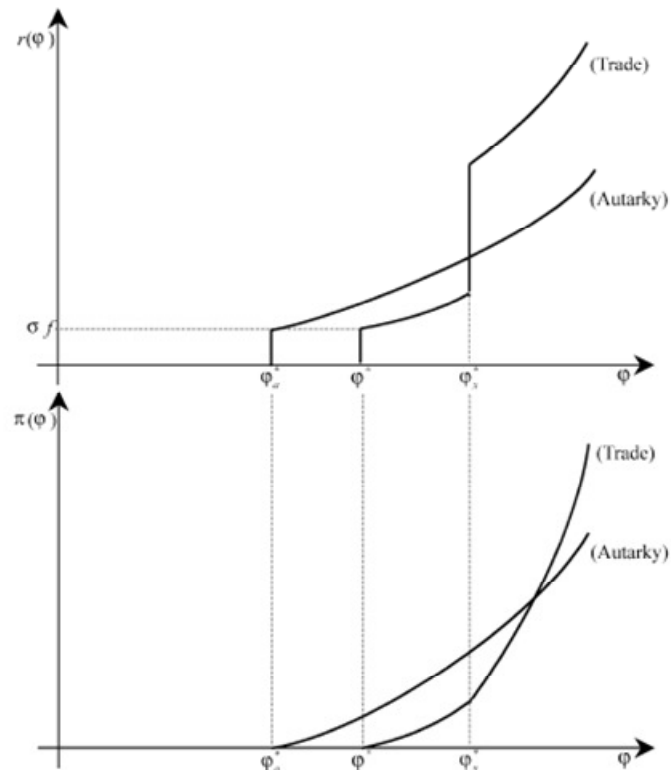


FIGURE 2.—The reallocation of market shares and profits.

- average firm productivity increases
- only firms with high productivity export (2nd firm selection effect)
- firms active only on domestic market lose revenue and market shares
- firms active on both markets gain revenue and market shares

Dynamic effects of international trade 1

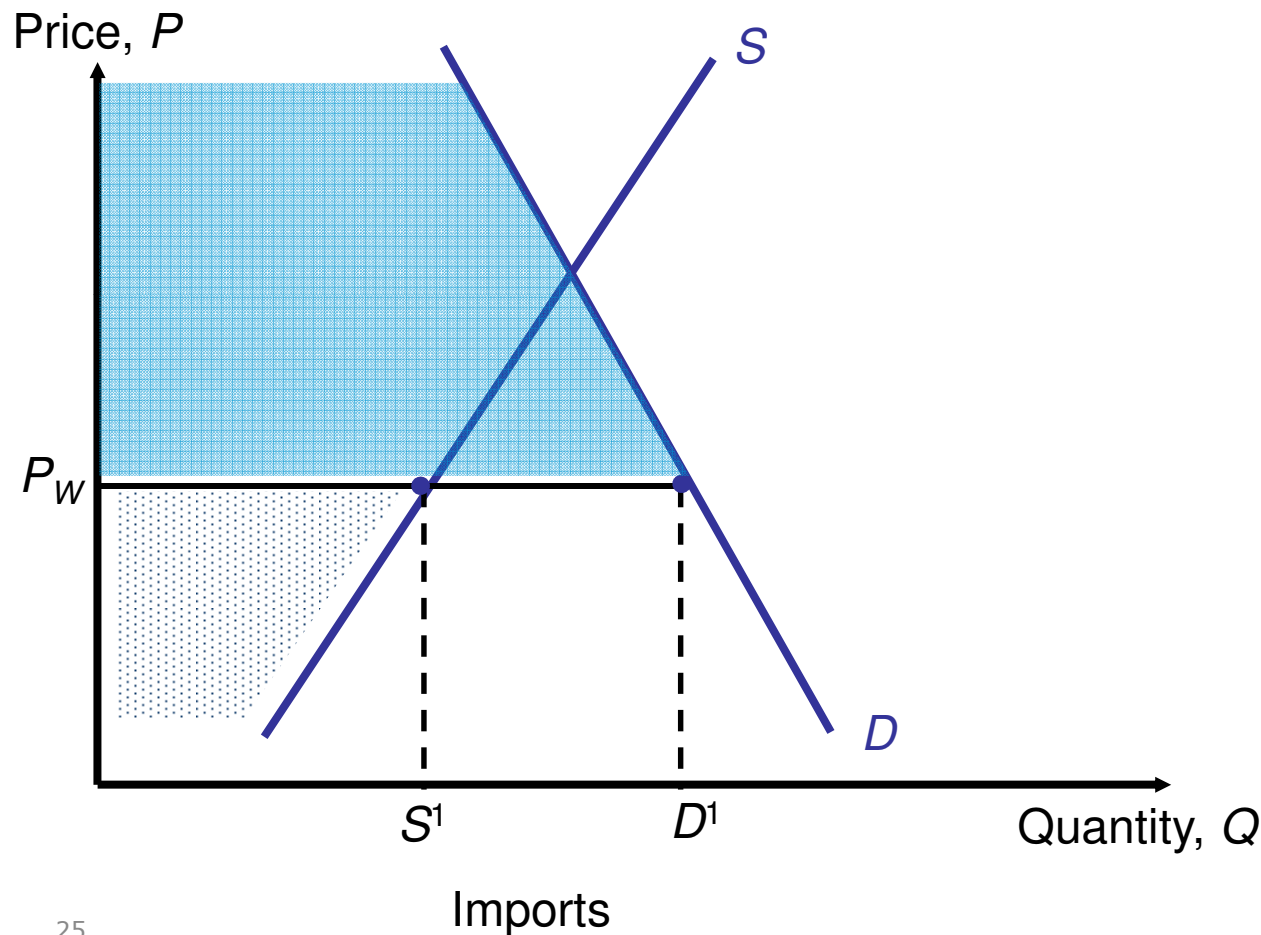
Growth effects – learning and human capital accumulation

ambiguous arguments

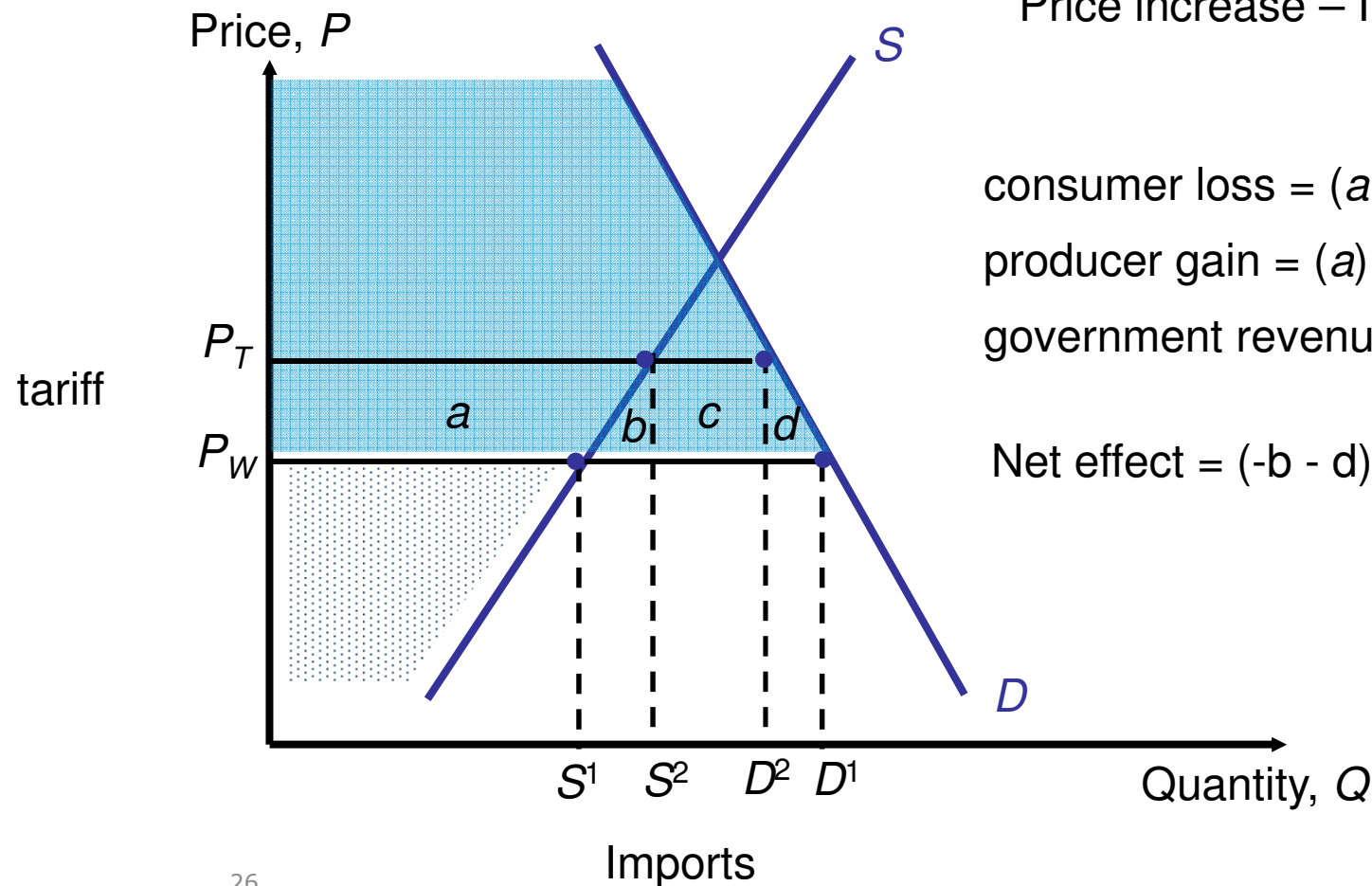
Dynamic effects of international trade 2

Trade fosters economic growth	Trade hinders economic growth
Trade offers additional learning possibilities	Trade hinders learning at home
Export, import and FDI offer access to foreign technology	Trade may lead to a specialisation in „wrong“ sector
Melitz: selection of more productive firms	Trade may prevent a sheltered learning period „Late comer“ „infant industries“

Costs and Benefits of a Tariff: Importing country Situation without tariff



Costs and Benefits of a Tariff: Importing country Situation with tariff



Price increase – Imports decline

consumer loss = $(a + b + c + d)$

producer gain = (a)

government revenue gain = (c)

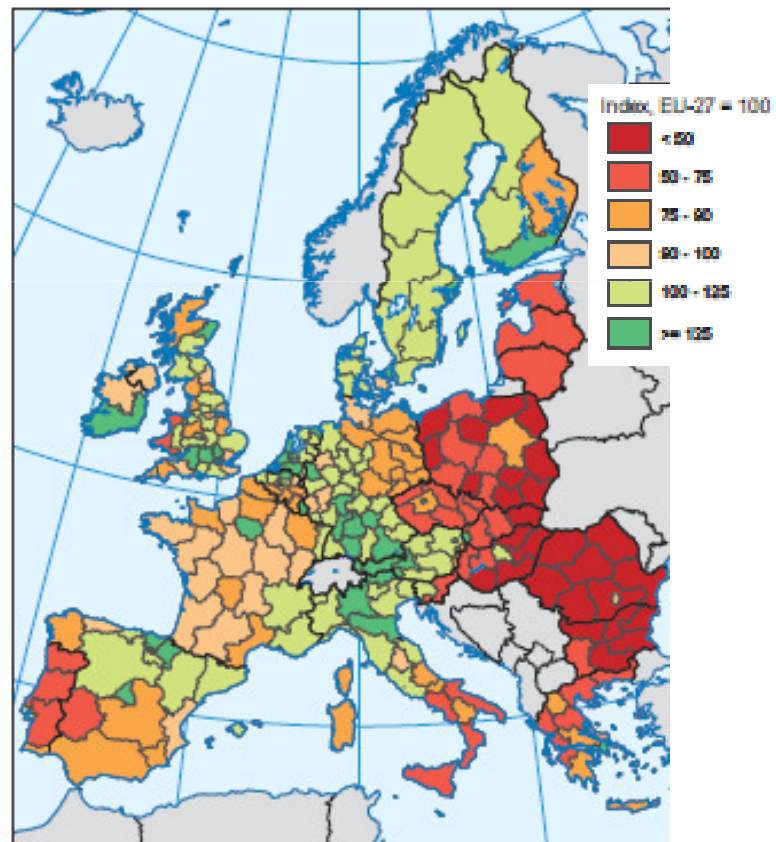
Net effect = $(-b - d)$

New Economic Geography NEG – Central question

How does the spatial distribution of economic activity look like in the long-run?

- Equally distributed among regions
- Agglomerated in one region
- Unevenly distributed over regions

GDP per head, PPP, 2007



Spatial distribution of economic activity: Explanation patterns

- Solow growth model
- Heckscher-Ohlin model of international trade
- New Economic Geography model

Explanation patterns: Solow growth model in a multi-country setting

Factor endowments: labour, capital, technical knowledge – growing

Connection between regions: not much,
sometimes technological spill-overs
No commodity trade and no factor mobility

Differences between regions: growth rate of population
and technical knowledge
“savings rate” for physical and human capital
distance to steady state

Consequence: countries grow at specific rates;
con-/divergence

Explanation patterns: Heckscher Ohlin model of international trade

Factor endowments: labour, capital – given

Sectors: agriculture and manufacturing

Connection between regions: commodity trade,
but no factor mobility

Differences between regions: factor endowment

Consequence of deeper integration:
specialization in production
according to factor endowment

Explanation patterns: New Economic Geography

Factor endowments: labour, capital – given

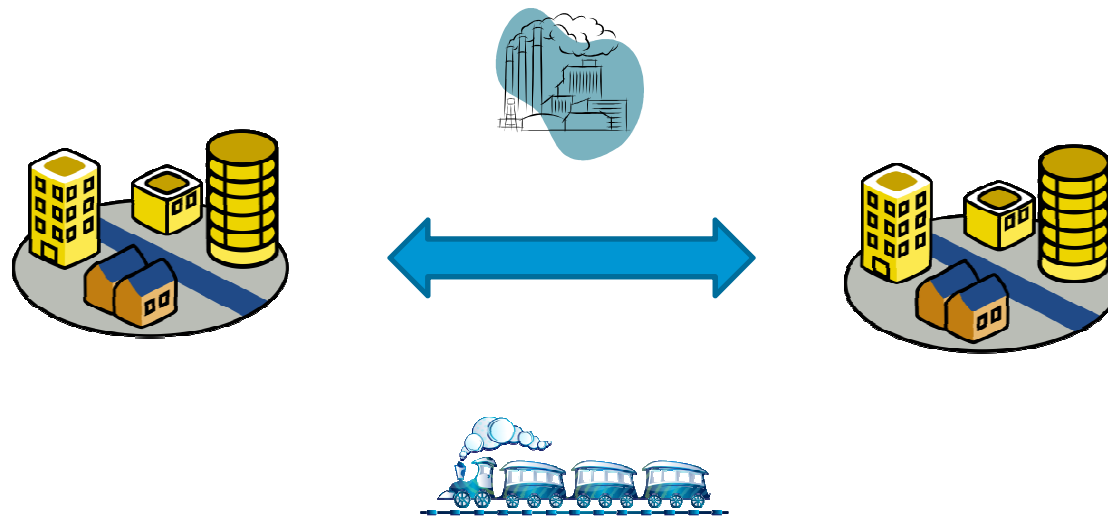
Sectors: agriculture and manufacturing

Connection between regions: commodity trade and
factor mobility

Differences between regions: no differences

Consequence of deeper integration:
Self-reinforcing agglomeration processes
(in most NEG models via factor mobility)

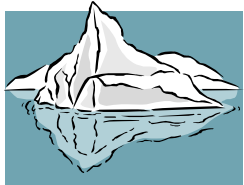
Explanation patterns: New Economic Geography



Krugman's cookbook: Main ingredients of the New Economic Geography

1. Dixit Stiglitz monopolistic competition with iso-elastic demand functions
Price setting: Constant mark-ups on (constant) marginal costs including transport cost
Profits are higher in the bigger market

2. Iceberg trade cost: Location of firm matters



Firms are selling to all markets, but profits are higher if local market is bigger

3. Factor mobility: according to profit rate differentials

Krugman's story: Self reinforcing agglomeration processes

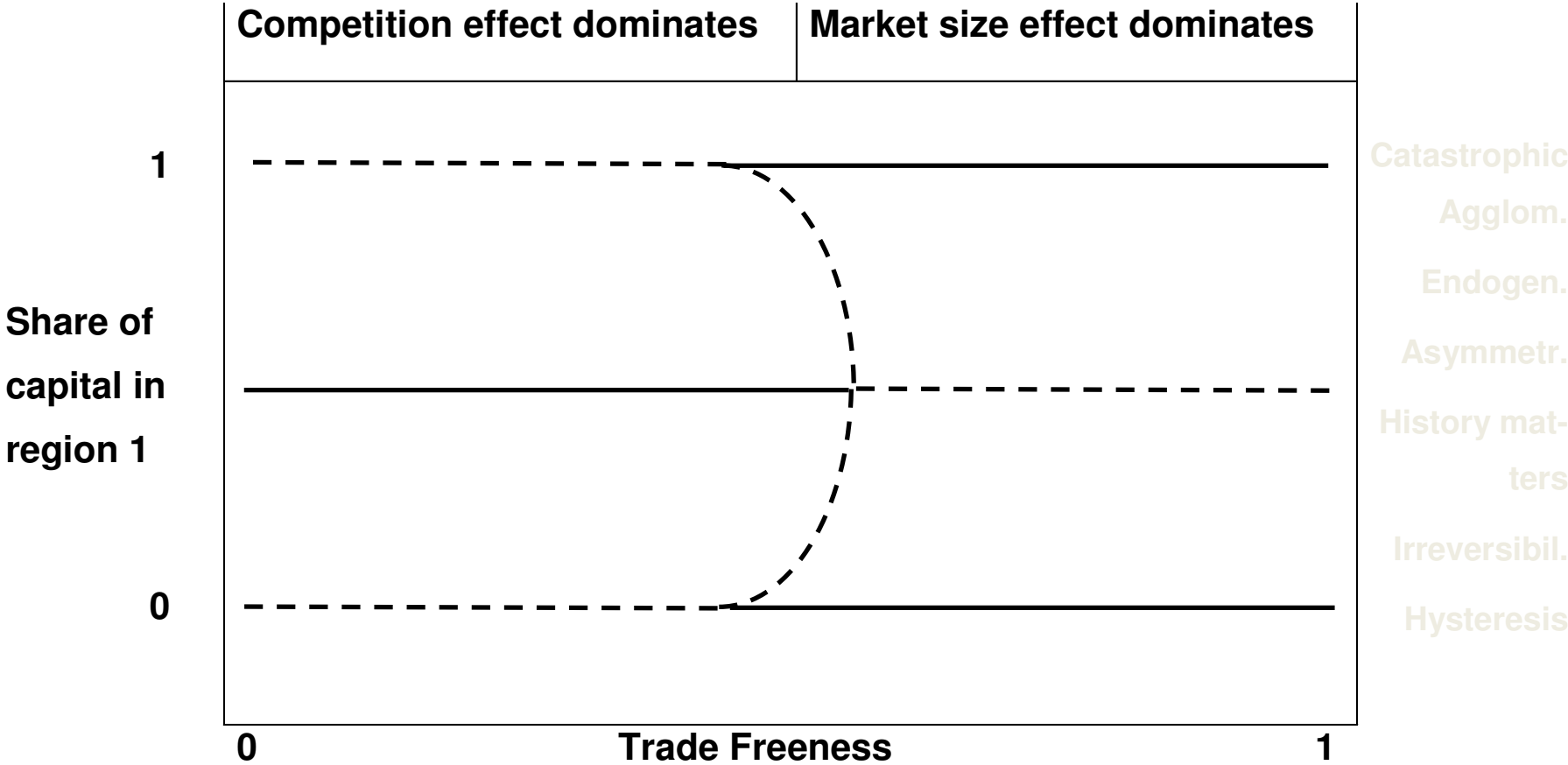
Footloose entrepreneur model: firm, capital and expenditure
Move simultaneously

Pivotal: Size of local market for a single firm
depends on overall market size in the region
number of firms in region

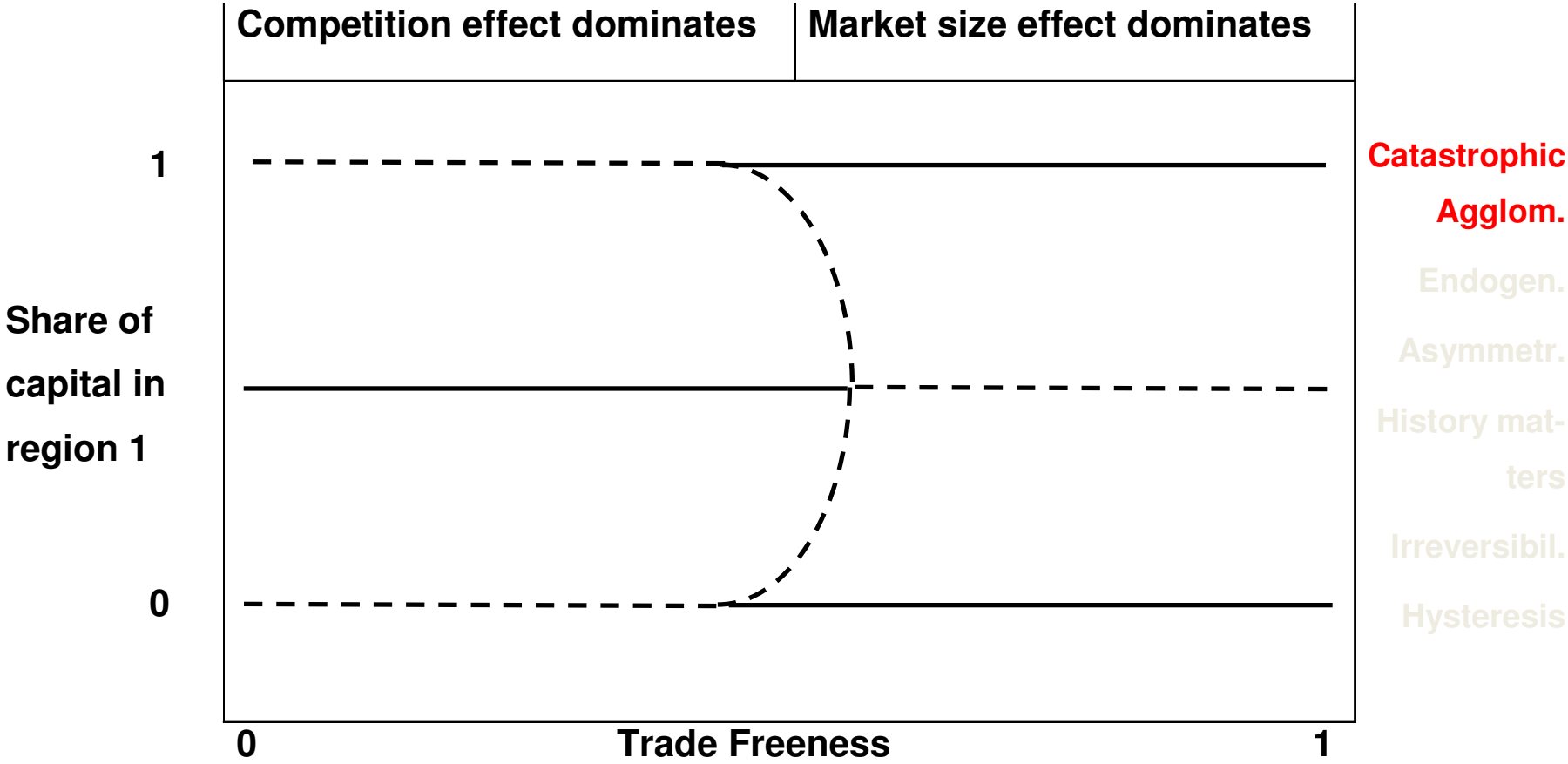
Interplay between

- Market size effect (positive feed-back – agglomeration)
- Competition effect (negative feed-back – dispersion)
- Price index effect (positive feed-back – agglomeration)

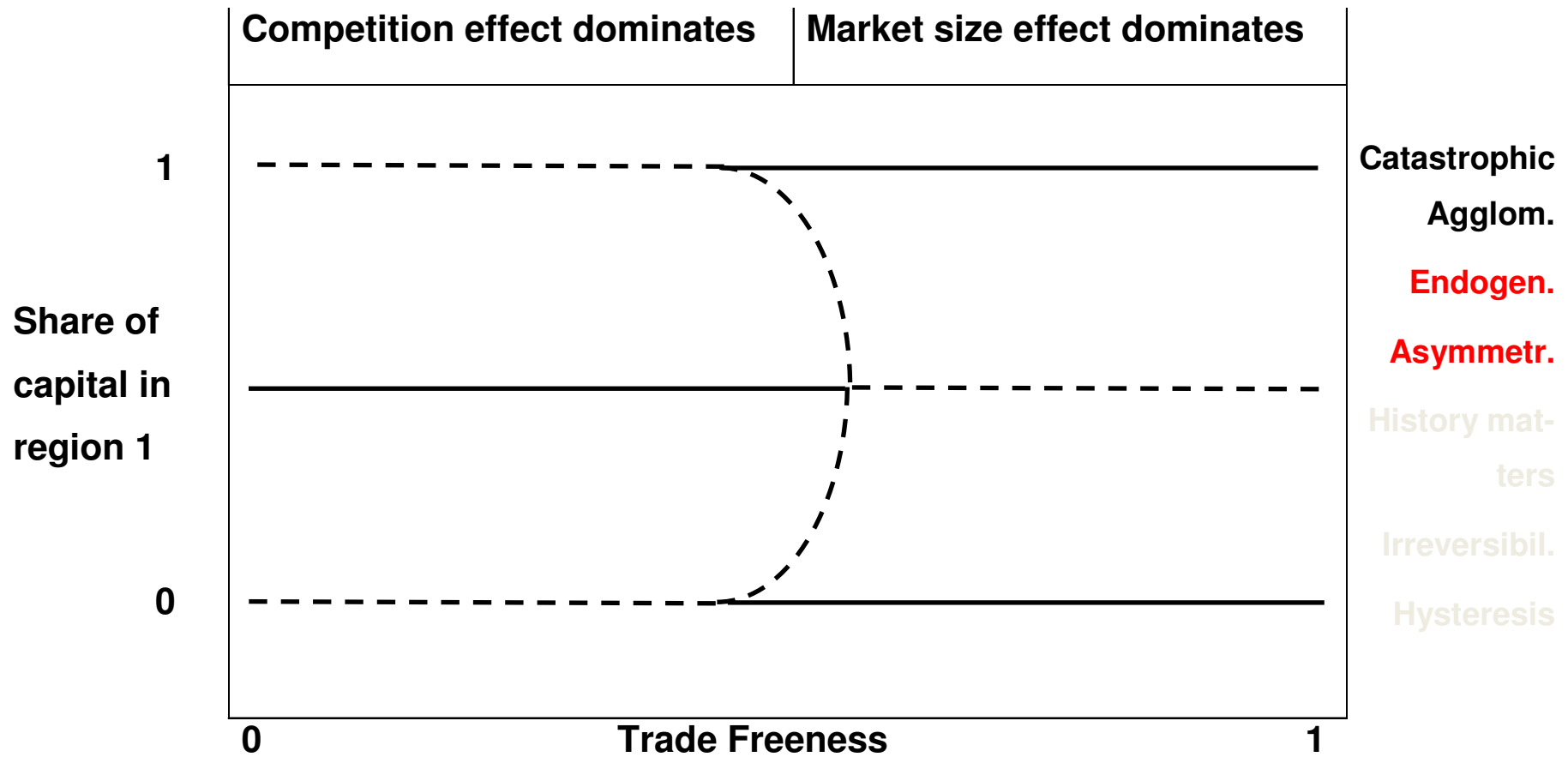
Krugman's picture: Tomahawk diagramme



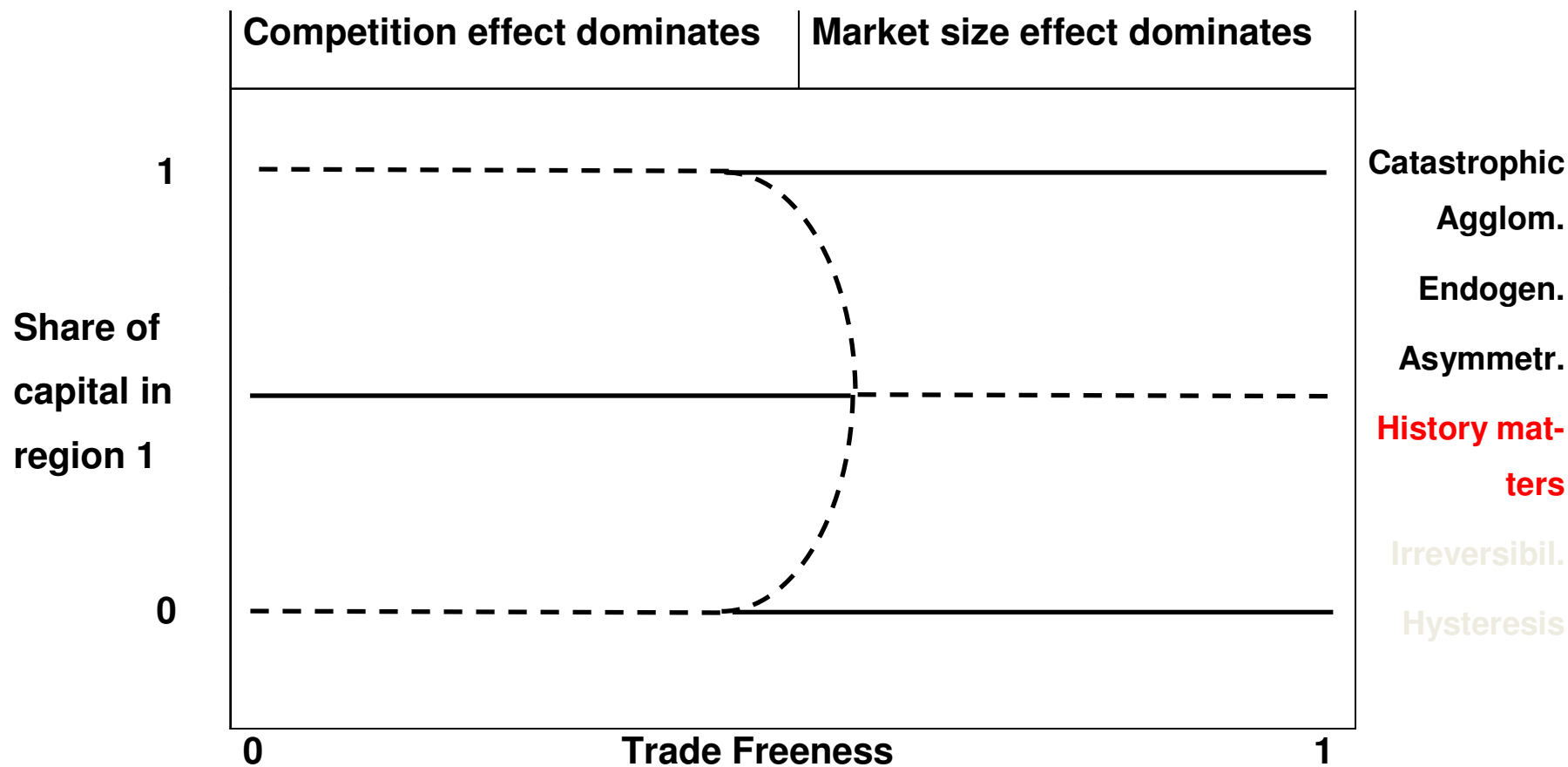
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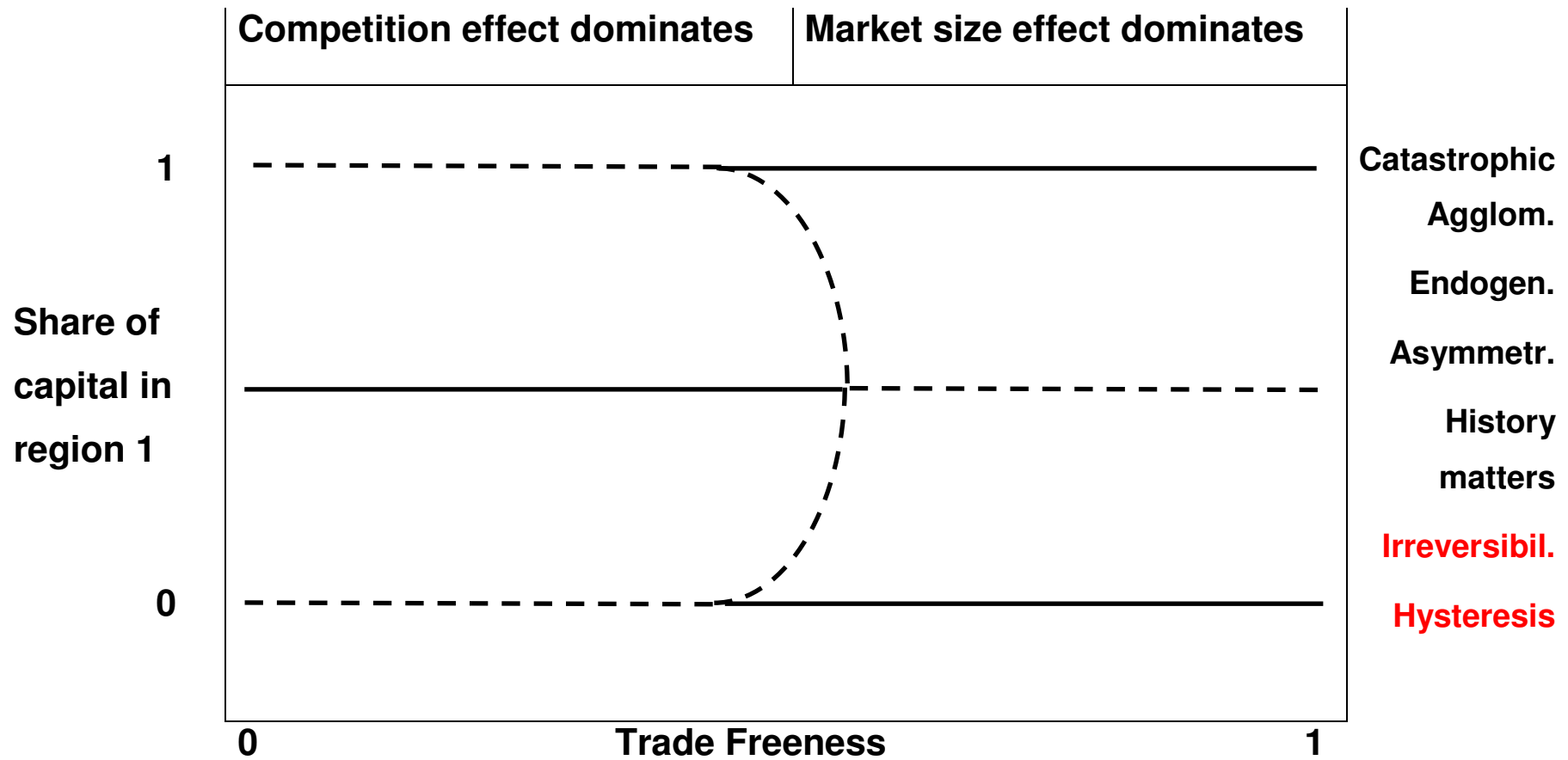
Krugman's picture: Tomahawk diagramme



Krugman's picture: Tomahawk diagramme



Krugman's picture: Tomahawk diagramme



Conclusions 1: explanation patterns for regional disparities

- regional Solow growth
- Heckscher Ohlin
- New economic geography

Conclusions 2: New Economic Geography

- NEG mechanism: Factor relocation –
market potential –
market crowding
not Marshallian externalities
- NEG implications:
sudden and irreversible agglomeration
circular causation
depending on small differences

Thank you for your attention!



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