Exports, Capabilities and Clusters

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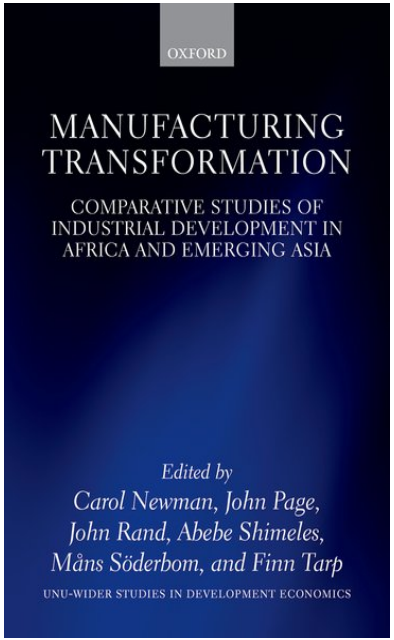
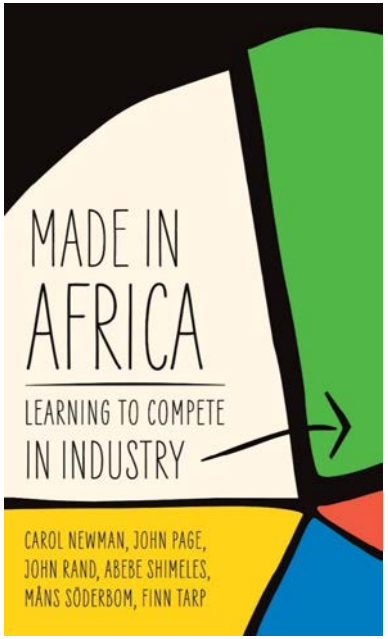
About This MOOC

- Attempting to bring the UNU-WIDER & Brookings research program on Jobs, Poverty and Structural Change in Africa to a broader audience.
- A multi-year, multi country comparative research program with a focus on firms.
- Use of mixed methods including case studies, quantitative and qualitative analysis

The Brookings & UNU-WIDER Research Program

- We began with *Learning to Compete* (2016) (with AfDB)
- Which tried to answer a (seemingly) simple question:
  - Why is there so little industry in Africa?
- This led to two other questions:
  - What makes firms more productive?
  - What makes countries more attractive to more productive firms?





The Structure of *Learning to Compete*

- Eleven Countries
  - Nine African : Ethiopia, Ghana, Kenya, Mozambique, Nigeria, Senegal, Tanzania, Tunisia and Uganda.
  - Two Asian: Vietnam, Cambodia.
- National researchers

- Three Track Approach
  - Detailed case studies of industrialization and the evolution of public policies
  - Econometric analysis of the stock of firm level surveys
  - Qualitative surveys of FDI firms and linked domestic firms.

A Simple Framework:
Drivers of Productivity and Location in Low Income Countries

- The “basics” (AKA “the investment climate”)
  - Infrastructure, institutions and skills
- Exports
  - Scale and “learning by exporting”
- Firm capabilities
  - Management and working practices
- Agglomerations
  - Industrial clusters

Conventional Wisdom: Africa Lacks the "Basics"

- African country studies highlight large gaps in infrastructure
  - Power is the biggest constraint
  - Transport and logistics come a close second
- Skills related to production and management are lacking in many countries
  - Deficiencies in post-primary education
  - Poorly performing vocational and technical education
- Institutions are improving but still constrain investment
- **Unconventional wisdom: the basics are necessary but not sufficient**
  - The four drivers are interdependent and mutually supportive

Exports: Scale and Learning

- Exports allow firms to transcend national markets and realize economies of scale
- Firms that export have faster rates of productivity change than those that produce for the domestic market.

Learning by Exporting

- For the exporting firm:
  - "Asymmetric competition"
    - African domestic markets lack competition.
  - Access to new technology
    - Better knowledge of possibilities
    - Access to proprietary technologies
  - Improved "capabilities"
    - Improvements in productivity and quality
- For other firms:
  - Demonstration effects
  - Supply chain relationships

Evidence from *Learning to Compete*

Cambodia, Ethiopia, Mozambique, Senegal, Tunisia, Vietnam

- Confirming expectations
  - More productive firms select into exporting
  - Large (and foreign) firms are more likely to export
  - Exporting further raises productivity
  - Learning effects appear to be stronger in
    - Domestically owned firms
    - More sophisticated products
    - Higher income (or more distant) markets
    - The initial years of exporting

Evidence from *Learning to Compete*

Cambodia, Ethiopia, Mozambique, Senegal, Tunisia, Vietnam

- And some surprises
  - Many African exporters are “born global” (both FDI and local)
  - Few firms “learn to export” (few partial exporters and fewer switchers)
  - Export activity is highly persistent
  - Small firms may learn more by exporting
  - The productivity premium tends to increase with low national (or sectoral) export participation rates

Exports and Public Policy

- Exporting has high social returns but high private costs of entry
  - The (neo-)classic rationale for public action
- For Africa entering global markets will require an “East Asian style” export push
  - Broad ownership and effective institutions (leadership from the top)
  - Trade related infrastructure and trade logistics
  - Appropriate macro-management
  - Support for regional institutions and infrastructure
- Few (if any) African governments have attempted an effective export push
  - Natural resources and Aid complicate exchange rate management

Firm Capabilities

- Capabilities are the tacit knowledge and working practices embodied in the firm (Sutton)
- Capabilities are reflected in
  - New product development
  - Production management
  - Management of the supply chain
  - Marketing
- They are linked more to people than equipment
  - Technology can be purchased
  - Management is important but it is not the only thing that determines capabilities, the whole workforce of the firm is relevant

What are Capabilities?

- Capabilities operate in two dimensions
  - Productivity
  - Quality
- Productivity is a “cost shifter”
- Quality is a “demand shifter”

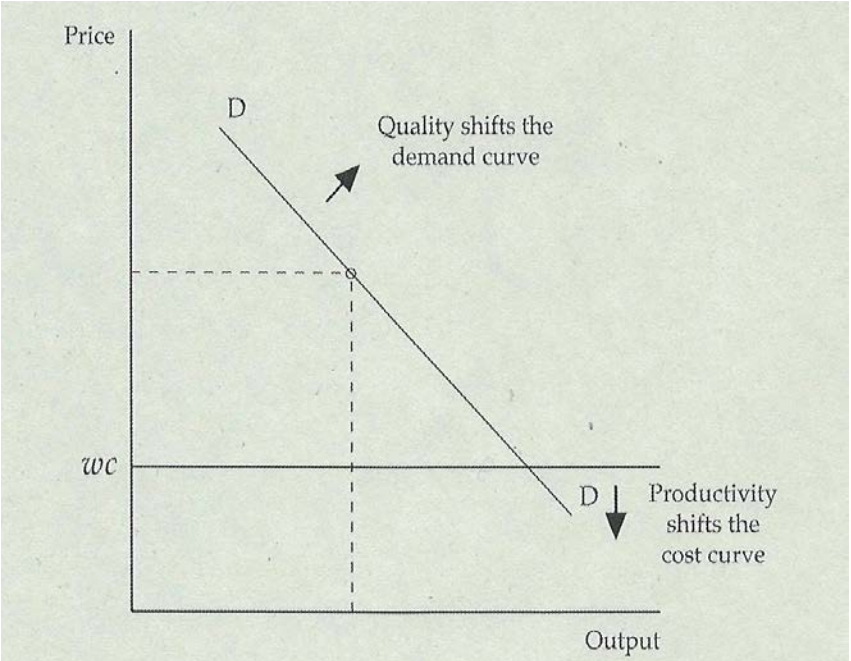


Fig. 1.1. Demand Shifters and Cost Shifters

Competing in Capabilities

- Globally firms are competing in capabilities
- Firms that succeed in entering global markets must meet minimum price and quality standards
- Low wages and therefore low prices are not sufficient to guarantee success
- Quality strongly depends on working practices

Capabilities and Exports

- Capabilities are built through supply chain relationships
  - Demanding buyers (quality and timeliness)
  - Repeated relationships (with input and equipment suppliers)
- Global export markets offer both
  - Exporting can improve capabilities

Capabilities and FDI

- MNCs embody advanced country capabilities
- Capabilities can spill over to other firms
  - Little econometric evidence of productivity increases arising from FDI in the same industry
  - More persuasive evidence of productivity increases in linked industries (Javoric; Harrison)
  - Very little understanding of the mechanisms by which these spill overs take place

Evidence from *Learning to Compete*

(Cambodia, Ghana, Kenya, Ethiopia, Mozambique, Uganda, Vietnam)

- African countries lack capable mid-sized (50-100 workers) firms
  - Management of a growing labor force is a major constraint
- Firms learn capabilities from exporting
  - The positive relationship between exporting and productivity is mainly due to process and quality innovations
  - Knowledge of potential markets' is the most serious constraint for international market entry.
- Firm to firm knowledge transfers are an important source of capabilities, especially from FDI
  - Vertical linkages along supply chains
- Firm to firm relationships are much more dense in Asia than in Africa

Domestic Value Chains Vietnam and Kenya

Backward link

Forward link

Competitor

FDI Firm				Supplier		Customer		Competitor	
No	Province	Investor	Product	No	Inputs	No	Products	No	Products
1	Hanoi	Japan	Porcelain products	1	Chemical	1	Porcelain products	x	Porcelain products
						2	Porcelain products		
						3	Porcelain products		
2	Hanoi	Japan	Furniture	2	Glass	4	Furniture	x	Furniture
				3	Wood	5	Furniture	x	Furniture
				4	Wood	6	Furniture		
3	Hanoi	Singapore	Tyres and tubes	5	Chemical	7	Tyres and tubes	x	Tyres and tubes
				6	Chemical	8	Tyres and tubes	1	Tyres and tubes
				7	Chemical	x	Tyres and tubes		
4	Hanoi	China	Electrical equipment	8	Copper wire	9	Transformers	x	Transformers
				9	Copper wire	10	Transformers	2	Transformers
5	Hanoi	Japan	Motor components	10	Inox	11	Auto assembling	x	Auto spare parts
				11	Inox	x	Auto assembling	3	Auto spare parts
				12	Inox	x	Auto assembling		
6	Hanoi	Multiple	Rubber components	13	Rubber materials	12	Rubber products	x	Rubber products
				14	Raw rubber	13	Rubber products	x	Rubber products
				15	Raw rubber	14	Rubber products	x	Rubber products
7	Hanoi	Japan	Metal components	16	Steel	15	Locks	4	Metal products
				17	Steel	16	Misc. mechanical products	x	Metal products
				18	Steel	17	Antennas	x	Metal products
8	Hanoi	Taiwan	Fibre optic cable	19	Decal, printing ink	18	Optic cable	5	Fibre optic cable
				20	PP bags	19	Optic cable		
						20	Optic cable		
9	Hanoi	Japan	Paint	21	Packing bags/boxes	21	Auto assembling	6	Paint
						22	Misc. equipment	x	Paint
						23	Misc. equipment		
10	Hanoi	Multiple	Paint	22	Chemical	24	Doors	x	Paint
				23	Chemical	25	Concrete	x	Paint
				24	Products for packing				
11	Hanoi	Multiple	Chemical products	25	Acid	26	Construction	7	Chemicals for construction
				26	Chemical	27	Concrete	x	Chemicals for construction
				27	Chemical	28	Construction		
12	Hanoi	Multiple	Carton products	28	Paper	29	Beer	8	Paper
				29	Paper	30	Milk	x	Carton
				30	Printing	31	Mechanical items	x	Paper bags
13	Hanoi	Japan	Plastic products	31	Amoniac	32	Plastic door	9	Plastic products
						33	Plastic door	x	Plastic products
						34	Misc. plastic products	x	Plastic products
14	Hanoi	Singapore	Electrical equipment	32	Electric wires	35	Transformers	10	Electric wires
				33	Misc. electronic products	36	Transformers	x	Electric wires
				34	Misc. electric equipment	37	Radios	x	Electric wires
15	Hanoi	Japan	Printing products	35	Printing paper	38	Misc. printing products	11	Printing
				36	Printing paper	39	Misc. printing products	x	Printing
				37	Printing paper	40	Misc. printing products	x	Printing

Note: Out of the 86 identified none refused to participate in the survey. An additional 3 FDIs/MNCs were interviewed but their interlinkages were not traced.

FDI Firm				Supplier		Customer		Competitor	
No	City	Investor	Product	No	Inputs	No	Products	No	Products
1	Nairobi	India	Packaging	1	Tissue and Hygeine products	1	Dairy/Food processing	x	Carton packaging
						x	Dairy/Food processing	1	Packaging
								x	Packaging
2	Nairobi	Switzerland	Footwear	x	Textiles			x	Misc. Rubber products
								2	Food and Footwear
3	Nairobi	USA	Automotive Industry			2	Cement	3	Automotive Industry
4	Nairobi	UK	Pharmaceuticals					4	Pharmaceuticals
5	Nairobi	Mauritius	Iron and Steel Industry					5	Steel
								x	Steel
6	Nairobi	Taiwan	Textile	2	Carton manufacturer				
7	Nairobi	UK	Tobacco	3	Printers			6	Tobacco
8	Nairobi	Netherlands	Petroleum	4	General plastics	x	Sugar		
				x	Misc products				
9	Nairobi	USA	Beverages					7	Beverages
10	Nairobi	France	Cement					8	Cement
								x	Cement
								x	Cement

Note: Out of the 14 identified for interview 9 refused to participate in the survey

Capabilities and Public Policy

- Creating knowledge networks
  - Knowledge as a public good
  - Collective action and Public-Private Partnerships
- Management training
  - Content likely to differ with firm size
  - Some indication of positive returns
  - Questions of incentives to adopt and persistence
- Making capability building a “practice area” for aid
  - JICA/World Bank training experiments

Agglomerations and Clusters

- Firms tend to concentrate in limited geographic areas, often in cities
- Driven by:
  - Common needs for inputs and access to markets
  - “Thick” labor markets (lower costs of search and availability of specialized skills).
  - Proximity to input suppliers and customers (backward- and forward-linked industries can realize economies of scale and resolve coordination problems).
  - Sharing indivisible goods and facilities (such as infrastructure)

Agglomeration Effects

- Externalities suggest that firms located in an agglomeration should have higher productivity
- Econometric studies have traditionally attempted to associate measures of firm level productivity (or growth or employment) with measures of spatial concentration
  - All of these studies suffer from a variety of econometric ailments (Selection bias, Identification, Simultaneity)
- While they may not satisfy the purists, they tell a pretty consistent story

Evidence from *Learning to Compete*

Cambodia, Ethiopia, Tunisia and Vietnam

- Broad evidence of productivity spillovers
  - Large (formal) firms appear to benefit more than small (informal) firms
  - Foreign-owned firms benefit most from productivity spill-overs
- Productivity gains for similar firms (localization effects) are strongest in lower income countries
- Where domestic transport costs are high, local competition increases
  - And prices tend to fall, reducing incentives to cluster
  - The trade-off between productivity and price effects determines the spatial distribution of industry
- Some evidence that the tendency toward geographical concentration is stronger in more sophisticated industries

Evidence from *Learning to Compete*

Cambodia, Ethiopia, Tunisia and Vietnam

- Clusters contribute to capability building
  - Sharing technological and/or marketing knowledge
  - Knowledge of improved management techniques
- Thick labor markets encourage spin-offs and transfer of tacit knowledge
  - Spin-offs by former employees are important

Clusters and Public Policy

- Agglomerations confer significant productivity gains, even in low income countries
- Starting a new industrial agglomeration is a form of collective action problem
  - The “first mover” disadvantage
  - A rationale for public intervention
- East Asian economies attempted to deal with the collective action problem through the use of spatial industrial policy

Special Economic Zones

- The principal instrument of spatial industrial policy in East Asia has been the Special Economic Zone (SEZ)
- East Asian SEZs offer a combination of
  - World-class infrastructure
  - Expedited customs and administrative procedures
  - (Sometimes) a distinct regulatory environment
  - (Often) fiscal incentives
- Designed to overcome barriers to investment in the wider economy.

Special Economic Zones in Africa

- African SEZs have largely failed to attract significant investment due to poor institutional and physical infrastructure
- Governments have failed to connect SEZs to the national development strategy
- The “architecture” of SEZs often discourages capability building

Indicators of Physical and Institutional Infrastructure in SEZs

	Average Africa Sample	Average Non Africa Sample
Power Outages (in hours downtime)		
Within SEZ	44	4
Outside SEZ	95	46
Import Customs Clearance Times (in days)		
Within SEZ	7.1	3.4
Outside SEZ	10.3	11.0

Energizing Africa's SEZs

- Match the institutional and infrastructure standards set by such "best practice" examples as China, Vietnam and Central America and the Caribbean
- Design SEZs with "open architecture"
  - Establish an ongoing exchange between the domestic economy and activities based in the zone.
  - Eliminate legal restrictions on forward and backward linkages and domestic participation in SEZs.
- Management must be sensitive to needs of the private investor
- Link the SEZs with the FDI agency to promote capability building
- Outward orientation is important (competition in local markets offsets productivity gains)

Summing Up

- Exports offer opportunities to achieve scale and learn capabilities
- In the global economy firms and countries are “competing in capabilities”
- Public policies can play a role in attracting and building more capable firms through an export push and FDI
- Firms cluster because of the productivity boost they receive from agglomerations, including through enhanced capabilities
- For that reason public policies for export promotion, capability building and spatial industrial policies are inextricably linked