



## Linking Trade Statistics and the Business Register in a developing country: the INEC – UNSD project



## Theoretical Background

- Global Shift - Peter Dicken (2011, 6<sup>th</sup> edition)
- Joining, Upgrading and Being Competitive in Global Value Chains – Cattaneo, Gereffi, Miroudot, Taglioni (2013)
- Global Value Chains and Economic Globalization – Timothy Sturgeon (2013)

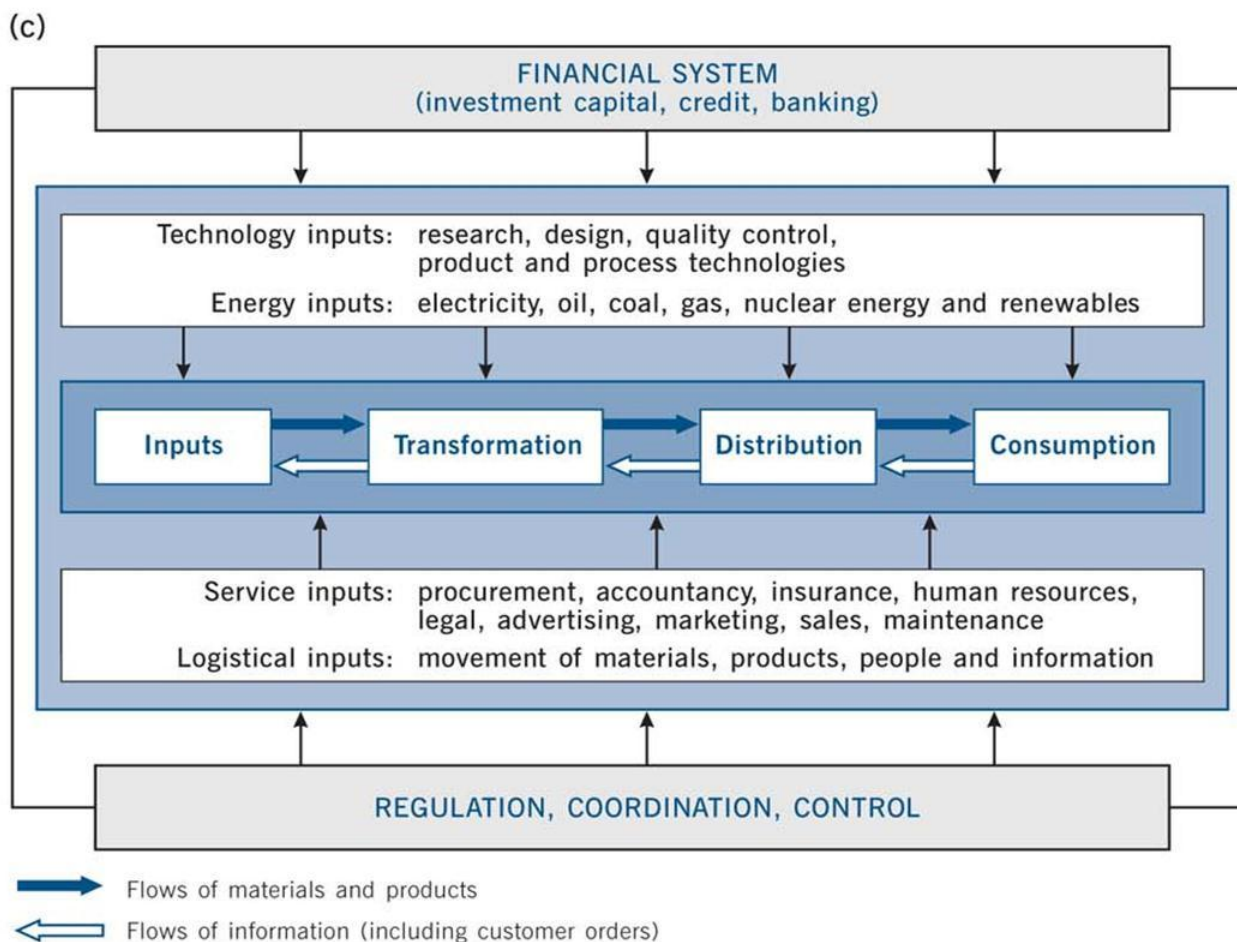


Figure 3.3 The basic components of a production circuit

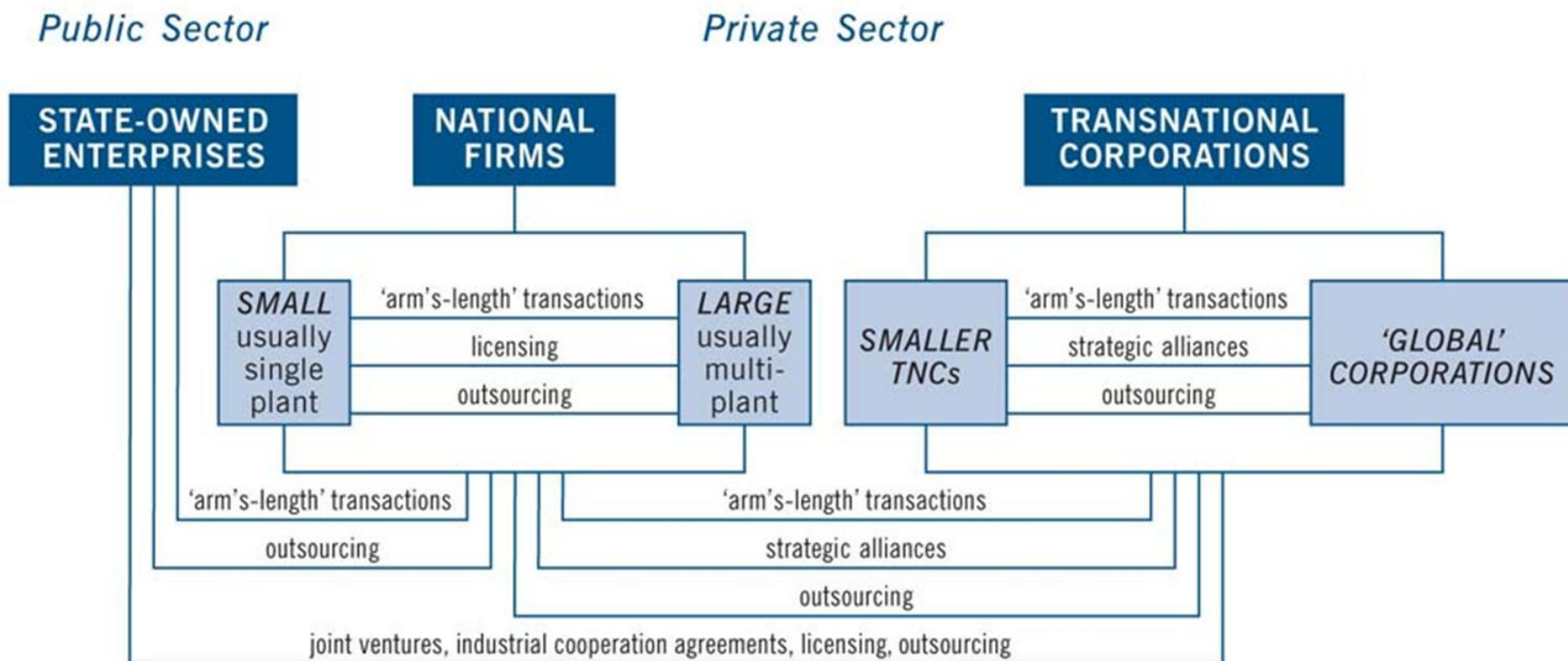
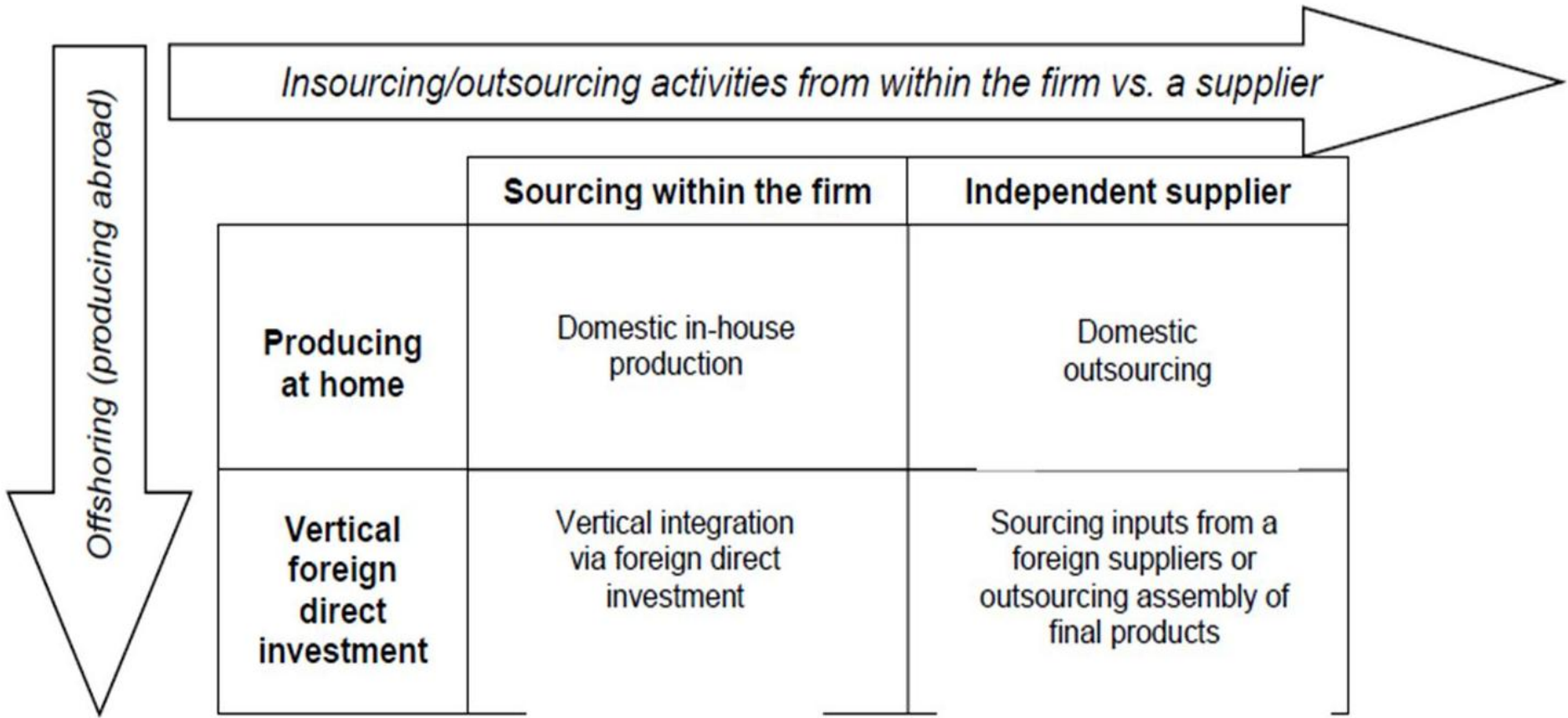


Figure 3.5 Types of firms in an economy

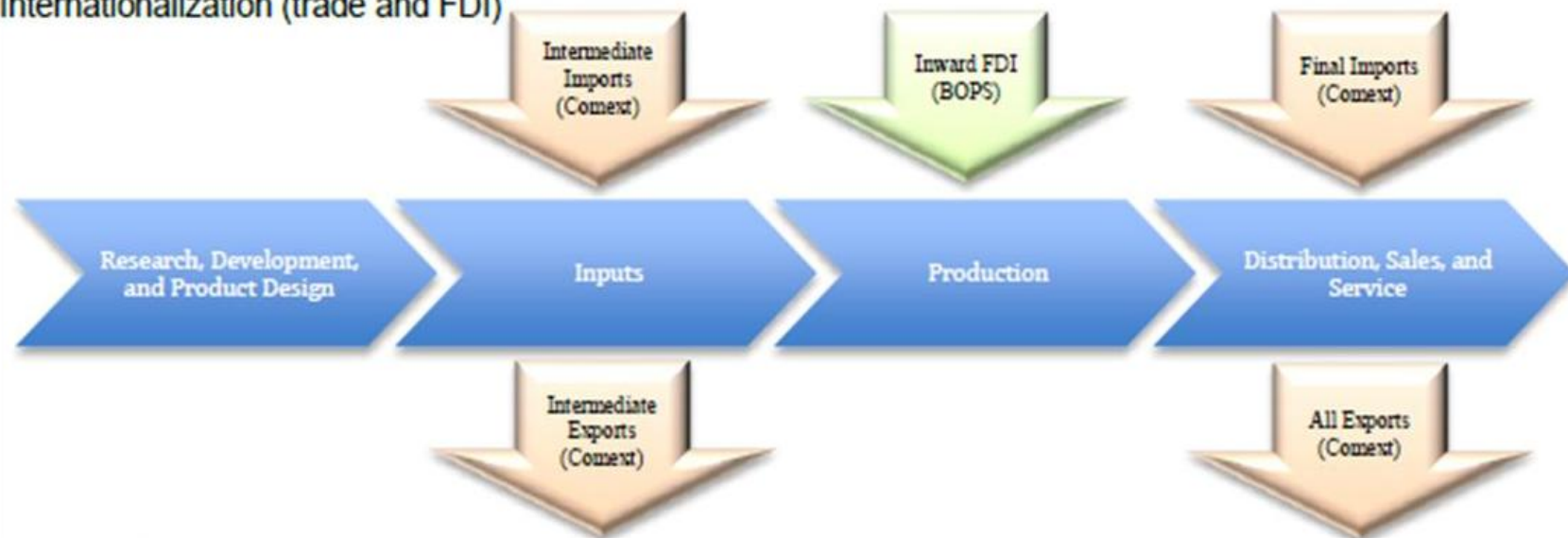
Figure 2. New Sourcing Strategies



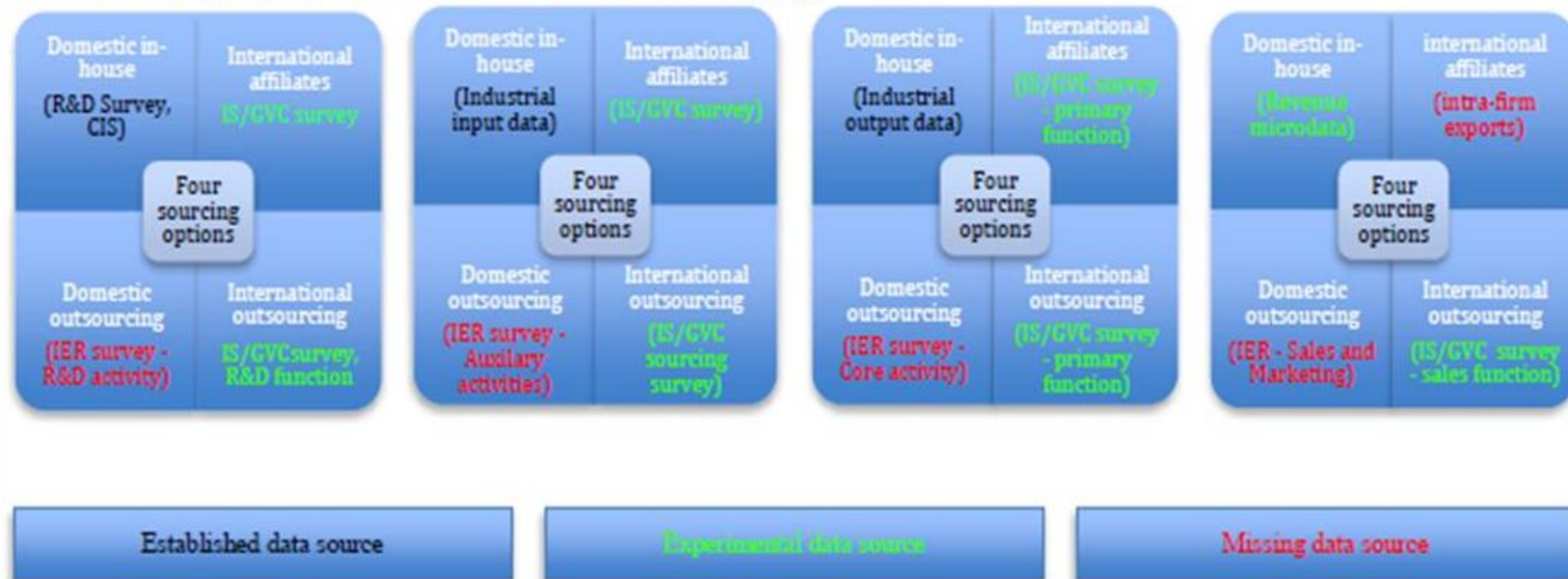
Source: Antràs and Helpman, 2004

**Figure 6. A simple value chain with sourcing possibilities and data resources**

Internationalization (trade and FDI)



Globalization (adds domestic and international sourcing)



# Costa Rica's Position in the Medical Devices GVC

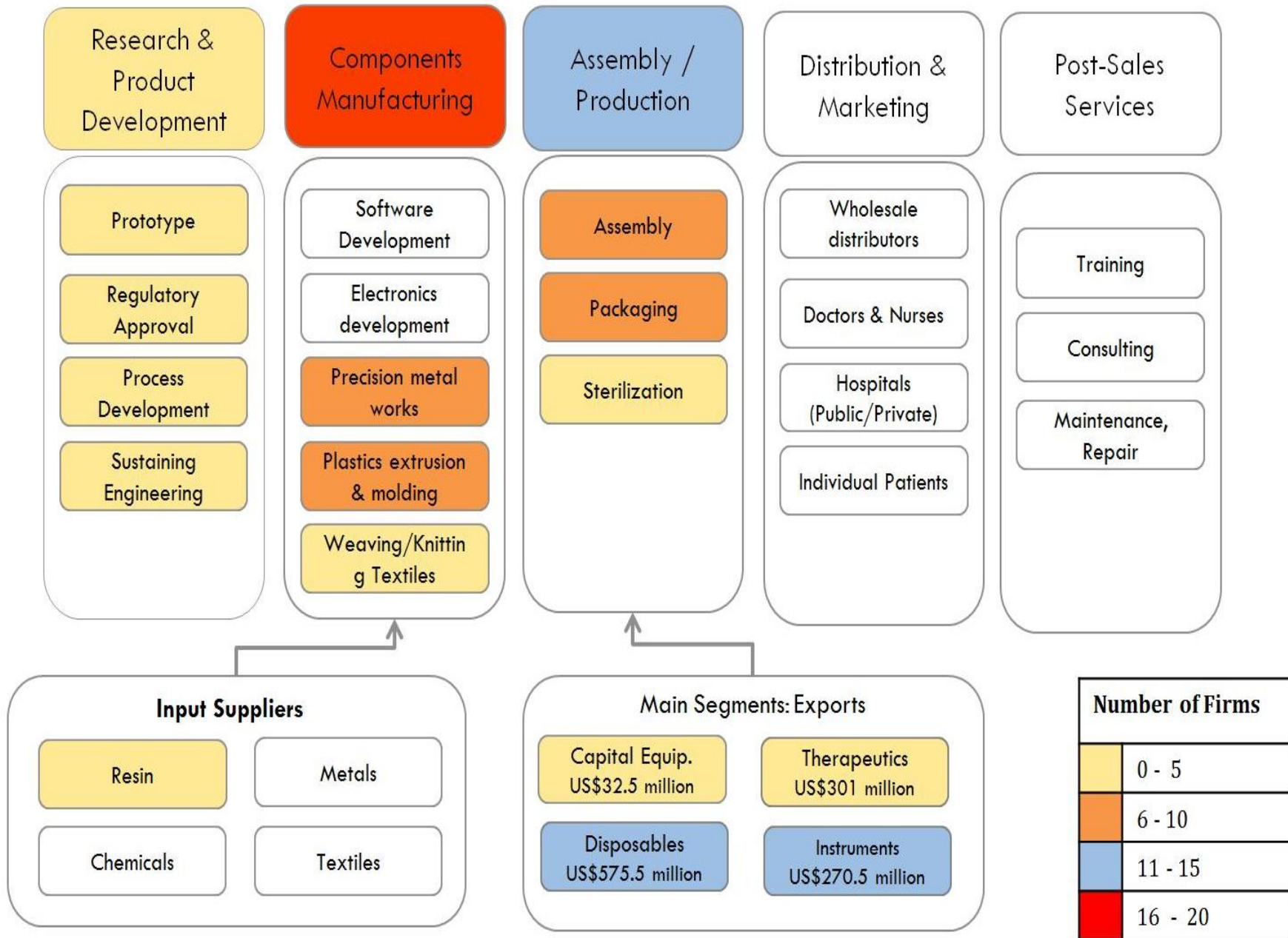


Figure 21. Offshore services upgrading trajectories for selected countries

Type	Diagram	Description
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Entry into the Value Chain</p>		<ul style="list-style-type: none"> <li>• Common way to enter the offshore services value chain is through the establishment of call center operations.</li> <li>• Opportunity for low-income countries to enter into the knowledge economy.</li> </ul> <p>Recent examples of countries entering the value chain through call centers include El Salvador (Dell, Sykes and Teleperformance), Nicaragua (Sitel), Panama (HP and Caterpillar) and Guatemala (Exxon Mobil, ACS and 24/7 Customer) (Gereffi et al., 2009).</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Upgrading within the BPO Segment (Functional Upgrading)</p>		<ul style="list-style-type: none"> <li>• Companies expand their BPO services within the segment.</li> <li>• Improving and expanding call centers operations or specialization in certain areas.</li> </ul> <p>South Africa has been an important destination for BPO services currently employing around 87,000 people and growing at 33% per year. South Africa is actively working in expanding their BPO activities (Everest Group and Letsema Consulting, 2008; Sykes, 2010).</p>





## Costa Rica and Global Value Chains

- Costa Rica: Trade Opening, FDI Attraction and Global Production Sharing (Monge, Jan 2011)
- Costa Rica's Global Value Chains in the Global Economy (Duke University, Jan 2012)
- Latin America's Prospects for Upgrading in Global Value Chains (Mexico, Mar 2012)



## Costa Rica – Policy Questions

- Understand the role Costa Rica currently plays in three high priority GVCs;
- Identify potential upgrading trajectories for Costa Rica to increase the value of its participation in these GVCs; and
- Based on these outcomes, identify the set of public policies that should be implemented to consolidate, increase and strengthen Costa Rica's integration in industrial GVCs



## Improving Data Availability – By linking Trade data and Business Register

- Since May 2012, UNSD works with INEC to link the Business Register of Costa Rica (maintained by INEC) with the detailed Customs data (processed by the Customs administration in cooperation with INEC)
- The cooperation has resulted in the creation of a first micro-level dataset for the monthly trade statistics of December 2011-April 2012
- Improved micro-level dataset on monthly trade statistics for June - December 2012

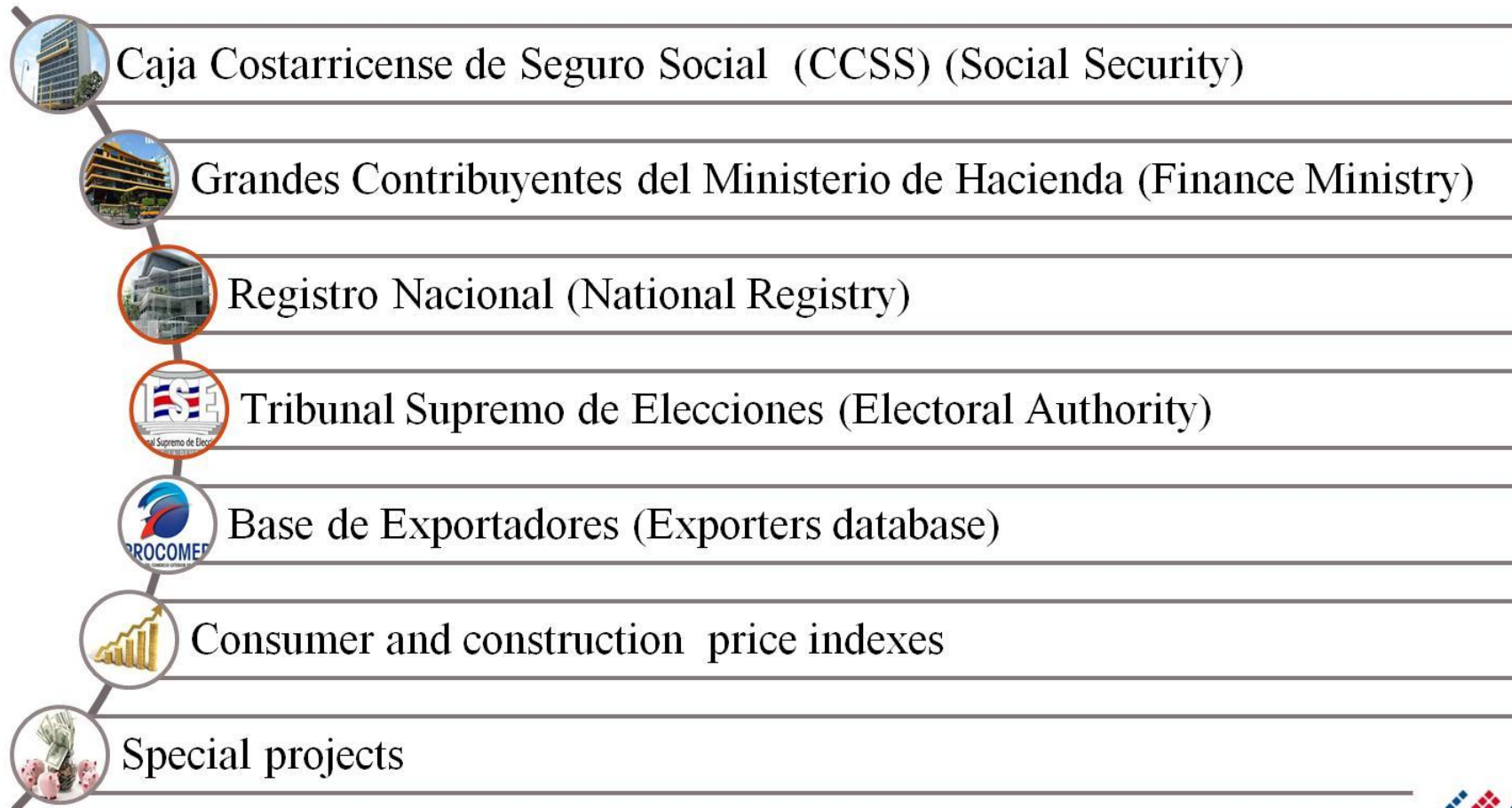


## Improving Data Availability – By linking Trade data and Business Register

- ❑ UNSD staff visited INEC in April 2013 for a whole week to take stock of progress made and to try together to find solutions for existing problems
- ❑ UNSD staff had a full day meeting with the national committee on trade statistics, which includes INEC, Customs, Central Bank and Ministry of Trade
- ❑ UNSD invited Costa Rica to Business Register meetings and Trade workshops



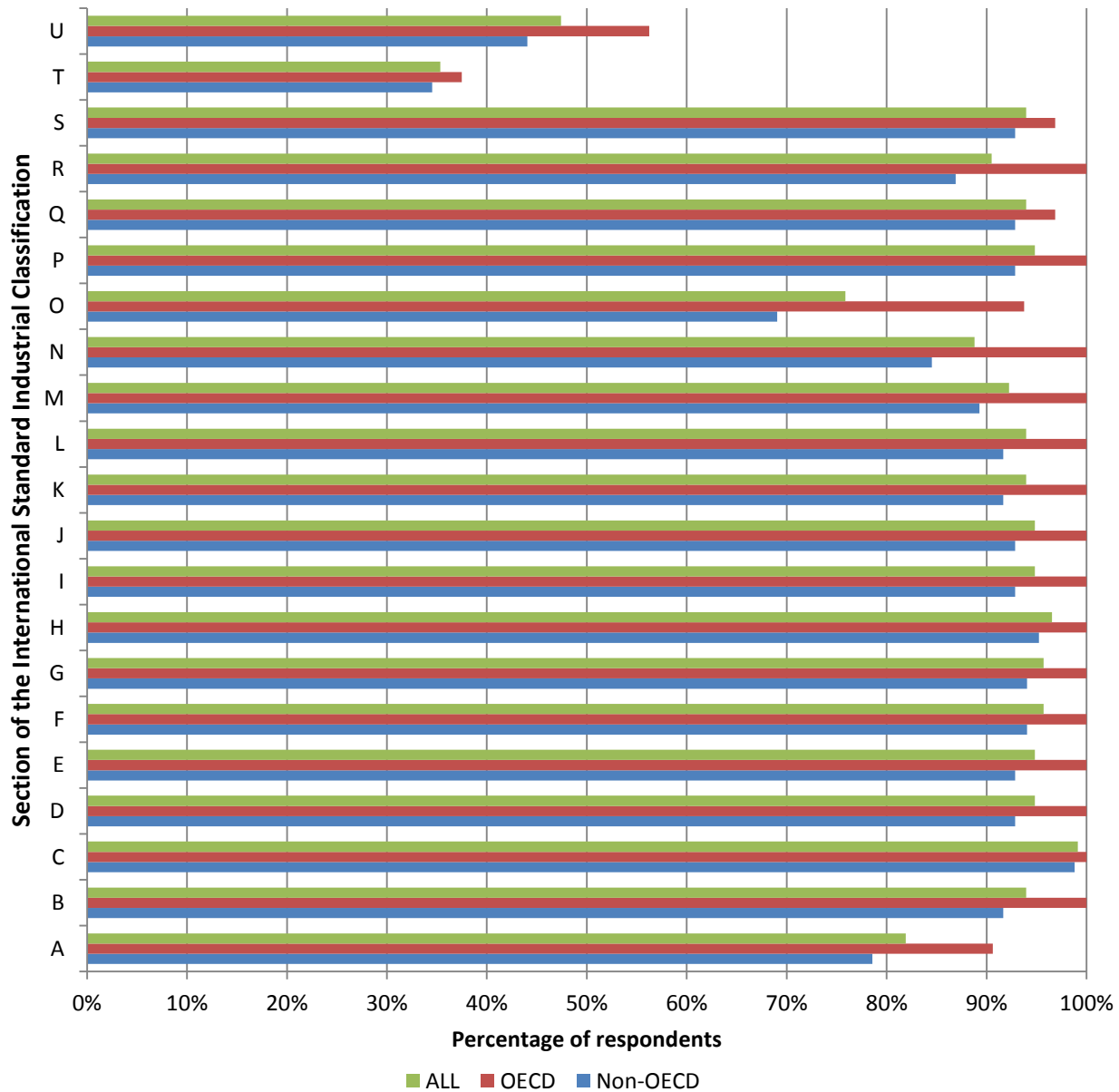
## Business Register (DUIE) – Data sources



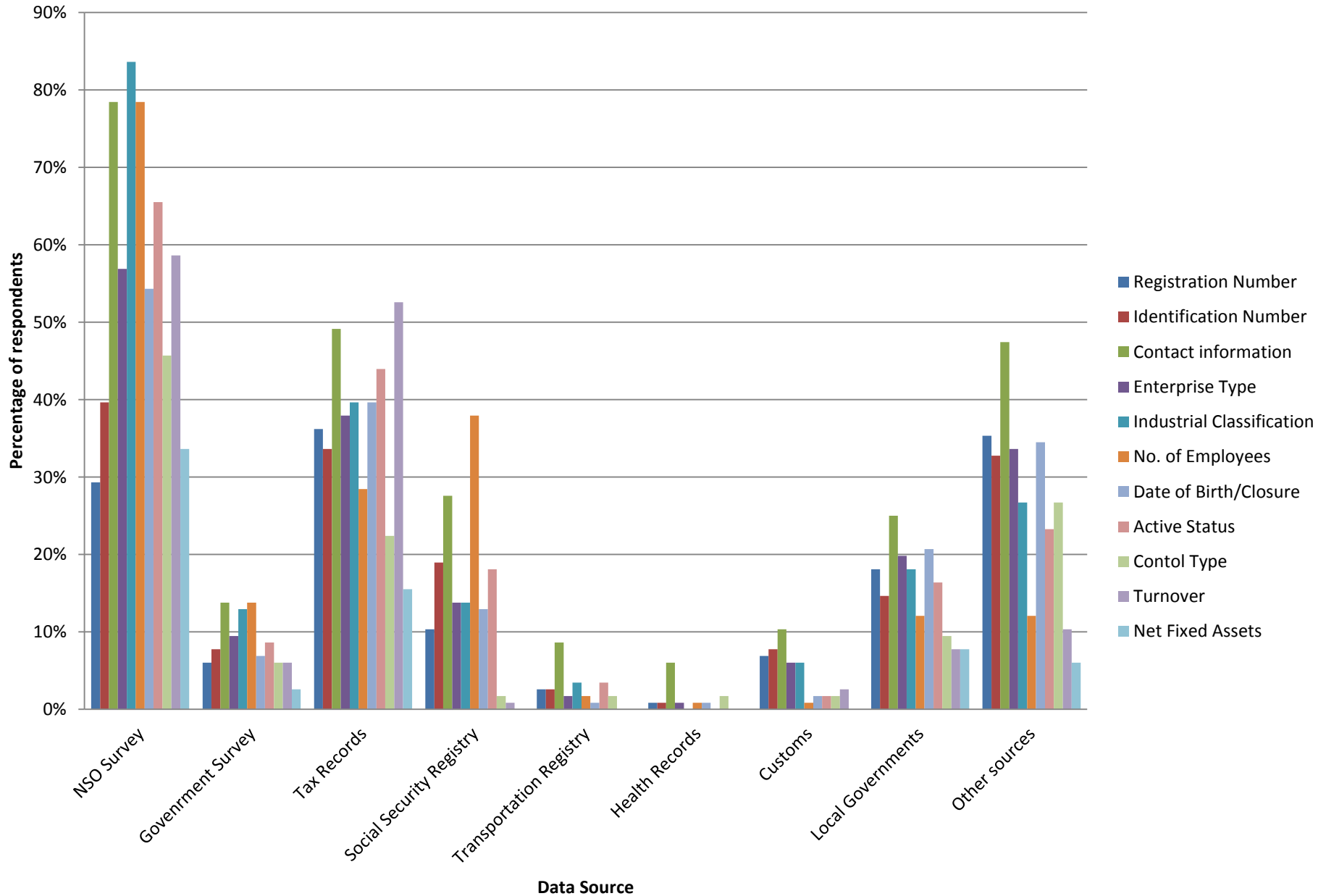


		<b>All Business Register</b>	
<b>Main activity</b>		<b>No. of firms</b>	<b>No. of employees</b>
<b>A</b>	<b>Agriculture, forestry and fishing</b>	<b>3,791</b>	<b>87,982</b>
01	Crop and animal production	3,608	85,069
02	Forestry and logging	132	1,567
<b>C</b>	<b>Manufacturing</b>	<b>4,257</b>	<b>144,706</b>
10	Manufacture of food products	1,078	48,328
14	Manufacture of wearing apparel	559	7,949
25	Manufacture of fabricated metal products	441	6,043
26	Manufacture of computer, electronics	40	6,531
27	Manufacture of electrical equipment	37	4,477
	<b>Wholesale and retail trade;</b>		
<b>G+H</b>	<b>Transport, warehousing, and support activities</b>	<b>18,668</b>	<b>201,935</b>
46	Wholesale trade, except motor vehicles	2,471	58,966
47	Retail trade, except of motor vehicles	11,663	88,411
	<b>Other activities</b>	<b>19,277</b>	<b>318,907</b>
	Hotel and Restaurants	4,892	
	Professional and scientific services	2,472	
	Social and Health services	1,871	
	<b>Unkown activity</b>	<b>2,988</b>	<b>15,771</b>
	<b>Non-matches</b>	<b>-</b>	<b>-</b>
	<b>TOTAL</b>	<b>48,981</b>	<b>769,301</b>

# Coverage of Industrial Sectors in the Business Register

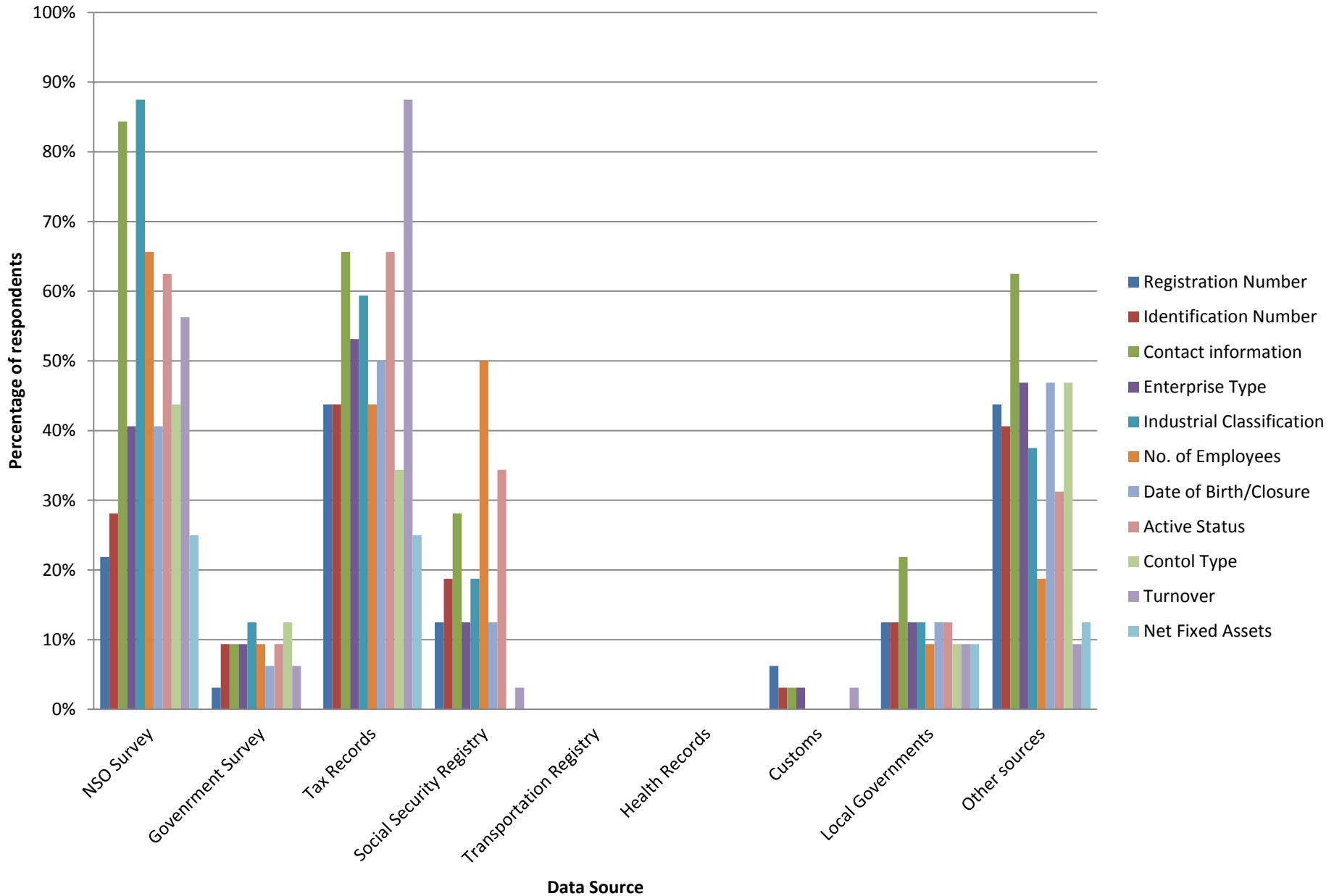


# Data Sources are Used for Specific Characteristics - All Countries

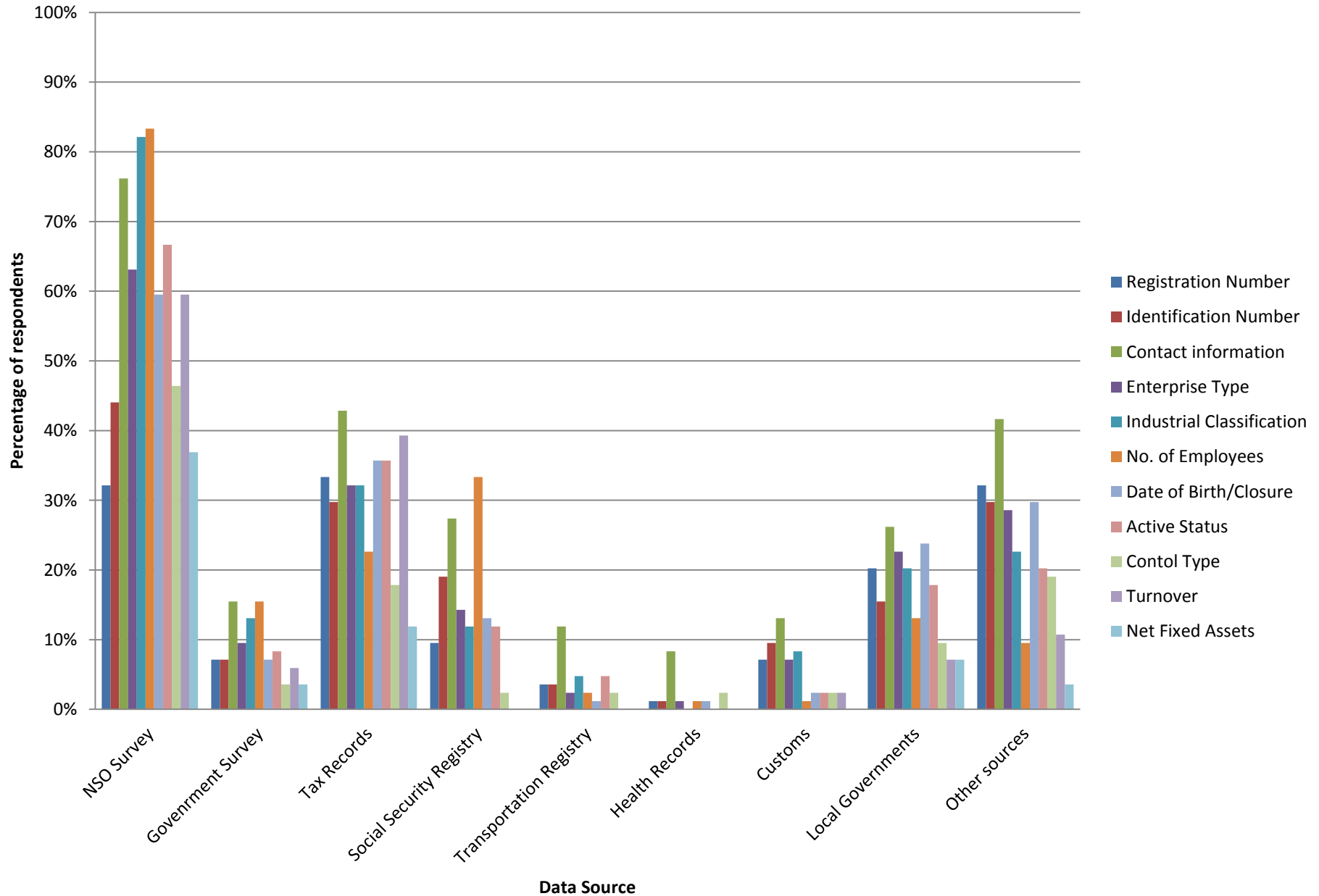




# Data Sources are Used for Specific Characteristics - OECD Countries



# Data Sources are Used for Specific Characteristics - Non OECD Countries





## Improving Data Availability – By linking Trade data and Business Register

- Linking variables of the Business Register to the variables of the Trade statistics
- Linking via the enterprise / establishment identification
- Use of statistical units and relationships between statistical units



- **Trade data (exports)**

- Year / Month
- Customs office
- Commodity code
- Product Description
- Country of origin
- Country of destination
- Customs Procedure
- Transportation mode
- FOB Value
- Net Weight
- Gross Weight
- Legal Unit of exporter

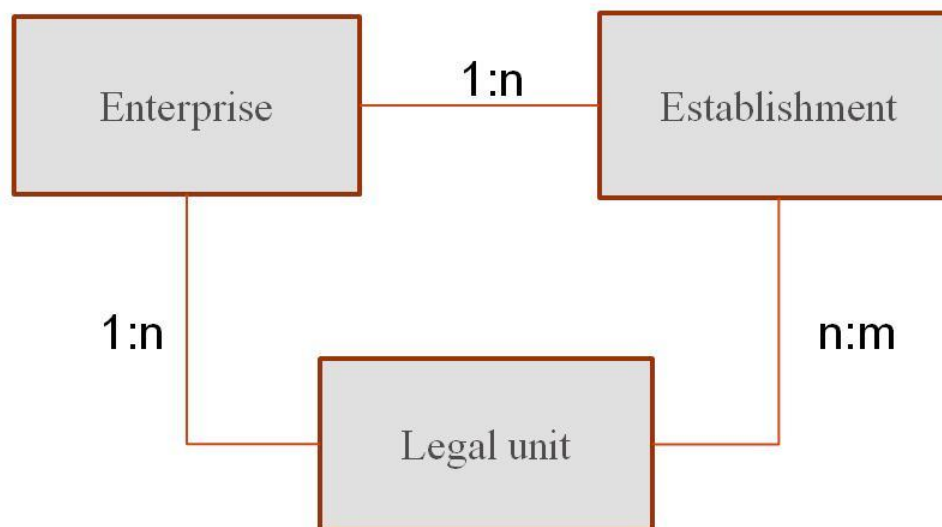
- **Business Register**

- Location
- Number of employees
- Main activity description
- Main activity ISIC Rev.4 code
- Start of operations (year)
- Production Costs



## Data model

Relationships among the units of the Business Register:





# Data model

Relationships among the units of the Business Register:





## Results of second linking exercise (June – December 2012)

	Not linked	Linked	Total
Number of records	20,934	355,960	376,894
	5.6%	94.4%	100.0%
Value in '000 USD	130,354	3,248,470	3,378,824
	3.9%	96.1%	100.0%
Number of enterprises	n.a.	1,903	n.a.
Number of legal units	764	1,958	2,722
Number of establishments	n.a.	n.a.	n.a.

Main activity		All Business Register		Exporting enterprise		
		No. of firms	No. of employees	No. of firms	No. of employees	Value of exports (US\$)
<b>A</b>	<b>Agriculture, forestry and fishing</b>	<b>3,791</b>	<b>87,982</b>	<b>294</b>	<b>40,283</b>	<b>216,690,448</b>
01	Crop and animal production	3,608	85,069	279	38,698	210,146,426
02	Forestry and logging	132	1,567	8	688	5,289,339
<b>C</b>	<b>Manufacturing</b>	<b>4,257</b>	<b>144,706</b>	<b>598</b>	<b>106,429</b>	<b>2,554,099,671</b>
10	Manufacture of food products	1,078	48,328	137	34,661	447,071,957
14	Manufacture of wearing apparel	559	7,949	25	5,022	42,878,988
25	Manufacture of fabricated metal products	441	6,043	39	2,497	42,358,757
26	Manufacture of computer, electronics	40	6,531	21	6,369	787,049,178
27	Manufacture of electrical equipment	37	4,477	20	4,204	143,662,034
<b>G+H</b>	<b>Wholesale and retail trade; Transport, warehousing, and support activities</b>	<b>18,668</b>	<b>201,935</b>	<b>739</b>	<b>55,190</b>	<b>387,741,850</b>
46	Wholesale trade, except motor vehicles	2,471	58,966	591	30,086	349,309,112
47	Retail trade, except of motor vehicles	11,663	88,411	60	17,370	25,826,992
	<b>Other activities</b>	<b>19,277</b>	<b>318,907</b>	<b>186</b>	<b>33,792</b>	<b>63,137,508</b>
	Hotel and Restaurants	4,892				
	Professional and scientific services	2,472				
	Social and Health services	1,871				
	<b>Unkown activity</b>	<b>2,988</b>	<b>15,771</b>	<b>71</b>	<b>864</b>	<b>24,375,886</b>
	<b>Non-matches</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>131,689,763</b>
	<b>TOTAL</b>	<b>48,981</b>	<b>769,301</b>	<b>1,894</b>	<b>236,794</b>	<b>3,378,826,643</b>





## Trade by Enterprise Analysis

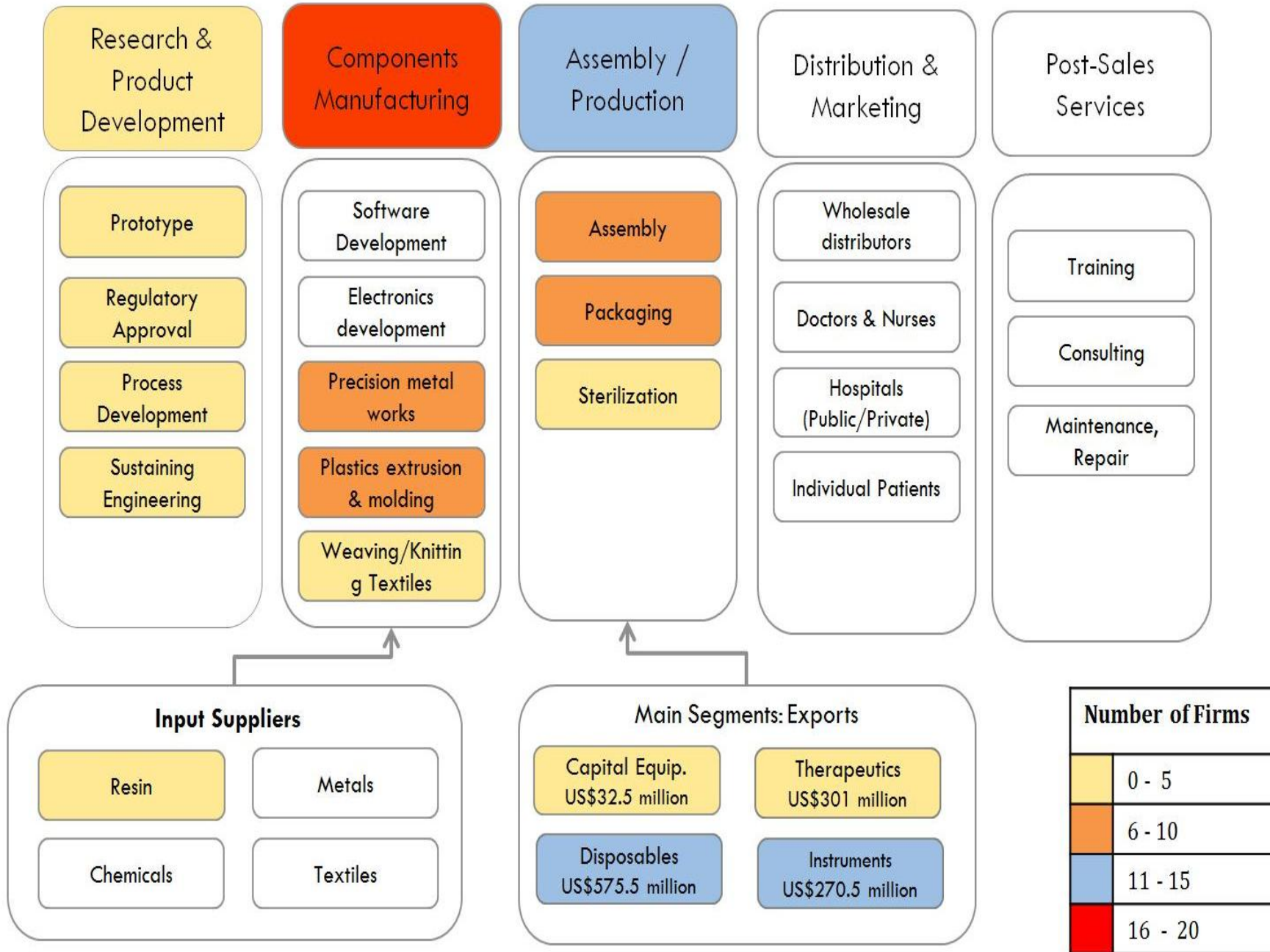
- **Profile of Exported Products**
  - Major export companies and destinations, by value
  - Concentration of exports
  - Degree of diversification of destinations
  - Share in exports
    - totals
    - by destination
  - Value of exports
    - total
    - By size category exporters
    - By category of "age" of exporting companies
  - Exports / Total Production



## Trade by Enterprise Analysis

- **Profile of Exporting Enterprises**
  - Major products and destinations, worth
  - Degree of diversification of products and destinations
  - Share in exports
    - by product
    - by destination
  - Total value of exports
  - Frequency of export activity
  - Size (number of employees)
  - Time from start of operations ("age" of the company)
  - Exports / Number of employees
  - Export / Total Sales

# Costa Rica's Position in the Medical Devices GVC





## Way Forward

- Adding Trade in Services, FATS and FDI
- Reporting Template for Trade by Enterprise Statistics
  - General
  - Country specific
- Linking to Enterprise groups