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# Taiwan's Semiconductor Strategy: A Developmental State Model for Economic Growth

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# Taiwan's Semiconductor Strategy: A Developmental State Model for Economic Growth

**Argument:** Taiwan's rapid economic development can be explained by its pursuit of a developmental state economic development strategy, centering the semiconductor industry as the engine of growth; understanding this, and whether the development strategy is transferable, is important if other countries are going to use Taiwan as a model.

## INTRODUCTION

Between 1950 and 1990, Taiwan experienced the 'Taiwan miracle', with its economy growing at an average rate of 8 - 10% annually, exceeding its previous rate of 2% (Wu, 2004) and that of other developing countries (World Bank, n.d.). Taiwan, similar to other East Asian countries, has pursued a developmental state economic development strategy, which, some argue (Onis, 1991), explains its rapid growth—transforming it from a predominantly agricultural society into a leading industrialized country and one of the Asian Tiger economies.

According to Alice Amsden (2001), Taiwan's state-led development strategy was focused on the semiconductor industry as an "engine of growth," helping transfer knowledge and connecting the country to the global tech network. Advocates argue that similar statist approaches also explain the rapid growth of other countries like South Korea and Japan in East Asia.

In contrast, others, such as Krugman (1994), argue that Taiwan's growth could be attributed to more market-oriented economies and an effective use of a neoliberal economic development strategy. Arguing Taiwan's success was largely established through factors such as property rights, incentivization, and openness to trade, with high growth rates primarily driven

by the utilization of workforce and private investments rather than direct state interventions (Krugman, 1994). Others like Tsai (Tsai, 2001) and Chang (Chang, 2007), argue nations' success could be explained by the transition of the developmental state to a neoliberal development strategy.

In this section, I first explain what the development state model is and then contrast it to the neoliberal economic model.

The "developmental state" refers to a state that plays a strategic role in promoting economic development by actively guiding investment and industrialization. This concept emerged in analyses of East Asian economies in the 1980s as a critique of the neoliberal perspective that credited their rapid growth solely to free markets and openness to global trade. According to the developmental state model, the state does not entirely control the economy but instead selectively intervenes to support national development goals (Onis, 1991).

## Key characteristics of the developmental state model:

### 1. Strategic Industrial Policy

The state pursues selective industrial policy to promote, protect, and invest in targeted sectors rather than taking a hands-off approach. For example, in Japan, the government implemented strategic industrial policies to foster the growth of the automobile industry. This included subsidies, financial loans, and trade barriers to support specific firms like Toyota and Nissan while discouraging others, driving out foreign competition such as General Motors and Ford (Magaziner, 1981). These measures aimed to promote economies of scale and technological advancement within the sector. Additionally, the government passed laws to limit

the repatriation of profits from foreign automobile manufacturers in Japan, encouraging reinvestment in the domestic economy through technological transfer, R&D, or local employment (Tamaki, 2014). Japan shifted its workforce to where it could be most productive and assist the growth of infant industries, while gradually reducing support for industries facing challenges in international competitiveness (Tamaki, 2014). Workers from competitively troubled industries like textiles, shipbuilding, and chemical fertilizers were retrained to work on other tasks by the government, aligning with its policies to manage the decline of these industries while redirecting labor towards more viable sectors such as knowledge-intensive and high-tech industries (Onis, 1991). The developmental state actively promotes and supports specific industries and sectors through targeted policies, incentives, and investments. In the context of financing, Japan's Strategic policy also included subsidies, financial loans, and trade barriers to support firms like Toyota and Nissan, contributing to the sector's growth and technological progress (Wan, 1995).

## 2. Political Stability

A strong, interventionist government provides a stable, predictable policy environment for long-term private investments and industrial progression. For example, some developmental states provided guaranteed prices or stable market access for key strategic industries.

For South Korea, the government guaranteed purchase volumes and stable prices for outputs from strategic sectors like steel, shipbuilding, and chemicals during its rapid industrialization phase (1960-80s) (Amsden, 1980). In Japan, despite occasional disagreements between manufacturers and the Ministry of International Trade and Industry (MITI), there is a common goal of increasing Japan's global competitiveness. These disagreements may lead to

occasional challenges of the overarching common goal, however, the ability to navigate past this demonstrates the resilience and adaptability of Japan's developmental state in maintaining a stable and strategic economic direction. This indicates a stable and consistent policy direction aimed at enhancing Japan's economic position in the global market.

### 3. Elite Bureaucracy

An autonomous, skilled bureaucracy is crucial in formulating and implementing coherent economic policies aligned to development goals with minimal political interference, e.g. Singapore Economic Development Board (EDB) 1961, which operates independently from direct political control or influence. It comprised a team of highly skilled and technocratic bureaucrats who were given considerable autonomy in formulating and implementing economic policies aimed at achieving national development goals such as attracting FDIs. Similarly, in Japan, the size of the bureaucracy and the amount of funds spent on industrial policies were relatively small, though the competence of individuals and the careful allocation of resources were crucial in Japan's approach. This highlighted flexible government policies and knowledgeable policymakers who were able to respond to individual conditions within specific industries. There is a highly skilled and knowledgeable group of government officials who understand how industries work and can make well-informed decisions based on that understanding. Notably, there is currently minimal government involvement in the automobile industry in Japan, highlighting the autonomy and competence of Japanese bureaucrats in certain economic sectors (Magaziner, 1981).

#### 4. Long-term planning

The developmental state prioritizes long-term growth, international competitiveness, and structural change over short-term profits (spurts of GDP growth over 1-2 years) or other goals like equality, welfare provision, or political freedom. This focus includes strategic planning and policies aimed at achieving technological superiority, developing infrastructure with long-term perspectives, and maintaining international competitiveness in key sectors. These efforts often involve supporting/promoting certain industrial groups while neglecting others, contributing to sustained growth and industrialization. Most East Asian governments have pursued some sector-specific industrial policies (Page, 1994).

Japan's post-World War II industrial policies initially focused on heavy industries like iron and steel, shipbuilding, and machinery, gradually expanding to include sectors such as automobiles, petrochemicals, and high-tech industries like computers and semiconductors. By the late 1980s, Japan shifted towards liberalized trade and foreign investment, prioritizing knowledge-intensive and high-tech industries over traditional sectors, signaling a shift towards market-led development strategies (Tamaki, 2014).

Nurturing the auto industry through protection, financing, export assistance, and overseas marketing and distribution reflects a long-term approach. The emphasis on industrial transition and supporting internationally competitive companies aligns with the developmental state's focus on long-term growth and structural change. This indicates a strategic orientation towards sustained industrial development and international competitiveness.

## 5. Infrastructure investment

East Asian leaders supported the principle of shared growth, which involved strategic investments in infrastructure, education, R&D, and technology to enhance production capacity and knowledge transfers. However, they did face challenges in persuading elites to support growth policies and share benefits with lower-income groups while ensuring everyone would benefit from future growth.

For instance, in Korea during the 1980s, the Ministry of Education initiated significant reforms, including a substantial increase in enrollment rates, to create a more equitable educational system and broaden access to higher education across the population. This emphasis on education reflects the early influence of Confucian values in Korean society, where education has historically been highly valued and regarded as a pathway to social and economic advancement. This emphasis on education plays a pivotal role in shaping Korea's developmental trajectory, underscoring the heavy investments made in the education sector. This strategic investment not only enhances human capital but also fosters innovation, productivity, and social mobility, contributing significantly to Korea's economic success and its transition into a knowledge-based economy.

## 6. Public-private collaboration

The developmental state actively works to create close public-private sector coordination and consensus building to facilitate effective policy implementation while keeping private firms accountable for national development goals. The Japanese government fostered a close

partnership with the automobile industry, which was identified as a strategic sector for economic development. For instance, when Toyota sought to establish a new manufacturing plant in the 1960s, the state provided substantial support. The government built dedicated highways and transportation infrastructure connecting the new plant to major cities, ensuring efficient logistics and distribution networks. Additionally, the state offered Toyota low-interest loans and tax incentives, enabling the company to expand its production capacity. Meanwhile, non-strategic firms in other industries had to rely on existing public infrastructure or finance their transportation and logistics solutions. This preferential treatment for Toyota and other automakers highlighted the collaborative approach between the Japanese government and private companies deemed crucial for national economic interests. Through this partnership, the state could align policies and initiatives with the specific needs of the automotive industry, while the private sector benefited from favorable conditions to drive growth and international competitiveness.

## 7. Export promotion

Export promotion is a government initiative to support specific industries focused on exporting their goods. It includes preferential policies such as tax incentives, subsidies, and infrastructure support. To facilitate this, export processing zones are established with attractive regulations for foreign direct investment. Governments may also implement import substitution measures or bans on imports to support the development of domestic industries. Many East Asian countries like Japan and Korea started through a period of import substitution, through the protection of electronics and machinery domestic import substitutes, which facilitated the rapid growth of electronics and machinery in East Asian economies (Page, 1994).



## TAIWAN

Semiconductors are silicon-based materials required for day-to-day electronics, the essential components found in almost all electronic products like smartphones, computers, and home appliances (Momoko, 2022).

Taiwan currently dominates the foundry market, a sector of semiconductor manufacturers that produce chips for other companies, known as semiconductor manufacturers or foundries (Y, 2022), and semiconductor manufacturing outsourcing for major global players such as Apple, Qualcomm, and Nvidia has become a significant part of Taiwan's semiconductor industry (Nenni, 2023). According to Taiwan-based TrendForce research, the island's contract manufacturers jointly accounted for over 60% of total global foundry revenue in 2020.

The Taiwanese semiconductor industry began in 1974 amidst challenging political and economic circumstances, a time of transition in Taiwan: lost its seat in the UN, oil crisis in 1973, and political transition towards democratization (Windham, 2003). In response, the government established the Industrial Technology Research Institute (ITRI) in the 1970s, which played a crucial role in driving Taiwan's technology sector forward. One of ITRI's early projects involved integrated circuit development for the Radio Corporation of America (RCA), which led to the formation of United Microelectronics Corporation (UMC) in 1981. However, the most significant transformation was the founding of the Taiwan Semiconductor Manufacturing Company (TSMC) in 1987 under Morris Chang's leadership. TSMC is a foundry that manufactures semiconductor chips for other companies. TSMC introduced the fabless foundry model, where companies (i.e. Texas Instruments) specialize in designing and marketing chips but partner with external

foundries, like TSMC, for the fabrication/manufacturing phase. This allows companies to concentrate on innovation and design without the burden of semiconductor manufacturing facilities. This flexibility enables fabless (semiconductor companies without a production line) companies to adapt quickly to market changes (Y, 2022). This approach has revolutionized the global semiconductor industry where companies like Texas Instruments can focus on chip design and outsourcing manufacturing from foundries like TSMC during the late 1980s. By 2007, Taiwan had become the world's second-largest microchip supplier, with TSMC leading in foundry revenue globally. Today, Taiwan is a central hub for semiconductor manufacturing, with its economy heavily reliant on semiconductor exports, contributing nearly 25% to its GDP in 2022 (World, n.d).

When considering how industries came to be and why the semiconductor industry was pursued for Taiwan, we need to consider the country's natural resources, labor and capital, and external economies of scale, where they have or can create a comparative advantage (Krugman, 2015).

Taiwan chose to concentrate on and pursue the semiconductor industry due to its strategic significance in driving innovation across electronics, computing, and telecommunications. Developing an advanced semiconductor industry was viewed as a pathway for economic transformation, shifting from basic to advanced manufacturing, reducing import reliance, and offering profitable export opportunities (Chang, 2000).

Despite lacking natural resources such as silicon and germanium (Nenni, 2023), Taiwan had competitive advantages - a skilled engineering talent pool that could be directed towards this high-skill industry through education and training initiatives, an existing electronics industrial

base with expertise in related technologies, efficient supply chain management, strong research and development capabilities, and effective collaboration among industry players (Y, 2022). Their focus on export-oriented strategies made domestic firms globally competitive, driving productivity gains and technology advancements (*explained below*).

During the 1980s, the evolving global semiconductor landscape also presented an opportunity. Obstacles such as overregulation, labor shortages, and volatility made it difficult for minicomputer companies like IBM and Prime Computer to operate their semiconductor fabrication facilities throughout the US efficiently. These difficulties led to temporary foundries like IDM (Integrated Device Manufacturer and in-house ASIC (Application-Specific Integrated Circuit) fabs manufacturing third-party designs, which were not ideal (Y, 2022). IDM semiconductor manufacturing facilities are operated by companies that design and manufacture their own semiconductor chips (Nenni, 2023). ASIC fabs are foundries that produce custom chips called Application-Specific Integrated Circuits (ASICs). These chips are designed for specific uses in electronic devices or systems (Anysilicon, 2021). However, a notable gap remained in the market for a dedicated foundry business focused solely on manufacturing third-party chip designs. IDM and ASIC often had other priorities or constraints that limited their ability to fully meet the demand for third-party chip manufacturing. As the semiconductor industry evolved, there was an increasing demand for custom third-party chip designs. This required companies to dedicate foundries that could efficiently and effectively manufacture these designs at scale, while meeting the specific requirements of various electronic devices and systems (cite). Taiwan, with its strategic vision, skilled workforce, and supportive developmental state policies with a focused objective on the semiconductor industry, was ideally positioned to excel. Its pivotal advantage was in recognizing the emerging demand for a

dedicated fabless foundry (TSMC), which set Taiwan apart and propelled it to become the world's leading semiconductor foundry hub in the 1990s.

Taiwan utilized the developmental state model to transform its industries through strategic planning and public-private coordination. Semiconductors were identified as a strategic industry to concentrate national resources on. The government provided financing, R&D support, incentives, and infrastructure, and built a network of universities, research institutes, and private firms. Policies promoting exports helped create large-scale markets. Taiwan aimed to become an industry leader in semiconductors globally by the 2000s, setting a clear long-term goal since the 1970s. This approach led to consistent investments in R&D and talent development while deferring immediate consumption needs for long-term growth.

### 1. Strategic Industrial policy

The Taiwanese Industrial Technology Research Institute ITRI was established to assist private companies in entering technologically advanced industries by doing applied science research and launching projects as private ventures. A sub-committee within ITRI specifically assisted Taiwanese companies in entering the semiconductor industry by inviting foreign firms, like RCA from the US, to teach relevant technologies (Y, 2022). This approach, similar to China's technology transfer agreements, aimed at transferring not just technical knowledge but also managerial and industrial expertise. Despite the current controversy surrounding technological transfer agreements – a complex process that often involves multiple stakeholders and is challenging to navigate in terms of finding suitable partners – Taiwan's strategy in the 1970s received less scrutiny for two main reasons, contributing significantly to the country's

semiconductor industry growth and development, for two main reasons. First, the technology transferred was slightly outdated but Taiwan gained access to RCA's entire technology portfolio when the company exited the semiconductor industry, which meant Taiwan received a broad range of technologies and expertise that contributed significantly to its semiconductor industry's growth and development. Taiwan did not acquire cutting-edge technology that could raise concerns about unfair advantages or intellectual property issues. Second, Taiwan wisely chose to adopt complementary metal oxide semiconductors (CMOS), the technology used in the fabrication of integrated circuits, emerging as a leading semiconductor technology during that period and later becoming dominant in semiconductor manufacturing (Nenni, 2023). Taiwan's adoption of CMOS positioned the country well for future growth and competitiveness in the semiconductor market. Through partnerships with foreign firms like RCA, Taiwan transferred technology and expertise which resulted in significant long-term benefits. This strategic decision resembled the actions of venture capitalists' risk-taking, long-term vision, and strategic partnership, leading to significant long-term benefits for Taiwan's semiconductor industry.

Taiwan modeled its semiconductor industry development on Silicon Valley's approach. The government founded many small startups and provided initial support to help them get going. This included setting up the Hsinchu Science Park to house the companies, as well as, offering attractive tax incentives like just 1.5% tax rates for semiconductor firms in the early 1990s. (Y, 2022)

In 1980, the government provided UMC with technological know-how, help recruit talent, and even support to close its first deal. UMC, the traditional vertically integrated semiconductor maker, soon became Taiwan's most profitable industrial manufacturer, however, it failed to compete internationally because the field was too competitive and itself produced low-level

chips for toys and watches. This is where TSMC differs with its focus on the fabless foundry model. TSMC from the start was focused on the international export market – at the government's request and Morris Chang's, TSMC's chairman and CEO, direction (Nenni, 2023).

The Taiwanese government provided financial support to TSMC through grants, subsidies, and low-interest loans to help fund its research and development (R&D) initiatives, expand manufacturing capacity, and invest in advanced technologies. These measures allowed TSMC to enter the market with technology much more advanced than UMC, giving it a comparative advantage. During this time the global market demand for semiconductor chips in the export market was significant, particularly with the addition of personal computers, especially in sectors like consumer electronics and computer devices (Nenni, 2023). This technology came from Philips (1970s), providing Taiwan with the 1.5-micron process, a semiconductor manufacturing technology, which became TSMC's core service (Nenni, 2023).

When UMC was started, it prioritized the domestic market for survival, benefiting from government support in Taiwan. However, the focus made UMC complacent and hindered its innovation and becoming a global leader (Y, 2022). In America, TSMC helped fuel the fabless semiconductor trend, leading to significant wealth accumulation for the company (Nenni, 2023).

The Taiwan government invested money in TSMC but also wanted private investors to oversee the market. Philips acquired a significant portion of TSMC's shares for its involvement, while Intel and Texas Instruments declined investment opportunities. Taiwanese businessmen were encouraged, and sometimes forced, to invest, but many, being older individuals, hesitated (Nenni, 2023). Wang Yung-ching, from Formosa Plastics, bought 5% of the company under government pressure but sold his shares shortly after, missing out on a potential \$20 billion fortune (Nenni, 2023). This illustrates the extent of government influence and pressure in the

early stages of TSMC's development, specifically the interaction of government policies and private investments in the semiconductor industry. The substantial potential fortune also underscores the success and value that TSMC achieved.

The Taiwanese government had a very specific strategy for developing the semiconductor industry through the fabless foundry model. Focusing on small companies (infant industries) clustered together with government guidance. Different to South Korea's strategy, where significant funds were given to specific companies known as chaebols to dominate a particular sector.

## 2. Political Stability

Taiwan's successful development was due to a strong government that consistently supported long-term industrial growth. For instance, during its rapid industrialization phase in the 1960s-1980s, the government provided support and stable prices for outputs from strategic sectors like steel, shipbuilding, and semiconductor industries (Amsden, 1980). The government indirectly supports TSMC through these policies. This stable policy direction aimed at enhancing Taiwan's global competitiveness aligned the government and private sector towards a common economic development goal centered on the semiconductor industry.

## 3. Elite bureaucracy

A skilled and independent bureaucracy was vital for Taiwan to create and execute effective economic policies aligned with national objectives. The Industrial Technology Research Institute (ITRI), established in the 1970s, had a team of technocratic bureaucrats given significant autonomy to drive Taiwan's technology sector policies (Y, 2022). This elite

bureaucracy played a key role in Taiwan's transition into an advanced semiconductor manufacturing hub with minimal political interference once strategic policies were established.

#### 4. Long-term planning

Taiwan had a clear goal of leading the global semiconductor industry by the 2000s. This started in the 1970s with the establishment of ITRI and a focus on developing semiconductor capabilities (Y, 2022). Decades of steady investments in research, education, and supplier networks transformed Taiwan's economy from basic manufacturing to advanced semiconductor production (Nenni, 2023). This long-term approach facilitated the accumulation of capital, technology, and skills required to transition Taiwan's productive capacities. Unlike short-term policies focused on immediate consumption or equality needs, Taiwan deferred these priorities to enable strategic, future-oriented planning aimed at attaining international competitiveness in its targeted semiconductor industry. The semiconductors market has grown and expanded significantly over recent years, bringing more businesses and associated economies of scale. By producing large volumes of semiconductor chips, TSMC can spread its fixed costs (equipment and facilities) over a greater number of units, leading to lower average costs of production per unit. This also allows TSMC to offer competitive pricing to its customers while maintaining profit.

#### 5. Infrastructure investment

Taiwan made strategic infrastructure investments needed for its semiconductor industry in line with its developmental state model. In the education sector, Taiwan reformed and grew its school system in the 1960s-70s to create a skilled workforce for industries like semiconductors (Lone Star tech, 2023). The government established specialized universities and curricula



focused on engineering, electronics, and semiconductor-related fields like National Chiao Tung University and National Tsing Hua University (Nenni, 2023). Students were given scholarships, subsidies, and incentives to pursue higher education in STEM subjects that the rising semiconductor industry needed (Y, 2022). Universities, research institutes like ITRI, and private companies worked together to train semiconductor specialists by sharing knowledge and technology (Nenni, 2023). For physical infrastructure, the Hsinchu Science Park was built in 1980 as a dedicated area for semiconductor and IT companies with land, utilities, and transportation access (Nenni, 2023). The government invested a lot of money into building roads, power, water, and telecom infrastructure inside the park to support semiconductor manufacturing (Chang, 2000). Major semiconductor companies like TSMC got tax breaks and subsidized land/utilities to set up factories and R&D centers in the park (Nenni, 2023). The Hsinchu Park brought semiconductor companies, suppliers, research labs, and skilled workers together in one place (Momoko, 2022). Similar science park hubs for semiconductors were later made in Tainan and Central Taiwan (Y, 2022).

## 6. Public-private collaboration

Taiwan enabled close cooperation between public research institutes and private semiconductor companies like TSMC. The ITRI acted as a bridge, setting up joint R&D projects where public researchers and private engineers could share knowledge (Lone Star Tech, 2023). While government funding helped financially, ITRI's collaborations allowed technology to transfer from public institutes to private semiconductor firms (Y, 2022).

This cooperative relationship between the public and private sectors also helped create a skilled semiconductor workforce. Government agencies worked closely with companies to

design training programs that taught the specific technical skills needed for semiconductor manufacturing jobs (Schive, 1987). This public-private coordination in developing human capital was crucial.

Taiwan's rules and regulations for the semiconductor industry were also developed through close consultation between policymakers and industry players (Schive, 1987). This collaborative approach addressed emerging industry needs and challenges. It created a regulatory environment that supported innovation while still following international standards.

## 7. Export promotion

Taiwan provided selective tax breaks and financing for domestic companies and foreign companies that establish operations/invest in Taiwan's electronic industry, provided that they met export targets in key electronics segments like semiconductors, displays (LCDS), and various electronic components. These export targets varied for the specific industry, State agencies helped improve product designs for Western markets and promoted Taiwanese goods overseas. This export-oriented approach encouraged economies of scale, technology transfer, and ongoing productivity gains as firms struggled to survive global competition (Haggard & Zheng, 2013). Taiwan's export-led growth could be seen in the trade dependence index (ratio of the total amount of trade to the GNP), from 27.4% in 1960 to over 103.12% in 1983. This indicates a substantial growth in the country's reliance on exports and international trade relative to its economic output. As a major supplier to the US and some European countries, Taiwan built up a significant trade surplus and became a net lender with its foreign exchange reserves (Schive, 1987). This highlights Taiwan's economic strength and stability from its export-led

growth strategy. Becoming a net lender with foreign exchange reserves means Taiwan was earning more from exports than it was spending on imports. This trade surplus allowed Taiwan to accumulate foreign currency reserves that could be invested or used for economic development.

However, for the semiconductor industry, after founding small startups and providing initial support for them to develop, the Taiwanese government did not provide them with ongoing subsidies or try to protect them from competition. Unlike countries that ban foreign competitors and have protective tariffs to secure their domestic market, Taiwan exposed its semiconductor startup TSMC to global competition from the beginning. This forced the companies to remain innovative and competitive, avoiding complacency behind protectionist barriers. Adjusting their strategy second time around for TSMC from experience with UMC, which became too complacent due to focus on just the domestic market. (Y, 2022)

Additionally, it could be argued that Taiwan happened to be in the right place at the right time, as Singapore tried to establish its own "TSMC" a few years later with inconsistent outcomes (Y, 2022).

One key factor that benefited Taiwan, which had little to do with government policy, was the sourcing of human talent(Chang, 2000). During the 1980s and 1990s, Taiwan had an influx of overseas Chinese professionals returning from Western countries. This is due to two main factors: Taiwan's booming economy, and to a lesser extent, increased Chinese nationalism over the Diaoyu/Senkaku Islands territorial dispute, which motivated overseas Chinese to contribute to the economic development of Taiwan as the "free China." (Y, 2022)

Moreover, the experiences of Taiwan, Japan, and Korea, confirmed the significance of an export-oriented approach for rapid productivity growth. For instance, Taiwan's manufacturing exports grew at an average annual rate of 14% between 1965 and 1990, surpassing its GDP growth of 8.9% (World Bank, 2023). This aligns with the argument that export growth is a powerful mechanism for technological upgrading, as firms that export have greater access to advanced technologies compared to those focused only on the domestic market or import substitution.

## THE NEOLIBERAL MODEL

The neoliberal model refers to an economic ideology that advocates for free market capitalism, deregulation, privatization, trade liberalization, and limited government spending as key drivers of economic growth and stability (Chang, 2008).

In contrast to the developmental state approach, which emphasizes strategic government intervention and long-term planning, neoliberalism promotes minimal government interference in economic affairs, prioritizing market mechanisms, and privatization.

Krugman argues Taiwan's, along with other East Asian countries, growth was not the result of any unique policies, institutional arrangements, or efficiency gains. Instead, he argues this growth was driven by the mobilization of labor and capital inputs, which stems from market-oriented economies and the implementation of a neoliberal development strategy. Understanding the neoliberal model is important to determine whether Taiwan's economic strategy was primarily characterized by the developmental state model or the neoliberal model. Krugman suggests Taiwan's success can be attributed to factors like property rights, incentivization, and openness to trade, driven by its workforce and private investments

(Krugman, 1994). This offers a contrasting development strategy to the developmental state model, Taiwan pursued a developmental state strategy centered on strategic industrial policies, public-private collaborations, and long-term planning, while other countries adopted neoliberal policies with different levels of success and challenges.

We aim to counter Krugman's argument by highlighting the significance of Taiwan's developmental state approach over a neoliberal model in driving its economic success. To illustrate the contrasting approaches, we can examine the experience of Taiwan under the developmental state model and contrast it with countries that adopted neoliberalism.

However, Chang's perspective provides a critical view of the neoliberal model. He argues that states and agencies such as the World Bank and IMF, which advocate for a neoliberal approach to economic development, are being hypocritical. Chang points out that countries often cited as successful examples of neoliberalism, such as the U.S. and Britain, actually pursued a developmental state model until their industries were sufficiently advanced to compete globally. Only then did they open up to free trade (Chang, 2008). Tsai's analysis further supports this view, suggesting that Taiwan, like Japan and Korea, followed a similar trajectory. These insights challenge the simplistic narrative that attributes Taiwan's success solely to neoliberal policies, highlighting instead the role of developmental state strategies in laying the groundwork for economic advancement (Tsai, 2001).

Key characteristics of this neoliberal model include:

Krugman questions whether the Asian growth experience justifies industrial policy over free market economics. He argues that if the phenomenal Asian growth rates were truly driven by productivity-enhancing policies like industrial policy and strategic trade policies

(developmental state), then there should have been clear signs of exceptional efficiency growth, but he states there is no such evidence.

### 1. Reduced Government Spending

Neoliberals argue that lowering budgets on social services and public infrastructure forces fiscal discipline and allows tax cuts that incentivize businesses. This approach is often seen as a way to stimulate economic growth by limiting the size and influence of the state. During the 1980s, under Prime Minister Margaret Thatcher's leadership, the UK pursued a series of neoliberal reforms that included significant cuts to government spending. This period saw reductions in welfare programs, privatization of state-owned enterprises, and a focus on market-driven solutions in various sectors. Advocates argued that these measures would improve efficiency and competitiveness. These cuts in social welfare spending contributed to a reduction in overall public expenditure, aligning with the government's goal of fiscal discipline and reducing budget deficits. While this reduced the financial burden on the government, this led to concerns about the adequacy of support for vulnerable populations (Krugman, 1994).

However, Chang critiques the narrative by highlighting how major developed economies like the US and the UK actively used government spending to promote industry and human capital during their development (Chang, 2008).

Chile under the dictatorship of Augusto Pinochet in the 1970s and 1980s implemented neoliberal reforms known as the "Chicago Boys" policies, influenced by economists from the University of Chicago. These reforms included austerity measures, privatization of state-owned enterprises, and reducing social spending. While these policies contributed to economic growth, they also increased inequality and social disparities (Valdes, 2013).

## 2. Trade liberalization

By removing barriers to international trade like tariffs and quotas, neoliberals argue that this allows countries to leverage their comparative advantages in global exports and imports.

Chang highlights how major industrial powers relied heavily on protectionist policies when building up strategic industries, only to later advocate and force-free trade onto poorer countries. For instance, the UK implemented protectionist trade policies, particularly in manufacturing and textiles, during the 18th to early 19th century as part of its industrialization strategy.

Chang emphasizes that the British only promoted free trade when they had become the leader through protectionism. This general pattern of rising, protective industrial powers later pushing free trade onto less developed economies was also true for the U.S. and other countries. Chang addresses the historical irony when institutions like the IMF and World Bank now advise developing countries against using the same protectionist policies that major economies have relied upon when industrializing themselves earlier (Chang, 2002).

## 3. Deregulation

Deregulation refers to the process of removing or reducing government regulations across various sectors such as finance, transportation, media, and others. The goal is to enable businesses to operate with greater flexibility, allowing them to allocate resources more efficiently and respond rapidly to market demands (Krugman). In many neoliberal models, deregulation is seen as a key driver of economic growth and innovation. By reducing bureaucratic hurdles and restrictions, businesses can innovate more freely, enter new markets, and compete more effectively both domestically and internationally. Under the leadership of Prime Minister Margaret Thatcher, the UK pursued a series of neoliberal reforms that included extensive

deregulation across various sectors. This deregulation involved reducing government control and barriers in industries such as finance, telecommunications, and transportation.

For instance, in the financial sector, the Big Bang reforms of 1986 deregulated the London Stock Exchange and allowed for electronic trading. This led to increased competition, innovation, and the growth of London as a global financial hub. Similarly, deregulation in telecommunications led to the privatization of British Telecom in 1984, which resulted in increased investment, technological advancements, and competition in the telecommunications industry.

For Taiwan, while deregulation is often associated with minimal government intervention, Taiwan stands out with its strong state. The Taiwanese government plays an active role in overseeing key sectors, ensuring compliance with regulations, and promoting fair competition.

On the other hand, Japan follows a somewhat different path. While there is little government ownership in many industries, the private sector is rigidly guided and restricted by bureaucratic government elites. This system, often referred to as "administrative guidance," involves government officials influencing business decisions and strategies, sometimes leading to a less dynamic and competitive business environment compared to fully deregulated markets.

#### 4. Privatization

Transferring ownership and control of economic assets and functions from the public to the private sector. This often includes selling state-owned enterprises (SOEs) or allowing private firms to take over previously government-run services (cite). During Margaret Thatcher's time as Prime Minister in the UK, privatization became a key economic policy. She sold off major



state-controlled businesses like British Airways, British Telecom, British Steel, and British Gas. The goal was to bring in competition, boost efficiency, and lessen the government's responsibility for managing these companies. Supporters believed privatization would drive innovation, improve services, and attract more investment.

In contrast, Taiwan's approach to privatization has been more nuanced. While there have been instances of privatization and collaboration between the public and private sectors, Taiwan's developmental model emphasizes a strong partnership between the government and private firms. Private companies are held accountable for national development goals, such as technological advancement, export promotion, and economic growth.

One notable aspect of Taiwan's privatization strategy is the continued influence of the state in managing formerly public enterprises. Even after these entities became private firms, there remained a degree of government oversight and involvement, reflecting the statist approach to economic development. This influence can be seen in policies that aim to align private sector activities with national priorities and strategic objectives, often through incentives, regulations, and partnerships facilitated by government agencies (Tsai, 2001).

## Transferability of Taiwan's Development Strategy

Taiwan's rapid economic development can arguably be explained by its pursuit of a developmental state economic development strategy, centering the semiconductor industry as the engine of growth. This strategy emphasized export promotion, technology adaptation through collaboration with foreign firms, and exposure to global competition that promoted innovation and efficiency. Taiwan's success was supported by the efficient accumulation and allocation of physical and human capital, along with strategic government interventions such as directed credit and financial repression.

While export-oriented economies have helped many people escape poverty, significant changes in global trade, manufacturing processes, and new technologies make the traditional export-led growth model increasingly challenging. As economist Richard Baldwin suggests, we need to shift our thinking away from the traditional development stages of progressing from agriculture to industry and then to service-based work, as this entire model may be flawed (Cohen, 2024).

Justin Yifu Lin argues that the path to economic development should focus on export-orientated rather than the classical development model. Developing countries were often pressured by the US and international institutions to adopt policies of open market and minimal government intervention. Lin suggests that these free market policies alone are insufficient for significant economic development. Export-led growth strategies have failed in Africa and Latin America due to a lack of government support and subsidies for domestic industries, in contrast to the successes of Japan and South Korea which utilized active industrial policies. Lin argues some form of targeted government intervention beyond just free market policies is necessary for robust economic development (Cohen, 2024).

The foundational principles of Taiwan's developmental state model – export focus, technology adaptation, human capital development, and targeted government actions – offer valuable insights for other developing economies aspiring to replicate East Asia's economic achievements. However, the specifics of implementation may vary based on each country's existing economic conditions, availability of skilled human capital, and the government's ability to implement effective interventions.

Some countries and regions have successfully adopted elements of the developmental state model, such as South Korea and Japan. In contrast, the model faced challenges in Africa and Latin America due to a lack of government support and subsidies for domestic industries

(citation). Alternative models highlighted include service sector-driven growth in India or a more diverse economic base focused on cities (Cohen, 2024).

Alternative models highlighted include growth in service sectors (e.g. India's tech/business hubs) and a more diverse economic base focused on cities rather than specific industries, which differs from the traditional state model. Education is a crucial component in attaining growth, with the increasing demand for service jobs that often require higher skills and education levels exceeding what the majority of the population in developing nations have. Government policies, education, and retraining workers will be critical for developing nations to adapt and generate economic mobility through new pathways beyond export manufacturing (Cohen, 2024).

While methods of the past, such as industrialization, cannot guarantee growth like before, with less reliance on cheap unskilled labor, instances like AMD (Advanced Micro Devices, multinational semiconductor company) announcing its largest global design center in Bengaluru, India, highlight emerging opportunities. Developing economies now face increased competition from other nations selling inexpensive goods abroad (Cohen, 2024).

Despite skepticism about replicating the East Asian Model, crises often arose from deviations rather than strict adherence to the model, as observed in the cases of Japan and South Korea (Chang, 2007). Replicating the model's success depends on factors such as the existing economy, human capital availability, and the government's capacity for effective interventions.

While the specifics may vary, the principles of the developmental state model, if implemented effectively, can offer a potential pathway for other developing economies to emulate East Asia's economic achievements. However, a tailored approach based on each country's unique circumstances, strengths, and challenges is necessary. Factors such as robust

property rights, incentives for entrepreneurship, and openness to trade, with high growth rates primarily driven by the utilization of the workforce and private investments rather than direct state interventions, should also be considered as an alternative perspective.

## CONCLUSION

In conclusion, Taiwan's rapid economic growth in the latter part of the 20th century can be mainly credited to its focus on the semiconductor industry as a key driver of development. Through a combination of strategic industrial policies, political stability, skilled bureaucracy, long-term planning, infrastructure investments, public-private collaboration, and export promotion, Taiwan was able to build a globally competitive semiconductor manufacturing sector.

The developmental state approach of targeted government intervention, along with an export-oriented strategy exposed domestic firms to global competition and technological advancement. This contrasted with Krugman's view attributing East Asian growth primarily to labor and capital mobilization under market liberalization policies.

While Taiwan transitioned towards some neoliberal reforms later, its initial success came from this developmental state model that combined government intervention with market incentives to develop key industries. The specifics of Taiwan's approach may not be easily replicable for all developing countries given varying contexts. However, the core principles of technology acquisition, human capital development, and coherent export-focused policies offer valuable lessons.

As traditional manufacturing-driven development models face disruptions from automation and shifting trade patterns, developing economies can learn from East Asia while adapting strategies to current global conditions. A tailored approach balancing strategic state interventions with strong institutions, openness, and competitiveness in exports remains a viable framework for development in the 21st century.

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