## Elderly Share of Population

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>12.4</td>
<td>14.5</td>
</tr>
<tr>
<td>OECD</td>
<td>13.2</td>
<td>15.9</td>
</tr>
<tr>
<td>France</td>
<td>16.0</td>
<td>18.2</td>
</tr>
<tr>
<td>Germany</td>
<td>16.3</td>
<td>20.8</td>
</tr>
<tr>
<td>Japan</td>
<td>17.4</td>
<td>26.0</td>
</tr>
</tbody>
</table>
Elderly Share of Population

Elderly population
As a percentage of total population, 2000 and 2014
Fertility Festival, Aichi Prefecture

Thousands of visitors to Tagatajinja shrine on March 15 observe the carrying of the "o-owasegata" phallic symbol at an annual fertility festival. (Yoichi Kawatsu)
Japan is at the low end with 1.5%
Vacation Days

• Japanese take less than half their vacation days
  – In 2012 they took 8.6 out of 18.3 days
  – Men took 44.2% of vacation days (2012)
  – Women took 53.4% of vacation days (2012)
  – Electric and gas utilities workers took 71.1% of vacation days
  – Hotel and restaurant workers took 29.8% of vacation days
Vacation Days

• Japanese only use half their vacation days
  – Given 18.5 days, use 9 days (2013)
  – 1/6 take no vacation days
  – But get 15 statutory holidays (relatively high)

• Abe proposals
  – Mandatory to take 5 vacation days a year
  – Get people to use 70% of vacation days by 2020

• French get 37 days, take 93%
• Spanish get 32 days, take 90%
• Danish get 29 days, take 90%
Percent of Men and Women who would eventually like to be married

<table>
<thead>
<tr>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>86%</td>
<td>89%</td>
</tr>
</tbody>
</table>
Marriage

• Average age at first marriage (2010)
  – Men 31.1 years
  – Women 29.4 years

• Men who work full time are more likely to be married than men who work part time

• Women who part time are more likely to be married than women who work full time

• Only 2% of babies are born outside marriage (40% in US)
Marriage in Japan

On the shelf
Japan
50-year-olds who have never been married, %

Source: Ministry of Health, Labour and Welfare
## World Happiness Report 2016

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Denmark</td>
<td>7.526</td>
</tr>
<tr>
<td>14</td>
<td>USA</td>
<td>7.104</td>
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<tr>
<td>16</td>
<td>Germany</td>
<td>6.994</td>
</tr>
<tr>
<td>32</td>
<td>France</td>
<td>6.478</td>
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<tr>
<td>53</td>
<td>Japan</td>
<td>5.921</td>
</tr>
<tr>
<td>83</td>
<td>China</td>
<td>5.245</td>
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<tr>
<td>99</td>
<td>Greece</td>
<td>5.033</td>
</tr>
<tr>
<td>106</td>
<td>Zambia</td>
<td>4.795</td>
</tr>
<tr>
<td>157</td>
<td>Burundi</td>
<td>2.905</td>
</tr>
</tbody>
</table>
Suicide Rates by Country

Suicide rates, Total, Per 100,000 persons, 2013

Source: Health status

Show: Chart Table fullscreen share download My pinboard

Japan 2013 18.7 Per 100,000 persons
Finance in Japan

Keiretsu, Main Banks, Finance
Keiretsu

- A keiretsu is a set of companies with interlocking business relationships and shareholding
- The term is Japanese (系列) for "system" or "series"
- After WWII, zaibatsu (i.e. Sumitomo, Mitsui, Mitsubishi, Yasuda) are dissolved by SCAP
- Come back together in the form of keiretsu
- Keiretsu retain common names and a common corporate image
- Operate as a large number of independent companies, and give each other preferential treatment in business dealings
Rising Sun (1993)

Michael Crichton novel and movie about how Japanese keiretsu are about to take over the United States. Not.
Conventional Wisdom

• Keiretsu tend to close the Japanese economy
• Keiretsu lead to cartelization of the economy and more monopoly power
• Distribution system excludes access to foreign goods
• Firms like long-term transactional relations and preferential trading arrangements with affiliate firms
• With main banks and inter-corporate shareholding firms can engage in anti-competitive predatory behavior
Keiretsu

• Definition: affiliated group
  – A problematic term
  – Can not be sharply defined or delineated
  – Relationships have morphed over time

• Financial Keiretsu
  – The Big Six
    • Mitsubishi, Mitsui, Sumitomo, Fuyo, Sanwa, Dai Ichi Kangyo
  – The Big Eleven?
    • More general and looser definition than above
    • Any group of firms with main bank ties to a big city bank
The Big Six

• Director ties, President’s Club, common corporate name
• Main bank holds up to 5% of shares
• Interlocking shares from 12% – 25%
• Intragroup loan ratios from 11% - 24%
• Personnel exchanges
• Keiretsu span all businesses, and ideally one firm in any line of business
  – Mitsubishi (Kirin), Fuyo (Sapporo), Sanwa (Suntory), Sumitomo (Asahi)
# Financial Keiretsu

<table>
<thead>
<tr>
<th>Industry</th>
<th>Mitsui</th>
<th>Mitsubishi</th>
<th>Sumitomo</th>
<th>Fuyo</th>
<th>Sanwa</th>
<th>DKB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>Sakura Bank</td>
<td>Bank of Tokyo-Mitsubishi Bank</td>
<td>Sumitomo Bank</td>
<td>Fuji Bank</td>
<td>Sanwa Bank</td>
<td>Dai-ichi Kangyo Bank</td>
</tr>
<tr>
<td>Trust Banking</td>
<td>Mitsui Trust &amp; Banking</td>
<td>Mitsubishi Trust &amp; Banking</td>
<td>Sumitomo Trust &amp; Banking</td>
<td>Yasuda Trust &amp; Banking</td>
<td>Toyo Trust &amp; Banking</td>
<td></td>
</tr>
<tr>
<td>Life Insurance</td>
<td>Mitsui Mutual Life</td>
<td>Meiji Mutual Life</td>
<td>Sumitomo Mutual Life</td>
<td>Yasuda Mutual Life</td>
<td>Fukoku Mutual Life</td>
<td></td>
</tr>
<tr>
<td>Trading Company</td>
<td>Mitsui Bussan</td>
<td>Mitsubishi Shoji</td>
<td>Sumitomo Corporation</td>
<td>Marubeni</td>
<td>Nissho Iwai</td>
<td>Itochu</td>
</tr>
<tr>
<td>Steel</td>
<td>Japan Steel Works</td>
<td>Mitsubishi Steel Manufacturing</td>
<td>Sumitomo Metal Industries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemicals</td>
<td>Mitsui Toatsu Chemical</td>
<td>Mitsubishi Gas Chemical</td>
<td>Sumitomo Chemical</td>
<td>Kureha Chemical Industries</td>
<td>Sekisui Chemical</td>
<td>Asahi Chemical Industries</td>
</tr>
</tbody>
</table>
The Big Six

• The Mitsui Group had 26 members with 171 affiliates. The core firms are Mitsui Bussan, Mitsui Fudosan, and Sakura Bank.

• The Mitsubishi Group had 29 firms on the President’s Council.

• The core of the Sumitomo Group includes Sumitomo Metal Mining, Sumitomo Chemical, and Sumitomo Bank.

• The Fuyo group had 27 members originating from the Yasuda zaibatsu.

• In 1994, the Big Six accounted for 3.6% of employees, 12.9% of sales, 14.4% of capital, and 19.6% of net profits of all industrial companies in Japan.
Horizontal Keiretsu

- Group of firms organized around an independent firm
- Stock holding is pyramidal
- Core company
  - Best known name
  - Largest shareholder
  - Source of personnel and technical assistance
- Hitachi – broad range of businesses
- Panasonic (Matsushita) – related companies with same kinds of products
Vertical Keiretsu

• Supplier Keiretsu
  – Core company and its subcontractors
  – Flow of finance and other resources is one-way
  – One family or individual may hold substantial power
  – Buying patterns are likely to be closer with member firms
  – Assembly industries (electronics, automobiles)
  – Core firm is downstream
  – Toyota Group, Nissan Group, Honda Group
Vertical Keiretsu

- Distribution Keiretsu
  - Manufacturer and affiliated wholesalers and distributors
  - Manufacturing firm sets up distribution system and retail outlets for their products
  - Core firm exercises control through exclusive sales arrangements (minority of retail stores)
  - Core firm is upstream
Difficulties

• Each of the above have different structures, purposes, and intensities of interaction and control
  – Mitsubishi has had strong leadership and is goal directed
  – Other keiretsu (Fuyo, Sanwa, Dai-Ichi) have been less cohesiveness
Difficulties

• Relations are not exclusive
  – Firms can have more than one affiliation simultaneously
  – Hitachi belongs to Fuyo, Sanwa, and Dai-Ichi

• Relations are not unique to Japan
  – Close firm-bank ties
  – Subcontracting relations
  – Long-term trading ties
  – Interlocking shareholding
Multiple Affiliations

MITSUI Keiretsu

FUYO Keiretsu

DAI-ICHI KANGYO Keiretsu

Toyota

Chiyoda Fire & Marine Insurance

Nissan

Nissan Fire & Marine Insurance
Keiretsu

- Have become less important
  - Percent of total employment accounted for by these keiretsus decreased with the decline in manufacturing
  - Main bank much less important as a lender
    - Growth of bond and equity markets
    - Finance more with retained earnings
    - Banks are weaker post bubble
  - Keiretsu firms hold smaller percent of corporate stock than in 1974-1988
  - Honda and Takata
Anti-Competitive?

• Do keiretsu monopolize industries?
  – No. Keiretsu are not cartels.
  – Firms in a keiretsu do not operate in the same industry, so the keiretsu does not give them market power

• Do keiretsu close markets with long-term relationships with suppliers?
  – Probably not.
UPSTREAM PARTS

DOWNSTREAM ASSEMBLY

GOODS MARKET

VERTICAL INTEGRATION

CHANNEL INTEGRATION

ARMS-LENGTH SUPPLIER (spot market)

Final Competitive Market

GM (old days)
EXXON (oil companies)
Steel Companies (mines → steel)
Japanese keiretsu
Wal-Mart (P&G)
JC Penny
McKesson (pharm)
K-Mart
Shaws (Quaker Oats)
Takeovers

• Do keiretsu prevent corporate takeovers?
  – In top 6 financial keiretsu, 73-88% of stock held by firms and people not in the keiretsu
  – Usually held by other keiretsu or other powerful companies
Main Bank

メイン・バンク
Main Bank

- Almost all firms have a main bank
- Strongest relationships are between large firms and large main banks
- Main bank relationships are broader than keiretsu relationships
- Engage in reciprocal shareholding
- Supply management resources and dispatch of directors
- Provide loans
- Operate payment settlement accounts
- Conduct foreign exchange dealings
Main Bank

- Main bank and firm are commercially independent entities
- No official or legal status as main bank
- But general recognition in capital markets and government ministries
- Most large firms have identifiable main bank relation
- Top banks are main banks for 2/3 firms on first section of the Tokyo stock exchange
Main Bank

• Main bank provides the largest share (among private financial institutions) of loans to a particular firm
• Main bank is typically among principal shareholders in the firm
  – Legal limit on bank holding of 5% since 1987
  – Tend not to sell shares except to group affiliated financial institutions
Main Bank Functions

• Payment settlement accounts are with main bank
  – MB is typically the bank of settlement
  – MB can observe most firm transactions
  – MB handles all foreign exchange business
    • Main benefit is commissions from this business

• Information services and supply of management resources
  – One quarter of directors are from outside firm
  – Of these one fifth are from banks
Main Bank Functions

- Main bank plays screening and monitoring role
- Bond and credit rating institutions, and security analysis agencies, in US
- Public information in Japan needs improvement
  - No use of consolidated accounting (despite extensive network of subsidiaries and affiliates) until 1998
  - Assets were recorded at historic value (not current value) in corporate balance sheets until 2001
  - External auditing needs development
  - So public accounts were of limited value
Main Bank Functions

- Main bank specializes in collection, evaluation, and transmission of information about firms
  - Close information sharing relationship with firms
    - Business and financial plans of firm
    - Consultation and reports to bank
    - Access to management information not readily available to outsiders
  - Formalized relationship with director link
    - Half of firms with bank borrowings have a bank representative on the board
  - Membership in a President’s Club
Main Bank Intervention

• What do main banks do when firms are in trouble?
  – Pull out before other banks realize there is a problem? No.
    • Damages reputation of the main bank with other firms, so rarely done
  – Mount a rescue mission by extending new loans
    • Frequently involves replacing borrower’s management with bank’s employees
    • Main bank bears disproportionate share of losses
  – Main bank may force firm into bankruptcy
Main Bank Intervention

• Main bank looks after firms in financial difficulty (form of insurance against bad times)
  – Access to capital
    • Emergency finance
    • Reduction in interest payments
  – Require a recovery plan (often devised by bank)
    • Labor force reductions
    • Asset disposal
    • Stipulate measures the firm must take
  – Bank sends its own executives to supervise rationalization
    • May oust president and key managers
    • Overhaul management structure
    • Arrange merger with another firm
Main Bank Intervention

• In the US takeovers are performed in equity markets
• In Japan the corporate raiders were the main banks
• Mazda was a member of the Sumitomo group
  – Got into trouble with the Wankel rotary engine
  – Easier to fix, cheaper, smoother ride
    • Very fuel inefficient (8 mpg)
    • Oil crisis 1970s
      – $2 per barrel → $16 per barrel
    • Company almost went bankrupt despite being one of the largest in Japan in 1975
Main Bank Intervention

- Sumitomo agreed to refinance only if top management was replaced with Sumitomo officials
- Management was forced to resign
- Mazda goes back to the piston engine for its primary market
- Ford takes a 7% share in Mazda by 1979, a 33% share by 1996 (now down to 2%).
Main Bank Advantages

• Main bank minimizes monitoring costs
  – Costs of monitoring a firm are fixed
  – Best if one firm does the monitoring even though many banks lend to that firm

• Usually free rider problem
  – No firm has incentive to monitor if others will do it
  – But if they own assets they do have an incentive
  – So main bank has largest loan share and significant equity share
Main Bank Advantages

• Main bank does not provide all funding
  – MOF and BOJ do not want MB to lend 100% of firm debts (gov regulations)
  – One bank should not bear all the risk of lending to the firm
  – Major banks compete to be the main bank and supply monitoring services
  – Firms want to diversity bank finance and limit monopoly power of a bank
Main Bank Advantages

• Risk bearing role of main bank
  – With failing firm, main bank assumes larger share of burden (residual risk bearer)
  – Avoids the moral hazard problem associated with transmission of information to other banks
  – Banks makes credible signal when it says firm is sound

• No hostile takeovers with inter-corporate shareholding
  – Stable shareholders (firms with common main bank, subsidiaries, and affiliate firms)
  – So what maintains firm discipline? The Main Bank.
Main Bank Disadvantages

• Bank objectives differ from stock owner’s objectives
  – Stock owners want to maximize profits
  – Bankers want to maximize loans
    • Strong emphasis on investment
    • Little emphasis on profits
    • Investment emphasis may have lead to excessive capital accumulation

• Bank might exploit keiretsu firms
  – No difference in growth rates or profitability for firms that are members of keiretsu
  – Firms with main bank ties have more access to capital, but the cost of capital is higher
  – Main banks extracted profits from firms in exchange for access to capital
Japanese Finance
### Savings as a Share of GNP

<table>
<thead>
<tr>
<th></th>
<th>1869-1938</th>
<th>1960-1984</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>11.7%</td>
<td>32.5%</td>
</tr>
<tr>
<td>United States</td>
<td>18.7%</td>
<td>18.0%</td>
</tr>
</tbody>
</table>

**Japan**

- **Prewar:** low savings and high international borrowing
- **Postwar:** little international borrowing but high savings
Saving rate Total, % of GDP, 2015

Source: National Accounts at a Glance
Why Did Japanese Save?

1. Cultural Factors
2. Demographic and Socioeconomic Factors
3. Institutional Factors
4. Government Policies
5. Economic Factors
6. Miscellaneous Factors
Vertical Groups and Subcontracting
Subcontracting

• **Differences in subcontracting**
  – An American firm might subcontract 30% of its parts, and produce 70% in house.
  – A Japanese firm may subcontract 70% of its parts, and produce 30% in house

• **Enormous network of subcontracting in Japan**
  – Manufacturing firms may have 70 subcontractors
  – Most small and medium sized firms are subcontractors
  – When US firms have subcontractors, they will supply more basic raw materials
Vertical Groups

• Purchasing
  – US companies traditionally rely on competitive bidding with clear termination dates
    • Purchaser sends out specifications
    • Supplier sends in sealed bids
    • Purchaser picks the lowest one
      – And sometimes you get $700 toilet seats
  – Japanese often have exclusive / long-term relationships with no clear termination date
    • No bidding process or imperfect bidding process
    • Contracts go to the same set of suppliers over and over
      – 84% of subcontractors had not lost a major contract in 5 years
      – And sometimes you get Takata airbags
R&D Relationships

• Locus of R&D is more dispersed than in US
  – Suppliers are expected to do more R&D
  – Detailed specifications are not sent out but rather general needs are outlined
  – Suppliers are supposed to engineer products by attaining a basic understanding of the needs of the purchaser
Why so much subcontracting?

• Efficiency arguments (pro)
  – Subcontractors can respond more flexibly to changes in demand than divisions
    • Because their jobs are on the line → better performance
    • High bankruptcy rate of subcontractors in Japan gives large firms more flexibility
  – US structure is too hierarchical
    • Suppliers are passive and intelligence too centralized
    • JP – suppliers have more responsibility and can show more initiative
    • Perhaps decentralization leads to innovation
      – US firms may lose efficiency by vertically integrating
Why so much subcontracting?

• System may be due to permanent employment system
  – Subcontractors serve as buffer for main plant during downturn
  – In 1974 IV GDP fell 10%
    • Mazda used autoworkers to sell cars door to door and began producing most parts by itself
Why so much subcontracting?

• Efficiency arguments (con)
  – How hard is it to get rid of an inefficient wholly owned division?
  – If Japanese system is so good, why don’t US firms do the same thing?
  – Hard to find any concrete evidence in support of efficiency
Non-Efficiency Arguments

• Tax structure
  – Consolidated reporting standards
    • In Japan widespread consolidated accounting only began to appear in 1980s
      – If parent held less than 50% of subsidiary then settlement date could vary
      – If firms listed their divisions as subcontractors, they could reduce their tax burden
    • Even when law was changed, many old practices were grandfathered in
      – A large number of Japanese corporations still had subsidiaries with different settlement dates
Non-Efficiency Arguments

• Tax structure (cont)
  – Consolidated reporting standards
    • US has very strict reporting standards for firms
      – Companies must file very detailed financial statements
      – Parent and subsidiaries must have same accounting period
      – Fiscal year must end on the same date
      – Otherwise firms could shift assets and liabilities, and hide losses
Non-Efficiency Arguments

• Tax structure (cont)
  – Tax breaks for small companies
    • Corporate tax rate for large firms 37.5%
    • For small and medium companies 28%
    • Government does not audit books of small firms unless they find a mathematical error (government is now allowed to audit)
  – In retail, you have these advantages, plus…
    – 8% consumption tax does not apply to small firms
    – Large scale retail law restricted the opening of new large stores
Non-Efficiency Arguments

• Implications
  – Strong incentive not to vertically integrate
  – Strong incentive not to purchase on basis of price
  – Tax incentive to shift profits out of the parent company to the subsidiary
Non-Efficiency Arguments

• Example
  – Foreign firm has a cost of ¥8/unit, offers to sell for ¥9/unit, and you sell for ¥10/unit
  – Subsidiary has a cost of ¥9/unit, offers to sell for ¥10/unit, and you sell for ¥10/unit
  – If parent company buys from foreign firm
    • After tax profit = ¥1(1-0.37)=¥0.63
    • Subsidiary profit = ¥0
  – If parent company buys from subsidiary
    • Parent profit = ¥0
    • After tax Subsidiary profit = ¥1(1-0.28)=¥0.72
  – Joint profits are higher by purchasing from more expensive source
The Distribution System
## Distribution System

<table>
<thead>
<tr>
<th>Industry</th>
<th>Japan 2014</th>
<th>United States 2012</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restaurants</td>
<td>619,629</td>
<td>598,512</td>
<td>4,230,881</td>
</tr>
<tr>
<td>Retail</td>
<td>1,024,881</td>
<td>1,063,842</td>
<td>7,685,778</td>
</tr>
<tr>
<td>Wholesale</td>
<td>382,354</td>
<td>420,501</td>
<td>3,932,276</td>
</tr>
</tbody>
</table>

The number of establishments appears comparable, but Japan is a much smaller country than the United States. More employees in the United States. More restaurants in Japan!
Japanese establishments have fewer employees, serve fewer people, with much higher physical density.
# Japanese Restaurants

## Table 10.2

### Eating and Drinking Places (2014)

<table>
<thead>
<tr>
<th>Size of operation (persons engaged)</th>
<th>Establishments</th>
<th>Persons engaged</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Ratio (%)</td>
</tr>
<tr>
<td>Total</td>
<td>619,629</td>
<td>100.0</td>
</tr>
<tr>
<td>1-4 persons</td>
<td>382,051</td>
<td>61.7</td>
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<tr>
<td>5-9</td>
<td>119,600</td>
<td>19.3</td>
</tr>
<tr>
<td>10-19</td>
<td>69,025</td>
<td>11.1</td>
</tr>
<tr>
<td>20-29</td>
<td>27,491</td>
<td>4.4</td>
</tr>
<tr>
<td>30 and over</td>
<td>20,813</td>
<td>3.4</td>
</tr>
<tr>
<td>Loaned or dispatched employees only</td>
<td>649</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Source: Statistics Bureau, MIC.
<table>
<thead>
<tr>
<th>Item</th>
<th>Total</th>
<th>Wholesale</th>
<th>Retail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Establishments</strong></td>
<td>1,407,235</td>
<td>382,354</td>
<td>1,024,881</td>
</tr>
<tr>
<td>Size of operation (persons engaged)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-4 persons</td>
<td>809,916</td>
<td>190,323</td>
<td>619,593</td>
</tr>
<tr>
<td>5-9</td>
<td>298,416</td>
<td>96,811</td>
<td>201,605</td>
</tr>
<tr>
<td>10-19</td>
<td>177,077</td>
<td>54,538</td>
<td>122,539</td>
</tr>
<tr>
<td>20-29</td>
<td>55,568</td>
<td>17,187</td>
<td>38,381</td>
</tr>
<tr>
<td>30-49</td>
<td>32,132</td>
<td>11,685</td>
<td>20,447</td>
</tr>
<tr>
<td>50-99</td>
<td>19,320</td>
<td>6,486</td>
<td>12,834</td>
</tr>
<tr>
<td>100 and over</td>
<td>9,141</td>
<td>3,366</td>
<td>5,775</td>
</tr>
<tr>
<td>Loaned or dispatched employees only</td>
<td>5,665</td>
<td>1,958</td>
<td>3,707</td>
</tr>
<tr>
<td><strong>Persons engaged</strong></td>
<td>12,031,345</td>
<td>4,009,494</td>
<td>8,021,851</td>
</tr>
<tr>
<td>Regular employees</td>
<td>10,152,342</td>
<td>3,485,161</td>
<td>6,667,181</td>
</tr>
<tr>
<td>Full-time employees</td>
<td>5,340,113</td>
<td>2,806,083</td>
<td>2,534,030</td>
</tr>
<tr>
<td>Other than full-time employees (^1)</td>
<td>4,812,229</td>
<td>679,078</td>
<td>4,133,151</td>
</tr>
<tr>
<td>Temporary employees</td>
<td>413,291</td>
<td>77,218</td>
<td>336,073</td>
</tr>
<tr>
<td>Loaned or dispatched employees from</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the separately operated establishments</td>
<td>322,235</td>
<td>128,786</td>
<td>193,449</td>
</tr>
<tr>
<td>Loaned or dispatched employees to</td>
<td>117,395</td>
<td>87,583</td>
<td>29,812</td>
</tr>
<tr>
<td>the separately operated establishments</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Among regular employees, excludes workers generally referred to as "full-time employees" and "regular members of staff" and includes those referred to as "contract employees," "non-regular members of staff," "part-timers," and similar appellations.

Source: Statistics Bureau, MIC.
Figure 3.6
Shares of Establishments and Persons Engaged by Scale of Operation (2014)

Establishments^1^:
- 1-4 persons: 58.4%
- 5-9: 19.7%
- 10-19: 11.8%
- 20-99: 8.9%
- 100 persons and over: 1.1%

Persons engaged:
- 12.0%
- 12.4%
- 15.3%
- 32.1%
- 28.2%

^1^ Excluding establishments consisting of only loaned or dispatched employees.
Source: Statistics Bureau, MIC.
Distribution System

- Wholesale and retail establishment are more numerous and smaller in Japan than US
  - Large number of small stores
  - Twice the per capita number of stores as US

<table>
<thead>
<tr>
<th></th>
<th>Japan</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale</td>
<td>3.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Retail</td>
<td>8.1</td>
<td>3.4</td>
</tr>
</tbody>
</table>
Distribution System

- Smaller establishments – workers per establishment

<table>
<thead>
<tr>
<th></th>
<th>Japan</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale</td>
<td>10.3</td>
<td>13.9</td>
</tr>
<tr>
<td>Retail</td>
<td>7.5</td>
<td>13.7</td>
</tr>
</tbody>
</table>

- Large number of wholesalers
  - wholesalers often sell to other wholesalers
Distribution System

• Legal Structure
  – Large Scale Retail Law (1974)
    • Covered stores that had over a certain minimum floor space
    • Law required that before a large store could be built, the store plan had to be approved
  – Significantly relaxed during 1990s
  – Costco (1999) 26 stores, Walmart (Seiyu 2005) 341 stores

• High land costs
  – difficult to store goods in houses

• Is the system inefficient?
  – Restrictions of competition should lead to excess profits and inefficiencies
## Distribution System

<table>
<thead>
<tr>
<th>Maruyama (1989)</th>
<th>Japan</th>
<th>US</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>wholesale</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sales/worker</td>
<td>390</td>
<td>272</td>
<td>173</td>
</tr>
<tr>
<td>gross profit margin</td>
<td>11.2</td>
<td>19.4</td>
<td>12.6</td>
</tr>
<tr>
<td><strong>retail</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sales/worker</td>
<td>62</td>
<td>69</td>
<td>51</td>
</tr>
<tr>
<td>gross profit margin</td>
<td>27.1</td>
<td>31</td>
<td>34.2</td>
</tr>
<tr>
<td>value added/worker</td>
<td>.76</td>
<td>.70</td>
<td>.68</td>
</tr>
</tbody>
</table>
Distribution System

- People have argued that the system is inefficient, difficult to penetrate, results in high mark-ups, and constitutes a trade barrier

- Is this situation changing?
  - Yes
  - Gradual increase in size of retail establishments
  - Workers per establishment rose from 2.7 (1960) to 4.2 (1988) to 7.5 (2014)
## Top Retailers

<table>
<thead>
<tr>
<th>Rank</th>
<th>Japan</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Daiei</td>
<td>Wal-Mart Stores</td>
</tr>
<tr>
<td>2</td>
<td>Ito-Yokado</td>
<td>Sears Roebuck</td>
</tr>
<tr>
<td>3</td>
<td>Jusco</td>
<td>K-Mart</td>
</tr>
<tr>
<td>4</td>
<td>Mycal</td>
<td>Dayton Hudson</td>
</tr>
<tr>
<td>5</td>
<td>Takashimaya</td>
<td>J.C. Penny</td>
</tr>
<tr>
<td>6</td>
<td>Seiyu</td>
<td>Home Depot</td>
</tr>
<tr>
<td>7</td>
<td>Uni</td>
<td>Kroger</td>
</tr>
<tr>
<td>8</td>
<td>Mitsukoshi</td>
<td>Safeway</td>
</tr>
<tr>
<td>9</td>
<td>Seibu</td>
<td>Costco</td>
</tr>
<tr>
<td>10</td>
<td>Marui</td>
<td>American Stores</td>
</tr>
</tbody>
</table>
Convenience stores have been on the rise, while department stores have declined. Many more department stores per person in the United States.
Seven Eleven Japan
# Seven and I Holdings

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1927</td>
<td>Southland Corporation, Dallas, Texas</td>
</tr>
<tr>
<td>1973</td>
<td>York Seven Co., Ltd., established</td>
</tr>
<tr>
<td>1978</td>
<td>Becomes Seven Eleven Japan Co., Ltd.</td>
</tr>
<tr>
<td>1982</td>
<td>POS system introduced</td>
</tr>
<tr>
<td>1987</td>
<td>Three times a day delivery begins</td>
</tr>
<tr>
<td>1991</td>
<td>Acquires Southland Corporation</td>
</tr>
<tr>
<td>2003</td>
<td>Total stores reach 10,000</td>
</tr>
<tr>
<td>2004</td>
<td>AEON overtakes 7-11 top retailer</td>
</tr>
<tr>
<td>2013</td>
<td>Total stores reach 15,000</td>
</tr>
<tr>
<td>2018</td>
<td>19,979 stores</td>
</tr>
</tbody>
</table>
Seven Eleven Japan

- “Tanpin Kanri”
- Management by stock-keeping unit
- Slow moving merchandise is quickly phased out, fast moving merchandise volume is increased
- New merchandise is brought in to replace the items lost
- The total SKU count is maintained around 2,800
# Seven Eleven Japan

<table>
<thead>
<tr>
<th></th>
<th>Sales (¥ billion)</th>
<th>Stores</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seven Eleven</td>
<td>¥2,974</td>
<td>19,722</td>
</tr>
<tr>
<td>Lawson</td>
<td>¥1,647</td>
<td>12,570</td>
</tr>
<tr>
<td>Family Mart</td>
<td>¥1,175</td>
<td>11,431</td>
</tr>
<tr>
<td>Circle K</td>
<td>¥524</td>
<td>5,948</td>
</tr>
</tbody>
</table>

Family Mart and Circle K merged 2016
Business Cycles

- \( Y = C + I + G + NX \)
- Investment is the most volatile of all the GDP components
- Investment includes
  - Business purchases of plant and equipment
  - New home construction
  - Changes in stocks of inventory
- Inventory investment is the most volatile component of investment
Inventories

• Just In Time (JIT) delivery (“Kanban” system)

• Stylized facts
  – US system
    • Relies on large lot sizes and (costly) inspections of each lot
    • Lots that don’t pass inspection are rejected
  – Japanese system
    • Relies on small lot sizes and frequent deliveries
    • No inspection except through production process
  – If they could get away with it, subcontractors always have an incentive to cheat
Just In Time Delivery

• Why don’t subcontractors furnish defective units?
  – US System
    • Subcontractors fear rejected lots
    • Inspections are costly so manufacturers do them infrequently and therefore require large lots
  – Japanese system
    • Subcontractors that cheat gain profit on current shipment but lose on all future shipments
    • Small lot size minimizes gains from cheating
    • Long-term relationships and supra-normal profits ensure gains to subcontractors from compliance
Implications for Firms

• US system is optimal when
  – Inspection costs are low
    • Implies that this may be optimal for simple products
  – Fixed costs of suppliers are high
    • Very costly for supplies to have lots rejected
Implications for Firms

• Japanese system is optimal when
  – Inspection costs are high
    • Implies that this may be optimal for complex products
  – Fixed costs of suppliers are low
    • Not costly for supplies to have lots rejected
  – When interest rates are low
    • Critical element in Japanese system is rate at which suppliers discount the future
    • If interest rates are low and firms discount the future less, then suppliers value long-term relationships more, and will be less willing to cheat
    • Capital market controls may matter here too
Just In Time Delivery

• Other reasons for the JIT system
Just In Time Inventory

• Compare the costs of both systems
  – Cost of system A = cost of inventory + cost of one transaction = \( cI \left( \frac{T}{2} \right) + \tau \)
    • Where \( c \) is the cost of maintaining \( I \) units of inventory
  – Cost of system B = \( n \left[ \left( c \frac{I}{n} \right) \left( \frac{T}{2n} \right) + \tau \right] \)
    • Where \( n \) is the number of deliveries
    • Or cost of system B = \( cI \left( \frac{T}{2n} \right) + n\tau \)
Just In Time Delivery

• Which system is cheaper?
  – Depends on the relative cost of $c$ and $\tau$
    • If $c$ is much smaller than $\tau$, then system A is cheaper
    • If $\tau$ is much smaller than $c$, then system B is much cheaper

• In Japan, land is very expensive and country physically smaller
  – $c$ is very large (inventory costs)
  – $\tau$ may be smaller (transaction costs)
  – thus system B is much cheaper
Bubble Economy
Land and Asset Prices

- Land and asset prices rise dramatically in late 1980s
- Land prices double from 1987 to 1990
  - Total land Japanese land value is 3 times greater than the US
  - Value of Japanese land is 75 times higher per acre than in the US
  - Ginza district land is $300,000 per square meter
- Higher land prices lead to higher stock prices
  - Corporations own land
Land and Asset Prices

• Nikkei 225 stock index
  – Doubles from 1983 to 1986
  – Doubles again from 1986 to 1989
  – 10,000 in 1983, 20,000 in 1986, 40,000 in 1989

• High stock prices → equity finance boom
  – Funds from equity finance → purchase of more stock and land
Figure 1: Stock Price (TOPIX), Urban Land Price, and Nominal GDP (1980=100): 1970–2007

Note: TOPIX is the price index of the Tokyo Stock Exchange; GDP is gross domestic product.

Source: Tokyo Stock Exchange; Real-Estate Research Institute; and Economic and Social Research Institute (ESRI), Cabinet Office, Government of Japan, websites.
Nikkei Index

End of month values
Real GDP grows 4.25% a year from 1980 to 1992

Less than 1% a year since

GDP peaks Fall 1992

Japan Real GDP

Trillion 2011 Yen
Bubble Peaks

• Stock prices peak December 1989
• Land prices peak 1991
  – Commercial and residential real estate
• Real GDP peaks August 1992

• Real GDP bottoms out May 1994
• Stock prices bottom out April 2003
• Land prices bottom out May 2005
Bubble Economy

• First Oil Shock, October 1973
  – Exerted a massive shock to the Japanese economy
    • Real GDP growth negative for the first time after WWII
    • 10% → -1%
    • Massive inflation
    • Large number of bankruptcies