

Copenhagen Business School,
24 October 2007

Economic mega trends in Japan, the industrial structure and international competitiveness

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Long-term trends of the Japanese economy, beyond the shorter term ups and downs of the business cycle, have considerable implications for the industrial structure and competitiveness. The dynamism of the Japanese economy is still considerable, as can be seen from a quantitative indicator of industrial specialisation. Moreover, there is a noticeable dualism between open, competitive sectors and branches resistant to change. A third issue is whether the traditional strength in assembly industries, based on Japan's well-described structural properties, is still useful for future challenges. It is argued that the huge domestic demand with its shifting needs makes Japan a noteworthy lead market for novel products. Summing up, Japan's industrial structure shows considerable strengths and potentials, while it has been frequently underrated in recent years.

Contents

- Dynamism of Japan's industrial structure
- Dualism between competitive and retarded sectors
- Strength of the assembly industries: still an advantage or a handicap?
- Role of demand: Japan as a lead market

The industrial structure changed dynamically even during Japan's „lost decade“

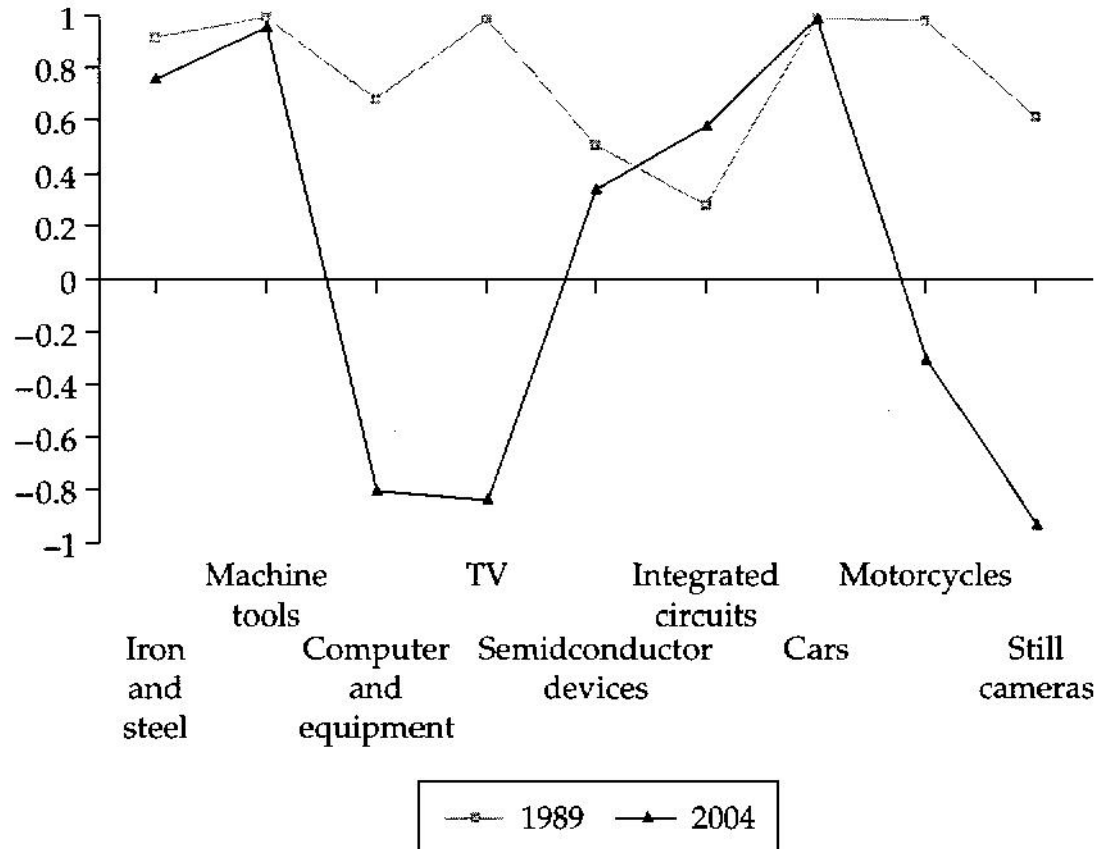
Dynamics of specialization

[Correlation of specialization over time: the lower the more different]

Period Country	1970- 1979 (Wolff)	1979-1994 (Wolff)	1970-1994 (Wolff)	1980- 1999 (Pascha)
Japan	0.84	0.84	0.58	0.73
Germany	0.96	0.87	0.76	0.88

Structural change of Japan's foreign trade (EX-IM/EX+IM)

Figure 1.3. Japan's Trade Specialization Index (vis-à-vis East Asia and Pacific)



Source: Shibate 2006: 2-3

Implications

- Several market segments can increase rapidly even during low overall-growth. This creates significant market opportunities.
- Simultaneously, non-up-to-date markets can decrease rapidly. Companies should prepare for this case, too.
- Sectoral dynamism equals economic dynamism, with all positive aspects of forward orientation.

A duality between competitive and retarded sectors has emerged: According to Porter, openness and low governmental influence are decisive.

<i>Sector</i>	<i>Japanese position in the global market</i>	<i>National degree of competition, governmental influence</i>
Home audio equipment ↑	Global market leader in many devices	25 companies with own brand names; no state intervention
Semiconductors↑	Global market leader in the early 90's	15 rivals (1997); foreign trade barriers were abolished in 1974
Musical instruments↑	Global market leader	2 rivals, actually at the same location (Hamamatsu); no state intervention
Cameras↑	Dominant producer and exporter (approx. 80 %)	13 rivals (1997); unsteady market shares point to strong competition; recession cartel 1965
Automobiles↑	Global market leader	9 producers in intensive competition; governmental efforts of consolidation failed
Chemistry↓	6 % of global export. In fact, 14 % of global production, but mainly for domestic demand	Strong governmental influence weakens competition: e.g. limitations on entry, price and supply control etc.
Detergents↓	2 companies with domestic share of 70 %, but without international presence	Complex system of distribution functions as a market entry barrier, restriction of direct investment until 1970, etc.
Clothes↓	Less than 1% of global export; high import deficit	Most important competitors struggle for import licenses, which handicaps in-house development; no state intervention
Chocolate↓	Less than 0.1 % of global export	Low product innovation of 5 leading rivals; import quota until 1974, still tariff of 10% in 1988

Camera – Industry (+)

Factor-Input-Conditions

- Considerable human capital (engineers, machine operators, etc.)

Local Demand

- Major local demand for new features



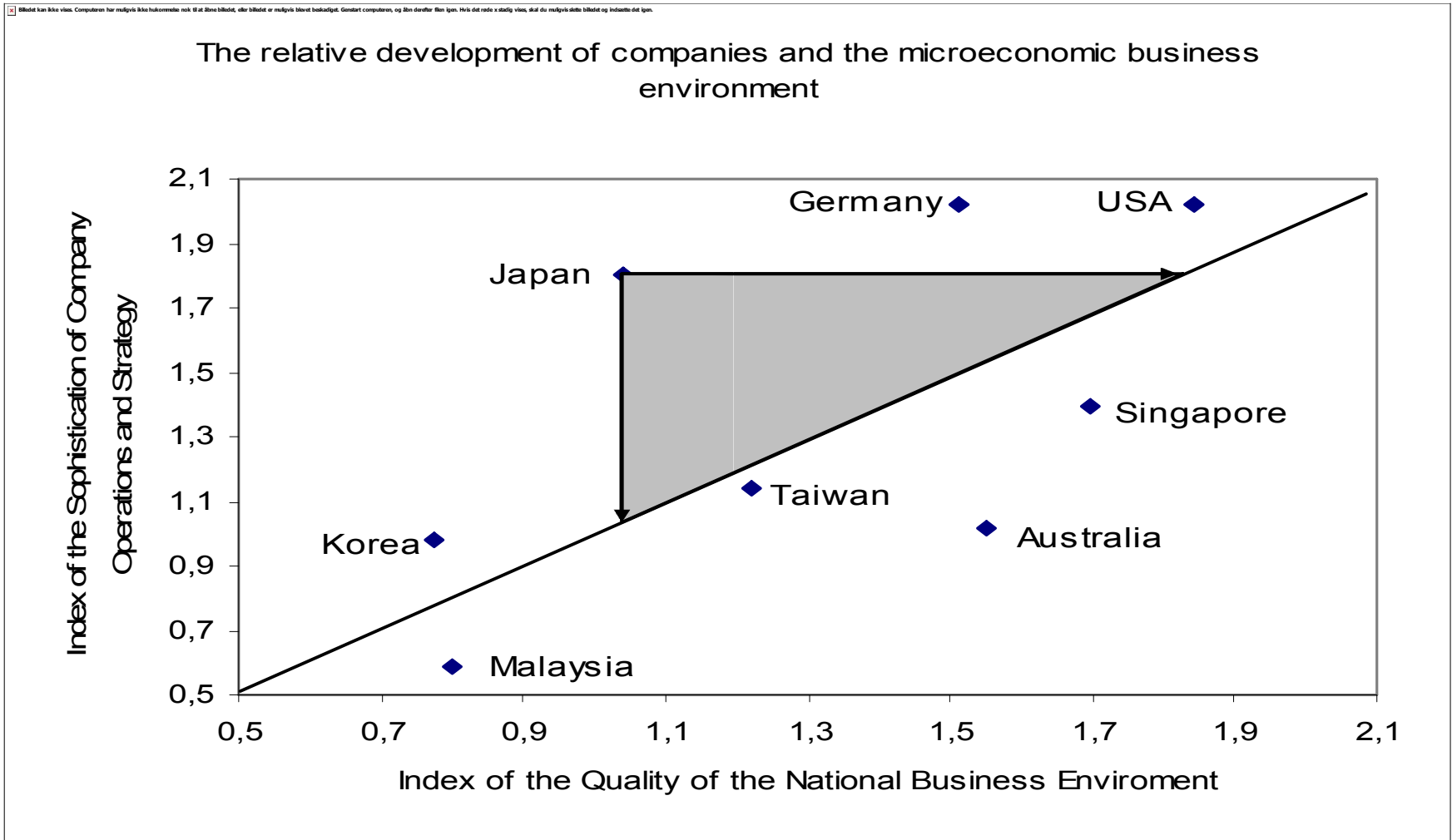
- Many competitors
- Strong competitive pressure
- ... also from substitutes (mobiles) and other industries (electronics: Sony etc.)

- Strong electronic industry that allows synergy effects
- Strong optical makers
- Strong precision machinery makers

Local Degree of Competition

Supplier & Connected Sectors

Japanese private business is much more competitive than the macro framework



Source: WEF (2003)

Disappointing productivity growth in the 90's – is this trend unchangeable?

Growth in Total Factor Productivity of leading OECD countries (average annual growth in percent)

	Japan	Germany	France	USA
1985-1990	3.0	n.a.	1.8	0.9
1990-1995	0.8	n.a.	0.8	0.8
1995-2001	0.6	0.8	1.4	1.2

Source: OECD Productivity Database

Note: The TFP and *Multi-factor Productivity* respectively are calculated with harmonised price indices for IT capital equipment. This is reasonable because IT goods are differently treated in national statistics.

Future of Productivity Growth

- TFP (progress, efficiency) as a residual is difficult to calculate
- Disappointing development in 90's was mainly due to recession (late adjustment of personnel)
- Considerable catch-up effects outside of industry
- Modification of the innovation system can cause a boost
- Contribution of IT will be more striking in the future (lowering prices, more risk capital)

Conclusion: Considerable contribution conceivable in the long-term

Japan's post-war advantages in assembly industry

- Firms use networks for flexible *and* sustainable collaboration – „flexible specialization“ e.g. supply-pyramid in automobile industry
- Innovation is characterized by incremental improvements
- Complementary structures and processes (teamwork)
- The adaptability of these advantages by foreign competition is limited

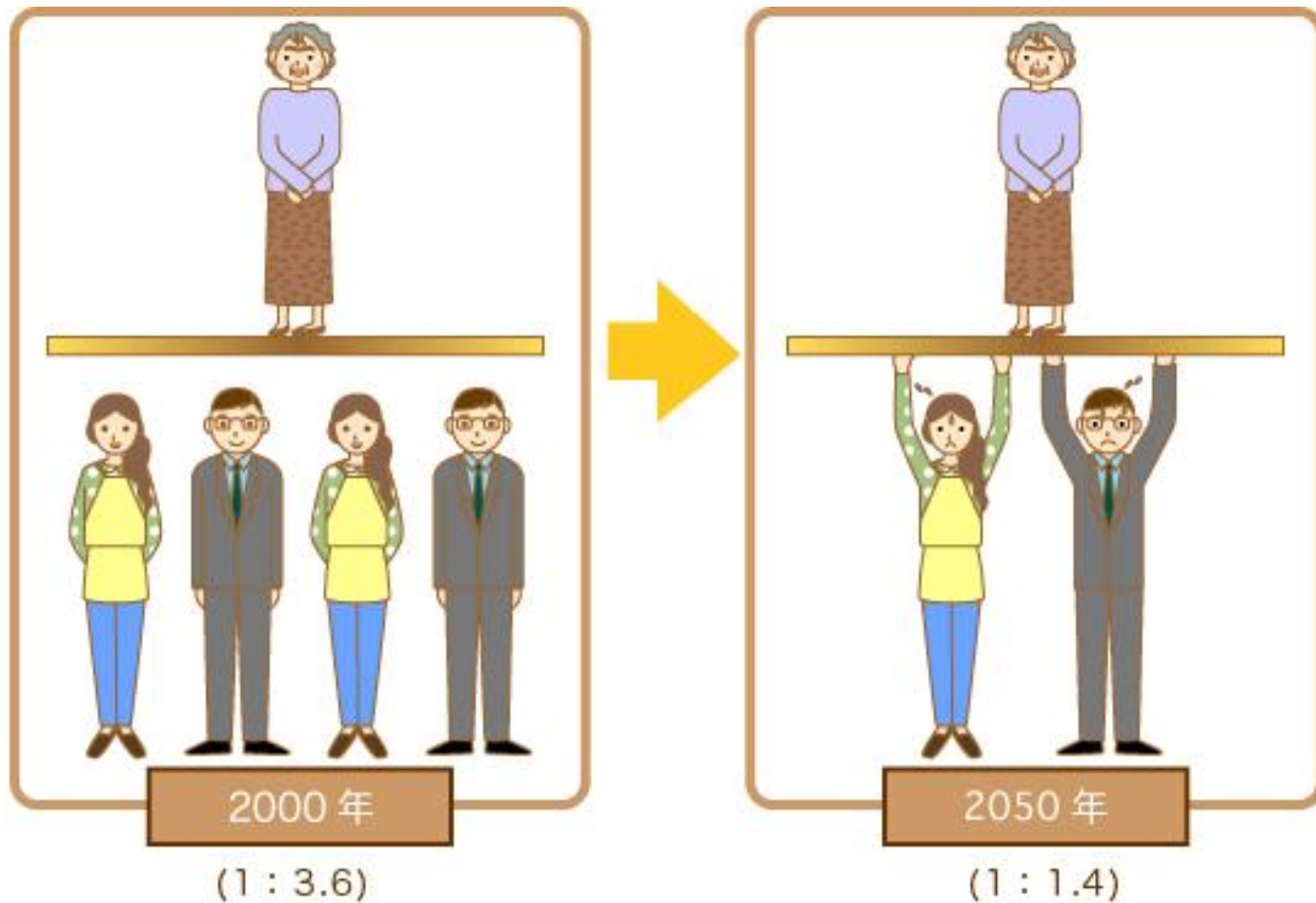
Are these advantages at risk? Will they even change into handicaps?

- In high-technology, incremental improvements play no major role
- Standardization and „arms´ length“-markets can be superior in a turbulent global market
- Low costs of transportation and communication lower the added value of stable networks
- Networks are difficult to maintain in the time of globalization

But ...!

- Lower prices of information transfer also support networks through lowering the risk of opportunism: „*move to the market*“ or „*move to the middle*“ as an open question
 - Networks based on trust and reliability have advantages in a turbulent global market
 - More choices for compatible arrangements beyond present paths through internationalization and deregulation
- Heterogenisation: idiosyncrasies of firms gain in importance relative to national systems

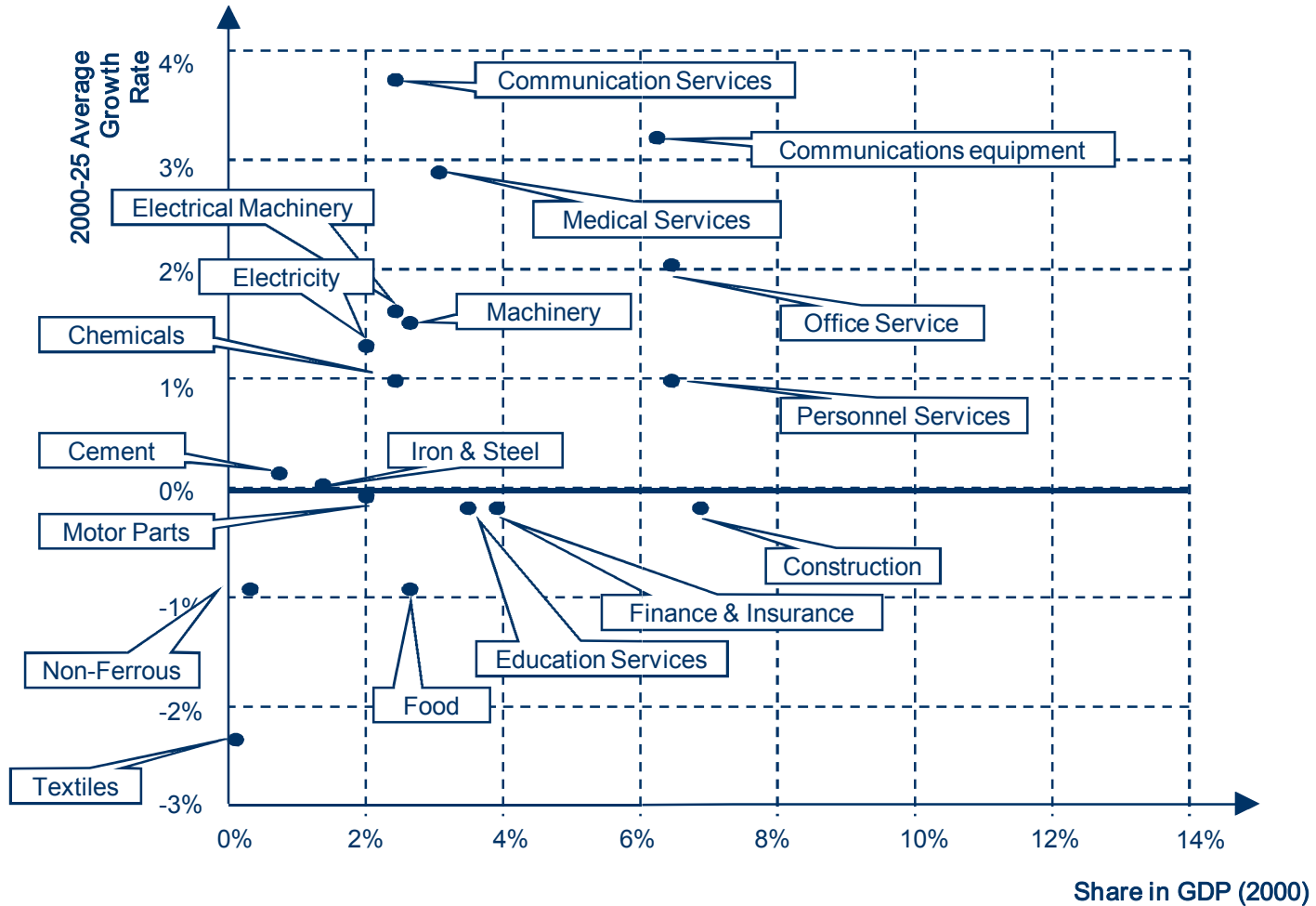
In 2050, the ratio of the aged (65+) versus working population will be 1:1.4



Saturation of consumer demand as an obstacle of growth?

- Saturation in mature economies is not affirmed
 - Dynamics of demand towards services, especially for the aged population
 - Japan as a leading market: „Silver Industry“, household robots, digital cultural assets
 - Capacity of new industries with process-oriented innovation
- Interesting growing sectors, also for foreign firms

Japan's growing sectors until 2025



„Cool Japan“ – the hope of the future?

- Japanese cultural assets, such as video games, cartoons, motion pictures, pop („J-Pop“), fashion and architecture, are internationally successful

Light and shadow of the media phenomenon „Cool Japan“

- International and regional influence – but convertible as a market success?
- Sales in 2002 „only“ 12.5 bn. US\$ – while +300% in 10 years
- Products with large profit margins – vulnerable in medium-term (e.g., changing image of Sony vs. Samsung)
- Consumption culture-fitness is difficult to replicate as a unique selling point

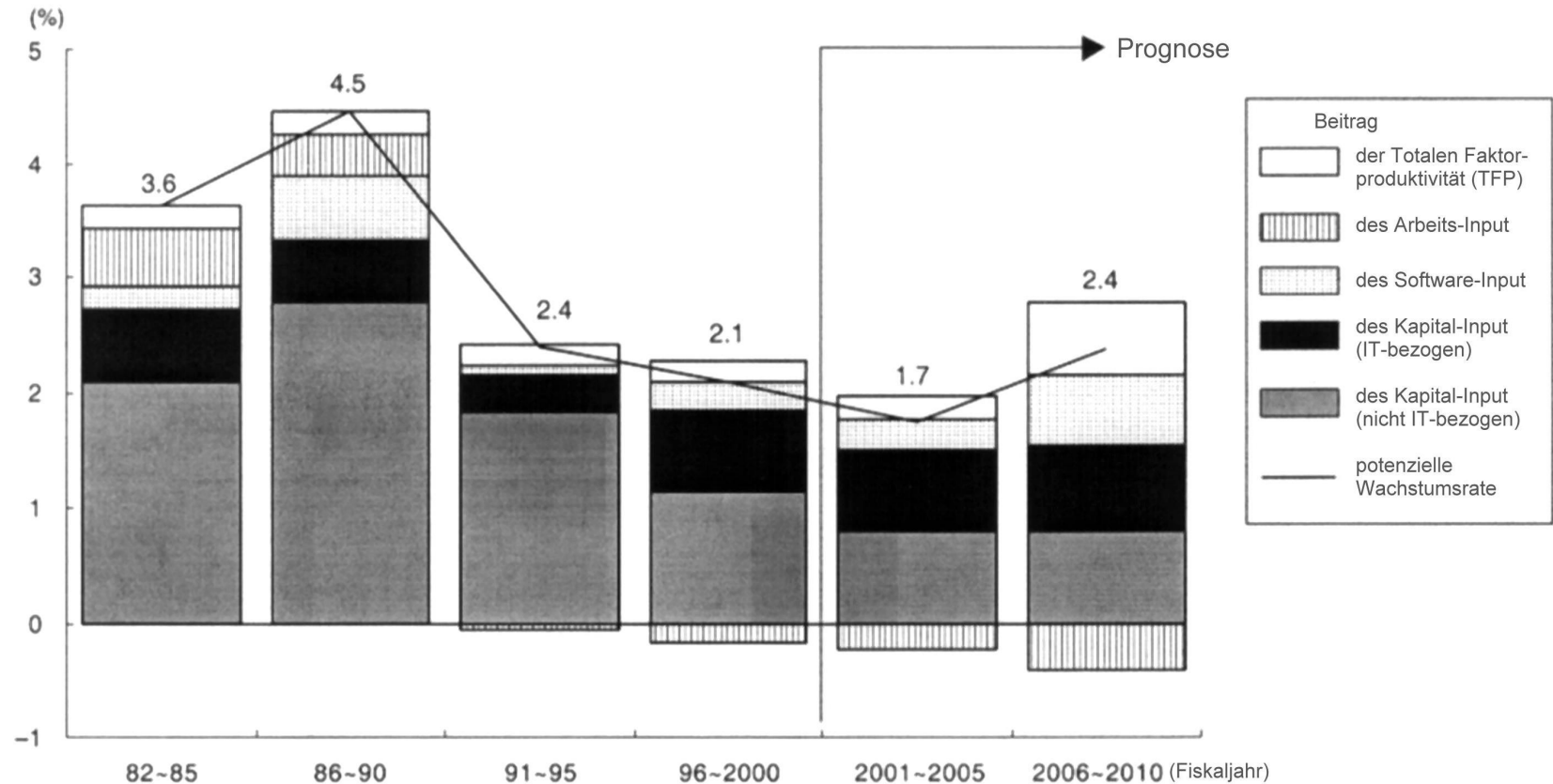
The „lead market“ concept

- Lead markets have the ability to stimulate innovation, based on geographical circumstances of demand and political-economic environment, *and* conditions for introducing and commercializing the product worldwide.
- Important sources of lead market advantages are: price and cost, demand, demonstration, transferability, international business activity, market structure, market support (politics, linkages)
- The example of Japan's silver market: early demand, transferability of demand, production structure, int. bus. activity profile

A Conclusion

- The Japanese industrial structure changed dynamically even during the „lost decade“
- Sectors that are internationally open and only exposed to relatively low governmental influence have a chance to be especially successful
- The slow productivity growth has been largely due to the recession, not to long-term decline
- Japan's advantages in the assembly industries (networks, teams) continue to be assets in a turbulent global economy
- Aging and other phenomena, such as the vitality of consumption, create advantages as a lead market

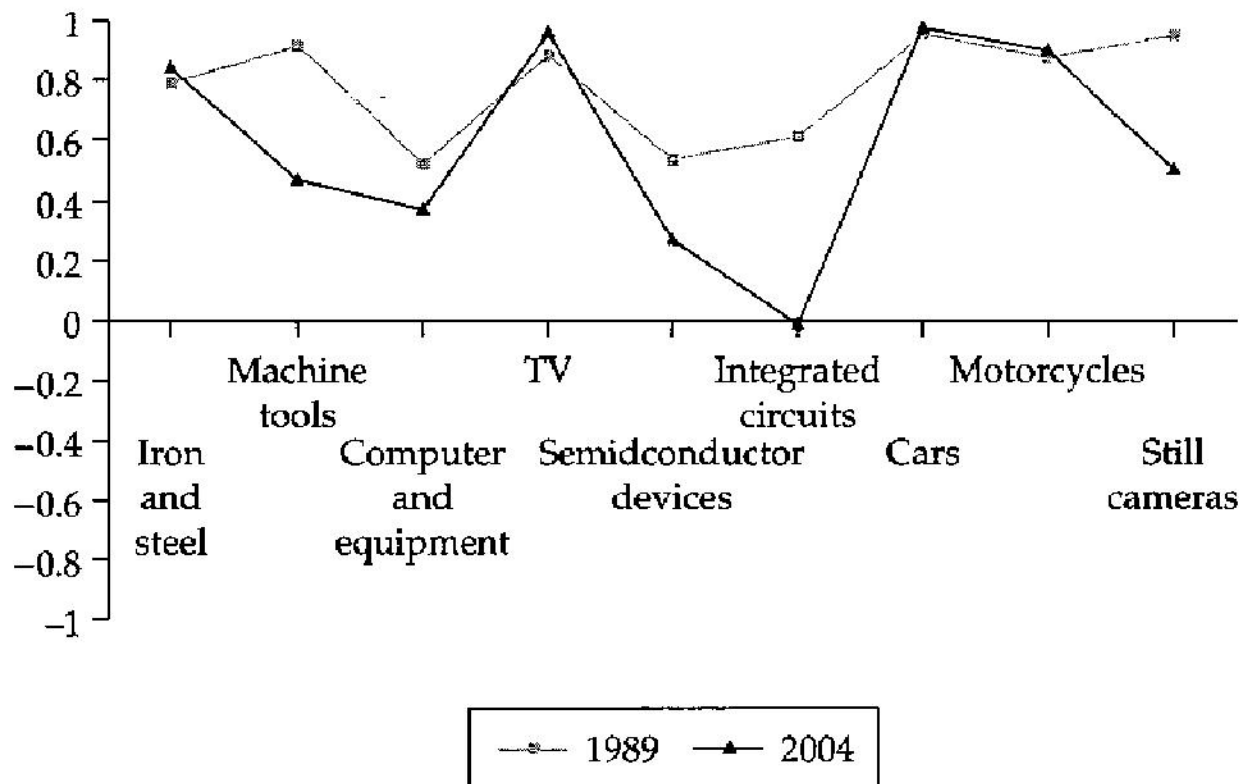
Factors of influence on the potential economic growth



Quelle: Masuda, Yasuyoshi (2001): Japan's Economy in the Coming Decade - Towards Rebirth Through Creative Destruction (Fuji Research Paper, Nr. 22). Tokyo, S. 6 (leicht modifiziert)

Structural change 1/2

Figure 1.2. *Japan's Trade Specialization Index (vis-à-vis the U.S.)*



Source: Shibate 2006: 2-3

Notes on the slide “structural change”

*Notes: Trade Specialization Index is calculated as $(EX-IM)/(EX+MI)$, where X is exports and M is imports. For the chart above, Japan's exports F.O.B. to the United States are used for EX , and the United States' export F.O.B. to Japan is used for IM . Products are named as follows in WITS database. Semiconductor devices: *Diodes/transistors/etc.*; Integrated circuits (ICs): *Electron integ circuits*; Cars: *Pass motor veh exc buses*; TV: *Television receivers*; Motorcycles: *Motorcycles/mopeds*; Machine tools: *Mach-tools remove mtrial.**

Source: WITS Database, the World Bank, WTO, UNCTAD, UNSD.

Basic literature on lead markets

- Marian Beise, Lead Markets, Drivers of the Global Diffusion of Innovations, RIEB Discussion Paper No. 141, Kobe University 2003, <http://www.rieb.kobe-u.ac.jp/academic/ra/dp/English/dp141.pdf> (also in Research Policy, Vol.33, No.6-7, pp.997-1018)