

**TAIWAN'S ECONOMIC DEVELOPMENT:
THE ROLE OF ENTREPRENEURSHIP AND ITS INCUBATING FACTORS***

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ABSTRACT

The abundance of active and innovative entrepreneurs has been ascribed as one of the main reasons for Taiwan's miraculous economic development. This paper expounds upon the past 60 years and how Taiwanese business behaviour has been manifested by adaptive entrepreneurship. Taiwan's entrepreneurs exercise their alertness to opportunities, use guerrilla strategies to profit whenever possible, manoeuvre in and out of regional arbitrages to exploit benefits from international production networks, as well as learn and improve their capabilities to upgrade their own technology. Although some of Taiwan's firms have recently reached world class levels in being able to conduct the original engineering design, it is rare to see a Schumpeterian type of revolutionary entrepreneurship. With its idiosyncratic environment, we ascribe Taiwan's abundant entrepreneurship to political, social, and economic factors, which interweave as well as very often reinforce each other. We demonstrate that a stable economic and political environment, coupled with the practice of the Confucius philosophy of pragmatism, has helped incubate Taiwan's post-war entrepreneurship.

I. INTRODUCTION

Taiwan's phenomenal post-war economic growth has been globally praised as a miracle. In an article published by U.S.-based magazine *Business Week* (2005), "Why Taiwan Matters?" it stated that "the global economy couldn't function without it." Considering the pivotal role played by Taiwan's electronics industry, this is indeed not an overstatement.¹ How Taiwan was able to reach this stage has instigated a series of studies and proffers an interesting lesson for latecomers. In the World Bank Policy Research Report (1993), Taiwan's successful economic development stands out as a vivid example within these East Asian economic miracles.² The report is obviously based on the neoclassical growth theory although it admitted that there are also non-economic factors, including culture, politics, and history, important to the East Asian success. The entrepreneur, who literally expedites the resources to efficient and effective allocation, is treated as a non-economic factor and is completely ignored.

There is no dearth of studies about the contribution of Taiwan's entrepreneurs to its growth. The plethora of "lao-bans" (bosses) of small and medium-sized enterprises (SMEs) is one of the influential factors for Taiwan's economic development, as predicated by Numazaki (1997).³ Shieh (1992) alluded to Taiwan as "Boss Island" and asserted that "bosses" are the drive for Taiwan's export-oriented industrialization and development, which has materialized under subcontracting networks and micro-entrepreneurships. Taiwan's electronics industry and its technological catching-up have also been topics of interests for scholars from technology management. Ernst (1998) presented how small computer firms in Taiwan have competed in the international market for computer-related products. In a comparative study of Asian Newly Industrialized Economies, using the electronics industry as an illustration, Hobday (1995) explored how small Taiwanese firms acquired technology, overcame the disadvantages of a small scale, and managed their way into international markets. Matthews (2004), using Acer and other electronics firms in Taiwan as case studies, showed that latecomer firms "can utilize the existing and latent interfirm connections of the global economy to accelerate their global growth."

As a tiny island economy, Taiwan has triumphed in the Information Technology (IT) field and has an outsized representation in the IT 100 of *Business Week* (2006). Within the IT 100, thirteen companies are from Taiwan and their founders are genuine entrepreneurs.⁴ Unlike South Korea or Japan where most of their successful businesses come from conglomerates, Taiwan's entrepreneurs typically start out as an apprentice or *heishou* (meaning hands are black due to working in a workshop), and then they become a lao-ban, or "boss." Two of the seven billionaires of Taiwanese listed in *Forbes* (2006), Terry Gou and Barry Lam, are both founders of the two biggest Taiwanese companies in *Business Week's* IT 100.⁵

The Chinese typically prefer to be their own boss - "better the head of a chicken than the tail of an ox," according to an old Chinese saying. With one company for every twenty people in Taiwan (one of

the highest densities in the business world), this “army of ants” has been the major contributor to its economic miracle (*Economist* 1998).⁶ According to *Taiwan’s Industry, Commerce and Service Census*, conducted by the Directorate General of Budget, Accounting and Statistics, Executive Yuan, R.O.C. (2002), between 1995 and 2000 the survival rate of enterprises was 69.4%. The ease of firms to establish and shut-down indicates the dynamism of entrepreneurship in Taiwan.

Although everyone knows that entrepreneurship has been and still is important for Taiwan’s economic growth, how exactly it facilitates the market to function and what type of strategies entrepreneurs adopt have seldom been discussed. In addition, Taiwan is well-known for its abundance of entrepreneurs, and what factors incubate entrepreneurship has not been systematically studied either. This paper attempts to bridge this gap by focusing on the role of entrepreneurs within Taiwan’s economic development. Israel M. Kirzner’s concept of adaptive entrepreneurship, which highlights the alertness and the opportunity discovery of entrepreneurs, is well apt to explain the past 60 years of Taiwan’s economic growth even as Taiwan has gradually reached the level of relying on the Schumpeterian mode of ‘heroic entrepreneurship.’ In view of the factors incubating entrepreneurship, we resort to the confluence of the economic environment and policy, the idiosyncratic political background of Taiwan, and cultural and social influences. The rest of this paper includes the following sections: Section 2 discusses adaptive entrepreneurship and entrepreneurial strategies. Section 3 investigates factors that incubate Taiwan’s entrepreneurship. We conclude this research in Section 4.

II. ADAPTIVE ENTREPRENEURSHIP AND ENTREPRENEURIAL STRATEGIES

Kirzner (1973) argued that the role of entrepreneurs lies “in their alertness to hitherto unnoticed opportunities.” With their alertness, entrepreneurs are able to discover and exploit narrow profit margins. Adaptive entrepreneurship can be observed in many forms, including putting new ideas in use; modifying and perfecting original innovations; adding some product attributes and fitting them to a slightly different market; supplying something which is lacking in the market; and serving the markets which pioneers have created, but have not yet adequately serviced.

The notion of adaptive entrepreneurship in Austrian economics is associated with the subjectivist theory of knowledge. According to Kirzner (1985), knowledge can be classified into two types: (1) technical knowledge involving skills in utilising given physical resources. This type of knowledge can be obtained by deliberate searching or via research and development (R&D). (2) knowledge of opportunities which cannot be obtained by deliberate searching, but manifested in entrepreneurial capabilities. Economic growth can thus occur in two ways: (1) improvement in technical knowledge (neoclassical studies largely focus on this aspect of research) and/or (2) increased awareness of the availability of opportunities. Hence, economic growth occurs not only “because of the availability of new opportunities, but because of expanded awareness of existing opportunities” (Kirzner 1985). Growth requires expanded productive possibilities as well as entrepreneurial alertness and discovery. In Kirzner’s view (Kirzner 1985), entrepreneurship consists of the social integration of the innumerable scraps of existing information that are scattered throughout the globe.⁷ The same entrepreneurial spirit also tends to stimulate the discovery or creation of entirely new information to satisfy consumers’ preferences. Kirzner argued that the entrepreneurial process at this new level is what drives the capitalist system toward higher standards of achievement.

In the following, the dynamics of Taiwan’s industry (mainly electronics) will be explained and illustrated by the concept of adaptive entrepreneurship. We identify four major entrepreneurial strategies commonly observed in Taiwan’s economy: alertness to opportunities and guerrilla entrepreneurship, original equipment manufacturing and entrepreneurial learning, small businesses and international production networks, and regional arbitrageurship.

2.1 Opportunity alertness and guerrilla entrepreneurship

The large-scale mass market approach adopted by South Korean Chaebols is not the only path to export success for developing economies. The Taiwanese case shows how hundreds of tiny latecomer firms have clustered together behind the electronics frontier in exploiting market opportunities (Hobday 1995: 95).⁸ Taiwan’s PC industry has achieved great success through its quick response to innovations from leading competitors. Once a dominant design or a radical innovation is introduced into the global markets, manufacturing companies in Taiwan are able to respond immediately to this change (Chang 1992: 210).

Compared to the advantages possessed by advanced western nations in system/application specifications and the advantages pursued by Japan in material technology and fabrication processes, Taiwan’s competitiveness originates from design speed, quality, cost, and flexibility (Chang and Tsai 2002: 103). For example, in late-2003 Intel made a big bet on Centrino, the wireless Internet system for

notebook PCs, and it sought out a partner that could quickly get Centrino computers to the market. Intel teamed up with engineers at Acer (Taiwan). Within three months, Acer not only came up with a high-end Centrino notebook sold under the Acer brand, but also offered mid-tier and even entry-level PCs using Intel's new technology (*Business Week* 2005).

Entrepreneurial firms in Taiwan are able to mobilize resources efficiently to different battlefields. These firms avoid head-to-head confrontation with their superior competitors, and they seek out opportunities for high profit margins in particular products, develop a formula, and exploit it by rapidly flooding the market before established firms can respond. Often, these firms only focus on short-term profits and then leave the market for another one before competition forces prices down to the point where they are no longer profitable without large-scale investments in technology or infrastructure (Lam and Lee 1992).⁹ This process in fact helps to reallocate capital from dying industries to sunrise ones, opens up new markets, and secures new suppliers of resources. Using guerrilla entrepreneurial strategies, manufacturing firms in Taiwan have been able to survive and compete under global competition.¹⁰

2.2 Original equipment manufacturing and entrepreneurial learning

For the past 60 years, Taiwan's manufacturing firms were not inventors, which usually define the 'paradigm' of technological progress. Instead, most of them are learners and adopt an accommodative strategy to incorporate high-tech knowledge into their adjustment (Wang 1995/1996: 551-577).

Taiwan's manufacturing firms learn by engaging in original equipment manufacturing (OEM). OEM manufacturers produce goods with the design and technology specified by foreign firms, with the product sold abroad bearing the brand name of the overseas companies (Hobday 1995). They do not have to spend money on establishing distributional networks or on consumer-oriented promotion to develop brand preference, nor do they have to maintain a strong internal R&D base to develop new products. In addition, orders from OEM buyers not only guarantee satisfactory utilization of an OEM firm's capacities, but also provide essential financing for its operations.

In a late-1980s survey of 43 Taiwanese OEM suppliers (27 domestic and 16 foreign-invested), roughly 70% acknowledged that OEM contracts are useful in transferring production technologies and in acquiring product design capabilities (Ernst 1998: 42). For example, Tatung, one of the largest electronics makers in Taiwan, exports around half of its color TVs, PCs, and hard disk drives under OEM arrangements. Tatung has learned how to absorb and adopt advanced foreign technology to modify, re-engineer, and re-design consumer goods for different types of customers. In 1990, Tatung employed around 500 R&D workers in electronics, with most of their works in re-engineering rather than original research (Hobday 1995: 112-113).

Having accumulated technical experiences and capability via internal R&D and OEM, Taiwan's PC industry is in an excellent position to shorten its technical lag behind leading firms. For example, in November 1988, two local companies announced their success in developing the same 32-bit PC, only two months after Compaq's introduction of its 32-bit PC (Chang 1992: 203).

During the early stage of PC development, entrepreneurs in Taiwan acted as opportunists, with most of them as agents of new foreign products for local customers. As the products matured, these firms then took steps to imitate similar products at lower costs. Under the pressure of intellectual property rights claimed by the original producers, they began to engage in the OEM business. As their technological capabilities grew, they offered original design manufacturing (ODM) products by which they designed and produced products for their buyers.

2.3 Small enterprises and production networks

Small businesses in Taiwan's electronics industry are successful, because they are infinitely flexible and they can switch businesses as market conditions dictate. Hewlett-Packard's Hsiao says he places orders for as few as 10 PCs of a specialized configuration. The Taiwanese can process and ship such an order in 48 hours. "They can change direction overnight," exalts Hsiao (*Business Week* 2005). Unlike South Korea, where large conglomerates like Samsung Electronics Co. and LG Electronics Inc. dominate its electronics industry, Taiwan is composed of smaller and nimbler outfits. It is no surprise to see that when Taiwanese companies get too large, they tend to spin off businesses and refocus. Hence, in 2001 computer maker Acer Inc. spun-off consumer electronics company BenQ, which later spun-off the LCD panel maker AU Optronics. United Microelectronics Corporation (UMC), a leading global semiconductor manufacturer, has spun-off two IC design houses that it invested in, MediaTek (designer of chipsets used in DVD players and cellular phone handsets) and Novatek (designer of LCD driver ICs) (*Business Week* 2005).

The electronics industry is highly volatile, with frequent and unexpected changes in demand and technology. To be able to compete, it is essential for a firm to maintain flexibility. In Taiwan the

primary source of this flexibility appears to be the specific organization of the domestic supply base, especially for parts and components. The result of these characteristics is a form of open and volatile production networks. Taiwan's electronic industry has found a niche for its domestic industrial organization and has taken advantage to integrate itself to the international production network and become a pivotal player in the supply chain of the global electronics industry.

Local business network with a center-satellite system

The business linkage scenario that places a large firm at the center and small firms as the surrounding stars is termed a center-satellite system. Three types of center and satellite systems exist between small and large firms in Taiwan: (a) backward integration pattern, where the SMEs supply key or spare components to large manufacturers; (b) forward integration pattern, such as for China Steel Company which provides processed steel material to the SMEs; (c) forward integration of distribution, where a large central firm mainly conducts trade, marketing and channeling, and where SMEs actually do the production work (Liu 1998: 344-345).

In this sophisticated networking system, the upstream and downstream manufacturers are each dedicated to specialized technologies in their own areas, without unwanted investment burdens, and are responsive to one another with adequate speed (Chang and Tsai 2002: 107). Originally, these networks were restricted to family and kinship relations. They are now rapidly being substituted by professional "peer group" networks. This is especially true for the IT industry where resource and capability requirements are much more demanding than in traditional industries, and where participation in international knowledge networks is of the essence.

International production networks¹¹

As the global economy becomes more specialized, the pressure for standardization increases. However, standardization may impede innovation. The solution to this dilemma is the establishment of tight linkages between firms along the supply chain that enhance the prospects for inter-organizational knowledge creation - for instance, between end product manufacturers and component suppliers.

In Taiwan, SMEs are integrated into international production networks through international subcontracting and OEM arrangements. Receiving orders from overseas firms, large Taiwanese PC companies such as Tatung, First International Computer, Mitac, and Acer rely on hundreds of loosely affiliated domestic suppliers to which they subcontract small tasks that have low profit margins. In this way, typical small Taiwanese computer companies thus often get involved with foreign firms in an indirect way, as large Taiwanese business groups dominate the direct interface with foreign customers.

Taiwan Semiconductor Manufacturing Company (TSMC) is a typical example of an electronics company in Taiwan involved in international production networks. Acknowledging that advanced industrial countries are in charge of the core technology of a computer, TSMC entered into this industry by creating a computer part OEM - the computer chip. Specializing in certain production processes, the firm was able to cut down the production cost and achieve quality control.

2.4 Regional arbitrageurship

After mainland China opened its market door to the world in 1978, Taiwan, with a similar cultural background and using the same language as the mainland, had the first big advantage of tapping affluent labour resources from the mainland. Well before Taiwan's government announced legal rules to invest in mainland China, Taiwanese entrepreneurs were already alert to the opportunity - namely, "taking orders in Taiwan; production in mainland China; and distribution globally". Although Taiwan's government advises a "no rush, be patient" attitude towards investment there, private enterprises in Taiwan have circumvented many policy barriers by taking a detour through various third countries. Two-way indirect trade totaled US\$2.7 billion in 1988, leaping to about US\$16.23 billion in 1994. From 1991 to February 1994, official statistics show that a total of US\$371 million was invested in mainland China (Liu 1998: 344-345). For instance, Alexander Lee, head of operations for Asustek (a worldwide-known motherboard and notebook computer company from Taiwan) in Suzhou, China, says that in 1999 the company had about 300 employees in China and now have more than 45,000 (*Business Week* 2005).

By relocating or subcontracting labour-intensive activities to other low cost regions such as mainland China, while keeping offices in Taiwan as coordinating centres, Taiwanese manufacturing firms have gradually evolved into trading companies. In some extreme cases, firms have no production sites in their home country at all. They simply maintain an office in Taiwan for administrative purposes and subcontract all jobs to other factories from the orders they receive.¹²

III. FACTORS INCUBATING TAIWAN'S ENTREPRENEURSHIP

Although there are different perspectives to study factors enhancing entrepreneurship, due to idiosyncratic characteristics of Taiwan's past history, we ascribe Taiwan's entrepreneurship to economic, politic, and social factors. It is important to note that these factors are usually interwoven and often reinforce each other.

3.1 Economic factors

Universal education and high human capital formation

Although high education does not necessarily foster entrepreneurial spirit, without an education the capability to discover profit opportunities will be limited. The emphasis on education by Taiwanese is due to the traditional Confucian spirit, in which education should be universally offered to each individual equally, and becoming an educated person is the foremost goal of a human's life. For example, Chi-Mei Group's founder Wien-Long Shi, one of the most accredited entrepreneurs in Taiwan, was from a poor family with many children, but had the full support of his family to study in a professional school to learn an engineering skill which helped him to build a kingdom for the future.¹³

Starting from 1968, Taiwan's government extended compulsory education to nine years. With the industrialization of Taiwan's economy and high competitiveness in the era of globalization, high-skilled labour has become important to support the transformation of an economy's structure.¹⁴ The emphasis on education helps offer an incessant supply of human capital, which is conducive to cultivating entrepreneurship. Although there was a problem to Taiwan's economy during the time of the brain-drain in the 1950s-1980s, there has been a reversal of this trend since the end of the 1980s. Educated high-tech engineers, (mostly from the U.S.), such as Morris Chang of TSMC,¹⁵ came back to Taiwan and devoted their experiences and efforts to the island's economic growth.

Successful land reforms in the early 1950s

Successful land reforms unlocked the hidden wealth to the majority of the public and sowed the seeds for nurturing entrepreneurship and the ensuing prosperity of Taiwan. World Bank Report (1993) remarked that Taiwan's successful 1949-1953 farmland reform, including the reduction of rents to a maximum of 37.5% of the main crops and the land-to-tiller program, helped liberalize the incentives to boost crop production. In particular, the government seized land from landlords, compensating them with shares in state enterprises. The land was then sold to farmers under favourable credit terms and favourable prices. As a result, the wealth could be trickled down to the majority of the farmers. Kuo (1997) claimed that Taiwan's economic growth accompanied with income distribution was unique among developing countries. Once the economy and each individual have accumulated enough wealth, the incubation of the entrepreneurship can be well grounded.

A small open economy

With limited resources, Taiwanese has been seen all over the world in conducting business enterprises. In particular, Taiwan's international trade has been playing an influential role in global economic development. From the 1950s to the 2000s, total imports and exports in terms of GDP have been growing from 20% to over 100%. The merits of an open economy are many. First, the economy can reach the information of new technology and management skills, and therefore competitiveness can be maintained. Second, opportunities are expanded as the world becomes its market and give entrepreneurs more room to manoeuvre. Third, a small open economy can have much more flexibility and prompt responses to a quickly changing world.

3.2 Political factors

Government-led industrial transformation

The past 60 years of Taiwan's economic development have the footprints of government-led industrial policies, such as the early 1950s' import-substitution, the advent of export promotion since the 1960s, and the sequential 13 medium-term plans for national economic development since 1953. In particular, each medium-term plan provides the ensuing infrastructure necessity for the economy as it goes through higher stages of development.¹⁶ The macroeconomic policy based on growth-cum-stability is conducive for entrepreneurial firms to fully exercise their capabilities.

The Industrial Technology Research Institute (ITRI) was established in 1973 as part of the Ministry of Economic Affairs. Its goal is to carry out R&D projects and then transfer the technology to the private sector. In 1980, the government established an industrial park almost entirely devoted to IC manufacturing and computer design - the Hsinchu Science-Based Industrial Park (HSIP). Indeed, UMC and TSMC, among others, benefit from government-supported R&D and technology diffusion policy.

Taiwan's government has been very supportive to small and medium-sized enterprises. Choo (2000) stated that Taiwan is "a paradise for small and medium-sized enterprises (SMEs)."¹⁷ Since 1966, the government started to assist SMEs to finance and establish their own businesses. In 1981 an office under the Ministry of Economic Affairs, Small and Medium Enterprise Administration (SMEA), was founded, which takes charge of helping SMEs. In July 1997, a clause of protection of SMEs was amended into Taiwan's Constitution. Hence, the growth and development of SMEs is further ensured.

A stable political environment

The land reforms program worked not only successfully for the island's long-term economic development (most equitable income distributions), but also brought in a stable political environment. As analyzed by World Bank (1993), the newly-landed farmers had little interest in radical activities and former landlords had a vested interest in the success of Taiwanese authorities' economic program.

However, political suppression began to be overturned starting from the end of the 1980s when an opposition party was established. Yet Taiwan's economy has retained its momentum on navigating a growing path. As a result, the island's economic dynamism has not been inflicted during the traverse periods of political turbulence starting from the end of the 1980s as it transformed itself into a democratic system. In fact, the economic dynamism and political democratization has energized Taiwan's society with novel and innovative ideas, which bode well for its high-tech industry in the information age.

3.3 Social factors

The influence of Confucianism

To adapt to the changing world, entrepreneurs need to learn incessantly. Confucian culture has developed a highly idealized notion of ethical self-development. A "Confucian profound person" has been characterized as "one who believes in and acts in the spirit of the perfectibility of human nature through self-effort" (Tu 1984: 92). Confucianism is characterized by a tradition of lifelong learning. The Chinese emphasis on education implies a lifelong *cultivation of human potential*, which is optimistically perceived to be virtually unlimited.

Under the enduring influence of Confucian culture, *Economist* (1998) described that Taiwanese, like most Chinese, work hard, is financially conservative, is natural gamblers with a keen eye for opportunity and an appreciation of managed risk, and is motivated by pragmatic self-interest and self-preservation. The rare empirical study by Li (1989) used a quantified analysis to support his hypothesis that seniority and educational attainment (two basic elements of Confucianism) have a positive effect on Taiwanese entrepreneurial behaviour.

Family-firm and network

Chinese people when they grow up need to separate from their family and become independent on their own, yet their family will always support them in a time of need. This custom results in a disintegration of individually-owned businesses and the build up of family businesses.¹⁸ The tradition that a family inheritance is divided up among the males in the family is one of the reasons that Taiwan is abundant with entrepreneurs.

In the Chinese tradition, parents expect their sons to continue with their businesses. The eldest son has the obligation to continue his father's enterprise. Many firms or factories are established under a family business with family members involved in the production. For example, Taiwan's two conglomerates, Tainan Ban and San-tsun Ban, are connected either through the same blood or through nuptial relationships.¹⁹ In overseas Chinese bamboo networks, contracts can be sealed by a handshake, without a lawyer, an accountant, or a consultant in sight (Ropke 1997). Special families and networks have been the key to success in running a business, as remarked in Greenhalgh (1995).²⁰

The influx of different cultures

Although Taiwan is a Chinese community and 98% of the population is ethnic Chinese, it is wrong to conclude that its culture is homogeneous. Among the Taiwanese, there are Ho-ka Zen, Aborigines (with different tribes), Fu-ken, and Nationalists (1.6 million). Although most Chinese more or less are under the influence of Confucianism, there are various religious beliefs, lifestyles, languages, and political ideologies. Notwithstanding the island's multi-culture tradition, 50 years under the rein of Japan also left a deep mark in its daily living and ways of doing business. Taking over Colonial Japan's big enterprises, such as the monopolized companies of sugar, water, and electricity, etc., the KMT-led government followed suit and maintained many big public enterprises after World War II.

The close connections between Taiwan's enterprises and the Japanese have never gone languid, such as for Tatung, Ho-sin, Formosa Plastics Corporation, Chi-Mei, etc. Nevertheless, aid from the U.S.

after World War II also trained many technocrats for Taiwan's civil services. Companies were also established by overseas Chinese returning to Taiwan, with educated high-tech backgrounds (mostly from the U.S.), such as TSMC as mentioned in Section 2. The ways of doing business either Japanese style or American style have been absorbed into Taiwan's daily life. Immersed in different external cultures and diverse domestic cultures, Taiwanese people cultivate an open-minded attitude. Inadvertently, an immense opportunity for creativity and novelty either in practicing business or developing new products is empowered

Secular value system and pragmatism

Confucian philosophy has permeated into every corner of Chinese society. Confucius reminded us to focus on our daily life and avoided unknown mystery. He said, "While you do not know life, how can you know about death?" (Analects, Xain Jin, 12). The Confucian bible also begins with the line, "it is joyful to practice what one learns". Profoundly influenced by the Confucian teaching, Chinese comes to be rational and practical people. The *pragmatism* of an interaction between "learning and practicing" has been the central philosophical theme of New Confucianism after the 11th century. The Chinese always detest "untestable theory" as hot air, while the huge Chinese population provides testimony that living effectively has always been a cardinal Chinese cultural value. Obviously, the Confucian ethic of life-time cultivation does not contradict worldly affairs, such as the pursuit of wealth and possessions.

In his study of Taiwan's root of entrepreneurship that focused on local history and culture, Skoggard (1996) stated that "although dedicated to one principal god, temples could house many secondary gods, who reflected the overlapping ties and allegiances among communities. The spiritual thread of connecting various gods created the warp and woof of a regional culture, facilitating social encounters, interactions, and transactions over a wide area." Very often, "the fortunes of the gods rose and fell with those of the community," added Skoggard (1996). To be sure, in Taiwan most temples serve as a combination of religious, commercial, and social functions; and certainly they are worldly-activity oriented.

Taiwanese people never shun from being rich through the assistance of a god. Chinese are certainly not a risk-averse race, as their willingness to take a chance makes them the best customers in the casinos of Las Vegas and Atlantic City (Fei and Chu 1999). The temples are crowded with people for lotto numbers when the day of the final draw is near. Taiwan's temples do not and will not decrease due to industrialization. In particular, under the high-tech and information industries occupying most of Taiwan's production shares, with the speed and flexibility of characteristics, the uncertainty becomes higher, and the reliance upon the Fortune God will never debilitate. The do-whatever-it-takes ethos of getting rich is a merit of fostering entrepreneurial spirit.

IV. CONCLUSION

Taiwan's phenomenal post-war economic growth could be attributed to its enormous entrepreneurial spirit. Using various Taiwanese electronic companies as examples, we ascribe Taiwan's success to its adaptive entrepreneurship, instead of the Schumpeterian type of revolutionary entrepreneurship in the course of its growth. This is an important lesson for latecomers with a shortage of highly-educated human resources and a lack of capital needed to do R&D. Taiwan's entrepreneurs mainly follow strategies such as: practice guerrilla entrepreneurship to take advantage of flexibility and adaptability, exercise regional arbitrageurship to exploit the international division of labour division, and implement imitation and entrepreneurial learning to accumulate profits to upgrade to its next stage of development.

To demonstrate how Taiwan's type of entrepreneurship is shaped under its post-war idiosyncratic economic and political environment, we examine three different but interwoven factors: economic, political, and social factors. For example, the temple in Taiwan serves not just for religious worship, but also for political and social interactions. It is important to note that entrepreneurship is not an independent variable for economic growth, which can have a feedback effect to spur entrepreneurship. This reflects the fact that it is important to have a stable economic and political environment, as Taiwan's past 60 years show. The secular-valued religious belief in Taiwan and characteristics of the Confucian idea, such as life-long learning and performance-oriented pragmatism that encourage the pursuit of worldly affairs, are conducive to incubating entrepreneurs.

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ENDNOTES

¹ For example, Taiwan is the world's leading supplier of IC chips, with a market share of 70%. Taiwan is also the world's top supplier of laptop computers with a market share of 72%; of liquid crystal displays with a market share of 68%. The island is the second-largest supplier of computer servers with a market share of 33% and digital cameras with a market share of 34%. Taiwan is also the world's biggest supplier of modems. See news and events of *Invest in Taiwan*, May 25, 2005, published by Department of Investment Services, Minister of Economic Affairs.

² The report states that the superior performance can in large part be explained by having achieved 6 'fundamentals' better than other economies: a. stable macroeconomy, b. high levels of human capital, c. an effective and secure financial system, d. productive agriculture, e. limited price distortion (getting price right), and f. openness to foreign trade, investment, and technology.

³ Numazaki (1997) described 6 unique characteristics of Taiwanese SME bosses: independence, risk taking, moneymaking, family assets over corporate capital, partnership, and guanxi.

⁴ The list of companies selected, are based on the minimum requirement of having revenues of at least \$500 million, and then using four criteria to rank: return on equity and revenue growth (which are given equal weight), shareholder return, and total revenues (which are both weighted). In 2004, there are 15 Taiwan companies on the list and in 2005, there are 13.

⁵ Terry Gou is the CEO of Hon Hai Precision Ind. - a typical "black-hand" apprentice-turned industrialist who is one of Taiwan's wealthiest citizens. Barry Lam was born in Shanghai, raised in Hong Kong, went on to study electrical engineering at National Taiwan University, and is the founder and Chairman of Taiwan notebook PC manufacturer Quanta Computer.

⁶ According to Taiwan's Small and Medium Enterprise Administration (SMEA), in 2003 about 97.8% of enterprises in Taiwan are small and medium size enterprises (SMEs), and they make up 75-80% of all employment and 47% of the economy's GDP. Within the SMEs, 9.7% of them last less than one year. The definition of SMEs in Taiwan is relatively strict compared to other countries. See SMEA (2004).

⁷ Hayek (1945:519) noted that "the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess".

⁸ For a discussion of the phases of Taiwan's electronics development, see Matthews (2004); Hobday (1995:103-108).

⁹ See Lam and Lee (1992) about guerrilla capitalism.

¹⁰ Yu (1999) first used the term guerrilla entrepreneurship to describe the dynamics of Hong Kong manufacturing firms. Wang (1995/96) took the term guerrilla capitalists to describe Taiwan's information and technology industry. Guerrilla entrepreneurial strategies are said to be essential to Hong Kong's industrial development (Yu 1997).

¹¹ The concept of international production networks (IPNs) is an attempt to capture the spread of broader and more systemic forms of international production that cut across different stages of the value chain and that may or may not involve equity ownership. Such networks constitute an important organizational innovation that enables multinational corporations to cope with the conflicting requirements of specialization and coordination (Sturgeon (1997: 38, note 73). For instance, in the PC industry, final assembly is most likely dispersed to major growth markets in the U.S., Europe, and Asia; microprocessors are sourced from the U.S.; memory devices from Japan and South Korea; motherboards from Taiwan; hard disk drives from Singapore; monitors from South Korea, Taiwan, and Japan; keyboards and power switch supplies from Taiwan (ibid, p.36).

¹² Such hollowing-out activities have also been observed in Hong Kong. See Yu (2000).

¹³ Chi-Mei Industrial Co. was founded in 1953 and mainly did plastic processing. The production of ABS (acrylonitrile butadiene styrene) made Chi-Mei well-known. In 2000, Chi-Mei Optoelectronics was founded and has since become a world-known producer of TFT-LCD panels.

¹⁴ In 1984, Taiwan had only 28 colleges and universities with 185,000 students. In 2005, it jumped to 145 universities and colleges with more than 1 million students enrolled, pursuing higher education.

¹⁵ Morris Chang was a Vice President of Texas Instruments, where he worked for 25 years (1958-1983), before he came back to Taiwan and founded TSMC in 1987.

¹⁶ In fact, Taiwan's government expedites different plans to prepare for the next stage of its economic development. For example, in the Fifth Plan (1969-1972), it focused on promoting export expansion, intensifying infrastructural development, upgrading industrial structure, etc., while in the Twelfth Plan (2001-2004), it focused on providing a sustainable environment, developing a knowledge-based economy, etc.

¹⁷ Choo (2000) alluded to the retrospect of the Kuomintang government not to repeat its past mistakes of losing China due to the corrupted link between government and businesses and stressed to implement the policy to foster small and medium-sized enterprises (SMEs) in Taiwan.

¹⁸ As noted by Greenhalgh (1995), in most of the societies that have been studied, family entrepreneurship has declined in importance as industrialization has proceeded. In Taiwan, despite rapid industrialization, there is no sign - at least not yet - that families have relinquished their control over the island's economy.

¹⁹ Tainan Ban and San-tsun Ban are run by Wu's and Lin's family and their relatives, respectively, and the former is mainly consisted of people from southern Taiwan while the latter is from the north.

²⁰ Greenhalgh (1995) concluded four factors of Taiwanese family firms: a. use of family members to staff key positions and the alignment of these positions with members' age, sex, and generation; b. a package of individual incentives and group risk insurance; c. the use of networks of kins and friends to recruit labour, capital, and information; d. strategies of spatial dispersal and economic diversification.