



ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT

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Trends in the ICT sector

***OECD IT Outlook
2008***

Graham Vickery
OECD

www.oecd.org/sti/ito



Global overview: ICT supply side

- **Growth dropped, Q3-Q4 financial markets meltdown and OECD area recession. Grew in all segments in 2008 due to Q1-Q3 growth. Outlook negative for 2009**
- **Turbulence linked with OECD area recession: IT investment is highly cyclical ('accelerator effect'), consumption hit by 'wealth effect', rising unemployment**
- **Growth was balanced across OECD countries. E.Europe and non-OECD have grown much faster**
- **ICT growth has been highest in consumer, Internet-related, service support systems**
- **Drivers shifted from technology push => commercial applications and user-driven applications pull**
- **Staying the course is the challenge for ICT policy**

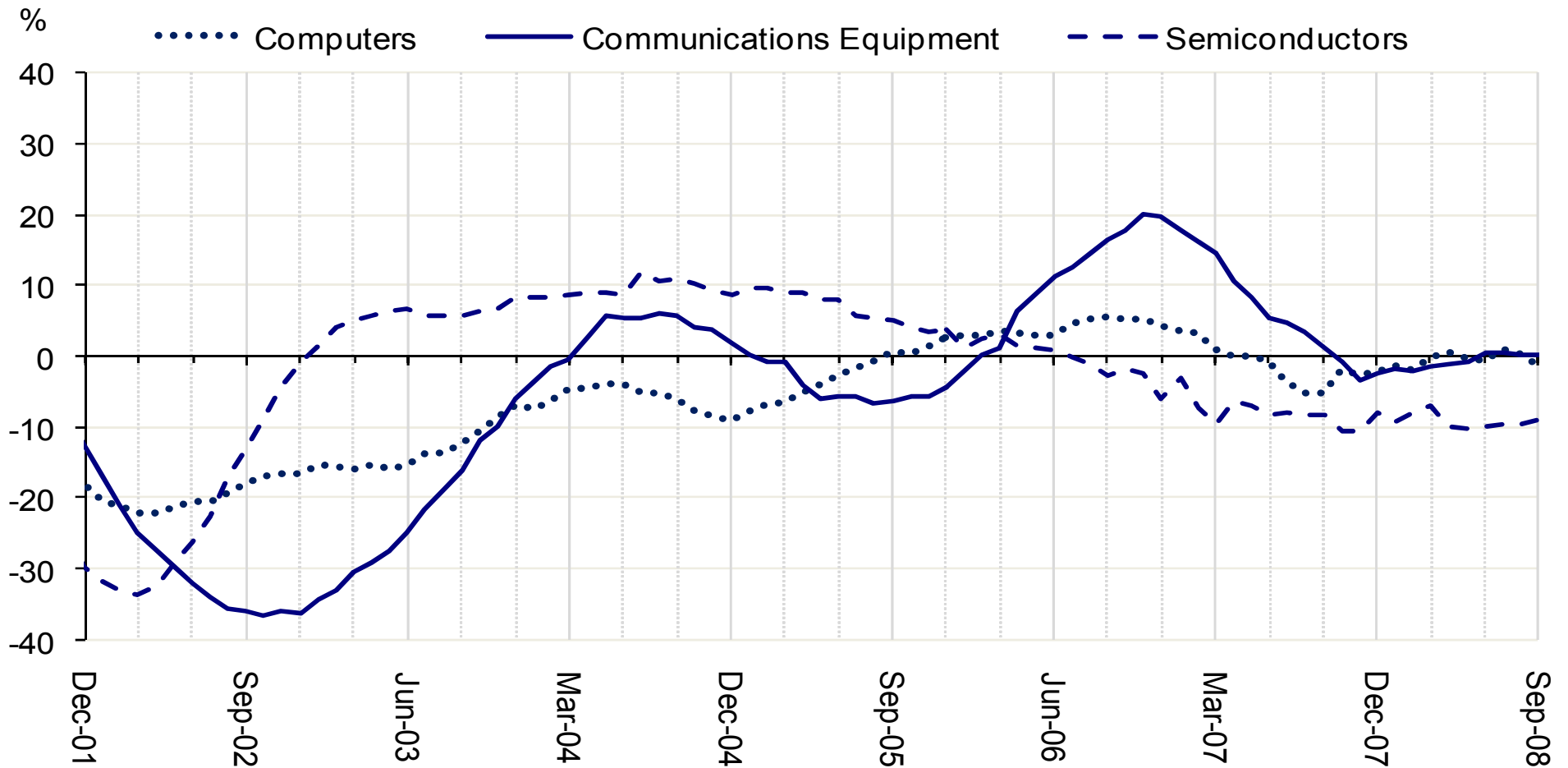
ICT industry developments

- **Aggregate developments => Q3-2008**
 - US output down. Japan & Europe slowing rapidly. Asian countries growing but slowing. **India** growth services sourcing
 - ICT markets: OECD share down **2003 85% => 2007 78%**
 - Non-OECD countries (Russia, India, China) took 23 of top 25 **market** growth positions 2000-2007.
- **Top 250 ICT firms (almost 70% of ICT industry)**
 - Growth across the board 2002-2007. Mixed results Q3 2008: IT, software, Internet firms still perform well. Others more mixed – with stress or declines in many.
- **India 4 Top 250 firms.** TCS USD 4.6 billion 2007, Bharti Airtel USD 4.3 billion, Wipro USD 3.7 billion, Infosys USD 3.1 billion. 48% annual USD growth 2000-07



US monthly shipments ICT goods by segment

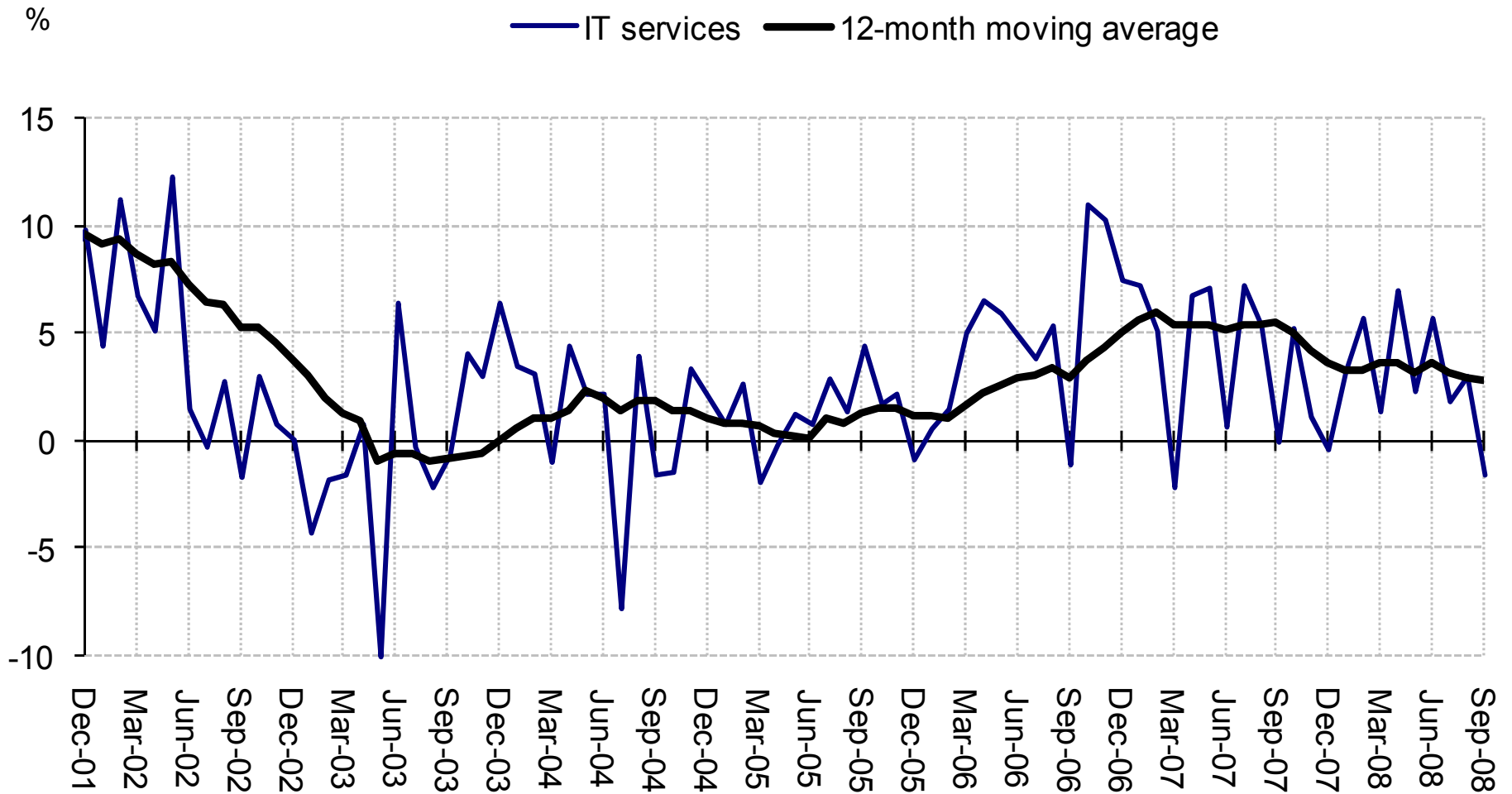
12 month moving averages. December 2001 - September 2008



Source: *OECD Information Technology Outlook, 2008.*

Japan monthly sales IT services industries

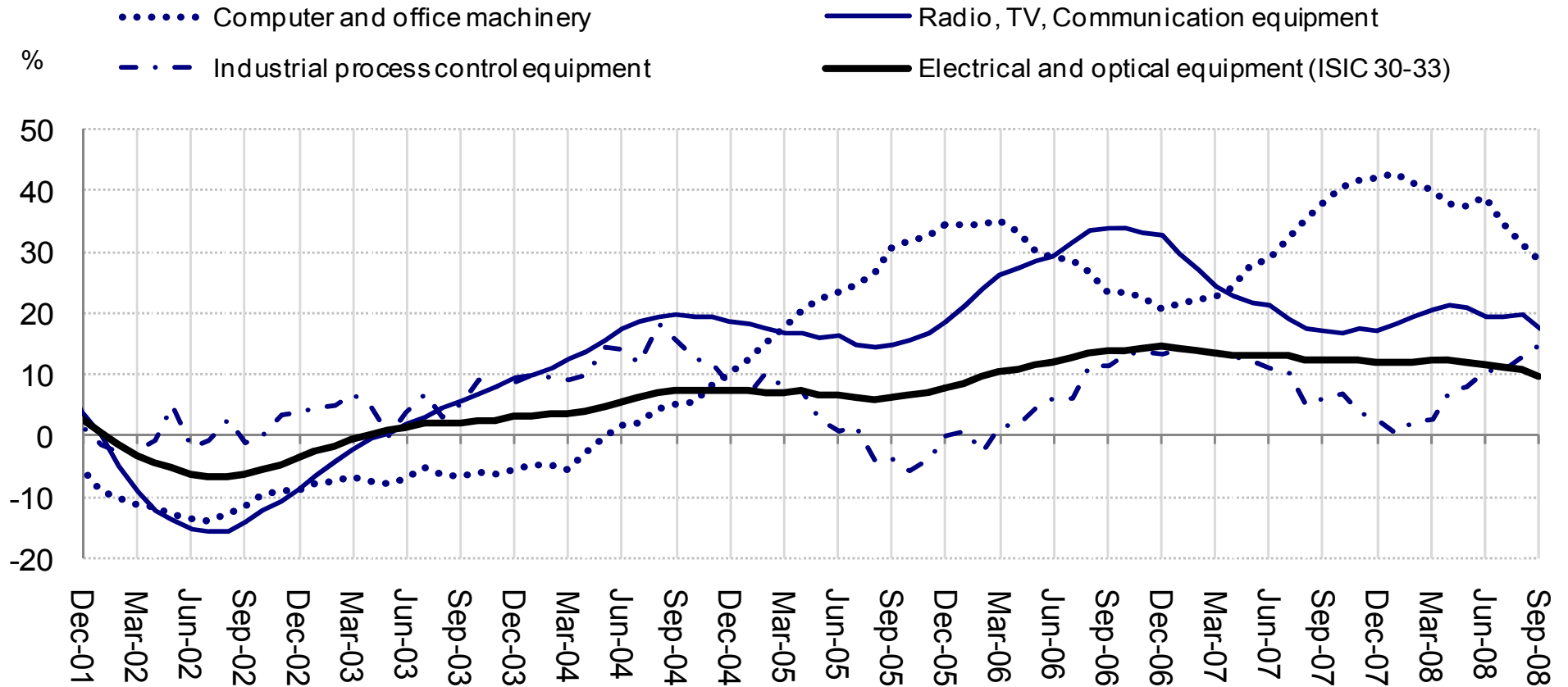
12 month moving averages, December 2001- September 2008



Source: *OECD Information Technology Outlook, 2008.*

Germany monthly production ICT sectors

12 month moving averages, December 2001 – September 2008

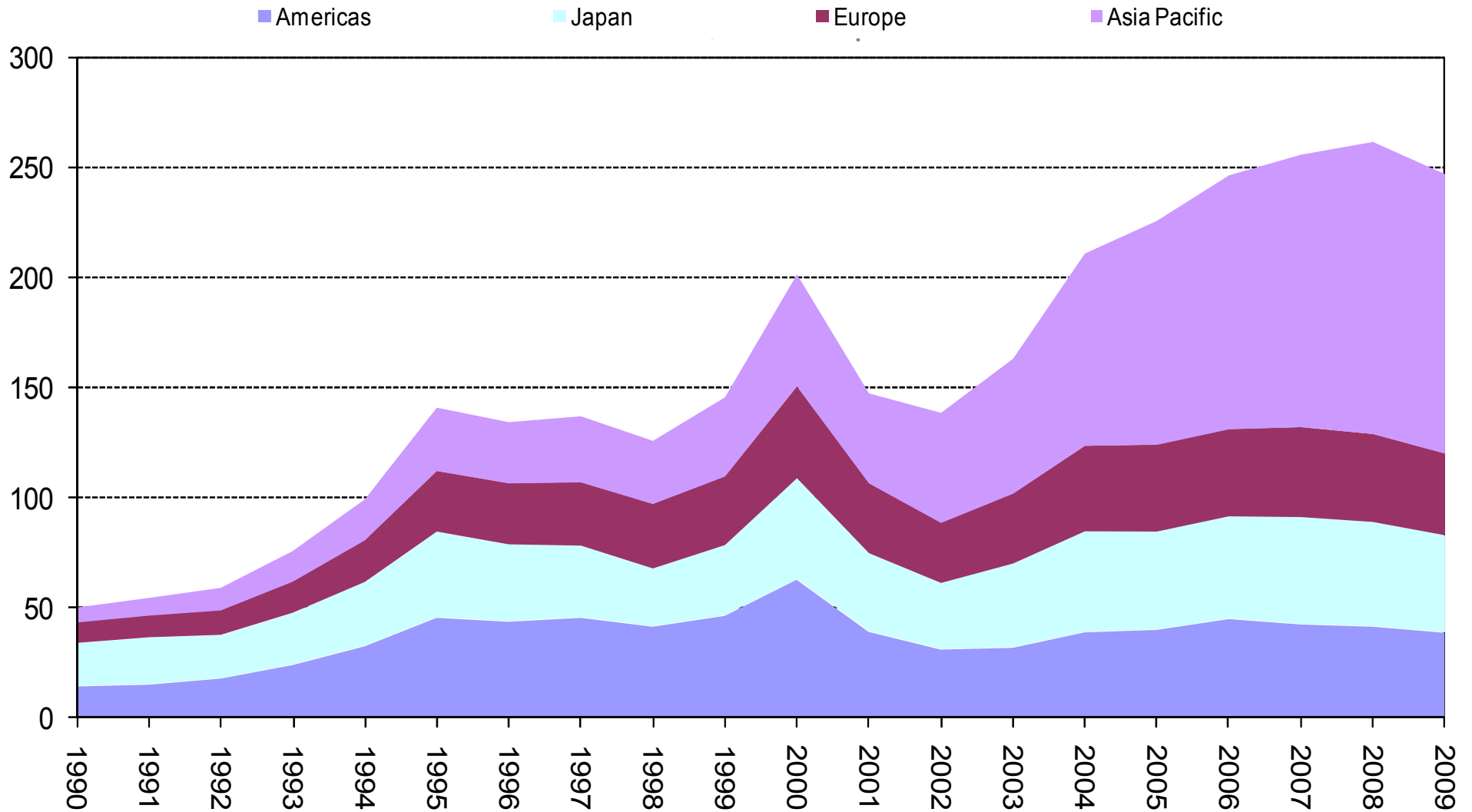


Source: *OECD Information Technology Outlook, 2008*.



Semiconductors in the lead? Asia in driving seat

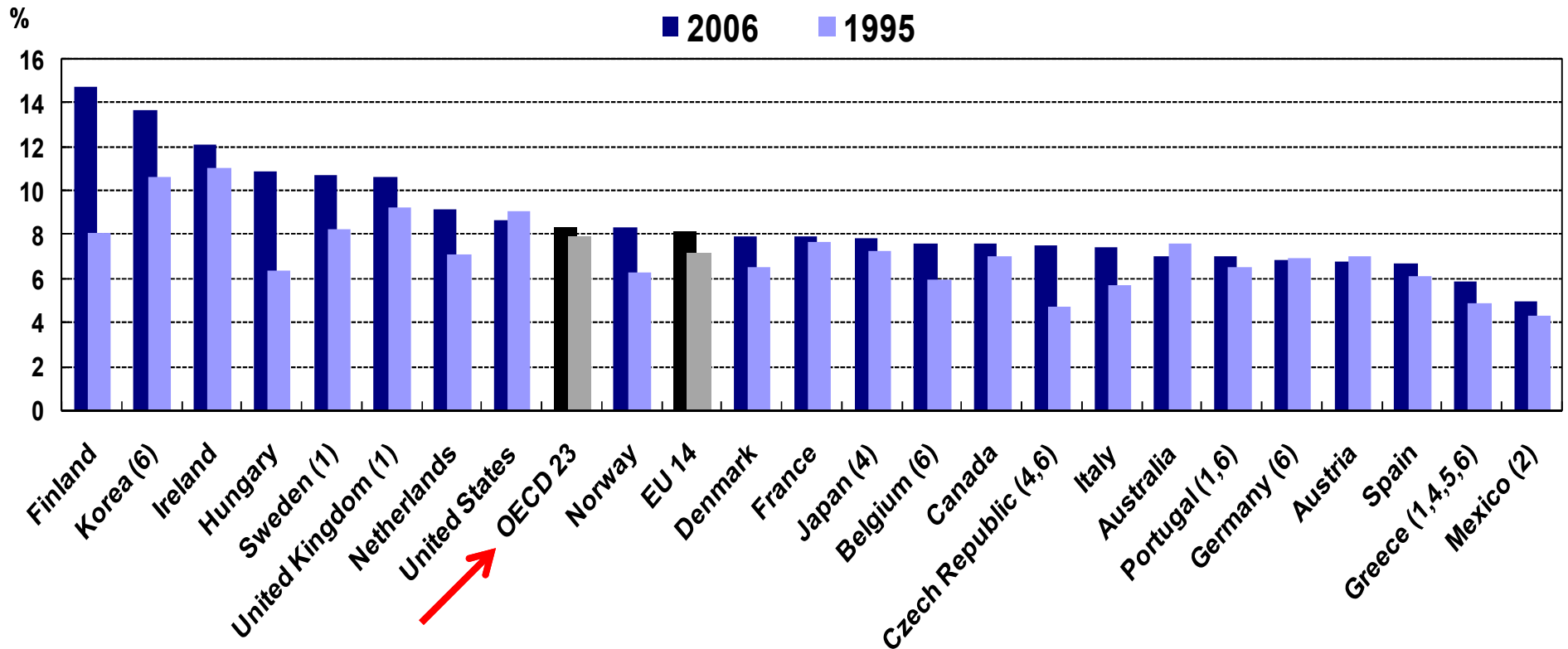
Semiconductor market by region, 1990-2009. Current USD billion



Source: OECD Information Technology Outlook, 2008. 2008 partly estimated, 2009 projected from SIA data.

Long-term trends: ICT business sector VA

1995 and 2006 % of total business value added



(1) 2005 instead of 2006.

(2) 2004 instead of 2006.

(4) ICT wholesale (5150) is not available.

(5) Telecommunication services (642) included Postal services.

(6) Rental of ICT goods (7123) is not available.

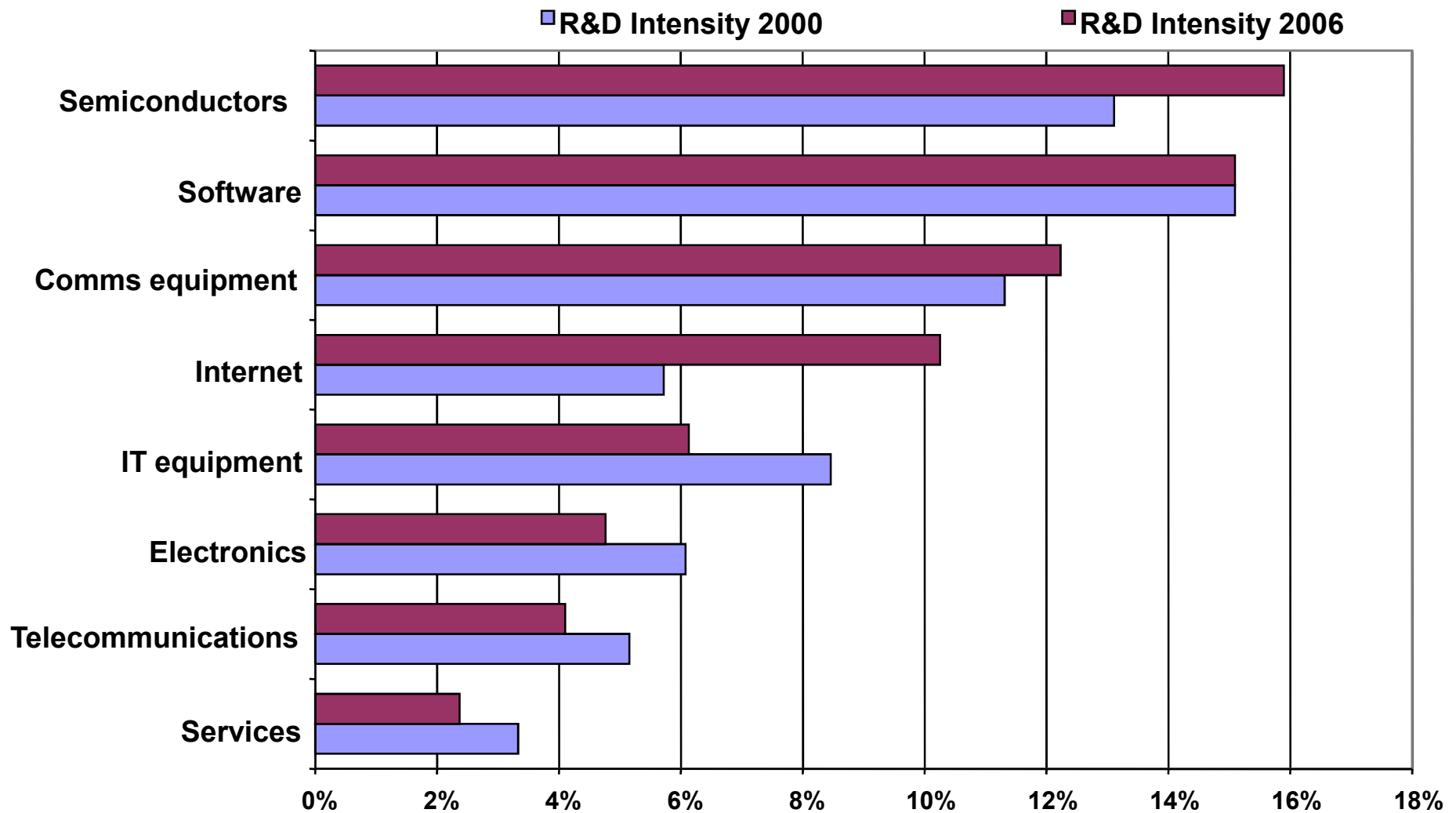
Source: *OECD Information Technology Outlook, 2008.*

R&D driving growth

R&D-intensive - SC, software, Internet firms

Biggest R&D spenders - electronics, SC, IT equipment

Top 250 ICT firms R&D share of revenue, per cent



Source: *OECD Information Technology Outlook, 2008.*

Globalisation and trade

- **New wave of ICT global restructuring**
 - ICT sector intensive in international trade and FDI: 8% of business VA, 12.5% of goods trade, 15% cross-border M&As
- **ICT goods trade: 2007 USD highs**
 - Global ICT trade expanded to USD 3.7 trillion 2007 but growth slowing from 2006 (USD 3.5 trillion 2006). Slowed further in first half 2008 but more resilient than expected. OECD area share in total decreasing to around 50%.
 - OECD has increasing **trade deficit**, particularly IT & related equipment, audio & video. OECD trade surplus components, communications, other ICT goods, surplus software goods.
 - **India** little trade in ICT goods. Imports growing 2½ times exports. 2007 exports < USD 2 billion; Imports > USD 18 billion; Deficit USD 16 billion. Communication equipment largest import; components largest export.

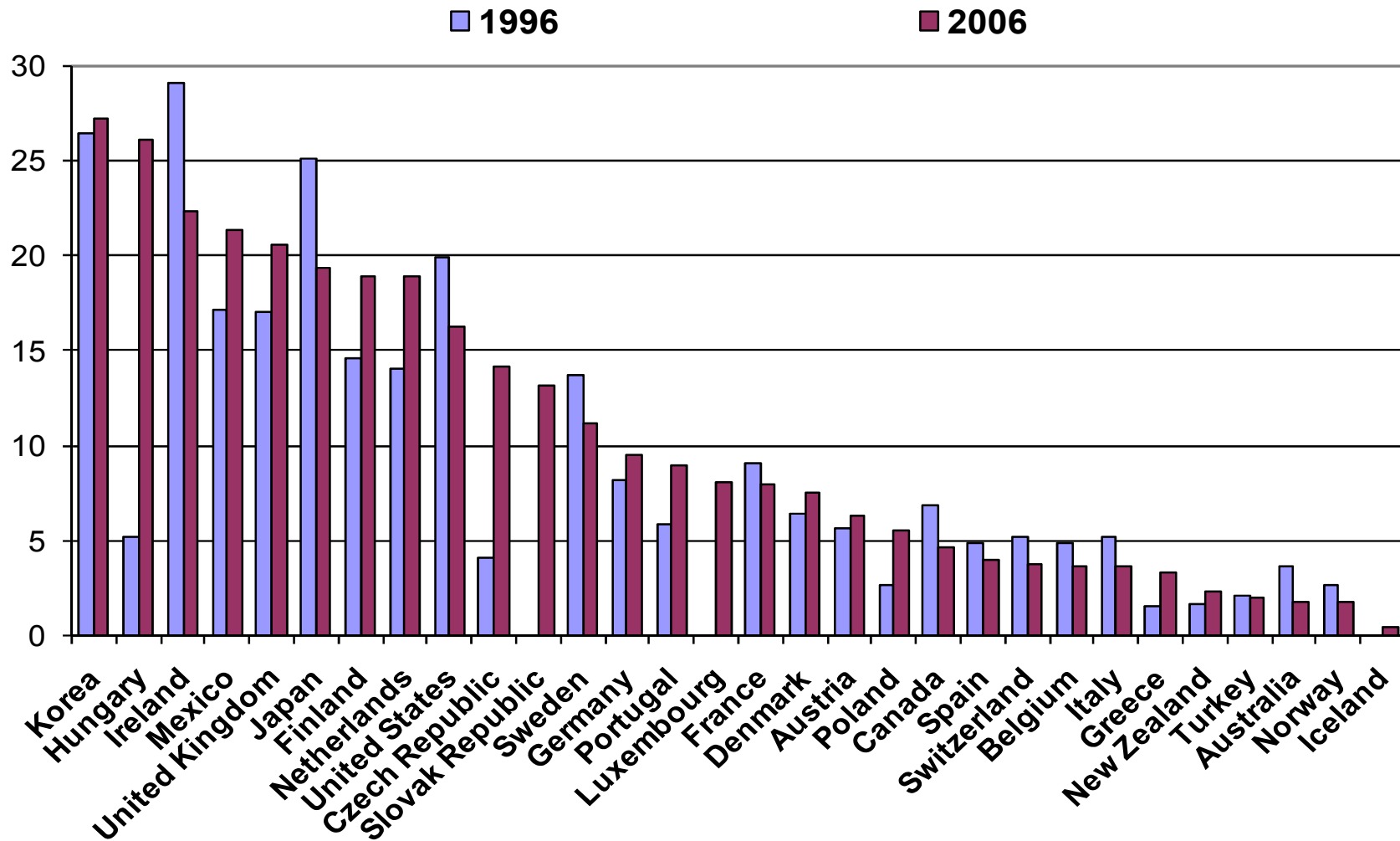
Globalisation and trade

- **Trade in ICT services: growing strongly**
 - **IT services** growing 15-20% p.a.
 - Ireland by far largest OECD exporter: 2006 USD 21 billion, surplus USD 20 billion
 - UK, US and Germany around USD 10 billion exports
 - **India** largest world exporter: 2006 USD 30 billion, surplus USD 27 billion
 - **Communications services**: India USD 1.4 billion surplus
- **High FDI and M&As: Business cycle effect**
 - 2008 down sharply
- **M&As: ICT and comms services high share**
 - Shift to E. Europe and non-OECD. Non-OECD investment up
 - **India** target (2007 Vodafone majority Hutchison Essar)
 - **India** acquirer 2007 30 deals total > USD 1 billion

ICT goods exports:

Large exporters have consistent trade surplus

Share of ICT goods in total goods exports, percentage



Source: OECD Information Technology Outlook, 2008.

ICT specialisation and trade

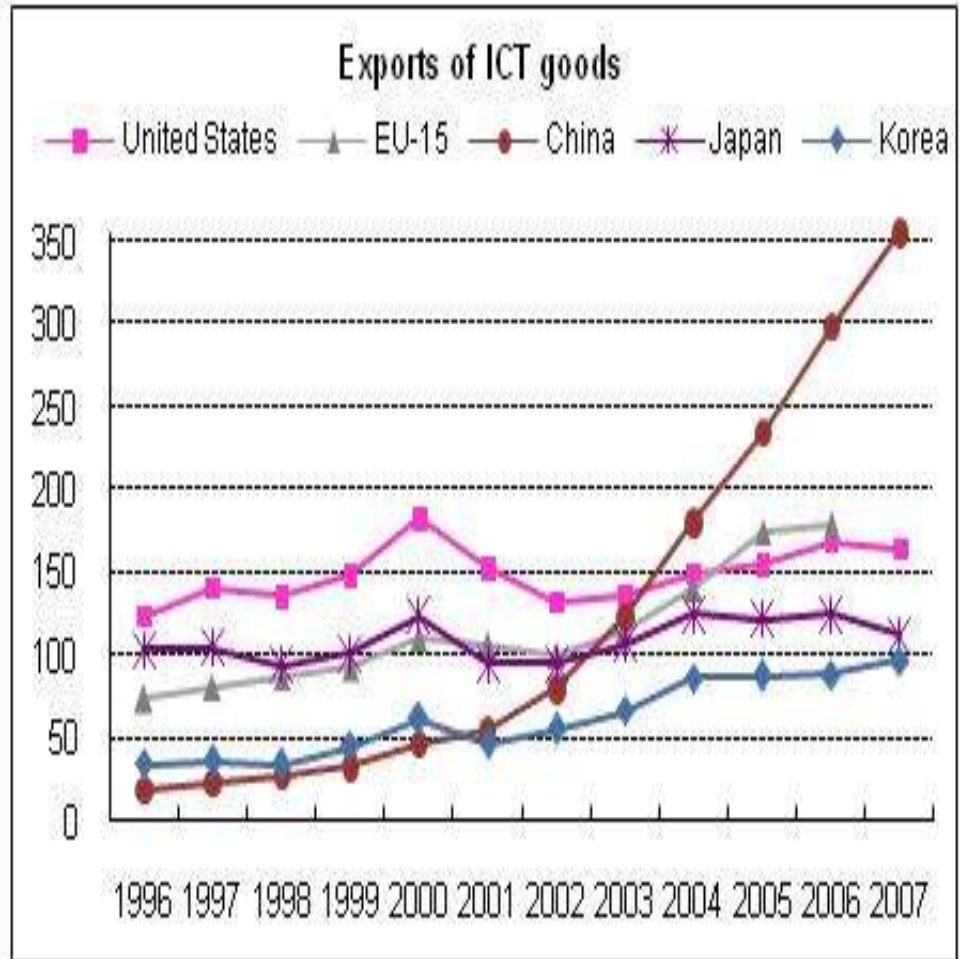
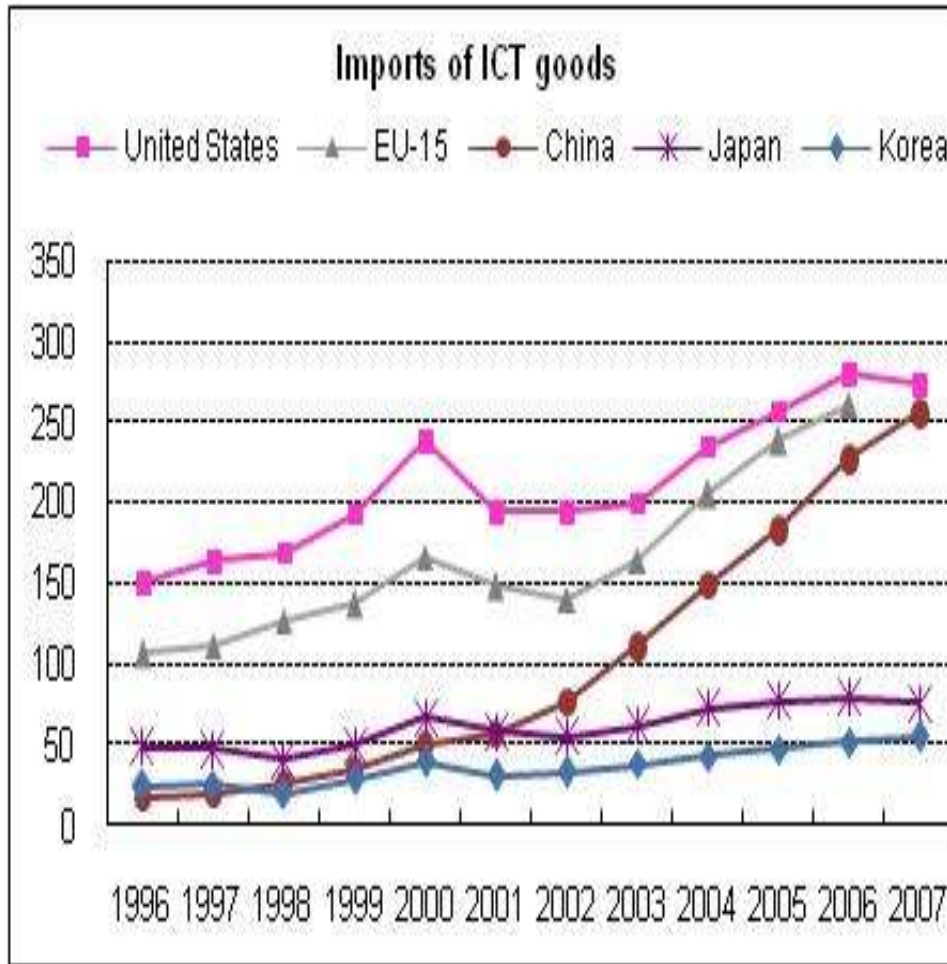
- **Parallels between shares of ICT in manufacturing and services value added and trade performance**
- **Specialisation in the ICT sector reflects the relative strengths of national firms and national factor endowments**
- **Korea, Finland, Japan, Hungary, Ireland and Sweden have high ICT manufacturing value added, relatively strong export performance, consistent trade surpluses**
- **In top group of OECD countries in revealed comparative advantages in ICT goods exports.**

The impacts of China

- **Major force in ICT production and trade**
- **Strategy: Host foreign ICT firms or third-party contract manufacturers -- like Mexico, E. European exporters, unlike Japan and Korea**
- **China's ICT firms developing despite relatively limited size and technological know-how. Investing overseas to buy technology, brands, distribution**
- **Will the ICT industry make transition from low-cost manufacturing to higher value-added products?**

China's lead in ICT goods exports

By region 1996-2007, USD current prices billions



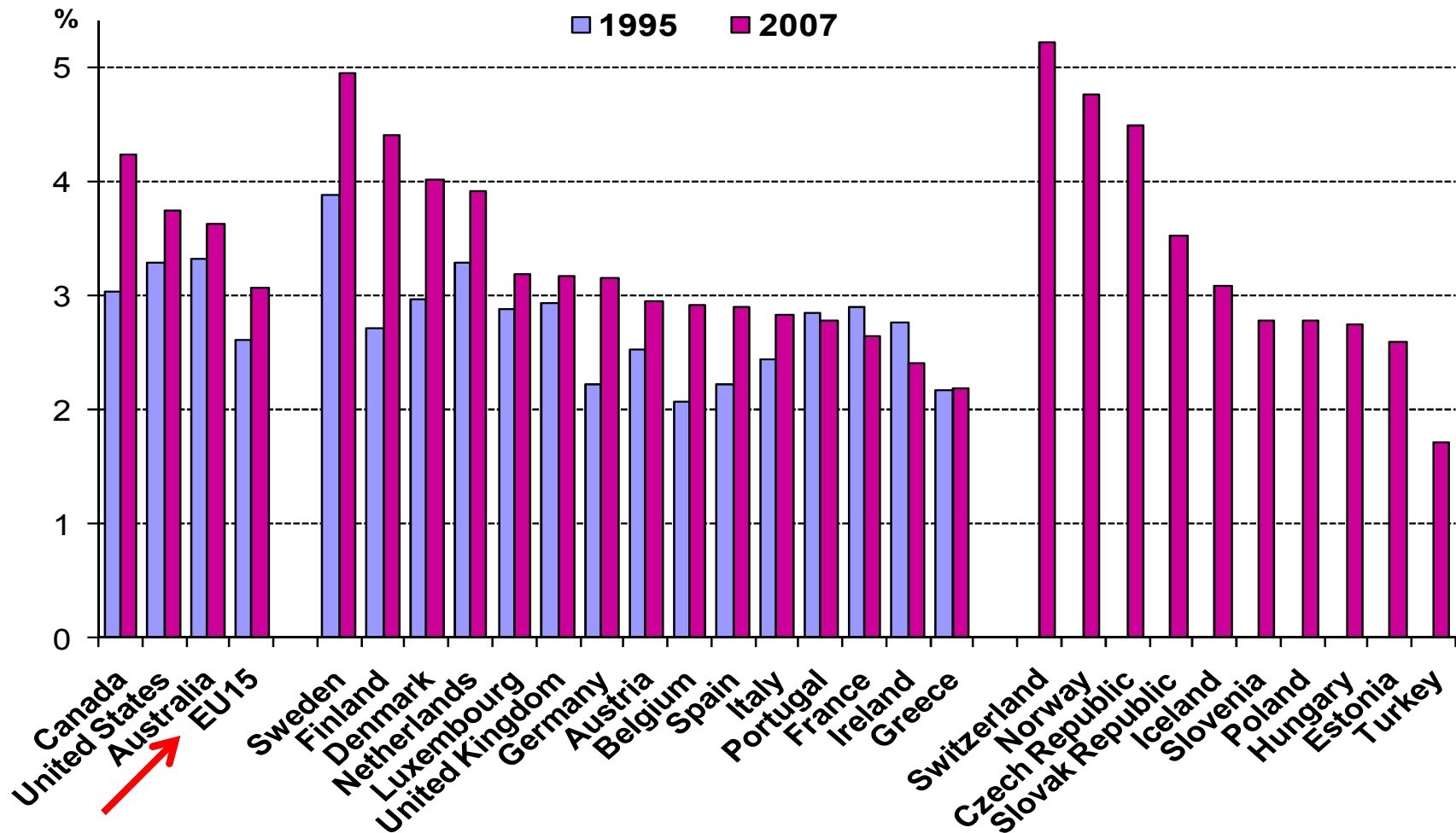
Source: OECD Information Technology Outlook, 2008.

Underpinning growth: Skills and R&D

- **ICT-skilled employment**
 - **Narrow: ICT specialists:** less than **5%** of employment, but growing in most countries.
 - **Broad: ICT-users + specialists:** **20-30%** of employment
- **Employment potentially affected by outward and inward services offshoring**
 - Outwards: intensive ICT users, codifiable, face-to-face contact not needed. Also inwards goods & services sourcing.
 - **Around 20% of employment - high shares in services**
 - **Managers, professionals, engineers increasing**
 - **Clerical occupations falling - also affected by digitisation**
- **ICT R&D generally up in OECD countries**

ICT specialists growing rapidly in most countries

Share of ICT specialist occupations in total employment, 1995 and 2007



Classifications not harmonised: shares for European and non-European countries are not directly comparable.

Source: OECD Information Technology Outlook, 2008.

Rising to the global challenge?

Top ten OECD ICT policy priorities, 2008

1	Government online, government as model users
2	Broadband
3	ICT R&D programmes
4	Promoting IT education
5	Technology diffusion to businesses
6	Technology diffusion to individuals and households
7	Industry-based and on-the-job training
8	General digital content development
9	Public sector information and content
10	ICT innovation support

Source: OECD Information Technology Outlook 2008, 28 OECD countries.