The ICT manufacturing sector in Hungary

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Problems with identifying ICT manufacturing and data availability

- Different approaches
- Here: NACE 30-33 (DL) are used, because of better data availability
- DL: Manufacture of electrical and optical equipment

  30 – Manufacture of office machinery and computers

  31 – Manufacture of electrical machinery and apparatus n. e. s.

  32 – Manufacture of radio, television and communication equipment and apparatus

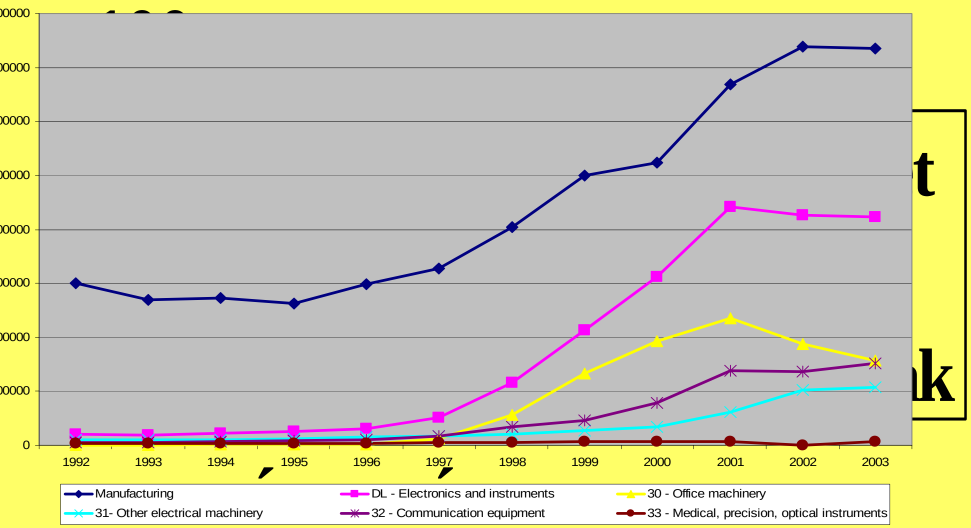
  33 – Manufacture of medical, precision and communication equipment and apparatus
- Source of data: Hungarian Central Statistical Office

ICT manufacturing in Hungary – basic facts

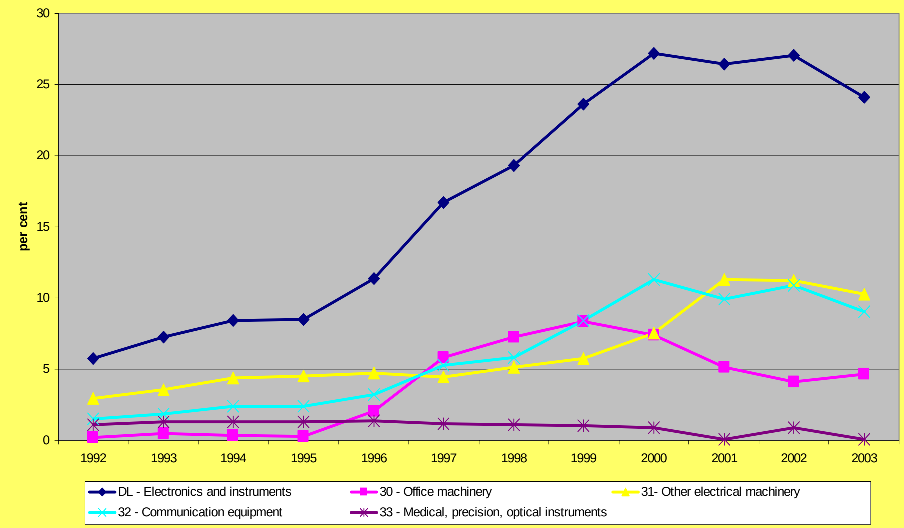
- Dynamic growth
- Regional leader
- The determining role of FDI (relocation)

Dynamic growth of ICT manufacturing in Hungary

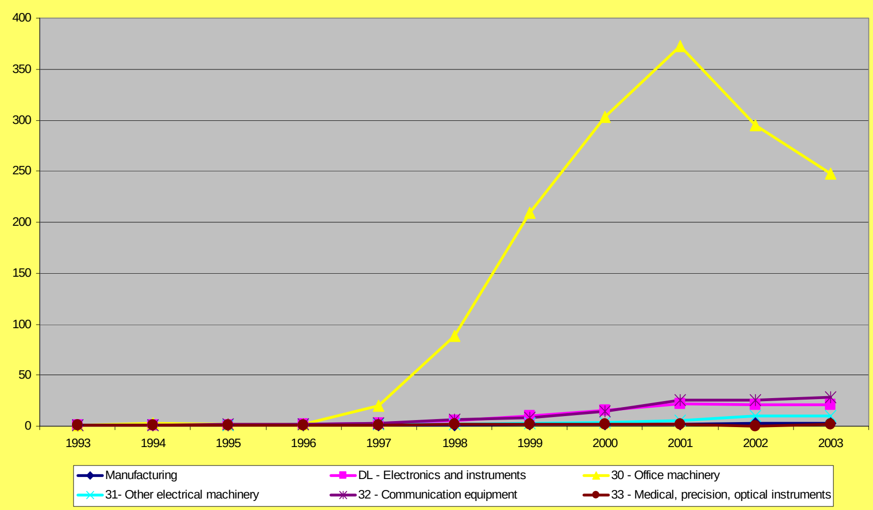
Output at constant (1992) prices



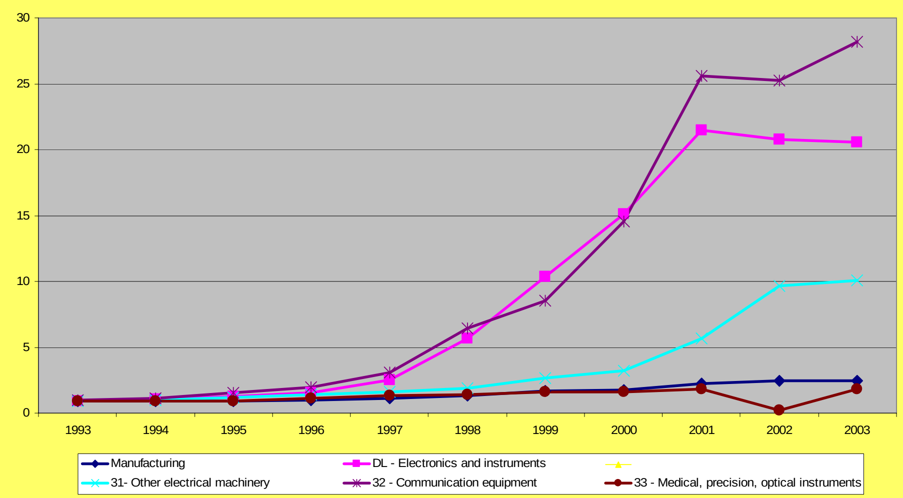
Share of Electronics and subsectors in total manufacturing output



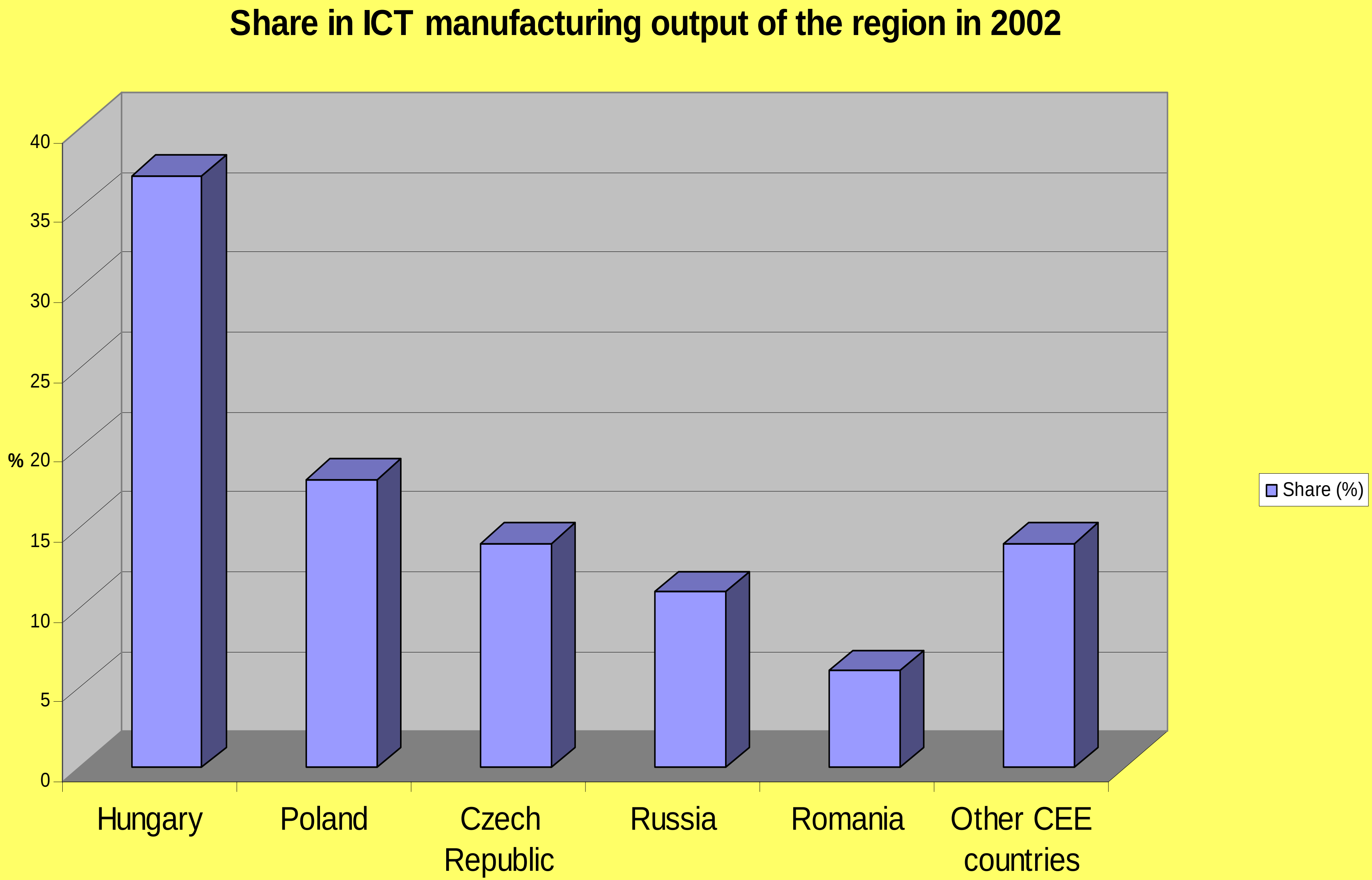
Growth of output (1992=1)



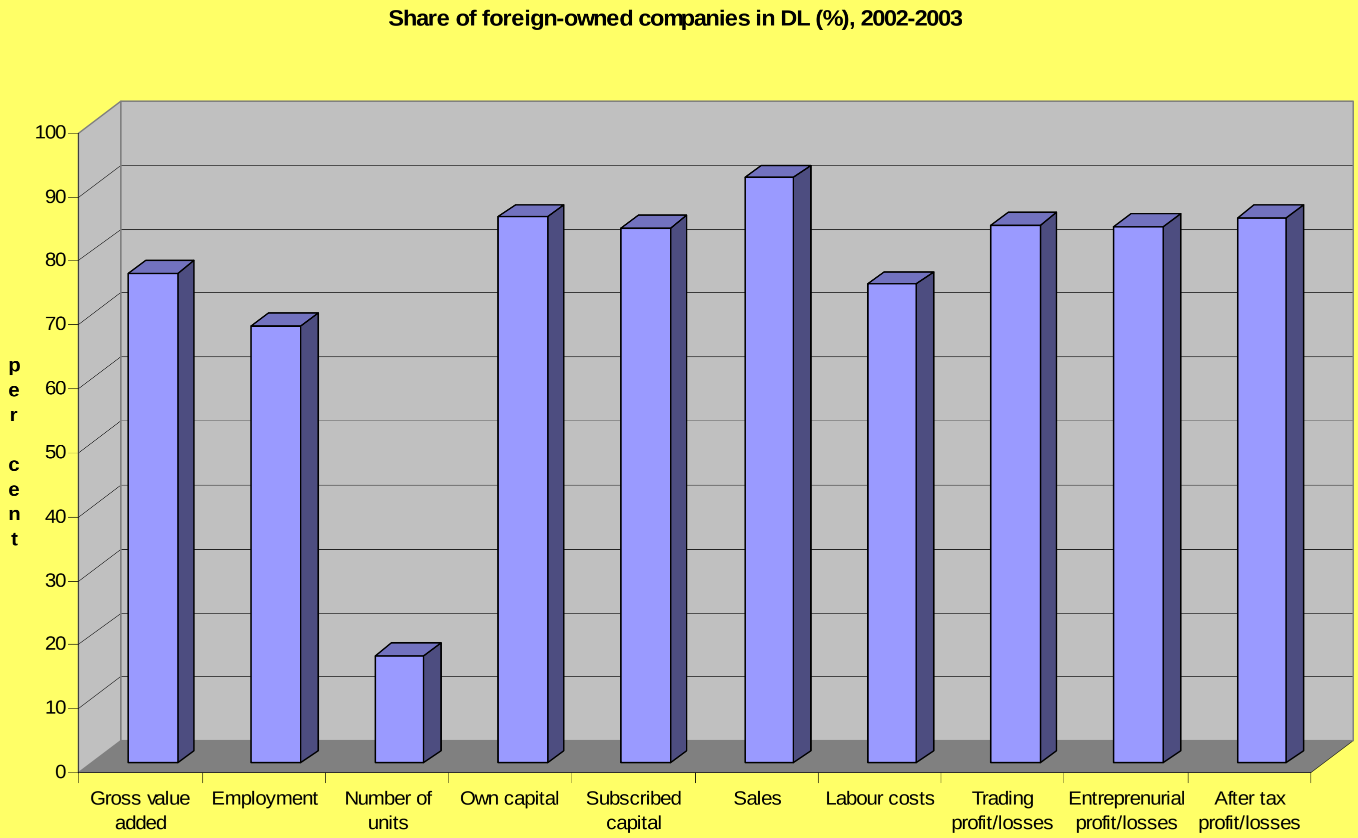
Growth of output (1992=100) without 30 (Office machinery)



Regional leader in ICT manufacturing



The role of foreign owned companies in ICT manufacturing in Hungary



Why Hungary?

- Open to FDI (both wide sense and narrow sense incentives and privatisation to foreigners)
- IFTZ-regulation up till EU-membership- unique (esp. favourable for export-oriented scale-intensive assembling operations)
- Availability of (un-, semi and) skilled and relatively cheap workforce (privatisation and bankruptcy of SOEs)
- Geographic proximity
- Traditions (for example Tungsram, Videoton)

Extent of ICT

- The majority of production and export is a result of relocation through FDI and OPT (role of companies with foreign participation)
- Production: magnitude: per capita ICT production: Hungary: 0.8 million USD, EU: 0.6 million USD;
- Share in world production: 0.8 % (2002, EU-15: ~20 %)
- Export: share in world export (2002) in leading products: Telecom appliances and parts: 2.4 % (EU-15: 41%), Computers and parts: 1.5 % (EU-15: 27.3%), Television receivers: 2.2 % (EU-15: 16.5%)

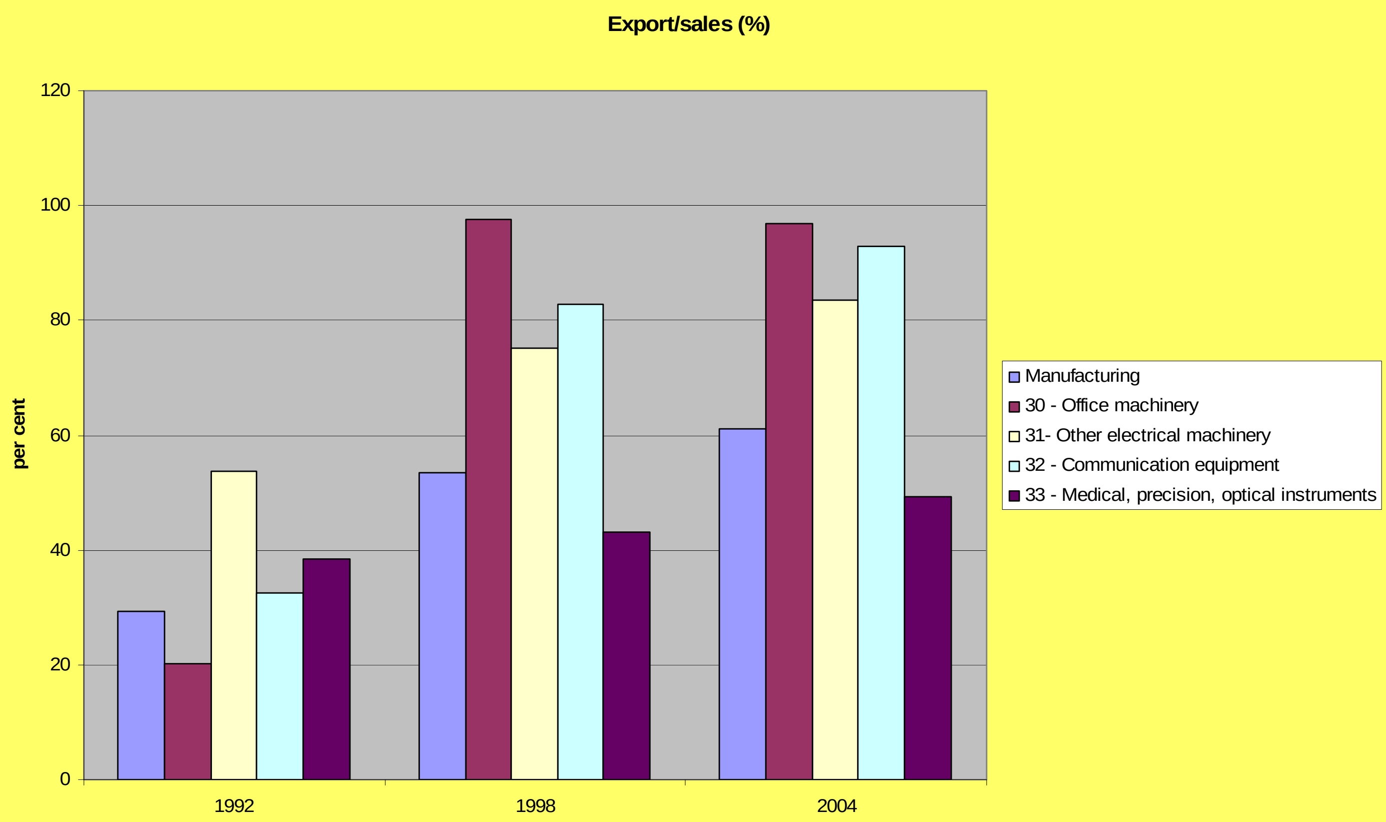
Further characteristics of the ICT manufacturing sector in Hungary

- Concentration (few products, few big producers, few export products, regional concentration)
- Export-orientation + most dynamic export growth + most important export products
- Low local value-added – growing?
- Little linkages
- Foreign dominated
- Further relocations – upgrading?

Concentration

- Few products: top ten products represent more than 1/3 of production (DL)
- Few producers: 1. own brands: Philips, GE, Samsung, Sanmina-SCI, Electrolux, Sanyo, Sony, Nokia, Siemens, Ericsson, IBM; 2. contract manufacturers: Flextronics, Solectron, Elcoteq (+ Hungrarian: Videoton, Orion, Hajdú)
- Few export products: top ten products represent 40 per cent of DL exports
- Regional concentration of production: Central and North-Western regions of the country (however, more dispersed than the automotive sector)

Role in exports 1
Strong export orientation



Role in exports 2
Most important export products

Product	Export share (2002, %)	Export share (1992, %)
Telecom. appliances	7.8	0.1
Reciprocating piston engines	*6.2*	*0.0*
Cars	*4.3*	*0.2*
Input or output units	2.2	0.0
Parts for TV, radio	2.1	0.3
Storage units for computers	1.6	0.0
Television receivers	1.6	0.2
Video recording app.	1.5	0.1
Parts for automatic data processing machines	1.5	0.1
Electric conductors	1.3	0.4

Role in exports 3
Top exporters

Top ten exporters, 2002

	Company	Wiht foreign participation?	Export/sales
1	Audi	Yes (greenfield)	99
2	Flextronics International	Yes (greenfield)	99
3	Philips Hungary	Yes (greenfield)	98
4	GE Hungary	Yes (privatisation)	94
5	Mol	Partly (publicly traded)	23
6	IBM Storage Products	Yes (greenfield)	100
7	Opel Hungary	Yes (greenfield)	100
8	Samsung Electronics	Yes (greenfield)	82
9	Borsodchem	Partly (publicly traded)	81
10	NABI	Yes (greenfield)	99

Note: only those companies included, which provided data on their activities (Nokia!)

Low local value added

Various indicators of manufacturing subsectors, 2002

NACE		gross value added/gross output	share in manufacturing output	share in manufacturing export
16	Tobacco	0,423	0,6	0,00
33	**Medical, optical and precision instruments**	**0,420**	**1,2**	**0,70**
26	Non-metallic minerals	0,372	3,0	1,20
24	Chemical products	0,353	6,4	6,40
36	Furniture	0,337	1,5	0,90
28	Metal products	0,336	4,4	2,50
35	Transport equipment	0,307	0,7	0,40
22	Publishing, printing	0,307	3,3	0,20
23	Coke and petroleum	0,305	4,8	1,90
20	Wood and wood products	0,293	1,5	1,00
29	Machinery n.e.s.	0,289	5,8	5,70
25	Rubber and plastic	0,274	3,8	3,50
21	Paper and paper products	0,272	1,6	1,40
18	Clothing	0,267	2,7	2,20
19	Leather	0,250	1,0	0,70
17	Textiles	0,241	1,7	1,30
	Manufacturing	0,237	100,0	100,00
15	Food and beverages	0,237	15,3	5,40
37	Recycling	0,193	0,1	0,00
31	**Electrical machinery n.e.s.**	**0,191**	**10,3**	**16,50**
34	Motor vehicles	0,184	12,3	21,50
27	Basic metals	0,136	3,4	2,80
32	**Communication equipment**	**0,125**	**11,3**	**16,80**
30	**Office machinery**	**0,069**	**3,4**	**6,80**

Linkages

Local supplies to various MNC affiliates in Hungary, 2000

Name of corporation	All suppliers (number)	All suppliers in Hungary (number or share:%)	All Hungarian suppliers (number or share:%)	Share of Hungarian suppliers in output	Desired share of Hungarian suppliers	Role of local decisions in procurement *
Sapu	35	5	0	10 %**	n.d.	L
TEMIC	80	5	0	1 %**	5-10 %	L
GE Lighting	50	30	25	40 %	n.d.	H
Nokia	100	10	2	5-10 %	n.d.	L
SANYO	n.d.	15	5	50 %**	n.d.	L
SAMSUNG	n.d.	25 %	25 %	15 %	50-60 %	L
ERICSSON	5	2	2	5-10 %	15-20 %	H
SIEMENS	500	150	n.d.	35 %	n.d.	H
FLEXTRONICS	n.d.	n.d.	~10 %	n.d.	n.d.	n.d.
Clarion	50	15	3	5-10 %	n.d.	L
ELCOTEQ	300	10	2	1 %	n.d.	L
Delphi Packard	n.d.	n.d.	n.d.	2 %	25-30 %	L

** Hungary-based suppliers, including foreign owned

Dominated by affiliates of multinationals

Economic actors in Hungarian ICT

- Affiliates of multinationals: previous graph and list
- Hungarian-owned, medium sized OEMs
- Small (and medium) sized, mostly Hungarian owned companies, usually suppliers of suppliers

Further relocations from Hungary

- The most labour intensive production processes relocated to 1. China, 2. Other low-wage countries of the region (especially Romania and Ukraine)
- Examples: Flextronics, IBM, Philips, TDK

Policy implications

- „Embeddedness”
- Human capital
- Infrastructure