Does What You Export Matter?

In Search of Empirical Guidance for Industrial Policies

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Preview

- Introduction
  - Conceptual issues (Marshallian externalities and the forgotten demand side)
- Part I: What Makes a Good Good?
  - Cursed goods
  - Rich country, high-productivity goods
- Part II: Beyond Goods
  - Heterogeneity in the production of goods
  - Export heterogeneity along quality dimension
  - Goods vs. Tasks

I. What Makes a Good, Good?

Why might standard price signals be deceptive in choosing goods?

- Marshallian externalities related to goods
  - local industry-level knowledge spillovers, input-output linkages, and labor pooling.
- Volatility externalities: Export diversification?
  - Copper 30% of Chile's exports
  - Nokia 20% of Finland's exports
  - Intel 20% of Costa Rica's exports
- Intervention warranted to shift to good with externalities against price signals.

Empirical Concerns for Policy Makers

1. How do we measure these externalities?
2. Doesn't the whole world see the same benefit and drive the price down? (GE)
   - More generally, must think of demand side as well
   - Should we look for safe rents like Natural Resources?
3. Are externalities intrinsic to good?
4. **What to make of the vast heterogeneity of experience around any good?**

In practice, measurement of MEs is difficult, so we take shortcuts

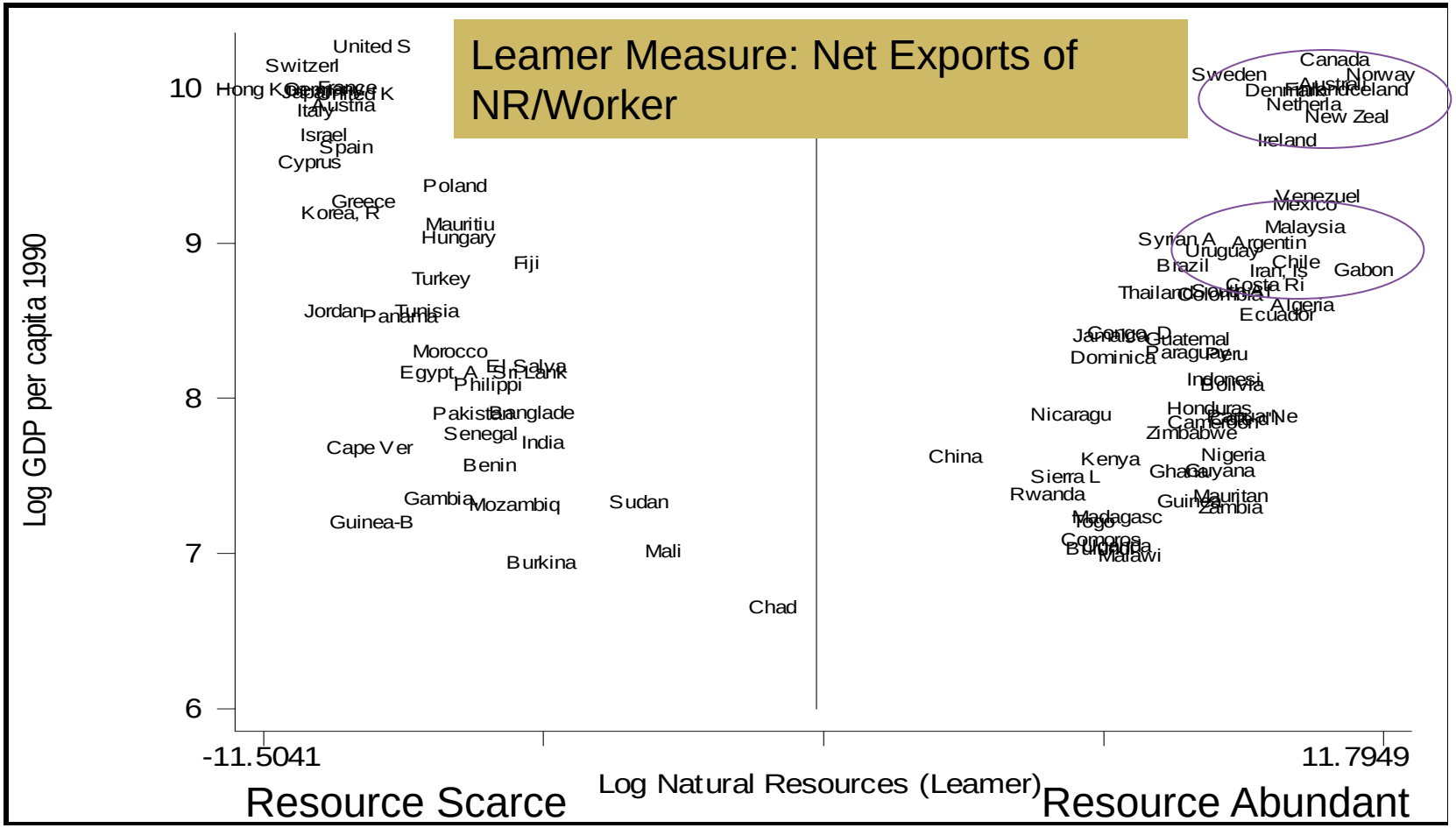
- Natural resources are cursed
  - Low productivity (Smith, Matsuyama, Sachs), few Externalities
- High productivity goods are good
  - Rich Country Goods (Rodrik, Hausmann)
  - High tech (Lall) high inter-industry MEs

Cursed goods: Natural Resources

Empirically, case for a resource curse is weak

- Minerals are good for growth: Davis (1995), Sala-i-Martin et al. (2004), Stijns (2005), Brunnschweiler (2008, 2009)
- Existing resource curse findings fragile: Lederman & Maloney (2007, 2008)

But, there is lots of heterogeneity of experience



Maloney 2007

High Productivity Goods

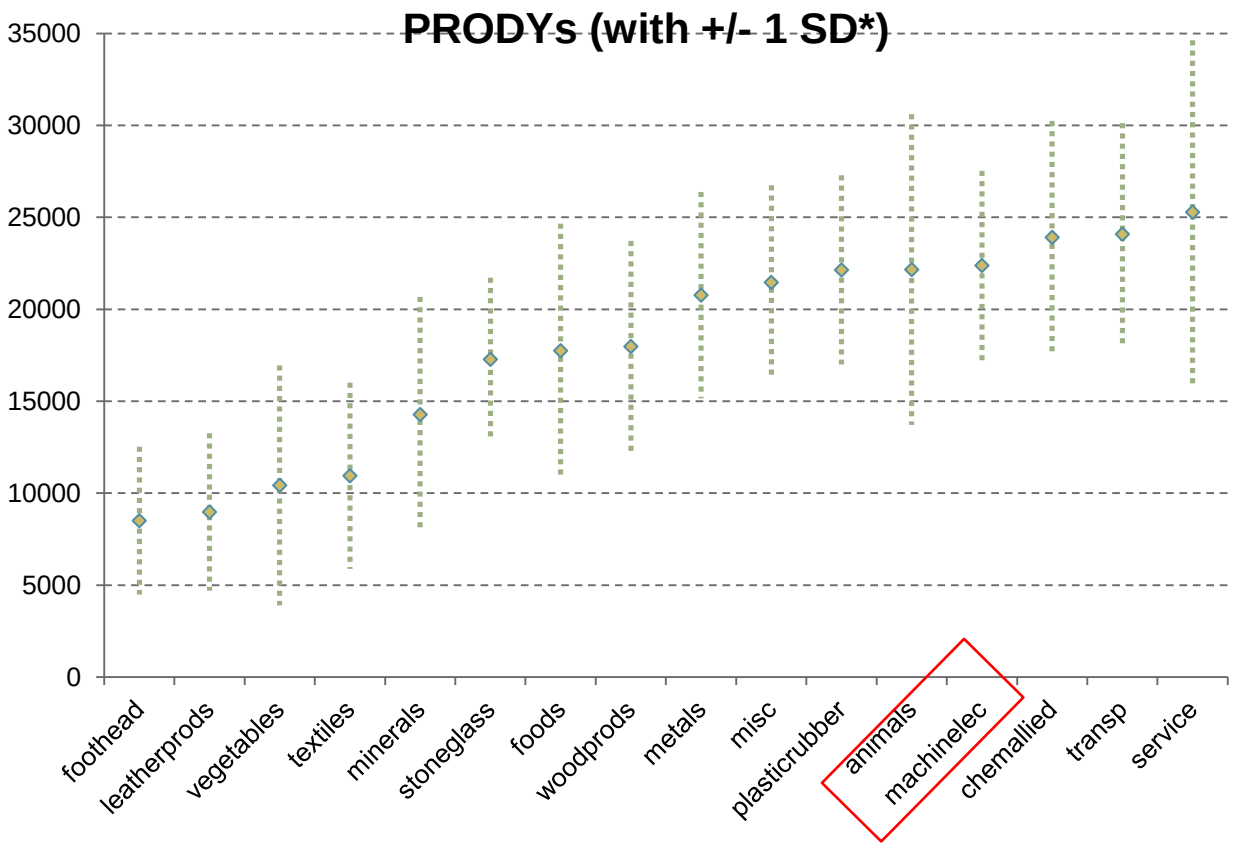
Does It Matter What We Export? Hausmann, Hwang, Rodrik (2007)

- Model- broadly inter-industry spillover
  - Country should produce the highest productivity good *within its CA*
- Empirics:
  - PRODY, EXPY
  - Similar to Lall (2000)
  - Find higher EXPY correlated with higher growth.

Caveats

- GE critique again?
- Rents- higher where rich countries already are?
  - Not generally the case- Nokia and TVs
- Empirical findings muddy
  - Animals, electrical machinery same PRODY
  - Lots of heterogeneity

Lots of heterogeneity in PRODYs



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  - Lots of heterogeneity
  - Finding of an impact on growth fragile

Empirically, some support for MODEL

Growth Regressions

	Base: HHR Regressions		Including the Export Herfindahl and the Investment Share		With Income Average Value		Including the Export Herfindahl and the Investment Share	
	IV	GMM	IV	GMM	IV	GMM	IV	GMM
Log (initial gdp)	-0.0382***	-0.0203**	-0.0414*	-0.0177	-0.0166*	-0.0177	-0.028	0.0215
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.04)	(0.02)	(0.03)
Log (expy)	**0.0925*** **	**0.0532** **	**0.107**	**-0.00687**	**0.102*** **	**0.0504** **	**0.124**	**0.00275**
	(0.02)	**(0.02)**	**(0.07)**	**(0.03)**	**(0.02)**	**(0.02)**	**(0.08)**	**(0.03)**
Category Log (expy)					**-0.0577*** **	**-0.00566**	**-0.0431**	**-0.119**
					(0.02)	**(0.10)**	**(0.03)**	**(0.08)**
Log (primary schooling)	0.00468*	0.00565	0.00271	0.0101	0.00394	0.00582	0.00207	0.00958
	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)
Log (Investment Share)			0.0111*	0.0360**			0.00935	0.0566***
			(0.01)	(0.02)			(0.01)	(0.02)
Root Herfindal Index			0.0551	-0.0381			0.0615	-0.0283
			(0.06)	(0.04)			(0.06)	(0.04)
Constant	-0.426***	-0.250*	-0.572	0.14	-0.186*	-0.199	-0.449	0.699
	(0.10)	(0.13)	(0.44)	(0.18)	(0.10)	(0.47)	(0.40)	(0.46)
Observations	285	285	285	285	285	285	285	285
Number of wbgroup		75		75		75		75

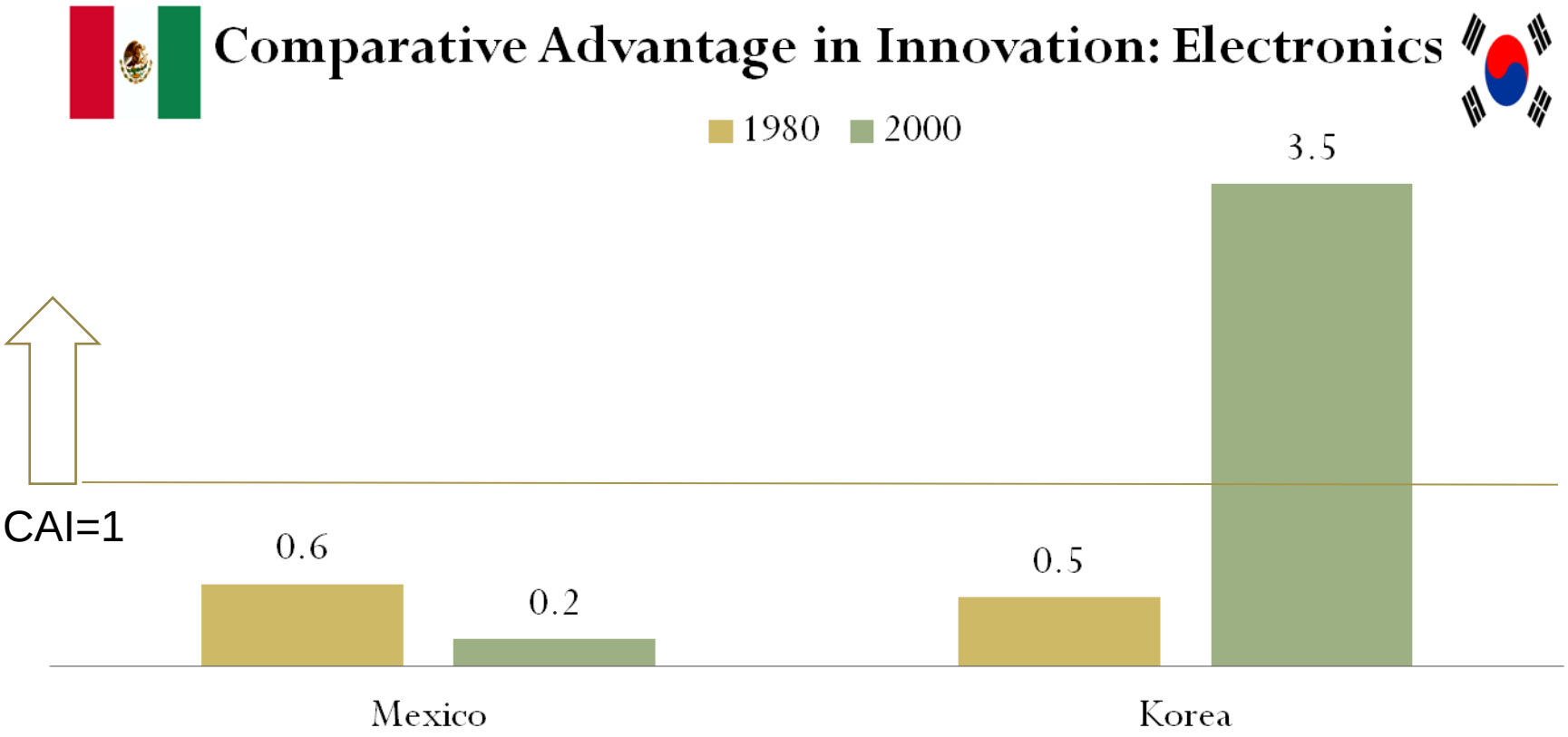
Regressions include decade dummies

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

II. Beyond Goods:
Is it what we produce, or how?

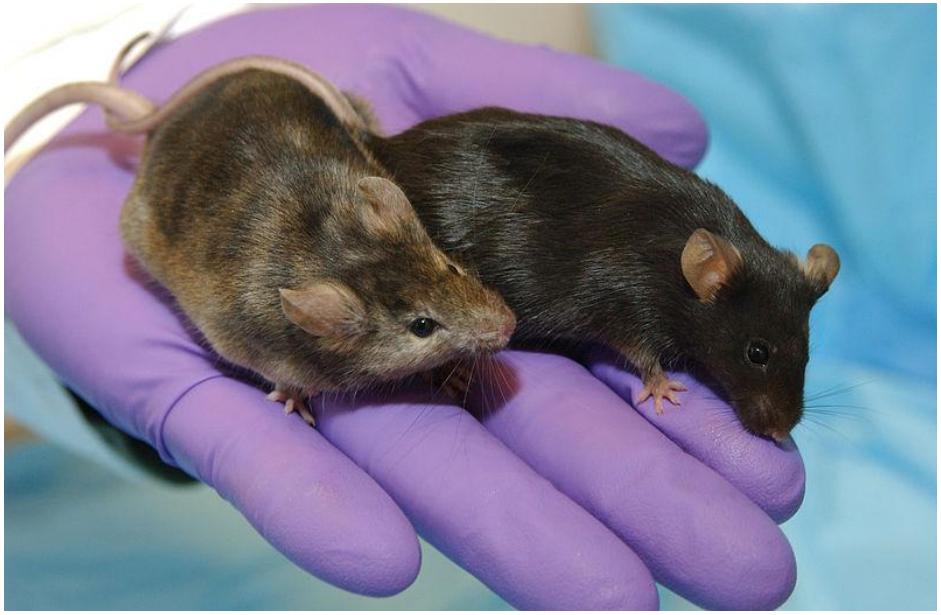
Heterogeneity in the production of goods

Is High Tech Necessarily High Tech?



Fuente: Lederman and Maloney (2012)

Hot High Tech Products on Route 128

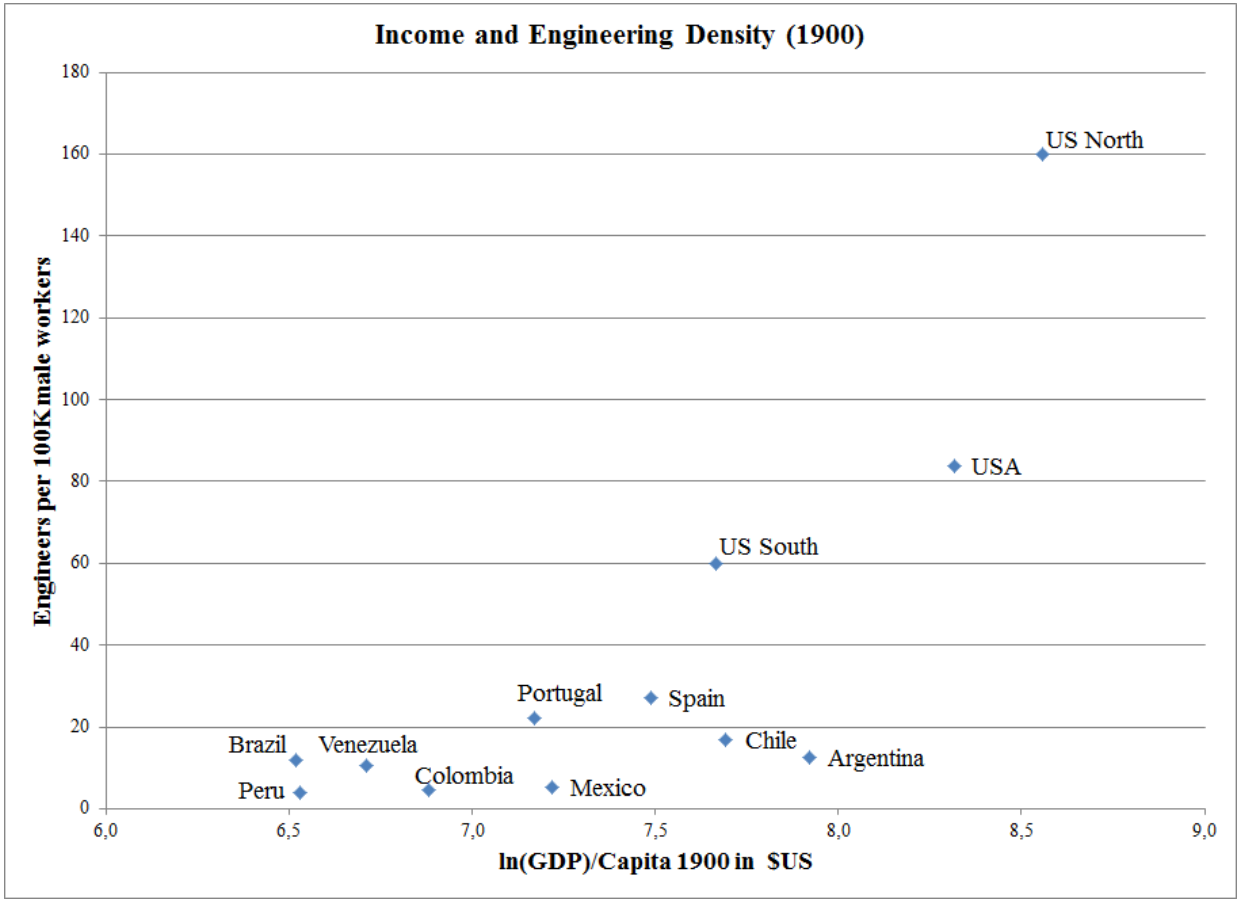


- OncoMouse-Harvard spliced in a cancer causing gene.
- First Animal ever patented by USPTO
- Product of the Year *Fortune Magazine* along with erasable optical disk
- General category of Knock Out mice got 2007 Nobel Prize in Medicine

Hot High Tech products on RT 128

- *Frankenfish*
- Splice in growth gene from Ocean Pout (eel)
- Salmon grows twice as fast as normal
- AquaBounty Maynard, MA

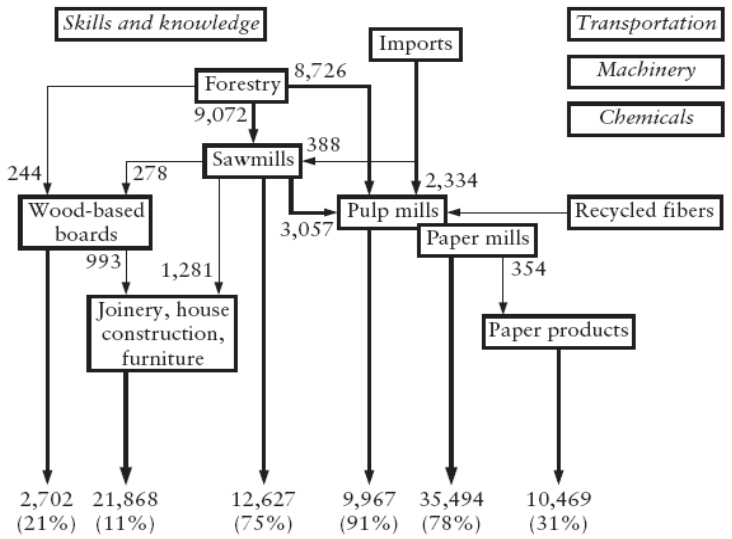
Is it the good, or Innovative Capacity? Copper Redux



Source: Maloney and Valencia 2013

Not the trees: Swedish monkeys are just better

Figure 8.1 The Swedish Forest Industry Cluster



Source: Authors' calculations.
Note: Resource flows in million SEK. Figures in parentheses denote export shares.

Blomstrom and Kokko 2005

Table 8.4 Participants in the Knowledge and Skill Cluster in the Paper and Pulp Industry (1990)

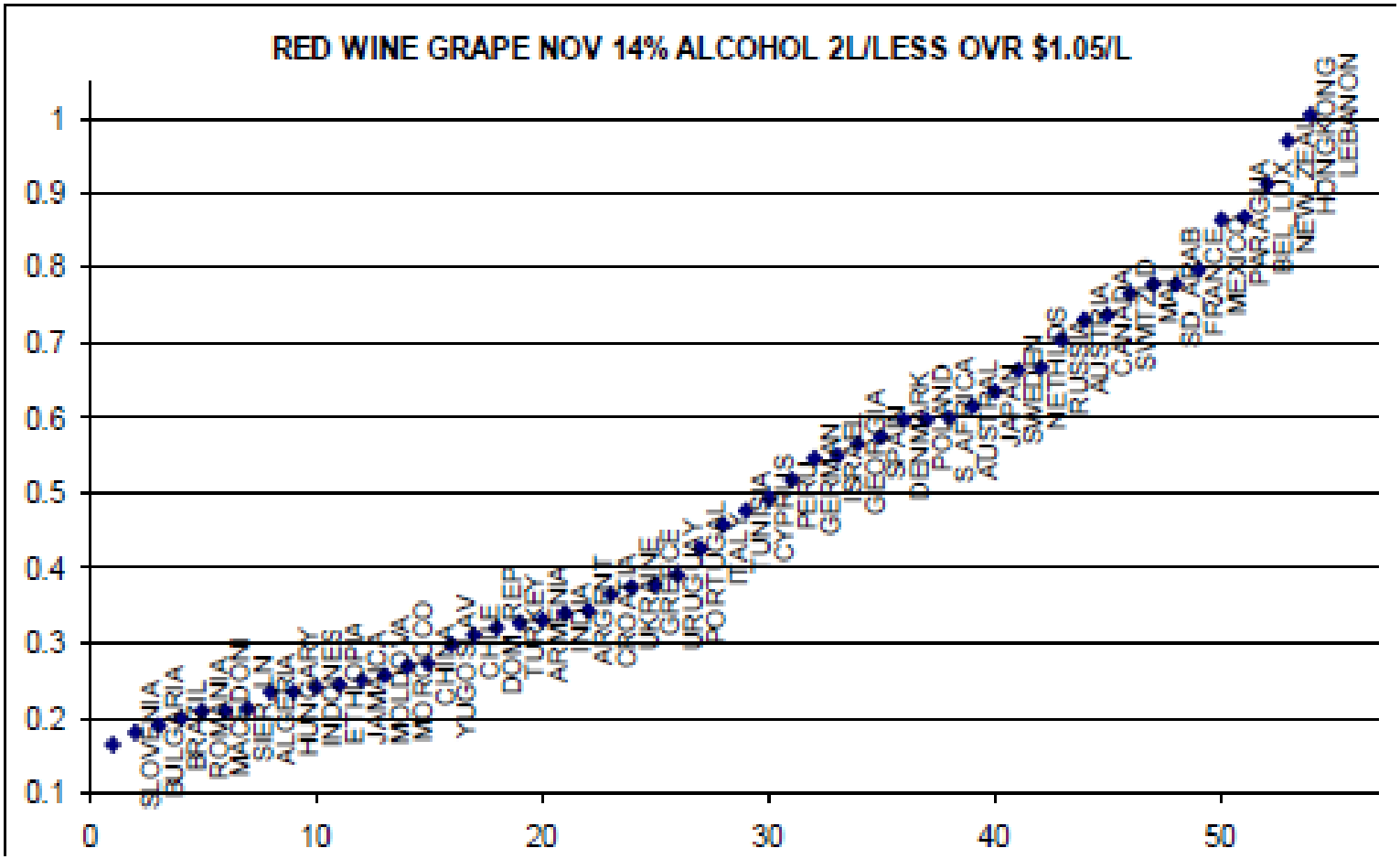
	Generation	*Dissemination*
Skills (Education)	Royal Technical University Chalmers Technical University University of Karlstad Swedish Pulp and Paper Research Institute	Swedish Pulp and Paper Research Institute
Knowledge (Research)	Royal Technical University Chalmers Technical University University of Karlstad Swedish Pulp and Paper Research Institute Institute of Surface Chemistry Graphical Research Laboratory Swedish Packaging Research Institute Swedish Newspaper Mills' Research Laboratory	Swedish Pulp and Paper Research Institute Institute of Surface Chemistry Graphical Research Laboratory Swedish Packaging Research Institute Swedish Newspaper Mills' Research Laboratory

Sources: Ds 1991:62, Statistical Yearbook of Forestry 1993, Handbook of the Northern Wood Industries 1991/92.

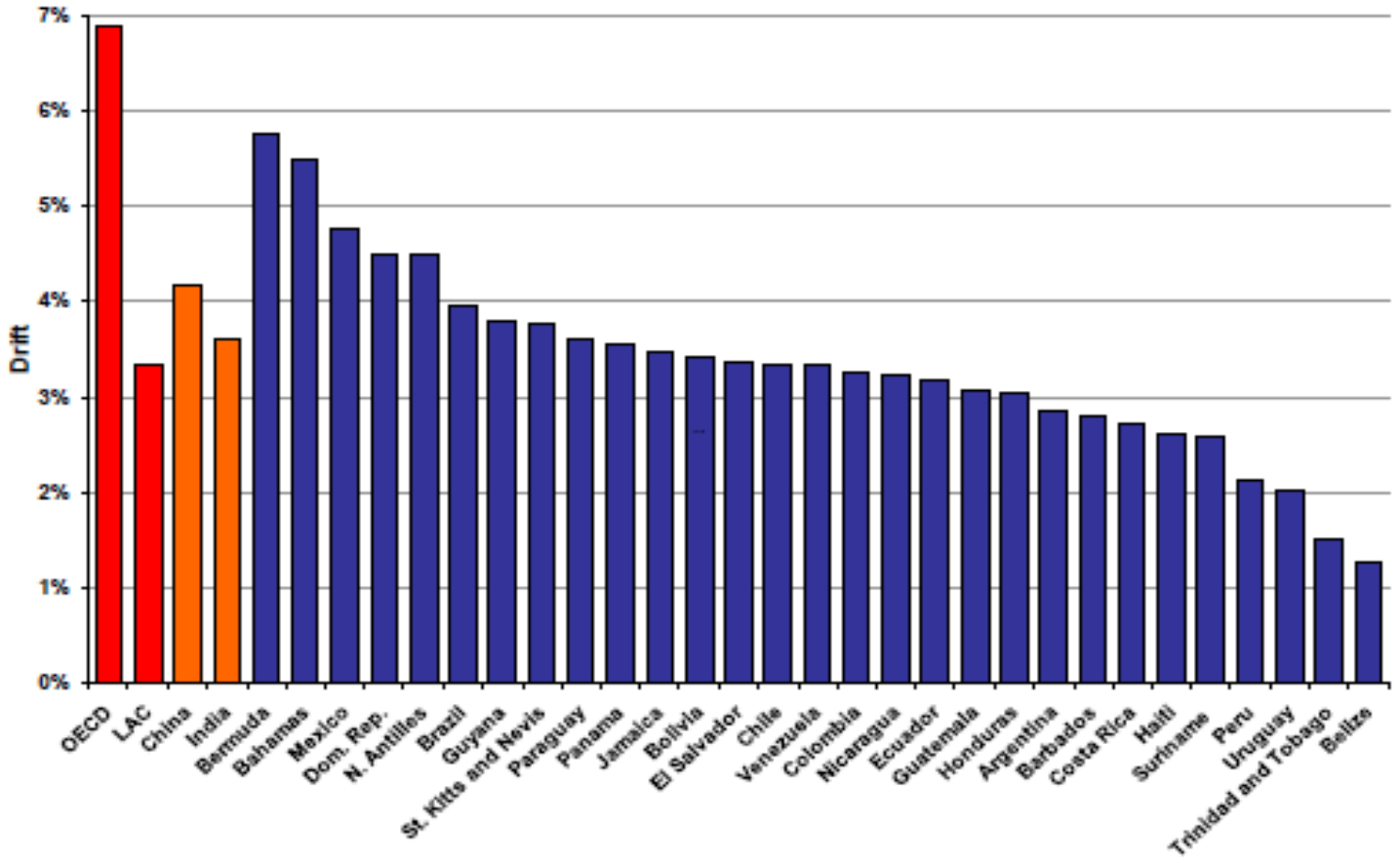
Export heterogeneity along the quality dimension

Quality ladder by product and countries

(relative unit values, standardized)



Export Quality Growth



Krishna and Maloney 2011

Driven by Both What and How

Figure 6.2a Quality Growth by Region 1990-2001

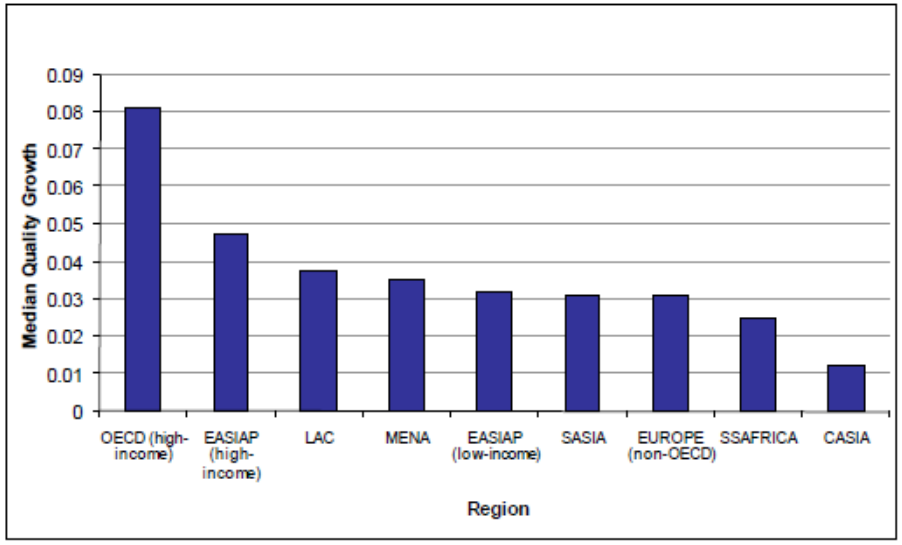
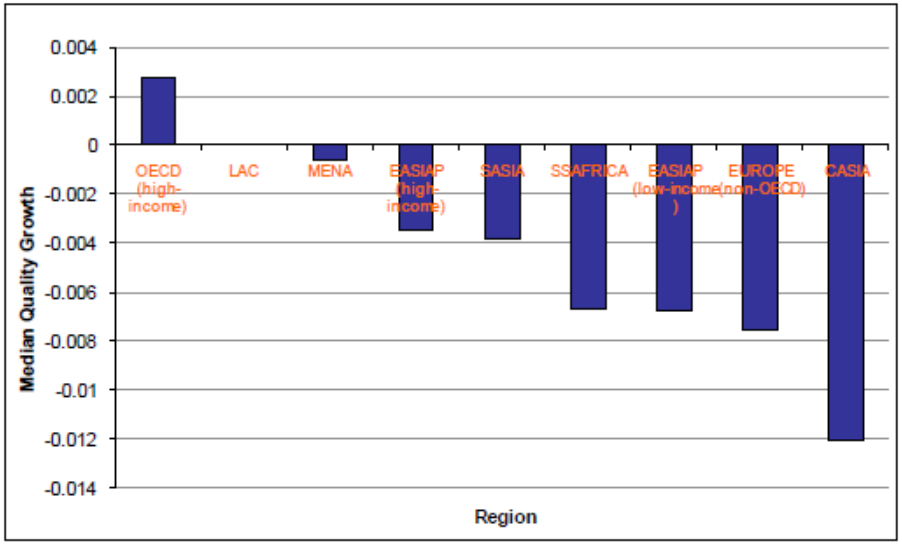
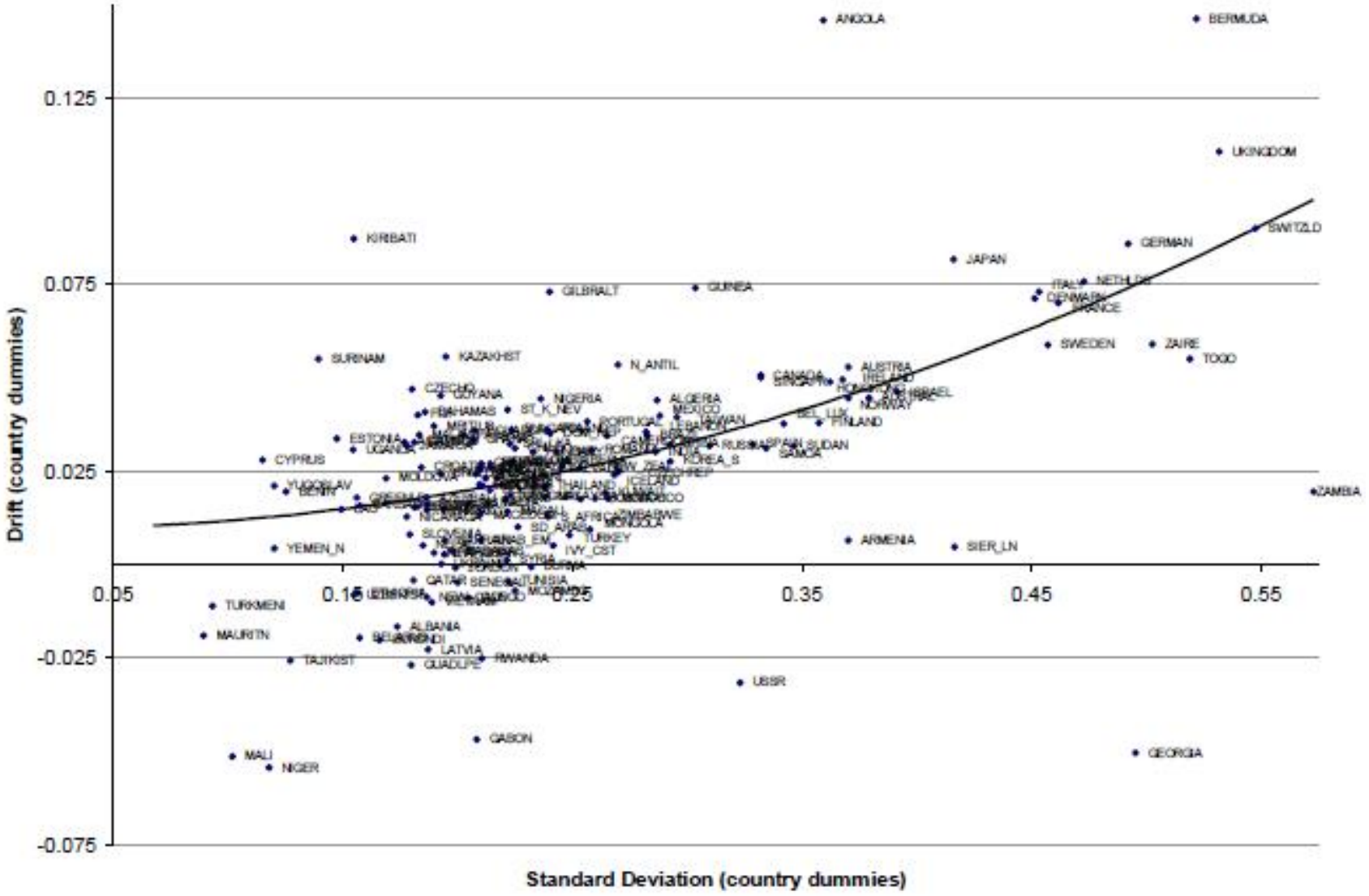


Figure 6.3 Quality Growth by Region 1990-2001 (Product Fixed Effects Included



Krishna and Maloney 2011

But high growth is risky



Krishna and Maloney 2011

Goods or Tasks

Goods or Tasks: Does China really export the iPOD?

Table 2 China: 10 Exports with the Lowest Domestic Value Added

Electronic computer	4.6
Telecommunication equipment	14.9
Cultural and office equipment	19.1
Other computer peripheral equipment	19.7
Electronic element and device	22.2
Radio, television, and communication equipment	35.5
Household electric appliances	37.2
Plastic products	37.4
Generators	39.6
Instruments, meters and other measuring equipment	42.2

China: 10 Exports with the Highest Domestic Value Added

Agriculture, forestry, animal husbandry and fishing machinery	81.8
Hemp textiles	82.7
Metalworking machinery	83.4
Steel pressing	83.4
Pottery, china and earthenware	83.4
Chemical fertilizers	84.0
Fireproof materials	84.7
Cement, lime and plaster	86.4
Other non-metallic mineral products	86.4
Coking	91.6

Source: Koopmans, Wang, and Wei (2008).

"..the electronic components we make in Singapore require less skill than that required by barbers or cooks, involving mostly repetitive manual operations"

Goh Keng Swee, Minister of Finance Singapore (1972)

In Sum

Doing IP blindfolded

- Little guidance on what goods (or tasks) are good
- Leads us back to “horizontal-ish” policies that
  - Resolve market failures related to innovation in old and new goods
  - Risk taking (entrepreneurship, finance)
  - Other barriers to the emergence of new goods and improvement of old

Thanks