

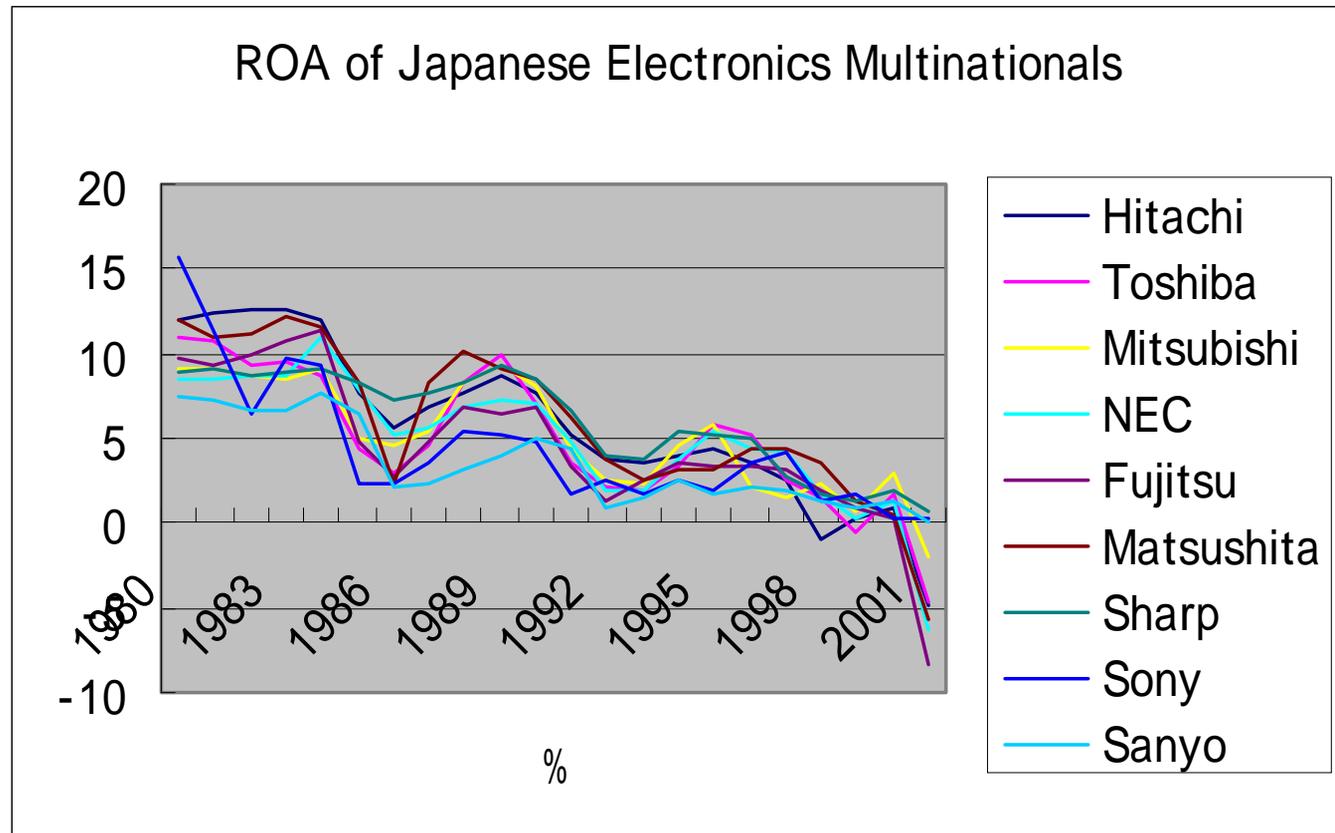
Towards a Strategic Realignment of  
Production Networks: Japanese  
Electronics Multinationals\* in Asia and  
China  
by Tomoo Marukawa

\*Hitachi Ltd., Toshiba Corporation, Mitsubishi Electric Corporation, NEC Corporation, Fujitsu Ltd., Sony Corporation, Matsushita Electric Industrial Co. Ltd., Sharp Corporation, Sanyo Electric Co. Ltd.

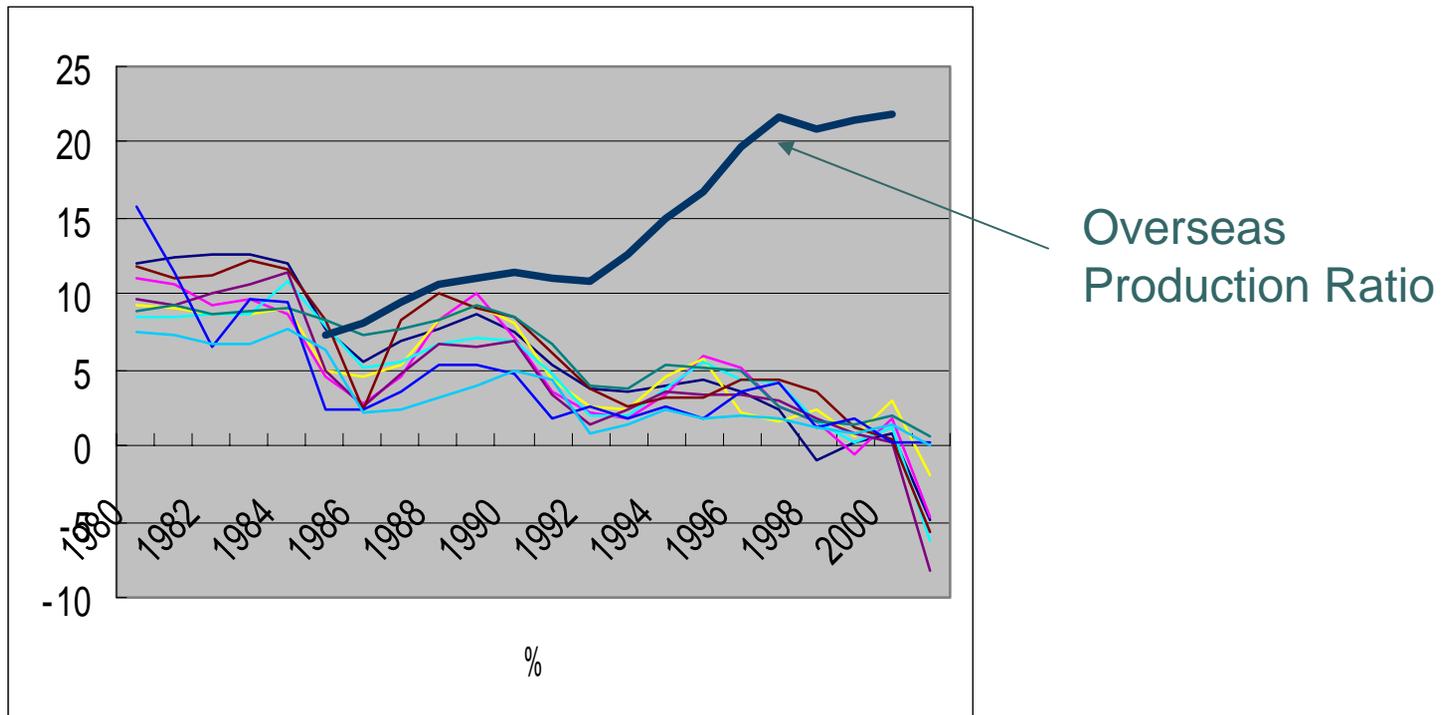


# Introduction

Japanese electronics multinationals (JEMs) are suffering from financial difficulties.

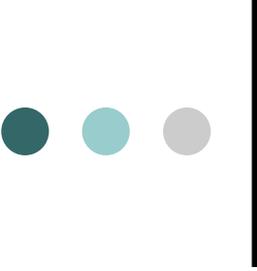


While their ROA declined, the overseas production ratio of Japanese electronics industry has steadily risen. Poor performance in the overseas operation seems to be one of the reasons of the decline of Japanese electronics industry, if not the most important.



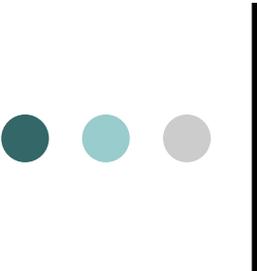


# A brief history of JEMs' investment to Asia



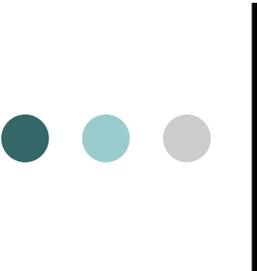
# JEMs' investments to Asia

- JEMs started to develop in the late 1950s, mainly by exploiting the domestic market.
- They soon succeeded in expanding exports to US.
- From around 1960, they started to penetrate the Asian market.
- They set up operations there to avoid trade barriers.



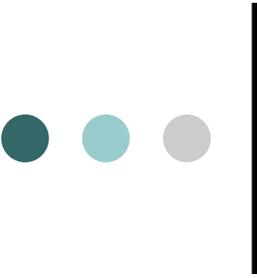
# Production sites established by JEMs

|             | Before<br>1960 | 1961-<br>1970 | 1971-<br>1975 | 1976-<br>1980 | 1981-<br>1985 | 1986-<br>1990 | 1991-<br>1995 | 1996-<br>2000 |
|-------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| South Korea | 0              | 3             | 11            | 2             | 1             | 4             | 1             | 1             |
| China       | 0              | 0             | 0             | 0             | 7             | 5             | 81            | 47            |
| Hong Kong   | 0              | 1             | 0             | 0             | 2             | 4             | 1             | 1             |
| Taiwan      | 1              | 14            | 1             | 1             | 1             | 6             | 2             | 2             |
| Vietnam     | 0              | 0             | 2             | 0             | 0             | 0             | 2             | 3             |
| Thailand    | 0              | 5             | 2             | 1             | 2             | 20            | 8             | 7             |
| Singapore   | 0              | 1             | 10            | 7             | 2             | 9             | 1             | 1             |
| Malaysia    | 0              | 2             | 6             | 5             | 3             | 20            | 5             | 0             |
| Philippines | 0              | 3             | 2             | 0             | 1             | 3             | 5             | 7             |
| Indonesia   | 0              | 1             | 1             | 0             | 0             | 2             | 18            | 12            |
| India       | 0              | 4             | 3             | 0             | 1             | 2             | 3             | 5             |



1960s: JEMs established one company in each Asian country.

- The companies produced a full line-up of their products
- A typical example is “Mini-Matsushita’s” which produce TV sets, refrigerators, and rice cookers to serve to domestic market of the host country.
- An exception was Taiwan, where JEMs built export-processing factories.



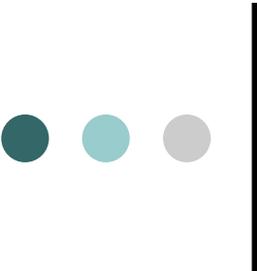
1970s: JEMs built export-processing factories in South Korea, Singapore and Malaysia.

Late 1970s and 1980s: JEMs were busy establishing production sites in North America and Europe, which were intended to ameliorate trade frictions.

After 1985, JEMs accelerated the shift of their export bases from Japan to Malaysia, Singapore and Thailand . In 1990s, they also expanded into Indonesia and Philippines.

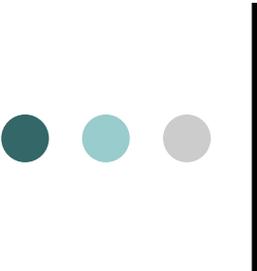


# JEMs' business in China

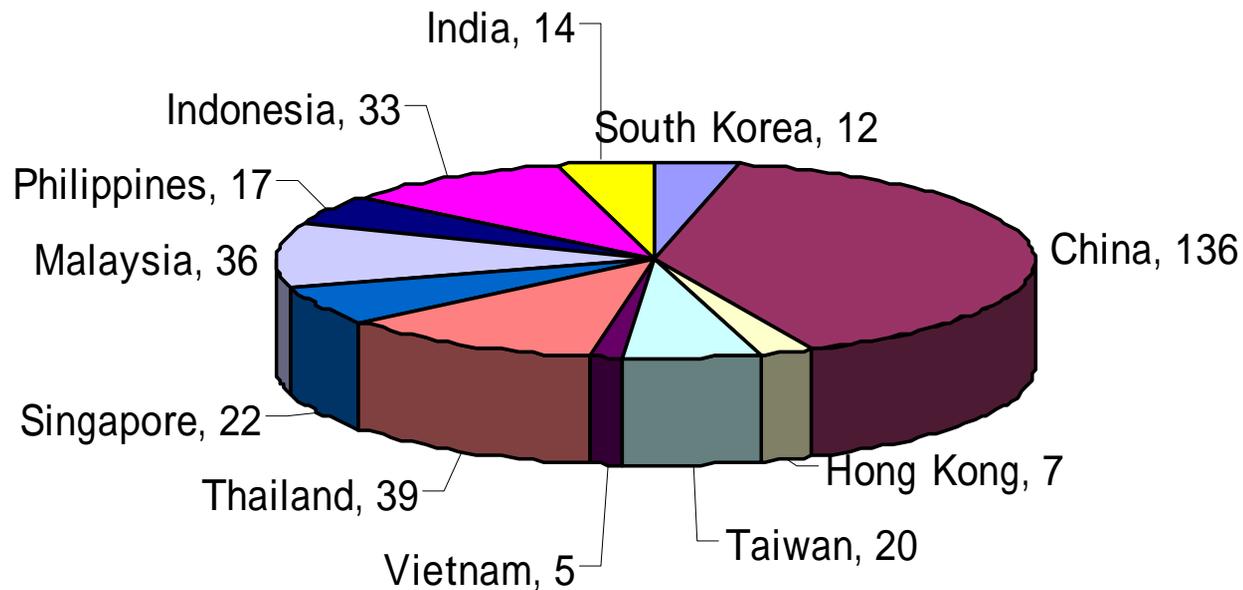


# JEMs' business in China

- Late 1970s and early 1980s: TV set exports.
- 1980s: Export of production lines of household electronics.
- Late 1980s and early 1990s: Involvement to the localization project of main electronics components, such as TV tubes and VCR chassis.

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- JEMs' products were very popular in China until early 1990s.
  - JEMs rushed in China soon after the reform of the foreign exchange system.
  - Matsushita established 37 subsidiaries in just a few years period.
  - Now all of the nine companies have more production sites in China than in any other country in Asia.

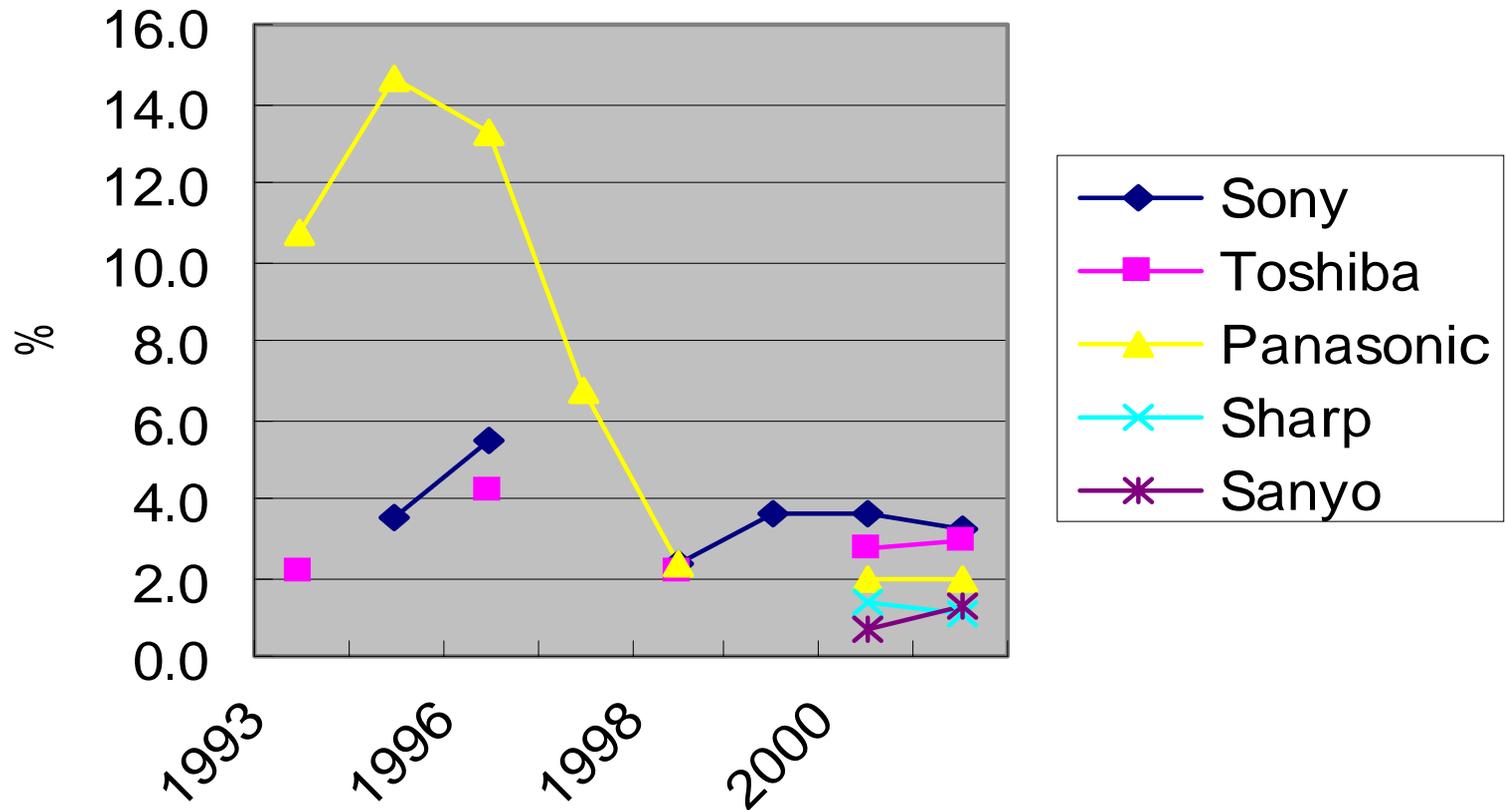
# Geographic distribution of the production sites of JEMs

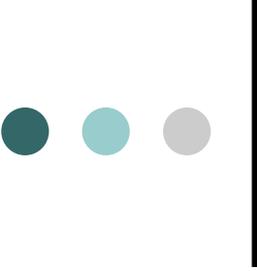




# Business performance in China

JEMs' market shares in the Chinese market have *dropped* after their investments.





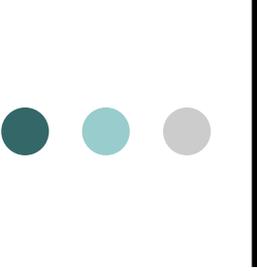
JEMs are also having tough fights in the household electric appliances market.

Washing machines: Haier 28.8%,  
Matsushita 5.4%, Hitachi 2.1%

Refrigerators: Haier 29.7%, Siemens  
10.2%, Matsushita 1.9%, Sharp 1.1%

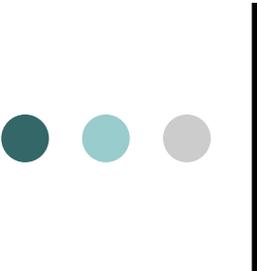
Air conditioners: Haier 23.4%, Midea  
13.1%, Mitsubishi 6.8%, Hitachi 5.7%

The market of video cassette recorder  
has virtually disappeared after  
Matsushita built a 24-billion-yen  
components factory in Dalian.



Business performance of JEMs subsidiaries, however, may not be so bad as the small market share suggests.

- The price of JEMs' products are much higher than domestic makers' products.
- Since the market is so large, a small market share may not indicate a small production volume.
- The capacity utilization rates of JEMs' subsidiaries are not necessarily low.

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- In the color TV market, Sony's share is only 3.26%, but its estimated sales volume, 1.05 million units, exceeds its initial plan, 600 thousand units.
  - Matsushita's capacity utilization rate is estimated to be around 70%.
  - The rate for Hitachi and Victor, on the other hand, are only 25%, which fact explains their recent decision to withdraw from China.



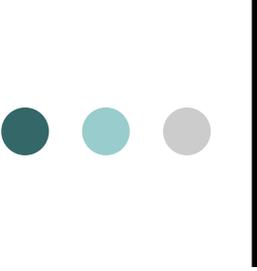
# Location behavior of JEMs

JEMs are attracted by the market size, cheap labor and currency of the host country.

Table 8 Result of the poisson regression analysis on Japanese electronics multinational's investment

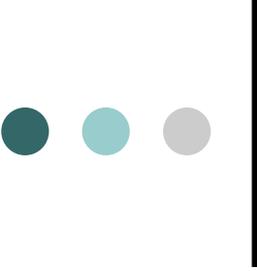
| behavior  |                    |             |     |               |              |     |
|---|--------------------|-------------|-----|---------------|--------------|-----|
| Dependent variable: number of investment projects started in the year |                    |             |     |               |              |     |
| Period  | 1983-2000          |             |     | 1983-2000     |              |     |
|   | Poisson Regression |             |     | OLS           |              |     |
|   | Coefficient        | t-value     |     | Coefficient   | t-value      |     |
| Constant  | 0.22               | 1.51        |     | <b>0.50</b>   | <b>0.82</b>  |     |
| <b>GDP</b>  | <b>0.0025</b>      | <b>6.54</b> | *** | <b>0.0080</b> | <b>5.28</b>  | *** |
| Exchange rate   | 0.047              | 2.66        | *** | <b>0.13</b>   | <b>1.30</b>  |     |
| Wage (Japan=1)  | -4.6               | -6.35       | *** | <b>-4.69</b>  | <b>-2.36</b> | **  |
| Cumulative production sites   | -0.0041            | -1.44       |     |               |              |     |
| Log likelihood  | -354.67            |             |     |               |              |     |
| R-square Pearson  | 0.67               |             |     |               |              |     |
| Adjusted R-square   |                    |             |     | <b>0.24</b>   |              |     |
| F value   |                    |             |     | <b>19.73</b>  |              | *** |
| Observations  | 180                |             |     | <b>180</b>    |              |     |
| * P<.1, ** P<.05, ***P<.01  |                    |             |     |               |              |     |

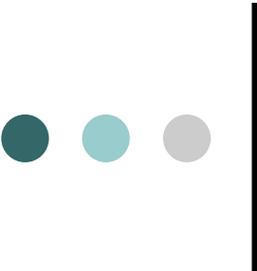




# Towards a strategic realignment of production sites

- JEMs' investment behavior in Asia deviates from ordinary market and cost considerations in two aspects: bandwagon effect among themselves and the tendency to maintain the existing facilities as long as possible by changing their functions.
- These tendencies are responsible for the duplications of functions between the subsidiaries and overcapacity.

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- Matsushita, for example, has television factories in each of five Asian countries, China, Vietnam, Thailand, Malaysia and Indonesia.
  - The custom of “building without scrapping” will be challenged by the establishment of free trade zones.



It is very likely that JEMs will concentrate their production bases to China and a small number of South East Asian nations.

- The regions with cheap and abundant labor, abundance of human capital, and developed supplier network will be selected.