Value Chain Analysis: Data Needs

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Overview

KEY CHALLENGE: How to integrate GVC analysis into trade and development

DATA NEEDS:
• Detailed trade data (components and end product market segments)
• Firm-level data (nationality, size and export orientation of firms)
• Employment and income data

CASE STUDIES:
• Costa Rica medical devices GVC
• Value Chains at a regional level: North America’s aerospace and auto industries
• Aid for Trade: combining analysis at the border and inside the border
Why Firm-Level Data Matters

- What is happening: Production patterns and trade flows
  - Firms trade, not countries
  - Heterogeneity within sector
- Consequences of GVCs for
  - Development
  - Inclusion
  - Sustainability
  - Inequality
- Data on
  - Profits
  - Wages
  - Social and Environmental Impacts
Local firms are mainly in packaging & support services (12 of 19) versus 4 in limited role in plastics molding & metal finishing and 1 OEM with exports under $2 million.
Costa Rica’s Medical Exports by Product Category: 1998-2011

- **Disposables** still the largest product category exported, but no longer a strong growth area.
- Exports in **surgical instruments** have grown steadily since 2005.
- **Therapeutics** has become 2nd largest category since 2008; likely to increase as newly established firms complete transfer of new product lines.
- Limited export of highest value **capital equipment** (eg. Electronic/software devices)
# FIRMS IN COSTA RICA MEDICAL DEVICES SECTOR

<table>
<thead>
<tr>
<th>Entry Year</th>
<th>Firm Characteristics</th>
<th>Main Product Export Category</th>
<th>Core Market Segments</th>
<th>Product Examples</th>
<th>Select Firms</th>
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</thead>
<tbody>
<tr>
<td><strong>Up to 2000</strong></td>
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<tr>
<td>24 firms:</td>
<td>4 OEMs</td>
<td>Disposables</td>
<td>Drug delivery; Women’s health</td>
<td>Intravenous tubing (I)</td>
<td>Hospira; Baxter; Amoena; Corbel</td>
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<td>8 US</td>
<td>8 Components</td>
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<td>Mastectomy bra (I)</td>
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<td>15 CR</td>
<td>1 Input distributor</td>
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<td>1 German</td>
<td>7 Packaging</td>
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<td>1 Finishing</td>
<td>3 Support services</td>
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<td><strong>2001–2004</strong></td>
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<td>13 firms:</td>
<td>3 OEMS</td>
<td>Instruments</td>
<td>Endoscopic surgery</td>
<td>Biopsy forceps (II)</td>
<td>Arthrocare; Boston Scientific; Oberg Industries</td>
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<tr>
<td>9 US</td>
<td>6 Components</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>3 CR</td>
<td>1 Finishing</td>
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<td>1 Colombian</td>
<td>1 Logistics provider</td>
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<td>1 Support services</td>
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<td><strong>2005–2008</strong></td>
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<td>8 firms:</td>
<td>2 OEM</td>
<td>Therapeutics</td>
<td>Cosmetic surgery; Women’s health &amp; urology</td>
<td>Breast implants (III)</td>
<td>Allergan; Tegra Medical; Specialty Coating Systems</td>
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<tr>
<td>7 US</td>
<td>4 Components</td>
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<td>Minimally invasive devices for uterine surgery (II)</td>
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<td>1 Puerto Rico</td>
<td>1 Packaging</td>
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<tr>
<td>1 Finishing</td>
<td>2 Support services</td>
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<td><strong>2009–2012</strong></td>
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<td>21 firms:</td>
<td>5 OEMs</td>
<td>Therapeutics</td>
<td>Cardiovascular Drug delivery</td>
<td>Heart valves (III)</td>
<td>Abbott Vascular; St. Jude Medical; Covidien; Moog Synergy Health Volcano Corp.</td>
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<tr>
<td>16 US</td>
<td>7 Components</td>
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<td>Dialysis catheters (III)</td>
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<tr>
<td>1 CR</td>
<td>2 Non-OEM assemblers</td>
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<td></td>
<td>Guide wires (III)</td>
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<td>1 Japan</td>
<td>1 Input Distributor</td>
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<td>Compression socks (I)</td>
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<td>2 Joint ventures (US-CR)</td>
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UPGRADING SUCCESS: A LEADING MEDICAL DEVICES MNC IN COSTA RICA

2004
First production plant opens in Costa Rica (10,000m²)

2005
Exports: US$18 million

2008
Second plant opens. (32,000m²)
First plant restructuring

2010
Initial plant reopens after restructuring
Exports: US$120 million

2011

Functional Upgrading
• 2004: Manufacturing functions
• 2012: Engineering for process improvements \(\rightarrow\) Focused on cardiology segment; strategy – to alleviate R&D costs in the US.

Product & Process Upgrading
• Biopsy forceps \(\rightarrow\) Labor intensive, basic metal works & extrusion.
• Urethral stent \(\rightarrow\) Thermoforming, laser marking, coating capabilities.
• Guide Wires \(\rightarrow\) Sophisticated Laser cutting & welding.
• Today – CR facilities cover 42 manufacturing processes.

Market Diversification
• Gastroenterology segment \(\rightarrow\) Urology \(\rightarrow\) Cardiovascular

Forward Linkages
• Recent co-location of sterilization vendors will allow the firm to export directly to global distribution centers
IRELAND AND MEXICO: MEDICAL DEVICE EXPORTS 1998-2011

IRELAND

- Most mature of the three locations
- 2005 shock forced upgrading strategy
- Significant growth in therapeutics & entry into capital equipment production

MEXICO

- Stabilizing disposables exports
- Strong focus in instruments
- Growing gains in capital equipment ➔ participation in electronics value chains

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LINKING NATIONAL, CLUSTER AND FIRM-LEVEL DATA IN MACRO REGIONS
Linking Clusters & GVCs in Mexico to Regional and Global Contexts

Mapping of GVCs across four dimensions for each industry...

- Local clusters
- Links to other states and clusters in Mexico
- Links to United States and Canada
- Other International linkages
Automobile production in 2007 and 2011

1 USA TRADITIONAL
2 USA NEW
3 Mexico TRADITIONAL
4 Mexico NEW
5 Ontario CA
Data for Policy

• Trade policy
• National development strategies
• Aid for Trade
AfT reduces costs, increases GVC competitiveness

Benefits tend to flow to the powerful

It matters where AfT enters the value chain
  – At the border
  – Behind the border
THANK YOU

Questions?

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