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The evolution of Japanese business networks in ASEAN countries since the 1960s

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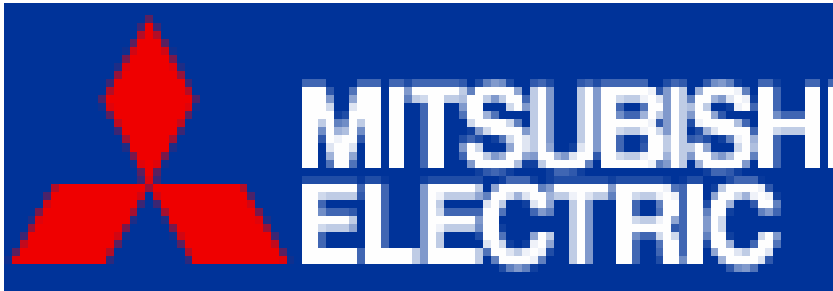


Motivation and research question

Japanese business networks

Standard view in management and industrial organization:

-strong links between companies of former kinship-based *zaibatsu* companies in prewar Japan (equity ownerwhip and directories)

-after WWII, dissolution of zaibatsu networks; but reconstitution as so-called "horizontal *keiretsu*" (fictitious family)

-strong links related to main-bank and cross-ownership, and weak ties based on transactions and informal exchanges of information (e.g. Gerlach 1992; Aoki and Saxonhouse 2000)

Revisionist view (Miwa and Ramseyer 2002): "horizontal *keiretsu*" is an ideological construct; invented by Japanese marxists ("myth of the *keiretsu*"*)*

This study: test the *keiretsu* hypothesis using information on Japanese subsidiaries in ASEAN countries (focus on five ASEAN countries: Indonesia, Malaysia, the Philippines, Singapore, and Thailand)

Outline

1. Chinese and Japanese kinship and business systems
2. Japanese and Chinese business networks and their interaction of in Southeast Asia
3. Toyo Keizai (Oriental Economist) database: Japanese subsidiaries overseas
4. Preliminary results
5. Tentative interpretation and agenda

1. Chinese and Japanese kinship and business networks
1.1 Similarities

Similar concepts (same Chinese characters): e.g.

- Relations/links (guangxi, kankei 関係)
- Trust (shinyong, shinyo 信用)

Kinship-based business groups

- Japanese *zaibatsu* 財閥 until 1945
- Chinese family business (CFB) : ; before 1949 in China, before and after 1949 In Hong Kong, Taiwan, and in overseas Chinese communities

Non-kinship business groups

-Post-WWII Japanese *keiretsu* 系列 (dissolution of zaibatsu by US occupation authorities

-State Owned Enterprises (SOE) in the People's République of China (PRC) since the 1950s (up to now); direct or indirect control of the communist Party (some SOEs owned by the army); SOE also in Singapore and in other ASEAN countries

1. Chinese and Japanese kinship and business networks

1.2 Differences in kinship systems

China

Chinese patrilineal lineages (Confucian ideology): same “ancestor” (genealogies 家譜 *jiapu*).

No record of matrilineal genealogy; no prohibition of endogamy

Elder son important but no strict hierarchy among sons

Sons (and daughters) of concubines (in China or overseas) regarded as children of the official wife

Clans in coastal southern China; provinces of Guangdong and Fujian: origin of Chinese communities in Southeast Asia

Japan

Patrilineal ideology but… husband using wife’s name and adoption (e.g. heir of the business) as common practices helping to maintain the lineage…

Elder son important (stem family: main house 本家本元 and separate house 別家) but can be adopted. No prohibition on endogamy

1. Chinese and Japanese kinship and business networks

1.3 Non-patrilineal weak ties

Chinese Business Networks

Strong: region of origin: native place association (*huiguan* 會館, *gongsuo* 公所) organized by province/district of origin or "dialect" in China (and in Southeast Asia: e.g. *bang* 幫 in Vietnam)

Relatively weak: marriage; matrilineal ties; education; more recently, religious affiliation (e.g. Christian evangelical churches in China)

Japanese Business Networks

Strong: region of origin (pre-1868 provinces; dialects); education (university: "disciples" of the same master)

Relatively weak: marriage, matrilineal ties; extended family (but important in "aristocratic" families of former high rank samurai status and in "old" merchant families, e.g. Mitsui)

2. Japanese and Chinese business networks and their interaction of in Southeast Asia
2.1 Postwar Japanese business networks

Post-WWII inter-firm groups

- vertical organised inter-firm groups: *keiretsu* (系列) i.e. alignement
- *kigyo shudan* (企業集団), horizontal groupings of companies (or 'horizontal *keiretsu*')
- linked in various ways, *e.g.* cross-shareholdings

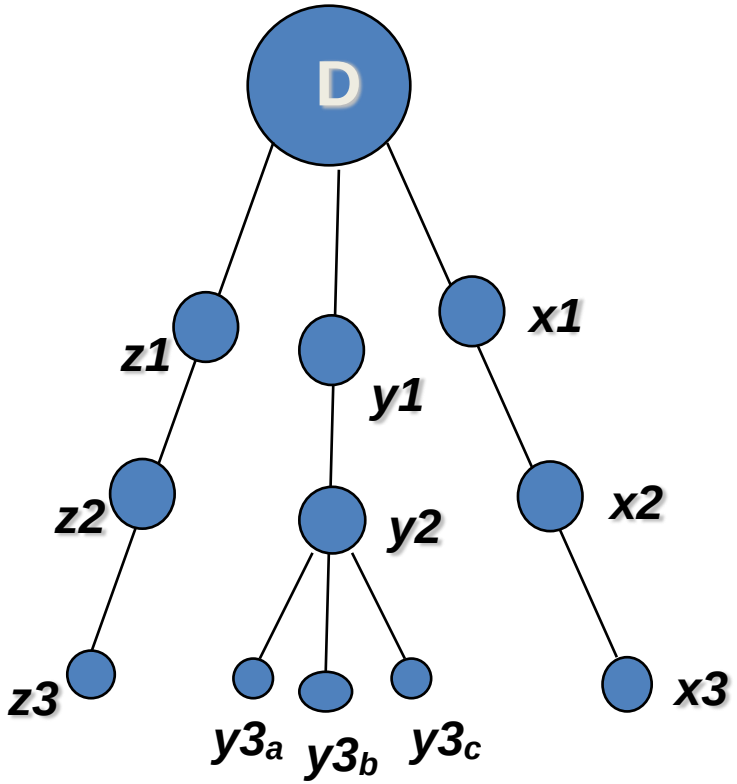
Cores of the network in 'horizontal keiretsu'

- The main bank; limited role of capital markets after WWII
- The general trading company (sogo shosha 総合商社) ; origins as the trading arm of the pre-war zaibatsu
- Several major manufacturing firms (large scale, high-tech, capital intensive)

2.2 Pyramid of subcontractors in vertical *keiretsu (VK)*

Structured layers : each tier of supplier firms may have its own pyramid

- Governance and control
- But the boundaries of the network are not related to capital links (subsidiaries and non-subsidiaries)



- What the tiers do
  - transfer costs from the core to supplier firms, *e.g.* inventories
  - insulate core labour from business cycle

2.3 The standard description of the horizontal *keiretsu (HK)*: cross-holding links

Model of HK network

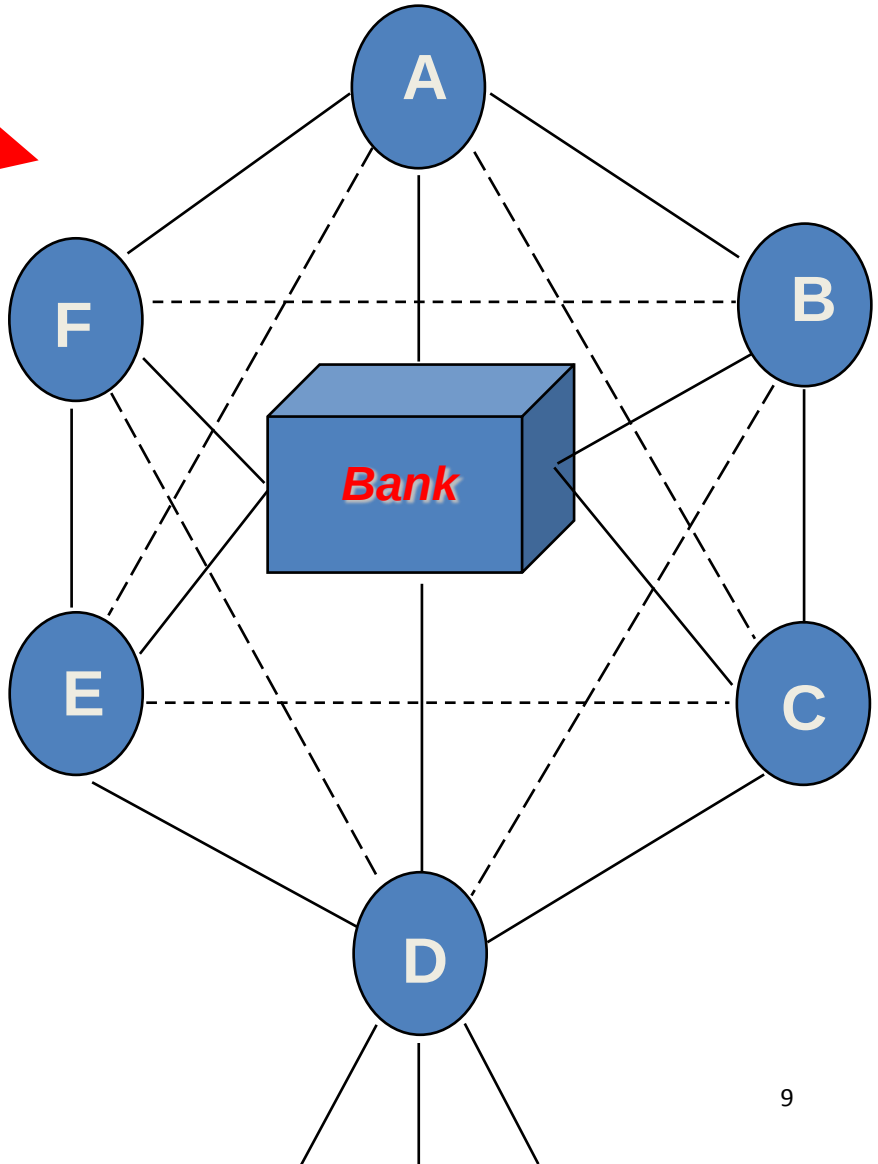
-Coordination

- Scale free

- Activities of actors, *e.g.:*
  - A *sogo shosha*;
  - B steel; C transport;

  D cars; E electronics;

  F packaging (B, C, D, E, F etc. are hubs linked to second-tier subsidiaries)
- What the links do:
  - access to capital
  - technology + info sharing
  - risk spreading
  - takeover proof



2.4 Overseas Chinese family business (CFB)

The Chinese family business (CFB) begins life as the classic small business

(family = firm)

- the CFB draws initially on family resources
- CFBs are linked in kinship-based networks

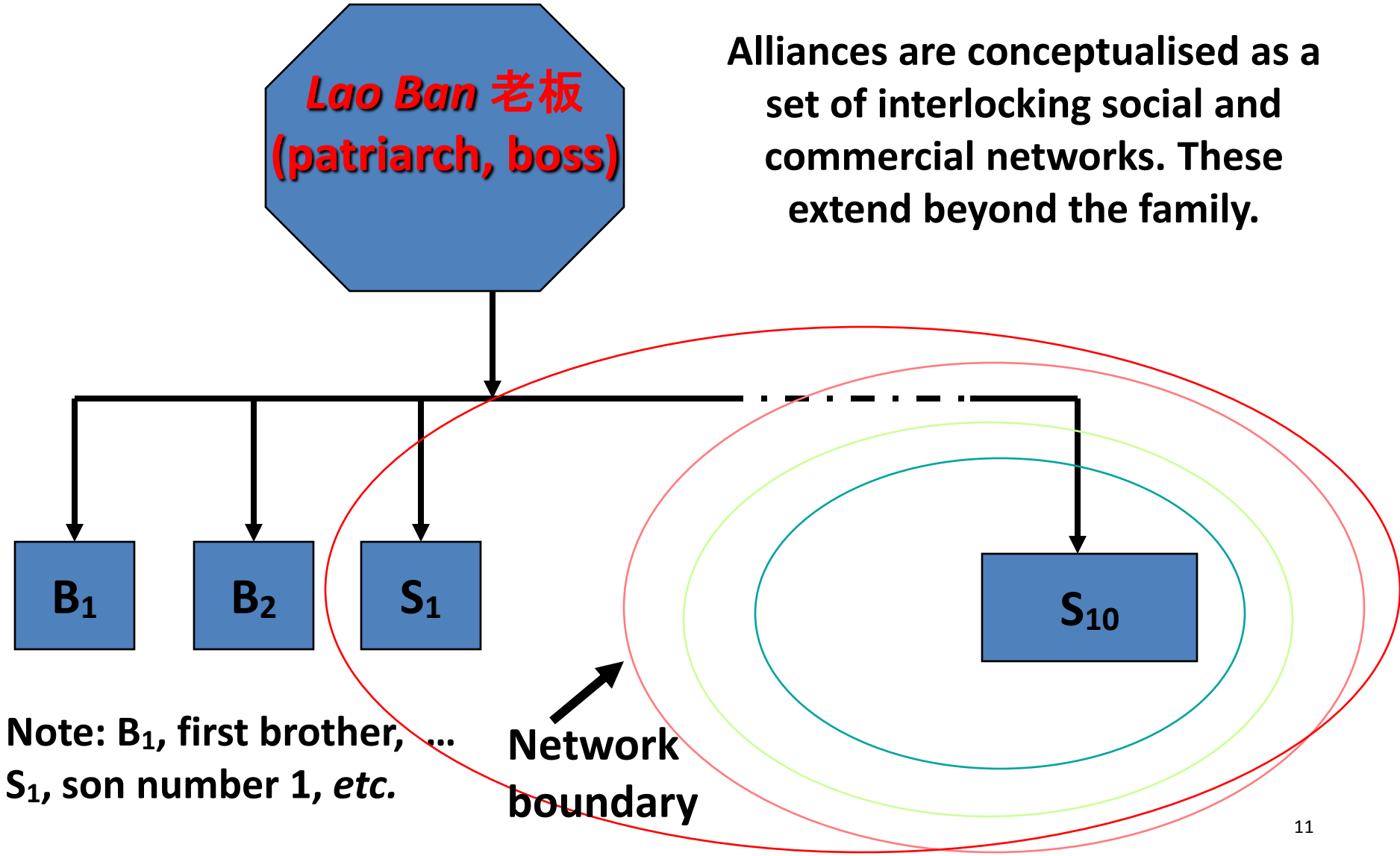
Headed by a patriarch, sub-units allocated to 'brothers', 'sons', 'uncles' + 'fictive family'

- distrust of non-family professional managers

CFB group growth is by firm replication

- new firm is created rather than a new division
- new alliances don't disrupt previous alliances
- Some CFBs grow into giant conglomerate (100s of 'group' firms)

Structure of Chinese family businesses



Alliances are conceptualised as a set of interlocking social and commercial networks. These extend beyond the family.

Note: B_1, first brother, … S_1, son number 1, *etc.*

The main purpose is to reduce risk

Reduces the likelihood of fraudulent behaviour between parties

you don't cheat 'family'

Increased information flows

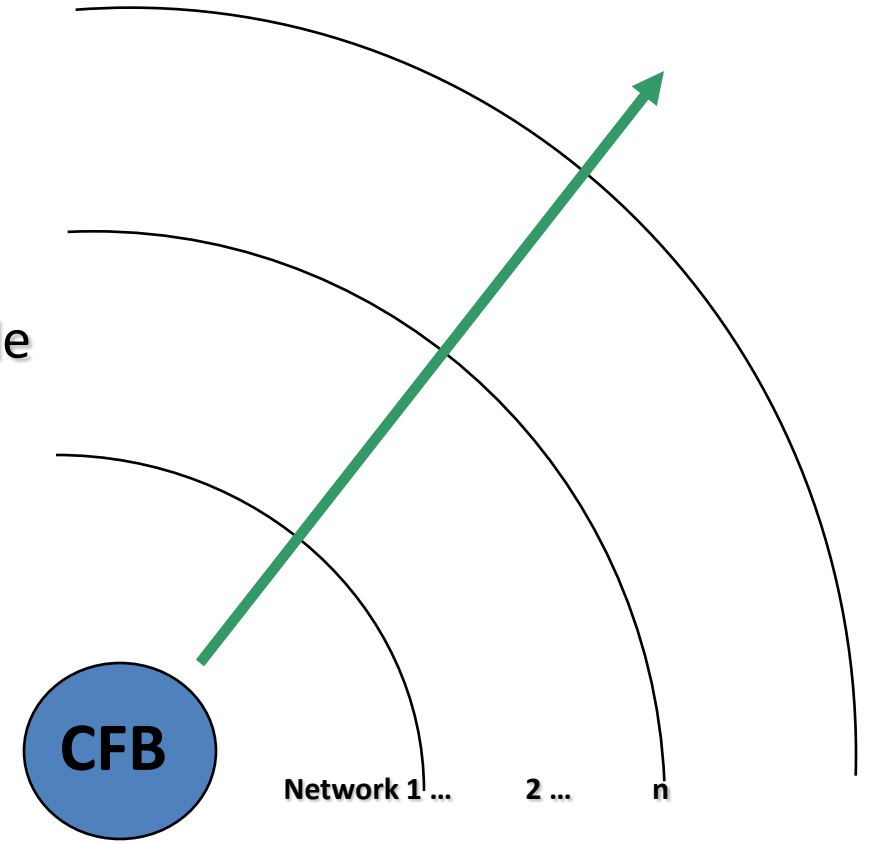
Networks are club-like institutions to reduce risk

-membership = acceptance of implicit code of ethics

-involves reciprocity system of debt, obligation and face

High level of trust explains long terms orientation (Lee and Dawes 2005)

Transaction costs rise with the number of partners and the network distance (heterogeneity of partners)



Origin of major business groups in Thailand (Suehiro 1992, Table 6, p. 51)

Siam Motors	Thawon Phornprapha	1916	China	Teochiu
CP Group	Chia Ek Chiu	1891	China	Teochiu
Metro Group	Sawang Laohathai	1941	Bangkok	Teochiu
Chawkwanyu	Chaw Chawkwanyu	1910	China	Shanghai
Boon Rawd Brewery	Prachuap Phiromphakdi	1911	Bangkok	Thai
Hong Yiah Seng	Phorn Liaophairat	1916	Saraburi	Teochiu
SPI Group	Thiam Chokewattana	1916	Bangkok	Teochiu
Kamol Sukosol	Kamol Sukosol	1913	Bangkok	Teochiu
Laemthong Sahakan	Yongsak Khanathanawanit	1926	Thailand	Teochiu
Thai Roong Ruang	Suri Asadathon	1908	China	Cantonese
Sukree Group	Sukree Phothirattanangkun	1916	China	Hainanese
Saha Union Group	Damri Darakanon	1932	Bangkok	Teochiu
Osothsapha	Surat Osathanukhro	1930	Bangkok	Teochiu
Boonsung	Juthi Boonsung	1910	Thailand	Hokkien
Sahaviriya	Phrapha Viriyaphraphalkit	1934	Thailand	Teochiu
Yip In Tsoi	Thawat Yip In Soi	n.a.	Thailand	Hakka
Kwang Soon Lee	Chawalit Chinthammit	1942	Bangkok	Hakka
Mitr-Pol	Wibun Phanitwong	1944	Rachaburi	Hakka
Cathay Trust	Kiat Srifuengfung	1916	Suphanburi	Teochiu
Mahakhun	Suphasit Mahakhun	1925	Bangkok	Teochiu
Thai Seri	Phairot Chaiyaphorn	1933	Samutsongkhram	Hakka

2-5. Interactions between Japanese and Chinese networks in Southeast Asia

Very few joint ventures between Chinese and Japanese investors before the 1950s in Southeast Asia

-Before the 1940s: commercial contracts; Chinese traders distributing Japanese goods in urban and rural areas (even during boycott campaign)

-WWII: command and control under supervision of the Japanese Army and Navy

-In the 1950s, import substitution policies: first joint ventures between Japanese and local Chinese firms but small FDI flows (labour intensive)

-Gradual rise of Japanese FDI with the same partners (trust); increasingly capital-intensive

3. The *Toyo Keizai (Oriental Economist)* database
3.1. General presentation

Micro-data obtained from the *Toyo Keizai* (TKZ) annual survey for analyzing the characteristics and evolution of network structures among Japanese manufacturing overseas subsidiaries since the 1960s.

The TKZ database reports micro-data for several thousands Japanese overseas subsidiaries, either wholly owned companies or joint ventures with local partners.

Available information enables identifying Japanese and non-Japanese shareholders, percentage of paid-up capital owned by each firm, number of employees (and expats), industry, address, year of establishment...

In Southeast Asia, local partner companies almost exclusively owned and operated by ethnic Chinese family-based networks (e.g. Suehiro (1992) on postwar Thailand).

3 The *Toyo Keizai (Oriental Economist)* database
3.2. The Southeast Asian sub-sample

Filter out: (a) “generic” nodes (e.g. 現地 “local enterprise”) which cannot be uniquely identified; (b) nodes representing foreign (with respect to Japan) entities (e.g. Bosch)

Network composed by 29.167 nodes, of which 18.315 constitute the main (largest) connected component: 1.941 Japanese investors own shares of 16.374 firms located in one of the ASEAN countries.

Few cases of divestment in ASEAN countries: 2006 survey use to generate proxies of snapshots (next step: longitudinal data)

Stock of subsidiaries established:

- 1975: 8,670 nodes (1,199 Japanese investors)
- 1985: 9.599 nodes (1,250 Japanese investors)
- 1995: 13,150 (1,561 Japanese investors)
- 2005: 18,295 (1,939 Japanese investors).

3 The *Toyo Keizai (Oriental Economist)* database

3.3. Reduced sub-sample with minimum size of communities

In order to provide reasonably robust (although preliminary!) results, only communities made of at least three members have been included

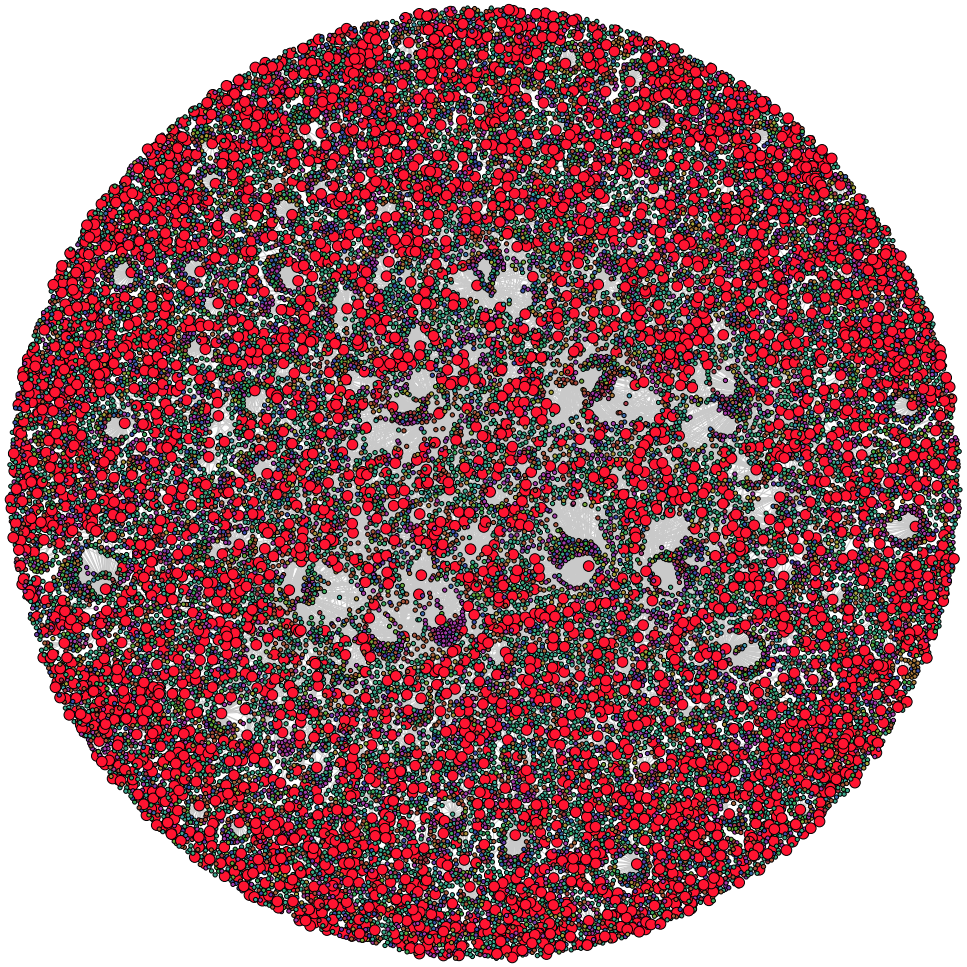
Total number of communities detected across years (stock) is:

- 1975: 86
- 1985: 97
- 1995: 113
- 2005: 134

Average size slightly oscillates between a minimum value of 12.89 (in 1985) up to 14.47 (2005), showing consistency in the detection process

Nodes are colored according to the nation they belong to
- Japan is red,
- ASEAN countries in cold colors

Differences in size (very small by choice) are related to the degree (k, that is the number of connections). Japanese investors are depicted in bigger size



4. Preliminary results
3.1. Modularity

The idea is identify groups of Japanese investors which appear to be connected between each other. In graph theory parlance, we refer to them as communities of more densely connected nodes.

The standard modularity optimization (Louvain community detection [Blondel et al. 2008]) method has been used, with satisfying results (modularity is systematically > 0.90).

Blondel, V. D., Guillaume, J.-L., Lambiotte, R. & Lefebvre, E. (2008) Fast unfolding of communities in large networks. J. Stat. Mech, 10, P10008.

4. Preliminary results
4.2. Persistence (a)

Intuitively, communities are considered to be similar if they share a given share of members (technically, the ratio between the intersection and the union of members.

Persistence is measured as Jaccard index (J_{ab}).

Given two sets of communities from sets S_a (let's say, up to 1975) and S_b (let's say up to 1985), the matrix of Jaccard distances between every couple Comm_x (from S_a) and Comm_y (from S_b) provides useful information about similar communities appearing at different times.

-1 means that communities are identical;

-0 means there are no common investors belonging to both communities).

4. Preliminary results
4.2. Persistence (b)

Additional condition J>0.5

Two different approaches have been taken:

(a)the “pivotal” approach compares year 1975 to, in turn, 1985, 1995 and 2005.

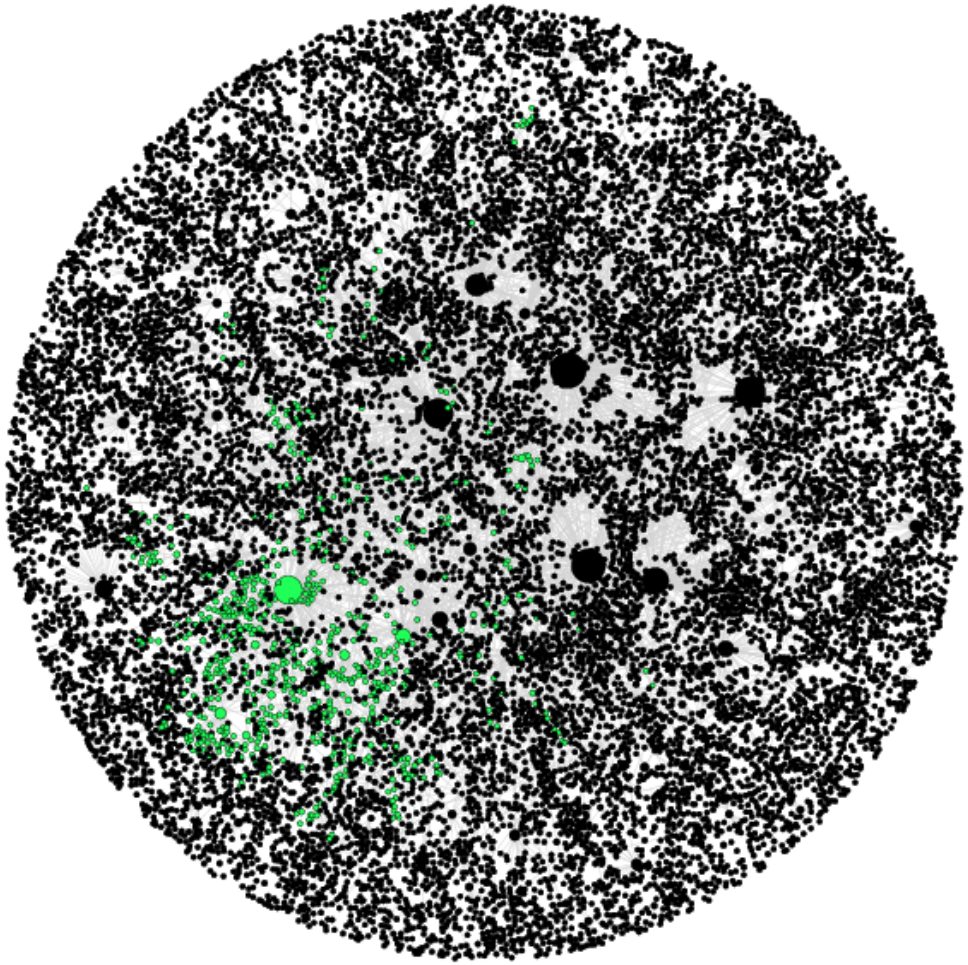
(b)the “windowing” approach compares successive time windows: 1975 and 1985; 1985 and 1995 and so forth.

In (a) we observe 60 persisting communities between 1975 and 1985, 40 between 1975 and 1995 and 26 between 1975 and 2005.

In (b) we observe (again, obviously) 60 persisting communities between 1975 and 1985, 46 between 1985 and 1995 and 50 between 1995 and 2005.

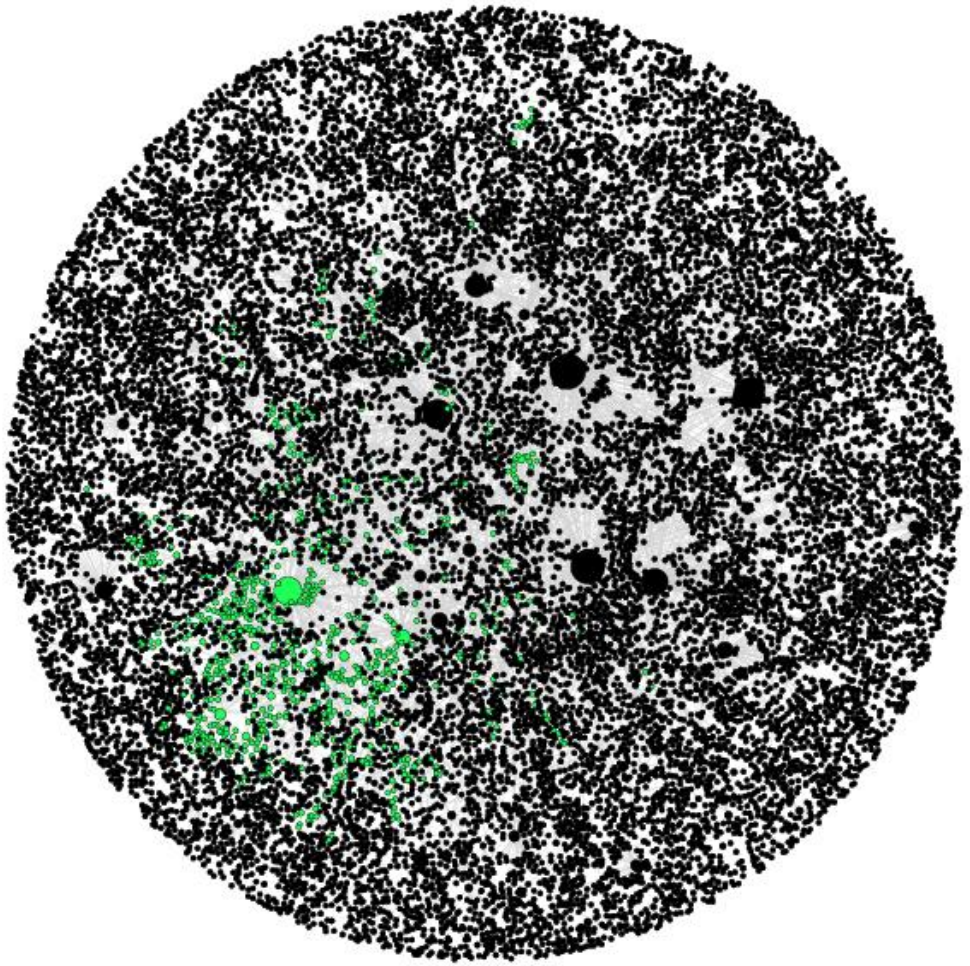
Example of persistence

1975



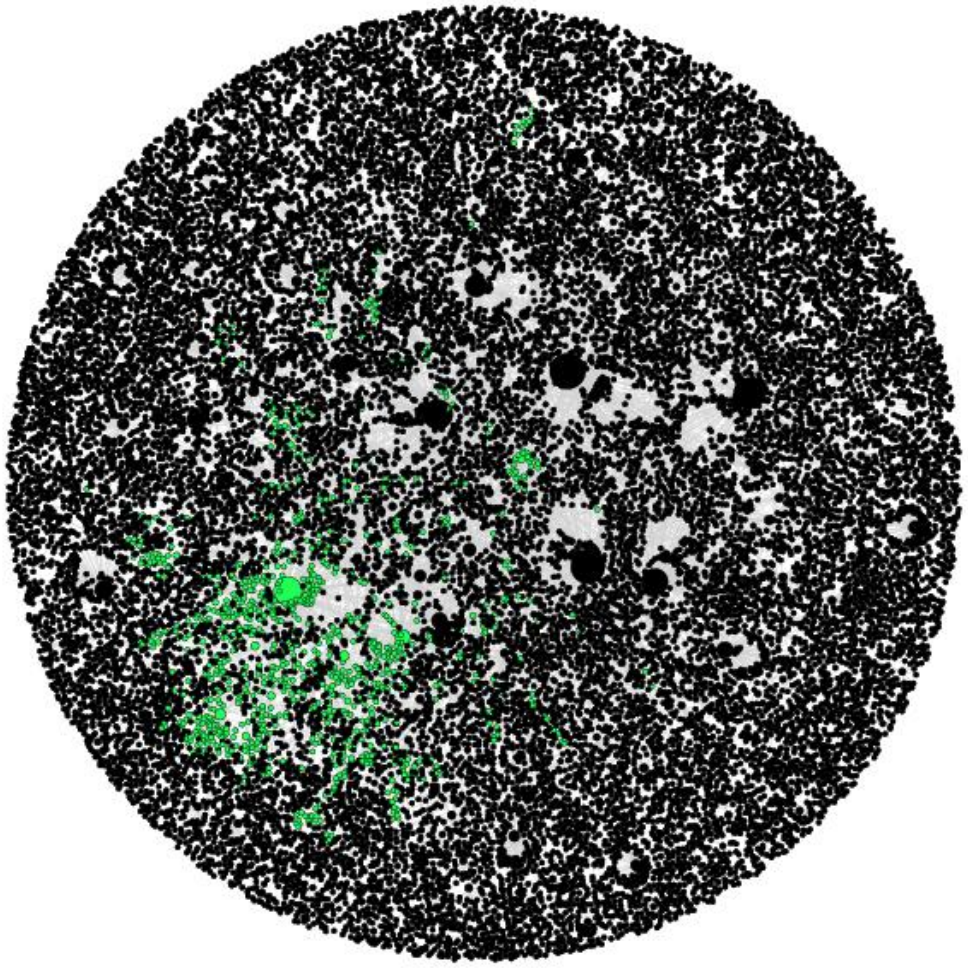
Example of persistence

1985



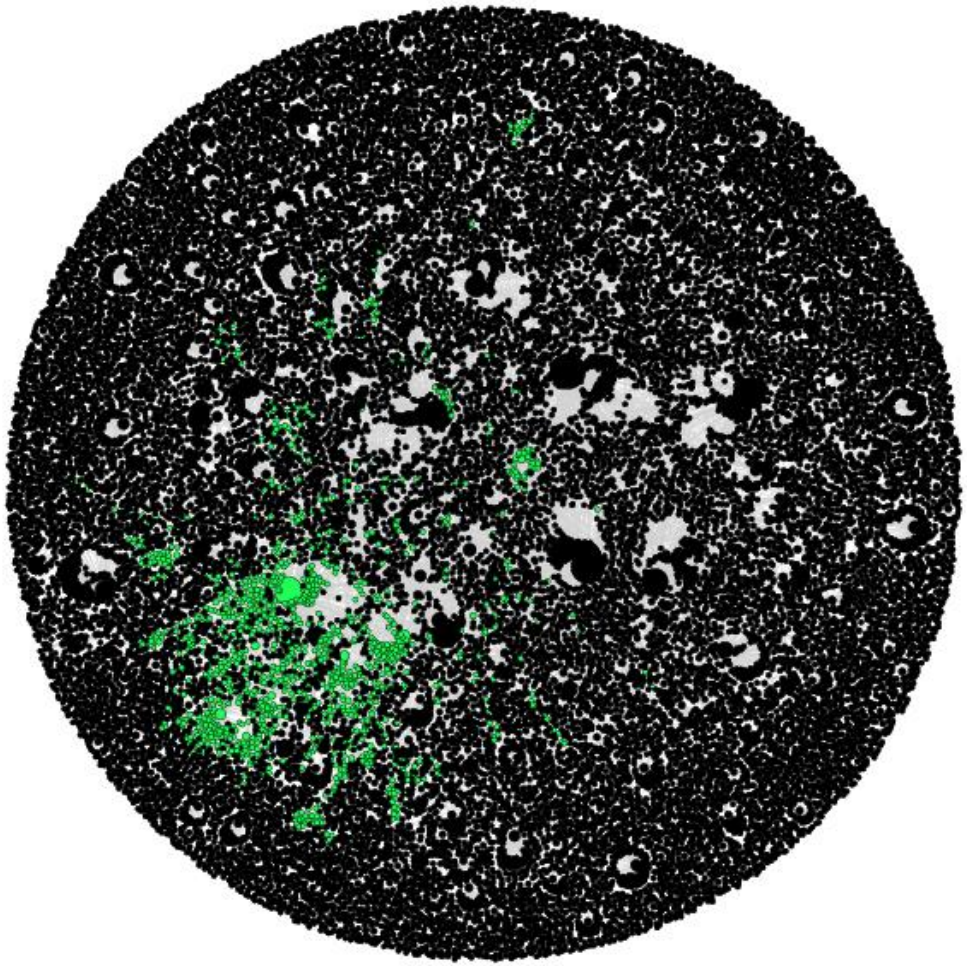
Example of persistence

1995



Example of persistence

2005



5. Tentative interpretation and agenda

Strong temporal persistence of well-connected groups of investors, both in the medium (10 years) and in the long term (20 and 30 years).

Identification of investors suggests that some kind of cooperation exists among member of a given *"keiretsu"*

But several local Japanese subsidiaries collaborate with different *"keiretsu"*

And several local partners linked with different *"keiretsu"*

Further research agenda

-Coding "*keiretsu"* (cross-shareholding in Japan)

-Coding local business groups (

-Breakdown for the main ASEAN countries