

A Comparative Institutional Analysis of Taiwan's Organizational Strategy for IT

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Examination was conducted on 17th December 2003, 10:00am—12:00 noon, at Bldg 19 Rm 712.

Overview of the Dissertation

In Part I-- Analytic Survey of the Literature on East Asian Development and Institutions

The existing theoretical paradigms in explaining East Asian development are discussed in detail. Because these theories view the role of the state and other institutions in development in very different ways, we will conduct a close scrutinization of the theories of the state contained in each theoretical paradigm and how they understand the role of the state and state-society relations in the development process. By pointing out the weaknesses of the existing theories in explaining particular industrial policy outcomes in comparative contexts, it is productive to propose an alternative analytical framework, a comparative institutional approach, to state-society-business relations, which is a direct application of what Evans and Stephens and Professor Aoki Masahiko called “the new comparative political economy” or “comparative institutional analysis.”

In Part II -- Political Intervention: Analysis of Organizational Strategies for State Institutions Related to IT

Through a sketch of its developmental history for Taiwan and Japan, it is discussed how the unique state-society relations and organizational strategies in Taiwan and Japan affected the formation of formal and informal institutions concerning the development of the IT hardware industry in which the state and societal actors interact with each other. It will be argued that the Taiwanese state has played so dominant and pervasive role not because of the strong and autonomous state that was envisioned by the early statist literature, but because of the institutional strategies and state-society-business relations that are unique to the political economy of the accelerated industrial catch up strategy for IT in Taiwan. This section shows that although Taiwan's state literally built the whole IT sector in the beginning, it also built an enhanced version of a highly diverse free market “rules of the game” which unlike Japan and South Korea, did not grant special privileges to certain large firms but rather built a transparent and level playing field embracing both small and large enterprises. Taiwan also avoided bureau pluralism by embracing an open pluralism institutional strategy that involved the privatization of government think tanks and the spinning off of almost all state research programs into the private sector in order to create the fullest possible diversity of

human resources.

In Part III--- Bureaucracy and NGOs in IT Industries: ITRI & MITI

This section is concerned about how the state and NGO bureaucracies promoted the high-tech industries in Taiwan. Basically they agreed on three major points: 1) The electronics industry is the most important sector to be promoted in order to upgrade Taiwan's industrial capability, and having IC technology is the key for the success of the electronics industry; 2) IC technology should be purchased rather than developed by the Taiwanese themselves because the latter would cost too much and take much longer time than the former; and 3) In order to prepare and undertake various IC projects, overseas Chinese engineers and scientists should be mobilized because no one in Taiwan was familiar with ICs at that time.

Considering Taiwan's industrial capability in the early 1970s, which was still highly labor-intensive by all standards, these decisions might be viewed as a pie in the sky dream. But Taiwan had to upgrade its industrial structure anyway due to the increasing competition from the less developed countries. Electronic products are diverse, ranging from watches, toys, and color TVs to VCRs and automation equipment. ICs as major components for electronic goods are also diverse, which allows Taiwan to take advantage of many diverse niche markets. Taiwan's having a small and medium size corporate structure was thought to be well suited to the diverse niche markets, some of which could be accessed with relatively low technological levels. The highly educated work force that Taiwan has boasted of was considered an additional advantage for Taiwan. The availability of overseas Chinese engineers was a particularly good comparative advantage, which was viewed as a critical factor for Taiwan's technological upgrading. By aiming at small niche markets that require low levels of technology, it was believed that the electronics and IC industries in Taiwan could have international competitiveness.

The Triangle method for Public / Private Sector Balance.

Simply put, this is just bringing about a balance between the three basic types of organizations in a country: the balance and co-operation between the state, business and NPO / NGO sectors. Each state has its own unique organizational strategy for which it decides on the role within the triangle of each of these types of sectors. The striking characteristic about the Taiwanese state is its active participation in forming and promoting literally dozens of specialized NPO organizations. Some like TSMC and UMC went on to be spun off as companies and others like ITRI and ERSO became autonomous NPOs. In 1995 more than 60% of all Taiwan technology patents were acquired by NPOs and they made up 5% of the economy.

In Part IV--- Background and Analysis of Corporate Organizational Strategies for Diversity for the IT Businesses with Case Studies

This section covers the unique organizational strategies of Taiwan's IT sector by explaining the background and innovations of Taiwan's Win-Win OEM strategy with its primary focus on the strategy of vertical division of labor of IC manufacturing. It is well known that the IC industry is divided into highly specialized sectors, including IC design, mask making, wafer processing, and assembly and test. One of the most significant changes in the Taiwan IC industry in recent years has been the transition from a vertically integrated model to a vertical division of labor business model. This transition has been driven by the need to constantly adapt to the rapidly changing business environments that characterize each sector of the production cycle, and by the massive investment needed to remain competitive in the global economy. The so-called IDM (integrated device manufacturer) model, in which one company is responsible for all aspects of production, is no longer competitive due to the excessive strain it places on a company's financial, research and development, and management resources. As a result, the vertical division of labor of production is becoming the mainstream business model in Taiwan. Many case studies are used to offer abundant evidence of the unique organizational strategies of Taiwan's OEM IT manufacturing.

In Part V-- For and Against Taiwan: Confronting Criticisms and Revealing Success

All of the East Asian countries and especially the Chinese NIEs (Taiwan, Singapore, Hong Kong) have at one time or another come under critical attack in the 1990's as will be shown below. Although there are many different types of theoretical camps that have attacked Chinese NIEs and high performance Asian economies (HPAEs World Bank 1993 p.3) from their various angles, this thesis focuses on four basic groups that have been explained in an overly simplistic manner due to the limited scope of this study.

In Francis Fukuyama's book Trust: The Social Virtues and the Creation of Prosperity (1995) he expounds on the weaknesses of the Chinese NIEs entrepreneurship and even more specifically the harmful effects of Confucian culture on business and regional integration because it involves trusting groups outside of the immediate family. Highly centralized authoritarian family controlled firms, nepotism, lack of Schumpeterian entrepreneurship and small scale OEM firms are the oft-cited weaknesses of the NIEs Chinese business practices. In addition he talks about the inability of Confucian Capitalism to have smooth transitions of power during generational changeovers as well as the inability to achieve international brand name recognition. Fukuyama sees the Ethnic Chinese NIEs entrepreneurship as a kind of anachronistic holdover of the mom and pop family management system unwilling to associate with outsiders and also unwilling to give up control to professional managers because of nepotism and therefore unable to develop large scale firms using a more Schumpeterian kind of entrepreneurship. Fukuyama attributes these weaknesses to what he calls lack of social trust, lack of spontaneous association and lack of civic virtue and blames

this on the Confucian heritage.

The second part of this section introduces the statistical data that gives us an idea of just how much more successful Taiwan's organizational strategies have been when compared with the traditional strategy of high vertically integrated "Big Brand" Makers such as IBM, NEC, Toshiba, etc. During the 1990's the ideas of "best practices" and "not invented here" became key concepts for restructuring and re-engineering in the massive attempt of huge corporations to downsize, decentralize, revitalize and cut costs. However, these concepts, and many others, for improving productivity through cross functional teams, niche marketing, strategic business units, decentralization, stewardship and information sharing were already being widely practiced in the 3 little tigers of Taiwan, Hong Kong and Singapore.

Summary of the Doctoral Dissertation:

The direct investment and outsourcing by multinational computer makers and efforts by local companies to become part of the supply chain combined to create a boom in computer production in East Asia. The combination of approaches was different in each situation. Singapore relied mostly on production by foreign multinationals, Taiwan and Hong Kong had a combination of foreign and domestic producers, and domestic firms dominated Korea's industry. During the 1980s, each of the four NIEs experienced high-speed growth in the manufacturing of computers and peripherals. However, in the late 1980s and early 1990s, production levels stagnated in Korea and Hong Kong but surged in Taiwan and Singapore. This surge in Taiwan during the 1990's along with the commensurate decline of Japan, Korea and Hong Kong's market share is of primary concern in this dissertation.

Central Issues of this Doctoral Research

The central inquiry of the PhD dissertation explored the answers to the questions below that correlate to the 5 main points raised in each respective part of this study.

Point 1-a. Evolution of Development Theories. How does this research conclude that in contrast to Taiwan, the state in Japan and Korea has played a largely different role? In particular, the role of the state in the Japanese accelerated industrial catch up strategy for information technology (IT) hardware has changed significantly over time, and so did the state-society and state-business relations. Part I goes into detail about the historical background which led to development paths that appear similar between Japan and Taiwan but are actually quite different in both practice and results.

Point 1-b. The Comparative Institutional Approach. Why are "bounded rationality" methodologies,

such as CIA and game theory more useful than conventional “rational expectations” economic models in analyzing economic development and transition economies? This is explained at the end of Part I and refers to the strong trend in the 1990’s for using more and more bounded rationality as the new methodology comes of age.

Point 2. Political Intervention. Japan and Taiwan both experienced strong political intervention into the IT hardware industry however the end result was far different in each case why? Part II examines the history of these interventions and answers this question.

Point 3. Bureaucracy and NGOs. What was unique about Taiwan’s state-business and state-society relations for IT hardware development and how did the human resource diversity strategy of “open pluralism” for state institutions differ from others using “bureau pluralism” such as Japan and South Korea?

Point 4. Corporate Culture of Diversity. What strategies were used in the Taiwanese IT hardware industry that helped achieve the highest average rate of both profitability and world market share increase during the 1985--2000 period? Also, from the perspective of institutional economics, what is unique about the organizational strategies of “human resource diversity” and “OEM vertical division of labor” (Win-Win strategy) for IT hardware companies and research institutions that make Taiwan stand out in East Asia?

Point 5. For and Against Taiwan. Why was the early 1990’s filled with so many criticisms about Taiwan’s IT development and business style with many experts explaining why Taiwan would soon fail? However, there were few experts explaining why Taiwan’s IT strategy was leading the world in profitability and revenue growth from 1990 until 2002. Part V explains the misunderstandings about Taiwan’s strategy and why nobody saw the strong success coming in the future.

Why did the Taiwanese and Japanese states play such different roles in the developmental processes of the IC industry, even though they have been viewed as classic examples of what Chalmers Johnson (1982, 1987) calls the “developmental state”? The existing views on East Asian development, those on the economic development of Taiwan and Japan in particular, cannot provide a complete and meaningful explanation to this critical question for a number of reasons that will be discussed later. Though Taiwan is called a newly industrialized country, the state is not new any more and neither are governmental organizations, industries, the people within them, state-society relations, nor the international political economic conditions and structures in which they are located. In other words, structures and institutions in regard to industrial policy-making and implementation are now well established (except for NPOs in Japan), and major players act and react according to the rules of the game that are unique to each society. Thus state dominance over economic policy-making and implementation is not necessarily true, though the state tended to be dominant and pervasive in the process of economic development in the past.

Examination results:

The examiners have different perceptions with the candidate on issues related to NGO and NPO in Taiwan; to the practices of OEM, ODM and BTO by Taiwanese companies etc. Some useful comments, such as to compare systematically the Taiwan cases with Japan and Korea and, to analyze the IT industries in some of the South East Asian countries in order to better understand Taiwan IT industrial structure etc., were also made by the examiners, to further improve the quality of the doctoral dissertation. However, the candidate has made thorough efforts through utilizing the abundant references written in English, Chinese and Japanese to explain his ideas, perceptions and findings. Beside, his oral presentation was particularly persuasive and impressive. He has, to our view, made a splendid contribution toward analyzing Taiwan's industrial structure as well as the mechanism of the success of Taiwan's IT industries. We therefore recommend that Mr. Alan Dale Partee be awarded the Doctoral Degree by Waseda University.

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January 2004