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# Institutional innovation and investment in Taiwan: the micro-foundations of the developmental state

**Abstract:** Rapid growth in the East Asian newly industrializing countries depended on institutional innovation. Authoritarian governments like Taiwan faced a dilemma: how to assure investors in a policymaking environment that made commitments difficult to sustain? In contrast to both the early developmental state literature and the new literature on authoritarian institutions, this article shows that “small” institutions have had an effect on both the credibility of commitments and the composition of the firms that the Taiwanese state sought to assure. In the 1950–1960s, insulated decision-making bodies with strong participation by foreigners and export-processing zones signaled government intent to both foreign and domestic firms. In the 1970–1980s, democratic decision-making structures were more decentralized and state interventions shifted in a more market-oriented direction. Even so, the Taiwanese government continued to use institutions such as the Hsinchu Science Park to extend assurances to domestic investors engaged in risky high-technology ventures.

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## 1 Introduction

The first wave of high-growth East Asian countries, including Korea and Taiwan, obviously did not comport with standard economic models of the institutional conditions for high growth. These conditions include constrained executives, robust rule of law and legal protection of property rights.<sup>1</sup> The early developmental state literature on East Asia, by contrast, emphasized the role of “strong states” in economic development.<sup>2</sup> But the developmental state literature was rightly criticized for lack of clarity about precisely how institutions were related to growth.<sup>3</sup> Elsewhere in the developing world, apparently strong states intervened

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1 For case studies, see North and Weingast (1989); Stasavage (2002a); for quantitative studies, see Knack and Keefer (1995); Henisz (2000); Stasavage (2002b); Jensen (2003); Acemoglu and Johnson (2005).

2 Haggard (1990); Wade (1990).

3 Rodrik (2007).

in ways that failed spectacularly and had the effect of deterring both foreign and domestic investment.

Since this early work, a new literature has explored how authoritarian institutions might make credible commitments and thus provides an opportunity to revisit the institutional sources of rapid growth in East Asia afresh.<sup>4</sup> Recent studies in this vein tend to focus either on external mechanisms for tying hands, such as bilateral investment treaties<sup>5</sup> or preferential trade agreements,<sup>6</sup> or macro-institutional arrangements that facilitate power sharing among ruling elites.<sup>7</sup> The institutionalization of the ruling party or legislatures that permit constrained contestation are seen as mechanisms for co-opting potential rivals, creating capacity for collective action among regime supporters, and thus assuring investors.

Yet these new models do not appear particularly compelling in explaining the East Asian newly industrializing countries either. Legislatures were not robust or competitive and political elites did not have close political ties to private sector actors. Indeed, in some cases – most notably Singapore – governments were overtly hostile to the private sector in their industrial development in the 1960s.<sup>8</sup> In Taiwan the mainlander-dominated KMT government held its distance from the local Taiwanese private sector. In Korea, the military junta initially jailed a number of local business moguls on corruption charges.

Moreover, the macro-level literature suffers from a broader theoretical problem of functionalist argumentation: institutions are seen as conducive to growth but explanations are typically lacking about how these institutions arose in the first place. What were the political incentives of rulers that produced these good equilibria? To whom, exactly, did the state seek to appeal in liberalizing the rules governing investment?

We argue that a close examination of the Taiwan case – one of the paradigmatic developmental states of Northeast Asia – suggests that closer attention should be paid to the political economy of micro-level institutions with the responsibility for promoting investment. Unlike the new literature on the macro-institutional foundations of credible signals, we find that delegation to key policy bodies played a significant role in signaling government intent and making policy signals credible. However, these institutions reflected different constellations of political interests at different points of time, with clear implications for policy.

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<sup>4</sup> North (1990); Weingast (1995).

<sup>5</sup> Allee and Peinhardt (2011).

<sup>6</sup> Buthe and Milner (2008).

<sup>7</sup> Gandhi and Przeworski (2007); Magaloni (2008); Gehlbach and Keefer (2011); Boix and Svolic (2013).

<sup>8</sup> See Vogel (1991).

We consider the course of institutional innovation in Taiwan during two periods: the take-off of the 1950–1960s, which occurred under an authoritarian regime heavily dependent on the US; and the gradual political liberalization of the 1970–1980s, by which time this dependence had eased and the government was more interested in building ties with the domestic private sector.

In the first period, the KMT leadership sought to transform the investment climate for domestic and foreign firms in a context characterized by fundamental political uncertainties. At the most basic level, the security environment Taiwan faced remained highly uncertain throughout the 1950s. Although it stabilized to some extent after the Second Taiwan Straits Crisis (August 1958–January 1959), Taiwan was still a risky proposition. At the decision-making level, authoritarian political institutions hardly comported with standard models emphasizing the capacity to make credible commitments to protection of property rights. Even if the KMT leadership were to undertake dramatic reforms – as they did – the state remained powerful, and the KMT remained divided between reformers and status-quo forces that favored state involvement in the economy, including through direct state ownership. By any objective measures, there was little about the international or domestic political environment that would make Taiwan an appealing place to invest.

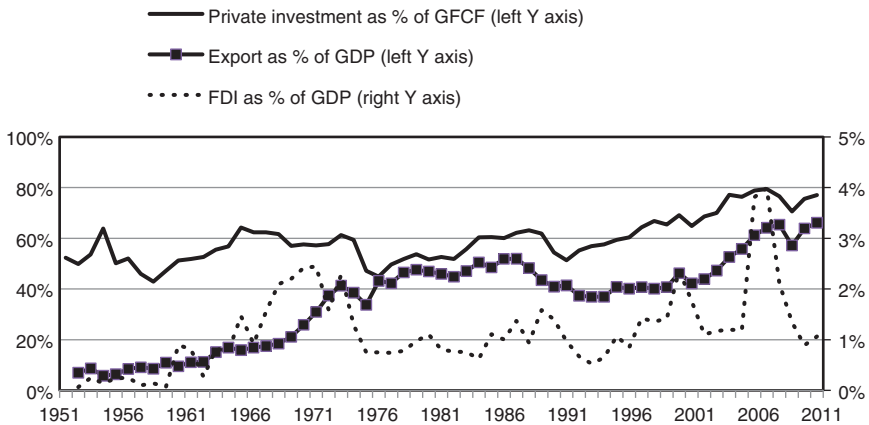
Facing severe resource constraints in the form of declining aid,<sup>9</sup> Taiwan opted for a set of reforms that addressed a variety of constraints on its investment climate in a relatively compressed amount of time. We show that these reforms were crafted by relatively centralized agencies, as the developmental state literature has emphasized. We show, however, that a defining feature of these institutional arrangements was strong participation by American advisors who sought to push their domestic counterparts toward a more forthcoming investment regime for both foreign and local capital. While responsive to US concerns, these core decision-making institutions were insulated from inter-ministerial conflicts and enjoyed some independence from standard civil service practices.

We also pay particular attention to the establishment of export-processing zones (EPZs) in the 1960s. The initial EPZs not only created a favorable investment environment by providing additional incentives and dedicated administration, but also institutionalized these commitments. The centralization and coordination of investment screening and approval processes outside of normal government channels increased the credibility of policy and eased foreign entry.

The results of these efforts can be seen in Figure 1. Although foreign direct investment (FDI) remained relatively small as a share of GDP, it exhibited a crucial inflection in the early 1960s, contributing centrally to the transition to

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<sup>9</sup> Haggard (1990).



**Figure 1** Foreign investment, private investment, and export 1951–2011.

Source: Republic of China (Taiwan), National Statistics, Investment Commission, Ministry of Economic Affairs <http://win.dgbas.gov.tw/dgbas03/bs7/sdds/english/calendar.htm>.

export-oriented growth (Figure 1). By the mid-1970s, the foreign sector exported between 40 and 55% of its total output and accounted for 20% of Taiwan's total exports. FDI also served as an important conduit for technology transfer.<sup>10</sup> Through relationships with suppliers, foreign firms played an important role in introducing new products and technologies in the auto and auto parts, electrical and electronics, and plastic and plastic-products industries.

The relationship between government policy, foreign firms and Taiwan's economic performance was not limited to direct investment, however; government policy moves had wider effect. Beginning in the 1960s, fundamental changes in the US, and later European and Japanese, retail sector created strong incentives for foreign sourcing of a variety of basic consumer goods.<sup>11</sup> The first firms to play this crucial intermediary role were the Japanese trading companies such as *Sogo Shosha*; by one account, these firms handled as much as one half of Taiwan's exports to third countries in the second half of the 1960s.<sup>12</sup> By the early 1970s, these firms were supplemented and then largely displaced by American and European retailers that placed orders directly.<sup>13</sup> As Feenstra and Hamilton note, "it is difficult to find any major product category that was not dominated by

<sup>10</sup> Schive (1990); Aw (2004).

<sup>11</sup> Gereffi and Korzeniewicz (1994) call these "buyer-driven commodity chains."

<sup>12</sup> Feenstra and Hamilton (2006: p. 263).

<sup>13</sup> Sears had established a buying office in Taiwan in 1967 and was followed in the early 1970s by Kmart, J.C. Penney, AMC, May Department Stores and others (Gereffi and Pan 1994).

contract manufacturing or any major retailers that were not involved in contract manufacturing in East Asia. Garments, household appliances, electronic products, toys, and bicycles – the majority of these finished exports were sold under foreign-owned brand names and product labels.”<sup>14</sup>

The second period discussed here encompasses major efforts at industrial restructuring in the context of fundamental political change. Taiwan’s economic take-off was initially based on its static comparative advantage in exporting labor-intensive products, but this strategy reached its limits and was disrupted by the global slowdown in the 1970s. How would the KMT respond to increasing competitive pressures, stagnant export growth, and a decline in FDI?

The coming of more democratic rule placed increasing checks on government discretion including through the growing influence of both powerful industrial groups and the growing population of small- and medium-sized Taiwanese firms. With the establishment of the Democratic Progressive Party and the second Legislative Yuan (Taiwan’s parliament) election in 1992, the native Taiwanese majority began to challenge the dominant mainlander elite.<sup>15</sup>In response, KMT politicians also began to court local business as a way of building interest group support and financing campaigns. Policy followed politics. Operating in a new political environment, with US influence in decline and strong incentives to court the private sector, the KMT gradually shifted incentives toward domestic investors, particularly small-and-medium enterprises (SMEs). The growth of the private sector share of total fixed capital formation fell with large government investments in the late 1970s, but subsequently grew apace and became the core engine of Taiwan’s subsequent growth (Figure 1).

Changes in the overall investment climate, and in the Statute for the Encouragement of Investment, tracked these political changes. But we also see changes in the nature of the export-processing zones that mirror this changed political environment. The Hsinchu Science Park (HSP) provides a case study of this process. Unlike the EPZs that were created to selectively attract overseas Chinese and foreign firms into export-oriented manufacturing, the HSP established a platform for multiple and broad interactions between public and private sectors that facilitated the growth of domestic high-technology firms, particularly in the IC design and software sectors. As such, the park served as a micro-institutional device that allowed more democratic governments to signal commitment to a new and broader political audience.

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<sup>14</sup> Feenstra and Hamilton (2006: p. 251).

<sup>15</sup> Nathan (1993).

## 2 The economic policymaking structure in the 1950–1960s

Upon relocating to Taiwan after the defeat in the civil war in 1949, the KMT leadership quickly disciplined its own factions, reorganized the fragmented military and incorporated social groups into party-controlled organizations. The country was formally ruled under martial law and the political system might be described as “leaderist:” Chiang Kai-shek headed the army, the political system, and an increasingly centralized party apparatus. Alternative centers of political power – leftist and Formosan nationalist forces, labor, students, and landlords – were crushed, displaced, or drawn into state-controlled organizational networks.

In principle, government technocrats enjoyed a certain amount of leeway as long as they had the support of the president or other top political leaders. But such support was not assured.<sup>16</sup> Certain factions in the government sought to focus on economic reform and the development of the local Taiwanese private sector as a route to political legitimacy and long-run control.<sup>17</sup> However, statist, military and political factions – in effect, anti-reform forces – also played an important policy role and competed over scarce resources. These factions included conservative forces that prioritized military expenditure as well as those that favored a more statist approach to development, including through the use of state-owned enterprises.

How did an authoritarian system of this sort move toward credible economic reform that assured investors? By the mid-1950s, Taiwan was experiencing a number of difficulties including market saturation, slowed growth and investment, the overvaluation of the exchange rate and sluggish export performance. The US was concerned about these developments, but also about the ongoing aid burden. The US thus had a very direct security and economic interest in promoting both exports and investment that would substitute for the gradual winding down of foreign aid.<sup>18</sup>

Given the weight of US aid in the economy, it is not surprising that the aid dispensing bodies institutionalized a direct role for American actors that placed

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**16** Hsueh, Hsu, and Perkins (2001).

**17** Haggard (1990).

**18** A cable from the Ambassador in mid-1960 captures these concerns for an “accelerated program” of economic reform: “Sustained rise in export [of] finished or semi-finished goods provides major hope for buying food imports which will be increasingly necessary. No automatic limits exist in increasing such exports, but sustained rise will probably occur only if there are fundamental institutional changes in economy to lower costs and to make industrial investment attractive to entrepreneurs. Such changes are among [the] objectives of [the] accelerate program” (Drumwright 1960).

checks on KMT discretion. Aid was administrated by the Mutual Security Mission to China of the International Cooperation Administration (ICA, the precursor to the Agency for International Development [AID]) and coordinated by a succession of institutions in which the Americans played a direct role. After changes in US aid policy in 1955, the ICA gained the authority to review aid programs down to the level of the individual project. The Council for United States Aid (CUSA) had responsibility for the selection of aid projects, oversight of the local currency or counterpart program and maintaining a liaison with American aid officials.<sup>19</sup> CUSA, along with a number of other ad hoc cabinet boards and commissions, gave Chinese technocrats a base for operating amid the confusion created by the preservation of duplicated ministries and departments at central and provincial levels.<sup>20</sup>

However, these bodies also provided the organizational base for strong and direct US influence over policy. For example, the Economic Stabilization Board formed in 1953 held its deliberations in English; the director of the US aid mission and the economic counselor of the US embassy took part as if they were full members.<sup>21</sup>

US aid in Taiwan was administrated outside of the budget. These institutional arrangements allowed development questions to be considered separately from sensitive issues such as defense and domestic political circumstances.<sup>22</sup> Moreover, this organizational independence was backed by financial independence. With their budget supported by US aid, these institutions enjoyed some freedom from normal civil service regulations, which enabled them to pay much higher salaries (up to five times comparable salaries in the early 1950s), recruit and train highly competent staff, and maintain an organizational *esprit de corps*.<sup>23</sup>

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**19** Cheng, Haggard, and Kang (1998).

**20** Although Premier Chen Cheng was the chairman of CUSA, it was the deputy chairman K.Y. Yin (Yin Zhongrong) who had taken charge of program of economic reform. Yin requested other government agencies to create liaison teams with the CUSA. The MEOA launched the Industries and Mining Cooperation Group, under K.T. Li (Li Guoding), who was the secretary-general of CUSA. The Joint Commission on Rural Reconstruction set up the Agriculture Planning and Coordination Group, headed by Tsung-han Shen (Shen Zhonghan). The Ministry of Transportation established the Transport Projects Coordination Group, headed by Fei Hua (Head of planning department). See Kuo and Myers (2012).

**21** American officials played a similar role in the Joint Commission on Rural Reconstruction, an agency with wide influence over the course of agricultural policy that included not only aid expenditures but domestic expenditures as well. The Commission consisted of five members with three appointed by Taiwan and two by the US. See Yager (1988).

**22** Jacoby (1966: p. 222).

**23** Pang (1988); Cheng, Haggard, and Kang (1998).

Finally, and again most importantly for our theoretical purposes, these agencies enjoyed autonomy not only from business and other societal interests but even from other branches of the government itself. Reforms ultimately had to pass through the representative bodies that were directly controlled by the executive and party leadership; it is hard to argue that this authoritarian legislature mattered much for making policy signals credible.<sup>24</sup> But the institutions were accountable not only to the executive but to the checks of the Americans as well.<sup>25</sup>

In 1963 the CUSA was reorganized into the Council on International Economic Cooperation and Development (CIECD), headed by Premier Chen Cheng, and later, by Yen Chia-kan (Yan Jiagan). This reorganization reflected in large measure the impending termination of US economic aid in 1964.<sup>26</sup> The CIECD was a centralized development agency that amalgamated the CUSA and three planning groups (industrial, agricultural, and communications). It was charged with the formulation, integration, and coordination of economic development plans and negotiations for external financial and technical assistance. During the period of the CIECD, economic technocrats and their extra-bureaucratic niches were gradually incorporated into the regular bureaucracy and the line ministries expanded their functions.<sup>27</sup>

The passing of the first generation of political leaders from the late-1960s and the rise of Chiang Ching-kuo (Jiang Jinguo) served to weaken the CIECD; the evolution of the economic decision-making bodies is outlined in Figure 2. The CIECD was formally downgraded to vice-ministerial level and renamed the Economic Planning Council (EPC) in 1973. The CIECD's technology cooperation, international funds, and public relations sections were integrated into other ministries, in effect normalizing the institutional arrangements that had generated the early economic reforms.<sup>28</sup> By that time, however, the country had long established the policy credibility required to elicit sustained foreign and domestic investment.

One set of government organizations that are particularly relevant for our purposes were those dealing directly with foreign investors. In 1954 and 1955, the government passed investment laws intended to facilitate the inflow of foreign and overseas Chinese capital, respectively. The inflows of foreign capital, however, were not particularly impressive through most of the 1950s (Figure 1), so

<sup>24</sup> Chu (1994: p. 117).

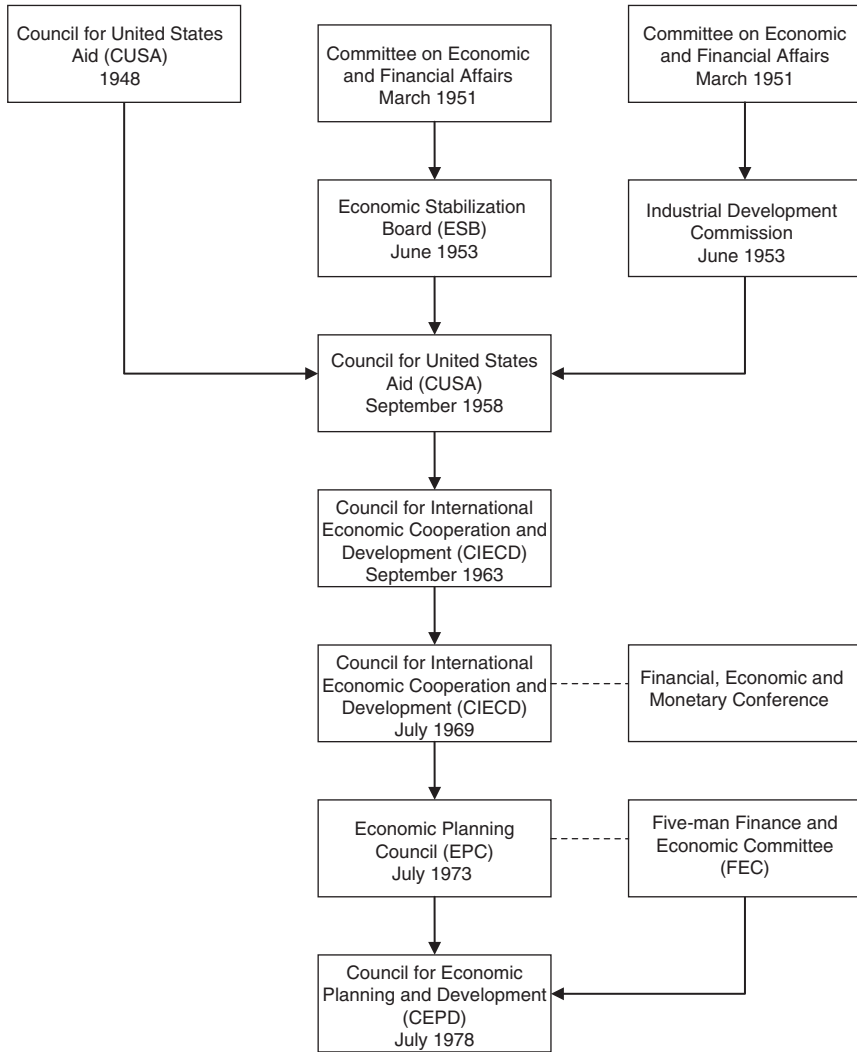
<sup>25</sup> See Yager (1988: pp. 274–275) on the legal debates around these lines of accountability.

<sup>26</sup> Some commodity assistance continued after that time, as well as lending through entities such as the Import-Export Bank. The US also facilitated borrowing through the World Bank.

<sup>27</sup> Cheng, Haggard, and Kang (1998).

<sup>28</sup> Wu (2005); Chiang Ching-kuo created a new cabinet-level forum for economic policymaking – the Financial and Economic Committee (FEC) – in January 1974 to manage the crisis but it relied on the ministries for implementation.





**Figure 2** Evolution of Taiwan’s economic planning agencies in the 1950–1970s. Source: Pang (1988: p. 37).

in 1959 the Industrial Development and Investment Center (IDIC) was created to address this issue by providing investment services; interestingly, it was placed in CUSA at the request of Premier Chen Cheng.<sup>29</sup> The IDIC was charged with attracting investment from foreign nationals and overseas Chinese and improving

<sup>29</sup> Haggard and Pang (1994).

Taiwan's investment environment. Through its extensive network of both overseas liaison offices, the IDIC established a platform to facilitate the interaction between the central government, foreign and domestic investors. Its location in CUSA also facilitated direct contact with American embassy and aid officials with a stake in promoting the interests of American investors.

The government also established an Overseas Chinese and Foreign Investment Commission to screen investment proposals, but its organizational structure made it unwieldy. The commission was initially established within the Ministry of Economic Affairs (MOEA), but acted primarily as a liaison agency for an initial screening of proposals, which subsequently required a direct approach to each of the separate government authorities with jurisdiction over aspects of the investment.

Important organizational changes in the Commission in 1968 reduced the channels through which particular investments might be slowed down or rejected by centralizing the review process. First, the Commission was delegated full authority by the various government organizations to the representatives of the Commission, who were upgraded to the Vice Ministerial level. Second, the Commission was granted a staff, which was drawn from the relevant ministries and other bodies, with administrative divisions corresponding to core functions: services, foreign transactions, taxes, and operations.<sup>30</sup> With this reorganization, the investment screening process approximated more closely the "one-stop shopping" model. Although the commission in principle only had the authority to approve applications conforming to statute, in effect it gained the discretion to bargain with the investor to determine what was needed to attract a desired project<sup>31</sup> and to commit other government agencies to the agreement.<sup>32</sup>

## 2.1 Reforming the statist economy: the role of the private sector

One mean that the government could use to increase the credibility of commitments to the private sector, both foreign and domestic, would be to incorporate them directly into policy-making or implementing institutions.<sup>33</sup> To what extent

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**30** Overseas Chinese and Foreign Investment Commission (1972).

**31** While the performance requirements were project-specific, they normally included local-content rates and export quota. See Schive (1990) for a detailed case study of Singer's investment in Taiwan.

**32** Wade (1990).

**33** Evans (1995).

did the government formally consult with or provide channels for private sector representation in the decision-making process?

In general, the literature on Taiwan emphasizes the distance between the government and the domestic private sector, either as a result of culture (the Confucian gap between the status of rulers and the commercial class), ethnicity (the divide between KMT mainlanders and the local Taiwanese) or politics (KMT concern about the threat of political competition if private business – dominated by indigenous Taiwanese firms – were allowed to organize independently or gain formal representation).<sup>34</sup> This political distance explains the fact that the KMT did not generally pursue the strategy of building “national champions” in the same way that Korean government did.<sup>35</sup>

These policy preferences were reflected in the industrial structure. In 1953, the government committed to transfer public enterprises to private ownership, but exempted “monopoly” enterprises, industries vital to national defense and producers of upstream intermediates that played a role in the government’s overall industrial policy. Four large state-owned enterprises – the Taiwan Cement Corporation, Taiwan Pulp and Paper Corporation, Taiwan Industrial and Mining Corporation and Taiwan Agricultural and Forestry Development Corporation – were transferred to private ownership to compensate dispossessed landlords under the land reform (Land-to-the-Tiller) program, but effective control of these firms remained in government hands because of the dispersion of private ownership.

The government not only walled off the “commanding heights” of the economy from private participation, but used a variety of other means to prevent the formation of the type of integrated business groups visible in Japan and Korea. Prior to the 1980s, for example, Taiwan’s laws prevented the formation of enterprise conglomerates by limiting the amount of capital one company could invest in another.<sup>36</sup> A number of Taiwanese firms ultimately achieved significant scale.<sup>37</sup> But SMEs initially played a supporting role in the acceleration of industrial production and exports, as subcontractors in sectors such as garments and shoes and as suppliers in sectors such as sewing machines, bicycles and later electronic components.<sup>38</sup>

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**34** Cheng (1993) provides a compelling political economy account.

**35** This difference was manifest in very different approaches to the financial sector; government-directed finance was a crucial policy instrument contributing to the growth of the *chaebol* in Korea. See Cheng (1993).

**36** The Company Act stipulated that the ceiling a company can invest in any one other company is 40% of its own paid-in capital.

**37** Amsden and Chu (2003).

**38** Wu (2005).

It is hard to find evidence that consultative mechanisms played a meaningful role in influencing the overall direction of investment policy. The state sanctioned a small number of interest groups including both peak and sectoral business associations, but these bodies were initially seen by the government as instruments of control, as Kuo shows clearly.<sup>39</sup> They initially focused primarily on the provision of services to their members rather than representing collective interests.<sup>40</sup> However, these consultative meetings were held *after* core statutes had already been promulgated and had the objective of transmitting information to the private sector as much as eliciting its views.

In the late 1950s, however, the relationship with the private sector began to change and US officials were at least partly responsible. Following the end of the second cross-Straits crisis over Quemoy and Matsu (August 23, 1958–January 1, 1959), US aid officials began to outline a package of reforms that would ultimately allow Taiwan to graduate from foreign aid by 1964.<sup>41</sup> In addition to the well-known macroeconomic reforms that have attracted attention in the literature on Taiwan, the Nineteen-Point Program of Economic and Financial Reform in 1960 contained three crucial structural reforms: with respect to the tax burden; the acquisition of plant sites; and the complexity of the procedures governing investment licensing.

The crucial statute for addressing these issues was the Statute for Encouragement of Investment (SEI) passed in August 1960. Premier Chen Cheng assigned CUSA the major role in drafting the SEI precisely to avoid resistance that would have affected its course if drafted through other channels. The SEI included important provisions easing the acquisition of land that had been put in place at the time of land reform in the early 1950s. In conjunction with investment in rural infrastructure and the establishment of industrial parks, the law set in train a dramatic expansion of rural industry that became a hallmark of the Taiwan model.<sup>42</sup>

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<sup>39</sup> Kuo (1995).

<sup>40</sup> For example, as a follow-up to the Nineteen-Point reform program, the government organized a high-level economic and financial conference in 1961. Major business leaders were invited to attend the conference, where they were encouraged to express their grievances and propose policy suggestions (Lin 1973).

<sup>41</sup> The reforms initially had eight core components: 1) limiting resources devoted to the military; 2) non-inflationary fiscal and monetary policies; 3) tax reforms to encourage private sector investment; 4) a uniform and realistic exchange rate; 5) liberalized trade and exchange controls; 6) formation of a utilities commission to oversee utility pricing; 7) reorganization of the banking system; and 8) the sale of public enterprises to the private sector and a reduction of the state role in activities in which the private sector could compete (Lewis 1993: p. 221).

<sup>42</sup> Between 1963 and 1988, the government designated 21,884 hectares of land for industrial use, of which 74% was developed into industrial parks (Hsueh, Hsu, and Perkins 2001: p. 31).

The main incentives under the SEI centered on taxes.<sup>43</sup> First, although foreign investors had gained the right to 100% foreign ownership and management, and guarantees against expropriation, the Statute did not explicitly differentiate between domestic and foreign investors.<sup>44</sup> Second, the focus of incentives on new businesses rather than existing ones had the (probably unintended) consequence of generating new start-ups and contributing to the gradual emergence of economic groups in Taiwan.<sup>45</sup> In a study conducted in 1967, Cheng found that only 474 enterprises – out of 240,000 enterprises on the island – enjoyed the various tax exemptions granted by the SEI. Nonetheless, these firms were estimated to account for 16% of total turnover and 27% of total business investment.<sup>46</sup>

Despite the lack of evidence of close business-government ties such as those found in Korea, detailed sectoral studies note an abiding interest on the part of the industrial policy agencies in the development of the local private sector.<sup>47</sup> Moreover, both government officials and local business organizations had an interest in forging linkages between foreign firms and local companies, as indicated in the role of business associations such as the Cotton Spinners Association (TCSA) and the Taiwan Electric Appliance Manufacturers' Association (TEAMA) in matching foreign buyers with domestic suppliers. The core or "pilot" agencies did not directly accommodate private sector participation. However, from very early, the government had developed highly specialized ad hoc bodies that conferred both formally and informally with private sector representatives over both the general business climate and sectoral issues. These institutions played an important role with respect to policy but also served directly to facilitate exports and inward investment.

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**43** The incentives included: a 5-year tax holiday on corporate income tax, and a 10% reduction thereafter for new businesses conforming to criteria; a reduction in the maximum corporate tax rate from 32.5% to 18%; deduction from taxable income of reinvested earnings up to 25% of the total income of the taxable year; deduction from taxable income of 2% of annual export proceeds as an export incentive; waiver of customs duties for equipment imported and used by "basic industries" with a minimum initial capitalization (Dao 1965).

**44** Under the law no venture with 51% or more foreign investment can be nationalized for a period of 20 years after the venture is established. Expropriation can be justified only for national defense needs and "reasonable" compensation must be given.

**45** Chung (2001) shows that the period following the SEI was characterized by particularly rapid growth of new firms and groups.

**46** Cheng (1970: p. 36).

**47** For the textile case, see Haggard (1990: p. 89); for the electric appliance case, see Kuo (1995: pp. 95–111 and 169–191). Parallel cases can be found in Simon 1980; Gold 1986; Levy 1991; Amsden and Chu 2003 and in early studies by the government itself, for example, Schive 1990 on sewing machines.

## 2.2 Export processing zones

The political function of EPZs in signaling government commitment and increasing the credibility of policy has not received adequate attention. The central feature of the EPZ was to combine the advantages of a free trade zone and an industrial estate with all of the relevant administrative functions of the government.<sup>48</sup> A key advantage of the zones was the avoidance of red tape, including the relatively time-consuming process of licensing investments and securing rebates on taxes on inputs or outputs, policy areas where the implementation process allowed some discretion.<sup>49</sup>

The original idea for setting up EPZs was put forward by the Economic Stabilization Board (ESB) as early as 1956, but met resistance from a number of sources within the government. Among the stated reasons for this opposition were concerns about sovereignty and the exploitation of labor,<sup>50</sup> but as with the coordination of investment screening, ministerial and intergovernmental concerns loomed large. The Ministry of Finance worried about the effects of the zones on the collection of customs receipts, the Foreign Exchange and Trade Commission had doubts about the potential leakage with respect to trade and exchange controls and local governments expressed concern about loss of control in their jurisdictions.<sup>51</sup>

As a result, Taiwan's experience with EPZs did not begin until 1966 with the establishment of the Kaohsiung (Gaoxiong) Export Processing Zone (KEPZ) and the passage of the Statute for the Establishment and Management of Export Processing Zones.<sup>52</sup> The CIECD and the MOEA drafted the rules and regulations pertaining to the enforcement of the Statute.<sup>53</sup> The legislation centralized the administrative responsibility and authority for the zones in the zone's administrative body. Even more directly than with the Investment Commission, several government agencies closely related to the operation and management of the EPZs had some of their functions and authority delegated to the zone administration. In addition to the tax incentives accorded under the SEI, firms established in

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**48** Scott (1979).

**49** The tax rebate system was initiated in 1951 and was later extended to cover all export goods. Before the EPZs were created, the government processed tax rebate applications by first taxing imported supplies and later refunding companies when they exported end products. The cumbersome procedure produced some financial costs even if no taxes were actually paid (Lin 1973: p. 100–103).

**50** Li (1988).

**51** Lam (1992).

**52** Two major concerns delayed the implementation of EPZ plan. First, there was a concern that Taiwan would yield sovereignty in the zones to foreign investors. The other concern was that relatively cheap Taiwanese labor would be exploited for the benefit of foreign investors (Li 1988).

**53** Li (1976).

the zones enjoyed additional benefits. They were entitled to import intermediate inputs duty-free; they did not need to go through the time-consuming tax rebate procedures; and duty exemption of imported plant equipment was granted to all plants without exception.

The zones were initially designed to protect the domestic private sector to some extent. The MOEA only allowed seventeen industries with a high value-added ratio to be located in EPZs.<sup>54</sup> The initial regulations also required that products manufactured in the EPZs could not be sold in the domestic market and the government maintained its commitment to local-content requirements. Later on, regulations were loosened to permit limited sales in the domestic market upon approval and payment of customs duty. However, at the same time, the government stopped giving tax holidays to labor-intensive investments and turned to encourage more capital- and technology-intensive industries in order to minimize competition with Taiwan's existing export industries.

The KEPZ was an immediate success. Between 1966 and 1970, it attracted a total of \$33 million in FDI, constituting 80% of total investments (domestic and foreign) in EPZs.<sup>55</sup> The Nantze (Nanzi) EPZ in southern Taiwan and the Taichung EPZ in central Taiwan were established in 1969 and were open for production in 1971. By 1986, the three EPZs had attracted \$459 million, more than twenty times the initial expectation in 1966, and almost 10% of private foreign and overseas Chinese investment in Taiwan for the period 1966–1983.<sup>56</sup> Total exports from EPZ-based firms averaged about 9–10% of Taiwan's exports for any given year. The majority of investors came from Japan and the US.<sup>57</sup> The zones also attracted Overseas Chinese, generally from Hong Kong and Southeast Asia as well.

The incremental improvement in the overall investment climate in Taiwan gradually reduced the advantages initially offered by the zones. Foreign investors began to regard government regulations with respect to local-content requirements and export quotas as limiting and burdensome when compared to the rules that pertained outside of the zones.<sup>58</sup> By the late 1970s, firms in the zones argued that there were only two major benefits left: the simplified government procedures and duty-free imports of machinery, equipment, raw materials, and

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54 Lin (1973: p. 107).

55 Schive (1990: p. 11).

56 Li (1988).

57 Simon (1980).

58 Each firm in the zones was allocated an export quota in proportion to its output, and was required to pay a penalty to the cooperative fund if its export sales fall short (Lin 1973: p. 108). It is indicated by the higher growth of local-content rates for foreign firms in the EPZs though foreign firms in EPZs have constantly had lower rates than those outside EPZs in the 1970s (Schive 1990: pp. 73–75).

intermediate inputs. But the former had eroded with the increased efficiency of the investment review process set in train after 1968 while the latter advantage became less compelling as Taiwan liberalized the domestic market.<sup>59</sup> Between 1966 and 1970, 13.8% of foreign investment went into the EPZs, but this proportion declined to 4.7% in 1986–1990 (See Table 1). Nonetheless, the zones complemented the broader reforms in the Statute for the Encouragement of Investment by establishing Taiwan as a credible investment location.

### 3 The transition to democratic rule: institutional innovations for industrial upgrading in the 1970–1980s

In retrospect, the first stage of economic development in Taiwan appeared to comport with the fundamental logic of trade theory. Despite extensive state inter-

**Table 1** Investment in Taiwan's export processing zones.

Year	Number of firms	Total cumulative investment (million \$)	Domestic (%)	Overseas Chinese (%)	Foreign (%)	Joint ventures (%)	EPZ FDI as a share of total <sup>60</sup>	EPZ exports as a share of total
1966	51	10	20	30	47	3	–	1.2
1970	183	55	10	13	51	26	13.8	7.4
1975	291	177	12	10	61	18	11.5	8.5
1980	296	309	12	6	65	18	11.0	7.2
1985	252	398	10	3	46	41	4.8	6.1
1990	235	797	15	1	44	40	4.7	5.2
1993	233	914	20	0	35	44	0.9	5.1
2002	305	5920	41	0	7	51	–	4.7
2005	401	6817	34	0	11	55	–	4.0
2011	556	14,141	39	0	12	49	–	3.8

Source: EPZ data from 1966 to 1993 are cited from Xiao (1994: p. 310); EPZ data after 2002 are from Export Processing Zones Essential Statistics, available at: <http://www.epza.gov.tw>. Data on national export and FDI are from Economic Statistics Annual: Taiwan Area, the Republic of China, various years, Ministry of Economic Affairs, Taiwan.

<sup>59</sup> Li (1988).

<sup>60</sup> FDI as a share of total is the average number in 5-year period. For example, 11.5% in 1975 means that FDI inflows in EPZs accounted for 11.5% of total FDI inflows between 1971 and 1975. The net FDI inflows in EPZs are calculated by using the sum of overseas, foreign, and JV's investment in present year minus the sum in the previous year.



vention, Taiwan specialized in labor-intensive exports, but this strategy risked stagnation in a low-level equilibrium trap by the 1970s. In addition to the oil shocks of the 1970s and early 1980s, Taiwan's trading partners raised protectionist barriers against its exports; rising labor costs put competitive pressures on mature industries; and other less-developed countries, particularly in Southeast Asia, began to hone in on Taiwan's markets. In 1974, GNP grew only 1.1% and FDI inflows dropped 50% in 1973–1975. Taiwan also faced the emergence of new international political vulnerabilities. The Nixon administration's opening to China was a major political shock. Taiwan's international position gradually eroded along with the transfer of US diplomatic recognition from Taipei to Beijing in 1978.

How did Taiwan push the limits of its static comparative advantage and attract investors to engage in capital- and technological-intensive industries? At the time of the first oil-shock, there were debates within the government over the appropriate course for industrial policy. Some argued that state-owned enterprises should lead a push into industrial deepening in sectors such as steel, heavy machinery and petrochemicals. The government did in fact invest in several of these activities, accounting for the temporary decline in the private sector's share of gross domestic capital formation in the mid-1970s (see Figure 1).

But subsequent policy did not follow this course; rather it has been characterized by two apparently contradictory trends in the three decades since the mid-1970s. On the one hand, we can see a strong trend toward liberalization of the investment regime. Liberalization was driven in part by external economic shocks and international political calculations and pressures. The government felt a strong need to maintain and foster as wide a set of international economic ties as possible as a surrogate for political ones.<sup>61</sup>

On the other hand, the government by no means abdicated its effort to attract and channel such investment through targeted, sector-specific supports. As with many other countries in the region, the government shifted toward what might be called an "open economy industrial policy." These policies place less emphasis on protection and subsidization of favored sectors and more emphasis on creating conditions that are favorable for both foreign and domestic investors in more capital- and technology intensive sectors.

What was the political economy of this new strategic direction? The answer is to be found in a changed relationship between the government and the domestic private sector as the political system liberalized and democratized. During the 1960s and 1970s, the government was still politically reluctant to promote large private enterprises. Privatization was the one component of the Nineteen-Point

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<sup>61</sup> Haggard (1990).

reform that was not implemented to US aid officials' expectations. The government continued to rely on state enterprises and multinational firms to undertake initial investments in the heavy and chemical industry sectors.<sup>62</sup>

In short, while relatively centralized and independent government agencies checked by foreign advisors were effective in signaling the credibility of policy vis-à-vis large MNCs, these institutional arrangements did much less for Taiwanese SMEs which accounted for more than 95% of Taiwan's manufacturers. The forging of new institutions and policies for industrial upgrading was strongly influenced by political calculations. Beginning in the mid-1980s, Taiwan's political system entered a period of transition to more democratic rule. The President continued to wield substantial authority but the Executive Yuan and ministries gradually lost lawmaking and policy making power. With the formation of the opposition Democratic Progressive Party (DPP) in 1986 and the lifting of Martial Law in 1987, newly formed interest groups gained a greater degree of autonomy in articulating their interests. The Legislative Yuan, historically an inactive and underperforming body, became increasingly significant in the policymaking process. In 1991, all old members of the Legislative Yuan elected in 1948 were forced to abandon their seats. A year later, the second Legislative Yuan was filled with newly elected members who were under pressure to represent constituent interests.<sup>63</sup> The DPP won 31% of seats, representing that the native Taiwanese majority had begun to take over political institutions that were previously dominated by the mainland elite.<sup>64</sup>

As the political system became more competitive, both the KMT and the opposition sought out business support. The ruling KMT government, historically relying on state employees and military families as their core supporters, had to attract new voters from a variety of private business groups to shore up its constituency base as private business sector interest came to play a much more central role in the KMT and the KMT-controlled Legislative Yuan.<sup>65</sup> Power naturally shifted away from insulated, technocratic agencies toward elected officials.

These changes had important implications for the institutions that had evolved in the early stages of export-led growth. In 1977, the EPC was merged with the FEC and reorganized as the Council for Economic Planning and Development (CEPD). The CEPD became a permanent government organization in 1985 when

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<sup>62</sup> In 1974, foreign investors accounted for 31% and 65% of sales in chemicals and electronic products respectively. By contrast, they had only contributed 10% of the textile and apparel market, 10% of the food and beverages, and 2% in paper and paper products (Amsden 1991).

<sup>63</sup> Chen (2001).

<sup>64</sup> Nathan (1993).

<sup>65</sup> Cheng and Chang (2003).

the Legislative Yuan approved its rules of organization. Yet although the formal functions of the CEPD were expanded when compared to the CUSA, CIECD, or EPC, it did not have the comparable power, resources and policy instruments of its predecessors.<sup>66</sup> As an advisory body to the cabinet, the CEPD was not headed by the premier or vice president but by a minister.<sup>67</sup> Nor did it have executive authority of its own; the staff advised the council and the council advised the cabinet, where real authority was concentrated. The ministries gained more power to formulate their own plans and implement them.

At the implementation level, the Taiwanese government focused on two tasks: shifting the industrial policy toward the nurturing of high-tech industries and promoting the development of SMEs. In 1976, the Investment Commission of the MOEA declared that it would give priority to technology-intensive investments and in 1978, the Ministry of Finance allocated NT\$200 million to a program that encouraged foreign and domestic experts to generate new technology-intensive businesses in Taiwan.<sup>68</sup> In 1984, the MOEA launched a “Core-Satellite Promotion Task Force” to promote cooperation between upstream and downstream industries and strengthen small firms by incorporating them into the orbit of larger enterprises.<sup>69</sup>

Concurrently with these institutional and overall policy changes, the government also redrafted its investment guidelines. From 1960 through 1990, the government revised the Statute for the Encourage of Investment no fewer than fifteen times; these revisions, summarized in Table 2, constitute a shorthand history of the government’s industrial policy. In the 1960s, the SEI was revised three times to encourage the establishment and growth of the export sector, particularly following the termination of US aid in 1964. In the 1970s, the SEI was modified eight times to discourage labor-intensive foreign investments and emphasize more capital- and technology-intensive activities. In the 1980s, the SEI was modified four times to promote industrial upgrading.<sup>70</sup> The total number of items eligible for incentives has shown a secular upward trend. But this increase has not been uniform across sectors; the electronics industry saw a much more dramatic increase in encouraged activities than other sectors.

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**66** Like some of its predecessors, the CEPD was outside the ordinary machinery of government, and thus could attract higher-quality talent by paying higher salary and bypassing the usual civil service examination.

**67** The CEPD’s founding director was Yu Kuo-hwa (Yu Guohua), Governor of the Central Bank, who later became premier.

**68** Hsueh, Hsu, and Perkins (2001).

**69** Amsden and Chu (2003).

**70** Xiao (1994: pp. 149–164). For example, the revision of 1981 removed most export and local-content conditions but required industries receiving benefits under the statute to devote a certain share of revenue to R&D (Gold 1986).

**Table 2** Manufactured products receiving encouragement under the statute for the encouragement of investment, 1961–1990 (Unit: products).

Industry	1961	1969	1973	1979	1986	1990
Food & beverage	9	8	16	9	9	9
Lumber	2	3	2	0	0	0
Paper & printing	15	15	8	4	5	1
Rubber products	3	5	6	1	2	0
Chemical products	53	47	40	81	95	84
Non-metallic minerals	6	9	11	9	6	5
Basic metal	15	16	15	23	13	12
Machinery	13	17	16	20	57	54
Electrical machinery	14	26	18	15	52	51
Electronics	0	0	11	55	122	98
Transportation equipment	2	3	6	17	34	34
Porcelain	5	3	4	4	3	2
Textile	5	5	3	4	3	5
Construction	0	2	1	1	3	2
Film	0	0	0	0	4	4
Miscellaneous	8	17	11	11	10	9
Total	150	176	173	259	418	370

Source: Xiao (1994: p. 175).

However, the SEI continued to involve extensive administration because its incentives were based on a positive list system: a long list of specific products and components drawn up and updated from time to time by the government. In 1991, the industry-oriented SEI was replaced by the more functionally-oriented Statute for Upgrading Industries (SUI). The SUI provided tax benefits to all industries for certain generic types of investment, such as R&D, manpower training and anti-pollution measures.<sup>71</sup> Although the SUI was believed to have contributed substantially to Taiwan's economy,<sup>72</sup> the incentive-based industrial policy became increasingly controversial because of the discretion exercised over incentives. After the SUI expired in 2009, the passage of the Statute for Industrial Innovation (SII) was repeatedly delayed, thanks to the strong criticism from the DPP. In contrast to the SUI, the SII not only cut tax incentives substantively, but also narrowed its target on “forward-looking” and “pioneering” R&D activities.<sup>73</sup>

<sup>71</sup> Smith (1997).

<sup>72</sup> A study conducted by the Chung-Hua Institution for Economic Research estimates that, between 2004 and 2007, the SUI had contributed NT\$497 billion to Taiwan's GDP, attracted NT\$244.7 billion in investment, and generated 141,000 new jobs (MOEA 2010).

<sup>73</sup> MOEA (2010).

A parallel process of liberalization is visible in the rules governing FDI. In 1984, Premier Yu Kuo-hua (Yu Guohua) made “economic liberalization, internationalization, and institutionalization” the three basic policy guidelines of his premiership. An important shift in this regard came in May 1988, when the government shifted from a positive to negative list approach to FDI applications, following the trend noted in the broader statutes for encouraging investment. The negative list was revised in 1990, 1996 and 1997, gradually reducing the list to less than 1% of manufacturing categories.

Taiwan’s accession to the WTO in 2001 provided an additional impetus to the liberalization of foreign investment, including in both agriculture and services. A number of well-protected service sectors were monopolized by state- and party-owned enterprises and closed not only to foreigners but to domestic private firms as well. These restrictions were gradually lifted; by the mid-2000s the negative list covered less than 5% of service industries with restrictions concentrated in telecommunications, power distribution and generation, airlines and television.<sup>74</sup> The accession to the WTO also resulted in important changes in the intellectual property regime in Taiwan, which had important implications for high-technology industries in particular.<sup>75</sup>

While Taiwan’s industrial development in the 1960s and 1970s relied more heavily on large state enterprises and MNCs, politically-salient SMEs increasingly played a more important role.<sup>76</sup> In 1966, the CIECD established an ad hoc agency to promote SMEs, but in 1981 this agency became a formal institution – the Administration of SMEs – under the restructured Ministry of Economic Affairs (MOEA).<sup>77</sup> The Statute ensured equal treatment not only among SMEs, but also between foreign and domestic firms.<sup>78</sup> A particularly important institutional arrangement was the establishment of an SME Development Fund and various “guidance systems” under which the government commissioned 29 public and private banks to provide various types of loans to SMEs.<sup>79</sup>

In sum, SMEs had played an important role in Taiwan’s export economy from the outset; at the peak in 1982, SMEs accounted for 75% of Taiwan’s total

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74 US Department of State (2005).

75 Patent and copyright laws were amended in November 2001 and the copyright law strengthened again through amendments in 2003 and 2004. An Optical Media Law of October 2001 provided the basis for clamping down on CD/DVD piracy, supported in a 2002 IPR Action Plan for 2003–2005 that expanded enforcement.

76 Hu and Schive (1998).

77 The criterion for selecting and promoting SMEs was substantially revised several times until 1991, when the Rule was finally replaced by the “SME Development Statute.”

78 Hu and Schive (1998: p. 323).

79 Each SME could borrow up to NT\$60 million (MOEA 2004).

manufacturing exports, with a particularly important role in emerging electronics industry.<sup>80</sup> But sustained support for the SME sector appeared to reflect changing political as well as economic priorities, increasing in salience as the government transitioned to more democratic rule and competing political parties sought government support.

### 3.1 The electronics industry and the Hsinchu Science Park

Just as the early EPZs reflected the government's interest in assuring foreign investors, the new industrial park models of the transition period also extended support to domestic firms. By the early 1970s, the electronics industry had expanded dramatically, but was still dominated by assembly and faced loss of competitiveness because of rising labor costs. Moreover, the small scale of most local firms meant they were unlikely to achieve significant technological upgrading on their own. Over the course of the 1970s and 1980s, the government developed an entirely new set of policy and implementing organizations designed to assist in the upgrading of the technological capabilities of local firms. These included subtle revisions in the EPZ model of the earlier period, centering their activities not simply on FDI but on creating linkages with local firms and supporting their capabilities.

Two key public research institutions played a crucial role in providing support to local firms: the Industrial Technology Research Institute (ITRI) for the hardware industry and the Institute for the Information Industry (III) for the software industry. The ITRI was established in 1973 and was placed under the MOEA, taking over the electronics R&D from a telecommunications laboratory in the Ministry of Communications. ITRI was composed of several functionally distinct institutes. The most important one was the Electronics Research and Service Organization (ERSO) which developed and licensed new technologies to the private sector. Originally, ITRI and ERSO were entirely funded by the state, but the private sector later became an important source of funds.<sup>81</sup> In contrast, ITRI remained dependent on the government for 55% of its financing.<sup>82</sup> The III

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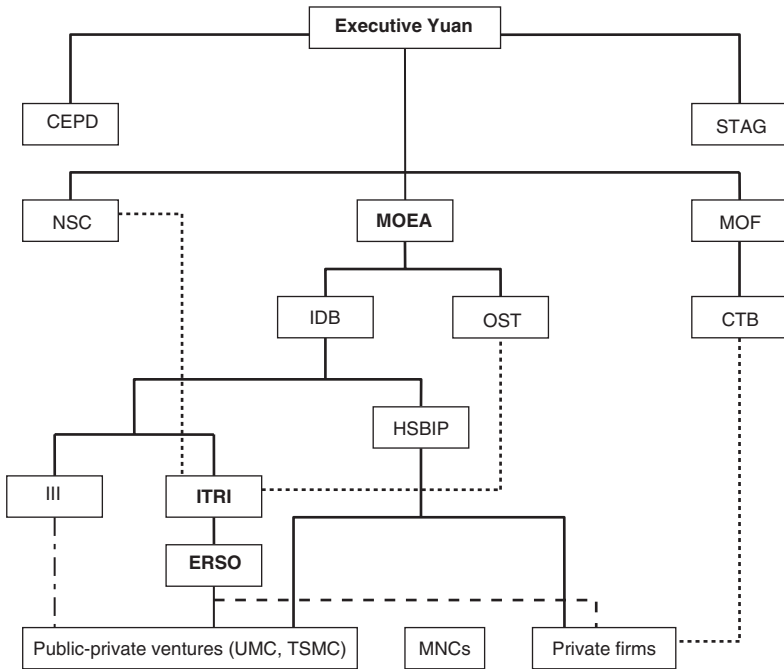
**80** Chu (1999).

**81** By 1988, ERSO received only about 20–25% of its funds from the government, with the rest coming from the private sector in the form of fees from companies for developing products.

**82** The initiative for long-term projects developed by ITRI came from the government while the private sector generally brought short-term projects to ITRI's labs. ITRI's budget was screened within the MOEA and approved by the Executive Yuan and the Legislative Yuan. Two other entities, the NSC and the Science and Technology Advisory Group (STAG) also exercised oversight. See Meaney (1994).

was established in 1979. Its major mission included introducing and developing software, assisting government agencies and public enterprises in computerization, training and educating information professionals, supplying market and technological information related to the information industry, and promoting the development and use of computer-related technologies.<sup>83</sup> Figure 3 outlines the policymaking structure of high-tech industrial policy.

At the implementation level, the government took a particularly direct approach: with capital provided by the government and technology licensed from



**Figure 3** Policymaking structure in high-technology industrial policy in the 1980s.

Source: Liao (1994: p. 127).

Note: CTB, Chiao Tung Bank; HSBIP, Hsinchu Science-Based Industrial Park; III, Institute for Information Industry; IDB, Industrial Development Bureau; OST, Office of Science and Technology.

———— indicates direct supervision.

..... indicates technological support.

----- indicates financial support.

- - - - -, indicates support of market & commercial information.

<sup>83</sup> In addition to ITRI and III, the National Science Council (NSC) was charged with designing research strategy and plans, promoting basic research, pioneering applied agencies. It was also the principal grantor of funds for researchers in Taiwan’s universities (Lee and Pecht 1997).

abroad, it established a demonstration factory for semiconductor manufacturing that became an important incubator for personnel and process engineering and even design skills. Later, the government invested capital, manpower, and management teams to direct the establishment of some flagship domestic private companies and fostered a wave of private investment in the electronics industry.

Yet it was recognized from the outset that domestic efforts were unlikely to succeed – either technologically or with respect to marketing and branding – in the absence of a strong foreign presence; from the outset domestic efforts were coupled with new inducements to foreign investment. In 1975, the minister of the NSC S.S. Shu (Xu Xianxiu) officially proposed the establishment of a “science-based industrial park” after his visit to Japan’s electronic industries; the HSP was established in 1980.<sup>84</sup>

The idea behind the creation of the HSP was in some ways simply an advanced version of an EPZ. Like EPZs, the park was directly managed by the central government agency (i.e., the NSC), not affiliated with local government; the government offered exclusive policy incentives to firms located within the park; lands or plants within the park could only be rented to companies.<sup>85</sup>

However, the HSP ultimately rested on a model that was quite different than the standard EPZ. The government did not just use HSP to attract foreign high-tech companies but rather sought to create an interacting cluster that included domestic firms; the objective was to capture the spillover from the presence of foreign high-tech firms through training, technology transfer, and direct co-operation with suppliers and subcontractors. In addition, the HSP was located near two leading technical universities, National Tsinghua and Chiao Tung, and the state-run ITRI and its Electronics Research Service Organization (ERSO) division were also moved to this area.<sup>86</sup>

The government offered generous incentives to companies located in HSP based on a company’s design, development, and manufacturing capabilities.<sup>87</sup> Of particular interest for our purposes is the fact that these incentives were available equally to both domestic and foreign firms. In contrast to the earlier period, the government did not set performance requirements with respect to local-content or

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**84** So (2006).

**85** So (2006).

**86** Saxenian (2001).

**87** According to the Statute for the Science-Based Industrial Park Establishment and Administration, companies established within HSP would be offered, among other things, 5-year tax holidays and exemptions from import duties, commodity tax, and business tax for equipment, raw materials, parts, and semi-finished products imported from abroad. Should the tax holiday expire, an upper limit of 22% on corporate income tax would be applied, instead of the regular 35% (Saxenian 2001).



exports, but the Statute required the enrolled firms to be “science-based,” defined in terms of R&D expenditure and training for domestic technical personnel.<sup>88</sup>

In addition to the standard economic incentives, the government also worked to build up the capabilities of firms and the general industrial infrastructure through its R&D apparatus: licensing foreign technologies, negotiating the licensing on behalf of Taiwanese firms, and granting subsidies to encourage local firms to enter high technology markets.<sup>89</sup> The ITRI and ERSO were deeply involved in the nurturing of Taiwan’s semiconductor industry, providing technical support to local manufacturers and serving as the training ground for young engineers, which facilitated the diffusion of spin-offs and start-ups. Many ERSO personnel who had been trained in EC design later moved to private industry or established their own businesses. The best examples were the establishment of the United Microelectronics Corporation (UMC) in 1980 and Taiwan Semiconductor Manufacturing Corporation (TSMC) in 1987, highly-successful semiconductor companies. The government not only held the largest share in these companies, but also “invited” some major private enterprises to take stakes in the new venture.<sup>90</sup>

Initial efforts to use the HSP to attract high-tech FDI was not an immediate success. As a science park, HSP’s primary objective was supposed to be technology research, supplemented by industrial production. In reality, HSP served primarily as a low-cost manufacturing base for foreign personal computers (PC) subcontractors.<sup>91</sup> In the decades that followed, HSP took off when local integrated circuit (IC) companies started to generate more substantial agglomeration effects on their own. By 2012, the IC industry accounted for 70% of the total sales revenue in the Park. The dominant investors were not foreign but rather companies founded by individuals from Taiwan who had gone abroad for training. The share of foreign investments fell from 33% in the 1986 to 9% in 2004 (see Table 3).

Not all of these industrial policy efforts were successful. In contrast to the remarkable growth of the semiconductor industry, the development of software and wireless communications industries faced greater hurdles. However, institutional arrangements help account for these differences at least in part. In the semiconductor industry, the government formed an integrated nexus with

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**88** Industrial Development & Investment Center (2005).

**89** Fuller (2002).

**90** In UMC’s case, the government contributed 49% of the initial capital investment of \$14 million through a state-owned bank and forced some domestic private firms to contribute small amounts. In TSMC’s case, the government contributed 48.3% of the initial capital formation of \$206 million and persuaded Philips to sponsor 27.5% of share (Simon 1996).

**91** In 1990, the 121 companies located in HSP had a total turnover of NT\$65.6 billion, but relatively low value-added computer products, particularly peripherals, accounted for 56% of the sales revenue (Chen 2005).

**Table 3** The Hsinchu Science Park.

Year	Number of companies	Sales revenue (NT\$ billion)			Cumulative investment			
		Total	IC Share (%)	PC Share (%)	Total (NT\$ billion)	Domestic (%)	Foreign (%)	Overseas Chinese (%)
1981	17	–			0.7	–	–	–
1982	26	–			1.2	–	–	–
1983	37	3			2	–	–	–
1984	44	10			3	–	–	–
1985	50	11			4	–	–	–
1986	59	17	19	70	6	62.0	32.7	5.3
1987	77	28	14	72	11	70.0	26.4	3.6
1988	94	49	14	72	16	68.9	24.2	6.9
1989	105	56	21	62	28	70.6	23.7	5.7
1990	121	66	22	56	43	74.7	20.7	4.6
1991	137	78	30	48	55	74.6	20.7	4.7
1992	140	87	37	44	63	75.7	19.9	4.4
1993	150	129	43	42	67	78.5	17.0	4.5
1994	165	178	47	40	93	87.1	10.3	2.7
1995	180	299	49	41	148	87.9	10.4	1.7
1996	203	318	49	38	0	87.3	11.6	1.0
1997	245	400	50	35	376	87.7	11.6	0.7
1998	272	455	51	35	511	90.1	9.4	0.5
1999	292	651	55	31	566	92.2	7.3	0.4
2000	289	929	62	23	694	95.1	3.4	1.5
2001	312	661	57	24	859	92.7	7.0	0.3
2002	334	704	65	18	910	92.3	7.5	0.2
2003	369	856	66	16	992	91.6	8.2	0.2
2004	384	1086	68	13	1050	90.5	9.2	0.3
2005	382	988	69	10	1040	–	–	–
2006	392	1118	71	9	1162	–	–	–
2007	416	1144	72	8	1149	–	–	–
2008	430	1005	70	8	1138	–	–	–
2009	440	881	68	7	1130	–	–	–
2010	449	1183	68	6	1079	–	–	–
2011	477	1030	69	6	1087	–	–	–
2012	485	1054	70	6	1094	–	–	–

Source: Hsinchu Science Park, <http://www.sipa.gov.tw/home.jsp?serno=201001210013&mserno=201001210001&menudata=ChineseMenu&contlink=ap/static.jsp>, access on September 18, 2013.

overseas scholars and engineers through public-private organizations such as the Technical Advisory Committee (TAC), Science and Technology Advisory Group (STAG), and Technique Review Board (TRB). In the wireless communication industry, however, Tso notes that strong institutional ties between the government, foreign and local firms did not exist.<sup>92</sup> Similarly, Breznitz argues that ITRI and III, although similarly structured and managed by the same leadership, played different roles in promoting the semiconductor and software industries. In the semiconductor industry, ITRI primarily played a supporting role, assisting private firms with their own advanced R&D projects. In the software sector, however, III competed directly with private companies for customers and financial support, hampering the development of the software industry.<sup>93</sup>

## 4 Conclusion

This paper has sought to address some ongoing puzzles in both the developmental state and new institutionalist literature on economic growth and foreign investment. The initial developmental state literature emphasized the role of “strong” and insulated states, but left open the question of how such institutional arrangements avoided problems of predation and making credible commitments. At least three theoretical approaches have since sought to answer this question. The early literature on the “embeddedness” of the developmental state (particularly Evans 1995) sought to solve this problem by turning to close business-government relations. But these were neither evident in Taiwan nor in a number of the other newly-industrializing countries either; Japan was anomalous in this regard. Nor was it clear exactly how such “embedded” institutions avoided capture.

These regimes did not also bear any resemblance to the institutions highlighted by the new institutionalist literature on long-run growth spearheaded by the property rights literature. As authoritarian regimes with few formal checks on their power, they would seem ripe for predatory behavior. Finally, we found little evidence that the macro-political institutions highlighted in the new literature on authoritarianism and FDI mattered either. These institutions were initially dominated by statist forces and played little role in increasing government credibility; to the contrary, they were a drag on it.

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<sup>92</sup> Tso (2004).

<sup>93</sup> Breznitz (2007).

We argue that greater attention should be paid to governance writ small: to the institutions that decide upon and implement economic incentives, including those to foreign investors. Prior to the transition to democratic rule, insulated decision-making bodies were checked by strong participation of American advisors, whose influence was ultimately rooted in the aid nexus. Such foreign checks are more akin to the role that has been attributed to other external hand-tying technologies such as free trade agreements and bilateral investment treaties than they are to models relying on domestic institutional arrangements. These institutions created sunk costs and identified the government strongly with the new policy course while delegation of substantial authority to bodies with narrow, investment-promoting mandates increased credibility. The authoritarian political system gave political elites the independence to initiate a set of policy incentives to create a capital-friendly policy environment. But authoritarian rule would have been a minus without parallel investment in the “small” institutions that governed the FDI nexus and limited government discretion.

In the 1980s, Taiwan’s political institutions experienced a fundamental transition as the authoritarian system gradually gave way to democratic forces. Powerful industrial groups and the potential electoral influence of a large pool of Taiwanese SMEs had a growing influence on the policy-making process. Changes in the domestic political landscape, along with external shocks and constraints, shifted the nature of government interventions toward policies that were more market-oriented and supported a wider array of domestic private interests.

However, even during this second period we find certain continuities in both institutional form and in the effort of the government to play a coordinating function. These efforts can be seen most clearly in the Hsinchu Science Park and in the ongoing granting of selective incentives to particular industries. There can be little question that Taiwan’s FDI policy has become more liberal. But it would be misguided to see it as altogether *laissez-faire*; rather, government actions sought to support the efforts of local private firms to play a central role in the upgrading process and to extend assurances that would induce ongoing investments in high-technology activities. They did so not for efficiency reasons, as functionalist arguments have maintained, but rather for good political reasons: the need to sustain business support in a more democratic political environment.

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