

Changing Trade and Investment Relations
of the Taiwanese Economy

OBIC Book Series – Volume 1.

CHANGING TRADE AND
INVESTMENT RELATIONS
OF THE TAIWANESE ECONOMY

Editor:
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Foreword

The year 2022 seems to be an extraordinary year when the challenge of the emerging powers of the world became more prominent and visible. First of all, the BRICS countries strive to challenge the so-called unipolar world order led by the US with the view of changing it to a multi-polar system in which other powers would attain leading roles in global dimension. Just at the end of the recent wave of Covid, the military conflict broke out between Russia and Ukraine which was the first but perhaps not the last step. Tensions are aggravating not only in the former Soviet areas, but also, recently between Serbia and Kosovo, and the gloomy clouds above the Strait of Taiwan are gathering, too. In early August 2022, we can witness another serious conflict which pinpoints the extremely sensitive issue and situation of Taiwan. The high majority of the international community, including the United States and all members of the European Union, follow the One-China-Principle. Therefore, Taiwan is not recognized as an independent state, however, since the 1970s, it has developed an advanced economy and since the late 1980s, the society has gone through a democratization process. Taiwan has its own government which has a narrow space to balance. It has to avoid declaring independence as it would be a *casus belli* for the People's Republic of China (PRC) as it considers Taiwan its own territory, but also considers risky to further enhance business and economic relations with the PRC. Anyhow, Taiwan's economy is strongly tied to the PRC as roughly one third of its exports and imports are carried out with the PRC. During the recent years, it seemed China did not search for a military solution for the reunification, considering a peaceful and long-term merge catalyzed by business and cooperation in various fields would be more desirable and successful. Now, when the military tension looks increasing again at the Strait, we can just hope that cool minded considerations and common sense will remain dominant at both sides of the Strait.

So, Taiwan has a number of challenges in our days. Besides the external risks, Taiwanese society and economy also face a lot of additional challenges, like brain drain, stagnant wages, lack of internal investments and so on.

In the present book of studies—*Changing Trade and Investment Relations of the Taiwanese Economy*—the esteemed Reader can find eight studies being authored by professors and scholars from Hungary and Taiwan. The objective of the book is to broaden the readers' scope about Taiwan's economy including its relations with the most important partners and also to provide a perspective to the Taiwanese society including cultural aspects. Besides the first comprehensive study: "Taiwan's Social and Economic Challenges", Taiwan's economic relations with the US, the European Union, the cross-Strait relations, moreover the business relations with Japan, South Korea and the developing countries are in the focus. Another study focuses on Taiwan's participation in the World Trade Organization. Two other studies examine social aspects as well, giving a deeper insight into the internal retail commerce and also into the social and cultural aspects of Taiwan.

I believe this book will be not only interesting, but also useful, giving new ideas for professionals and scholars. I wish to express my gratitude for the financial and moral support received from the Taipei Representative Office in Budapest as well as the Budapest Business School, University of Applied Sciences (BBS) and also to our contributing authors including two Taiwanese colleagues, Prof. Tony Sowang Kuo (Shih Chien University) and Adolfo Yinshi Wu (Fu Jen Catholic University) whose valuable professional contributions enabled us to publish the present book of studies.

Budapest, November 2022

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Taiwan's Social and Economic Challenges

György Iván Neszmélyi

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1. Introduction

When we read or talk about Taiwan, we attribute a number of ideas and thoughts about a distant island from Europe which was one of the well-known East Asian economic miracles, the so-called Asian new industrialized economies (ANIEs), together with Hong Kong, Singapore, and the Republic of Korea (ROK). The rich bibliography describing and analyzing the background of the spectacular economic development of these economies also mentioned these famous fours as tigers, dragons and ANICs (Asian newly industrialized countries). No need to say, the latter is not punctual, as Hong Kong—contrary to Singapore and the ROK—is not a country, but since 1997, a special administrative region (SAR) of the People's Republic of China. Moreover, with the exception of a few countries, Taiwan is also not recognized as an independent state, but as a part of China. Members of the European Union and all other significant powers in the world consider Taiwan as an important entity in terms of its economic performance, and in fact, with its own currency and financial and corporate system, Taiwan has its own economy, but in the international political arena, Taiwan is not considered as an independent entity. It is radically different, than it was before the early 1970s, when Taiwan, the so-called Republic of China, represented China in the United Nations' Security Council. So, for several decades now, Taiwan has to act in international isolation in terms of political relations, but in terms of trade, business, sports, culture, education, and many other fields, it developed a wide range of cooperation with most countries of the world.

The relations between Taiwan and the “Mainland”, the People's Republic of China (PRC) have also undergone important changes. Even though Beijing considers Taiwan as a renegade province, the trade and investment relations between the two sides of the Taiwan Strait became intensive. The PRC needs semiconductors and other state of art technologies while Taiwan needs growing export market opportunities. Nowadays, PRC is far the biggest trade partner of Taiwan, by and large 30-40 percent of the Taiwanese export is purchased by the PRC.

The economic ties became really strong, therefore, contrary to militant rhetoric of politicians, PRC has no interest to get the control back over Taiwan by military force, unless the government in Taipei declares its independence.

2. About Taiwan in a Nutshell

The island of Taiwan (formerly called Formosa) is located off the south-eastern coast of the continental China, at the western edge of the Pacific Ocean, between Japan and the Philippines. The Central Mountain Range divides the east and west coasts and stretches from north to south. With Japan to the north, the People's Republic of China (PRC) to the west beyond the Strait of Taiwan, and the Philippines to the south, Taiwan has always been a location of strategic maritime importance since ancient times. It has played an important role in the development of Asia, as well as in world history, politics, and trade. As a result, Taiwan, which comprises several smaller archipelagos in the South China Sea, now enjoys a high level of openness and cultural diversity. Taiwan's geographical and historical uniqueness has given rise to a diversity of ethnic groups, cultures, and languages. There are 380,000 people who belong to twelve officially recognized indigenous tribes, each with their own social structure, language, and cultural traditions. Taiwan has a population of 23 million people who still observe their culture and still speak regional Chinese dialects in addition to Mandarin (MOE Taiwan, 2017). Taiwan's jurisdiction extends to the archipelagos of Penghu, Kinmen, and Matsu, as well as numerous other islets. The total area of Taiwan, including the outlying islands, is around 36,197 square kilometers which is similar in size to the Netherlands (Taiwan at a Glance 2020-2021, 2020) and slightly bigger than one third of Hungary.

Taiwan is relatively poor in mineral resources, but it has small deposits of coal, natural gas, limestone, marble, asbestos, and arable land. The majority of the island is covered by a mountain range, with more than 300 peaks over 3,000 meters above sea level. Its highest point is Yu Shan (3,952 m). Therefore, Taiwan has very limited possibilities for agriculture. According to the figures of the CIA Factbook (2021), based on estimation, the ratio of agricultural land is 22.7 percent only. The population of Taiwan was 23,572,052 (July 2021), while life expectancy at birth for the total population is 80.95 years (for males: 77.93 years, for females: 84.14 years in 2021) (CIA World Factbook, 2021).

After the 1960s, Taiwan went through a rapid economic and industrial reform, also experienced remarkable social development. The basis of this spectacular development was the export-oriented economic development policy combined with the implementation of the so-called developmental state model, which was a locally adopted way of the post-WWII economic development model of Japan.

The concept of the “developmental state” was first described and introduced by C. Johnson (1982) in the economic bibliography. He fundamentally applied this concept to Japan, but later it has been extended to other countries as well, in particular to the first wave of the newly industrialized Asian economies (ANIEs) (South Korea, Taiwan, Hong Kong, and Singapore).

According to Ricz (2016), Johnson’s 1982 model is still valid and in line with that the most important characteristics of the developmental state are described as follows: a “capitalist, plan-rational model, with a long-term commitment to the developmental-oriented approach, and active state interventionism in order to achieve the main socio-economic objectives. It is also tenable that for building or maintaining a developmental state some kind of social consensus is needed regarding the central role of the state in development, as well as on the content of the main socioeconomic objectives” (Ricz, 2016). The classic school of Johnson as well as Ricz (2016) and Csáki (2016) underlined that from the very beginning, the Japanese governance wanted to differentiate the approach it has applied both from the American model and the Soviet planned economy. The developmental state is almost the complete opposite of the so-called rentier state, the peculiar features of which have been analyzed by Gyene (2017), using the example of the post-Soviet countries of Central Asia. In these countries, the state/government control over the economy is also strong, but the source of the “rent” is primarily the selling of natural goods, raw materials, rather than work, representing an increasing share of added value.

The economic achievements of the 1970s and 1980s allowed Taiwan to rank among the Asian Tigers and in the 1990s, among developed countries. Since the 1980s, the economic structure of Taiwan gradually shifted from labor-intensive industries to high-tech industries, wherein the electronics industry was particularly vital to the world’s economy. Taiwan has excelled in the semiconductor, optoelectronics, information technology, communications, and electronics fields. At present, the economy is shifting toward nanotechnology, biotechnology, optoelectronics, and the tourism service industry. Moreover, international trade is the economic lifeline of Taiwan. Japan and the United States were Taiwan’s top two

trading partners until 2005, when mainland China took over as Taiwan's main import/export trading region, while Japan and the United States came in second and third. In recent years, the unfavorable financial situations of the US and European economies and the economic slowdown in mainland China had a joint impact on the economic performance of Taiwan (MEET-Taiwan, 2017).

Globalization reshaped the economies by increasing market competition all around the world, and also brought about a thorough transformation in the characteristics of competition in the market. As a result of deregulations and international agreements, governments, instead of directly interfering into the competition, rather apply indirect tools in order to improve the conditions of business environment. Another robust phenomenon is the massive increase in online sales over the last years and the intensive growth of e-commerce and development continues every year in most developed economies (Erdeiné Késmárki-Gally et al., 2015; Dobroselskyi et al., 2021). Taiwan has a dynamic capitalist economy with gradually decreasing government guidance on investment and foreign trade. Exports, led by electronics, machinery, and petrochemicals provided the primary impetus for its economic development. This heavy dependence on exports exposes the economy to fluctuations in world demand. Taiwan's diplomatic isolation, low birth rate, and the rapidly ageing population are other major long-term challenges. On the basis of estimated figures of CIA World Factbook (2021) and of the recent data (2022) of the Directorate General of Budget, Accounting and Statistics (DGBAS) of Taiwan, it is highlighted that Taiwan's PPP-based (purchasing power parity) GDP was 1,143.277 billion USD in 2019, GDP (official exchange rate) was 611.391 billion USD (2019), while the GDP growth rate was 3.36 percent (2020). The per capita GDP (real) was 28,383 USD (2020), while the ratio of gross national saving was 38.39 percent of GDP (2020). In 2018, the composition of GDP by sector of origin was as follows: agriculture (1.8 percent), industry (36.0 percent) and services (62.1 percent). The main industries are: electronics, communications and information technology products, petroleum refining, chemicals, textiles, iron and steel, machinery, cement, food processing, vehicles, consumer products, and pharmaceuticals. In March 2022, the labor force was estimated 11.8758 million, the division of which by sectors was as follows: agriculture (4.63 percent), industry (35.35 percent), and services (60.02 percent). The unemployment rate was 3.66 percent in 2022, 2.7 percent lower than in 2016, but slightly more than in 2018 (3.69 percent) (CIA 2017, 2021). In 2017, the Taiwanese public debt was 35.7 percent of the GDP (0.5 percent less than in 2016), while in 2017 the budget had 0.1 percent deficit. In 2019, the inflation rate (consumer prices) was 0.5 percent, a year before it was 1.3 percent. In 2019, the total exports of Taiwan amounted

to 388.49 billion USD (383.484 billion USD in 2018), while the total amount of imports was 308.744 billion USD (in 2017 it was 305.428 billion USD). In 2019, the main export commodities were: integrated circuits, office machinery/parts, computers, refined petroleum, liquid crystal displays, while in the same year the main items of imports were: integrated circuits, crude petroleum, photography equipment, natural gas, refined petroleum. In 2019, the main trading partners were as follows. Export markets: P.R. China 26 percent, United States 14 percent, Hong Kong 12 percent, Japan 7 percent, Singapore 7 percent, South Korea 5 percent, while in the same year the main import sources were P.R. China 21 percent, Japan 16 percent, United States 11 percent, South Korea 6 percent (CIA World Factbook, 2021). It can be clearly seen that the People's Republic of China is not only the biggest export market for Taiwanese goods, but also the biggest supplier of imports as well.

According to more recent sources, Taiwan exported goods in the value of 347.2 billion USD worldwide in 2020. It means 24.4 percent increase since 2016 and a 5.4 percent growth just from 2019 to 2020 (Workman, 2021). With other words, it can be said that Taiwan's economic performance was not significantly hit by the Covid-19 pandemic. In the year 2020, the main export figures and partners of Taiwan were as follows (Table 1):

Table 1: Taiwan's main export figures and partners in 2021

Country	USD, billion	Share in Taiwan's total exports (%)
PRC	103.1	29.7
United States	50.9	14.7
Hong Kong	49.3	14.2
Japan	23.5	6.8
Singapore	19.2	5.5
South Korea	15.2	4.4
Vietnam	10.6	3.0
Malaysia	9.5	2.7
Netherlands	6.1	1.8
Germany	6.1	1.7

Source: The author's own compilation based on Workman (2021).

It can also be underlined that in 2020, Taiwan achieved an outstanding trade surplus with many of its main trade partners, and the island gained an overall 59.8 billion USD surplus during 2020, which was 37 percent more than in 2019 (43.6 billion USD). Taiwanese surpluses with the United States (59.6 percent), Hong

Kong (22.3 percent) and the PRC (13.5 percent) increased in 2020 in comparison to the year before (Workman, 2021).

Besides outstanding export records, Taiwan has one of the biggest reserves of foreign exchange and gold in the world, the total amount of which was estimated 456.7 billion USD (on December 31, 2017), while the year before it was 439 billion USD. Taiwan's total amount of external debt was an estimated 189.684 billion USD (in 2019) while the year before it was 196.276 billion USD (CIA World Factbook, 2021). The main economic indicators of Taiwan are shown in Table 2.

Table 2: Taiwan's Main Economic Indicators between 2015 and 2019

	2015	2016	2017	2018	2019
Population (million)	23.5	23.5	23.6	23.6	23.6
GDP per capita (USD)	22,941	23,161	25,154	25,750	25,893
GDP (USD bn)	539	545	593	607	611
Economic Growth (GDP, annual variation in %)	1.5	2.2	3.3	2.8	2.7
Unemployment Rate	3.8	3.9	3.8	3.7	3.7
Inflation Rate (CPI, annual variation in %)	-0.3	1.4	0.6	1.4	0.6
Exports (USD billion)	284	279	315	334	329
Imports (USD billion)	236	229	257	285	286
International Reserves (USD)	426	434	452	462	478
External Debt (% of GDP)	29.5	31.6	30.7	31.5	30.2

Source: author's own compilation on the basis of data published by FocusEconomics (2021).

Taiwan has its own currency, the New Taiwan Dollar (TWD or frequently used as NT\$), the exchange rate of which is determined by market forces. However, when seasonal or irregular factors disrupt the market, the bank of issue (the Central Bank of the Republic of China /Taiwan/, CBC) may intervene to maintain an orderly foreign exchange market. Otherwise, CBC promotes financial liberalization and internationalization. The management of capital movements is market based. In general, capital can flow freely in and out of Taiwan (CBC, 2017).

The developmental state continues to impact Taiwan's post-war transformation and remains critical for its future economic, social, and political development (Schubert, 2016).

Analysts referred by FocusEconomics claimed that Taiwanese economy was rebounded strongly in the third quarter of 2020, contrasting the marginal contraction in the second quarter, marking the best result in two years. The turnaround was spearheaded by firmer export growth, chiefly thanks to soaring

demand for Taiwanese electronic goods from PRC and the US. In terms of the domestic market, consumer demand showed signs of recovery in Q3, contracting at a much milder pace than in Q2. Furthermore, government spending bounced back in the third quarter, solidifying the overall economic recovery in turn. The economic growth was seen to pick up steam in 2021, as the constraining effects of the pandemic were gradually wearing off. The increasing foreign demand for merchandise goods seems to support the external sector, while recovering consumer demand is set to boost domestic activity. However, uncertainty over the timing of a Covid-19 vaccine and geopolitical tensions with PRC shaded the outlook. Experts of FocusEconomics forecasted GDP growing by 3.4 percent in 2021 (FocusEconomics, 2021).

3. The Main Challenges of Taiwan

3.1. Combatting against Covid-19

Looking back on 2020, it started with an outbreak of the Covid-19 pandemic that quickly spread out and wreaked havoc on the global economy and world trade. Hampered by the resulting demand weakness both at home and abroad, Taiwan's economic growth slowed to 0.35 percent in the second quarter, the lowest since the second quarter of 2016. However, the pace picked up further and further in the latter half of the year amid economic reopening overseas and the introduction of consumption stimulus policies domestically. The annual growth rate of GDP reached 5.09 percent in the fourth quarter, the highest since the second quarter of 2011. For the year as a whole, the economy expanded by 3.11 percent, also higher than the past two years. Similarly, domestic inflation was affected by the pandemic as softer international demand for raw materials dragged down energy prices and hospitality services (such as travel and hotels) launched promotional price cuts. The annual growth rate of CPI dropped to -0.23 percent, the lowest since 2016, while that of the core consumer price index (CPI) (excluding fruit, vegetables, and energy) fell to 0.35 percent, a record low unseen for more than a decade (CBC Annual Report, 2020).

Among the GDP expenditure components, net foreign demand became the driving force behind the economic growth of 2020, with a significant contribution of 2.73 percentage points. This was mainly due to export growth supported by shipments of advanced semiconductor chips and rising demand for new tech applications and products associated with remote working. Regarding domestic demand,

private consumption came under strain because of border controls and international travel bans during the Covid-19 outbreak. On the other hand, fixed capital formation recorded solid growth, because semiconductor firms increased capital outlays for advanced production, the government's major investment incentives went through robust implementation, and public projects gathered steam. In all, domestic demand contributed 0.38 percentage points to GDP growth.

As the severe economic impacts from the coronavirus pandemic caused international raw material (including crude oil) prices to slump, Taiwan's wholesale price index dropped by 7.79 percent over the previous year. Of the components, domestic sales—excluding imports, imported goods, and exported goods—recorded year-on-year declines of 5.71 percent, 10.28 percent, and 7.21 percent, respectively. Consumer prices were also affected by the pandemic, mainly reflected in reductions of domestic fuel and gas prices amid an international oil plunge and promotional discounts of local tourism and accommodation services. Consequently, the consumer price index dropped by 0.23 percent for the whole year, the first decline since 2016. Nevertheless, the core CPI (excluding fruit, vegetables, and energy items) rose by 0.35 percent, albeit the most modest increase since 2010.

The unemployment rate went up at the start of 2020 amid the coronavirus pandemic and reached 4.07 percent in May, before dropping on account of a domestic economic pickup towards the end of the year and registering 3.68 percent in December. It averaged 3.85 percent for the year as a whole, the highest since 2017. The average labor force participation rate edged down by 0.03 percentage points to 59.14 percent, the first decline since 2010. The average number of employed persons merely increased by four thousand, or 0.03 percent, to 11.50 million. The services sector hired 30 thousand more persons, representing a 0.44 percent increase mainly accounted for by increases in the healthcare and social work sectors. On the other hand, employment of the industrial and agricultural sectors decreased by 16 thousand, or 0.39 percent, and by 11 thousand, or 2.03 percent, respectively.

In terms of wages, non-farm (industrial and services sectors) monthly earnings per employee averaged 54,320 NT\$ with a smaller year-on-year increase of 1.24 percent. Nevertheless, real monthly earnings (adjusted for inflation) rose by 1.47 percent to a historical height of 53,094 NT\$¹ (CBC Annual Report, 2020).

¹ 1 USD = approx. 27.9 TWD (NT\$) (Bloomberg, August 3, 2021).

A study published in 2020 focused on the fact that the recovery rate of Covid-19 patients in Taiwan was 83 percent, much higher than the global average of 34 percent, while the death rate of Covid-19 in Taiwan was about 0.3 per million population, against a global average of 36 per million population. The outstanding statistics may be explained by the hard lessons learned from the formerly experienced SARS pandemic in 2003. For this reason, Taiwan's response was swift and effective to Covid-19 in 2020, furthermore, Taiwan's exclusion from the World Health Organization (WHO) further increased the government's and individuals' mental preparedness for fighting a pandemic independently (Chiang, 2020).

3.2. Regional Alignment in the Asia-Pacific Region – Enhancing NSP or the Cross-Strait Relations?

Taiwan's economy has been experiencing a downturn since the breakout of the global economic crisis in 2008, although the Covid-19 pandemic hit Taiwan to a lesser extent than other economies in the world. The Taiwanese economy has been vulnerable due to its excessive overdependence to the exportation. Both investment and consumption in Taiwan are growing at a slow pace. There are three main factors contributing to Taiwan's economic growth: investment, export, and consumption. Regarding the investment sector, the Taiwanese government has faced the sovereign debt ceiling, which restricts its capacity for raising public debt. The private investment sector shows limited growth potential. Furthermore, there is little progress in negotiations for FTA (Free Trade Agreement) as well as ECFA (Cross-Straits Economic Cooperation Framework Agreement) follow-up agreements. Negotiations, however, have been started for a cross-strait trade in goods agreement under the ECFA framework (Wang, 2015).

The relationship between the two sides of the Taiwan Strait is complex and unique. In the 1990s, there was no official contact between the two sides, and the government's public power could not directly handle it. However, the transactional issues arising from cross-strait exchanges must be carried out by the government's designated private institutions through an intermediary role. In order to maintain the technical and business issues between Taiwan and mainland China, the Straits Exchange Foundation (SEF) was established by the Taiwanese government in March 1991. The SEF is the only government-established institution in accordance with Article 4 of the "Regulations on People's Relations between the Taiwan Area and the Mainland Area" (referred to as the "Regulations on Cross-Strait Relations"). The operating organization, with the Mainland China Council as the

competent authority, receives authorization from the government to contact and negotiate with Mainland China on matters involving the exercise of public power (SEF, 2021). The SEF is technically a private foundation, however, in fact, it is funded by the Taiwanese government and controlled by the Mainland Affairs Council of the Executive Yuan (the executive branch of the Taiwanese political leadership). Its role is in fact, a kind of de facto embassy to mainland China, to not officially acknowledge the latter's sovereignty over Taiwan.

It should be added that Taiwan nearly reached a stalemate in the cross-strait relations before the Covid-19 crisis, therefore this way was proven to be an unsuccessful option to break out of the diplomatic isolation. In the recent years, another 2-3 countries have left that "narrow club" of countries which still recognize Taiwan as an independent state, the tiny Eswatini (Swaziland) remained the only one in the African continent, and no significant economic and political powers can be found among the other countries neither (Holy See, Kiribati, Marshall Islands, Nauru, Palau, Solomon Islands, Tuvalu, Haiti, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Belize, Guatemala, Honduras, Nicaragua, Paraguay). Other attempts to get admitted into international organizations, like the World Health Organization (WHO) of the United Nations also failed. But, based on the robust exports, Taiwanese economy works well and from the point of view of the Southeast Asian countries Taiwan appears to be a success story: a developed and rich economy. Therefore, it is a promising partner for cooperation. For many ASEAN citizens Taiwan provides livelihood as they were allowed to arrive and stay as guest workers (several hundred thousand people from ASEAN, mainly from the Philippines, Indonesia, and Vietnam arrived so far). The Taiwanese environment is very welcoming as there is no discrimination against foreigners, especially against Moslems, no anti-migrant rallies etc. (Lőrincz, 2019a).

Under these circumstances, it was not surprising that Taiwan needed a firm diversification in its strategy for economic and foreign relations. The most logical choice was to diversify these relations by intensifying cooperation in the Asia-Pacific region which is in direct geographical proximity of Taiwan. In this context, Taiwanese President Tsai Ing-wen in her inaugural speech in 2016 emphasized the significance of the New Southbound Policy to improve Taiwan's stance and versatility in the international economy, pointing out that by this Taiwan should give up being reliant on a single market (PRC) and re-establish and intensify ties with other Asian economies. Taiwan's trade ties with ASEAN countries have gained rapid traction in recent years.

Taiwan still faces the dilemma to identify its relation and behavior within the cross-strait relations, not only due to the well-known political considerations and diplomatic isolation, but also, it is widely visible that Taiwanese investors and the Taiwanese government fears the possible implications of a trade war between the US and the People's Republic of China (PRC, hereinafter: Mainland China). Besides other reasons, this is the main motivation of the sudden outflow of the Taiwanese FDI from Mainland China. This huge amount of capital, however, merely does not return to Taiwan to create new jobs and develop new, high value-added containing industries, but rather goes to Southeast Asia where it still focuses on the low-cost labor-intensive manufacturing sector. Besides other, non-industrial fields, the present Democratic Progressive Party (DPP)-based Tsai-administration fosters its New Southbound Policy (NSP), which is partially implemented under the umbrella of a special NGO, the Taiwan-Asia Exchange Foundation (TAEF). The 18 target countries of NSP comprise the full ASEAN, plus South Asia, Australia, and New Zealand. However, from among the target countries, Taiwan has the most intensive investment and trade relations with the ASEAN region (mostly with Vietnam, the Philippines, Thailand, Malaysia, and Indonesia) (Neszmélyi, 2020). As the elections in January 2019 reinforced DPP and the Tsai-government in power, it could be expected that Taiwan would not revert the focus from NSP to the improvement of the cross-strait relations. The political stance of Beijing, including an implicit threat of a military-solution for the re-unification definitely does not help the cross-strait business relations. In a recent research, Chen and Shih (2021) clarified that from the PRC's point of view the share of the bilateral trade between the PRC and Taiwan has been falling steadily, because of China's rapid economic growth, the steady expansion of the size of the Chinese market and the ongoing rise in China's overall exports. Nonetheless, the modest results of Taiwan's NSP had to reflect to reality: the PRC has still been, and most likely will remain far the biggest export market of Taiwan.

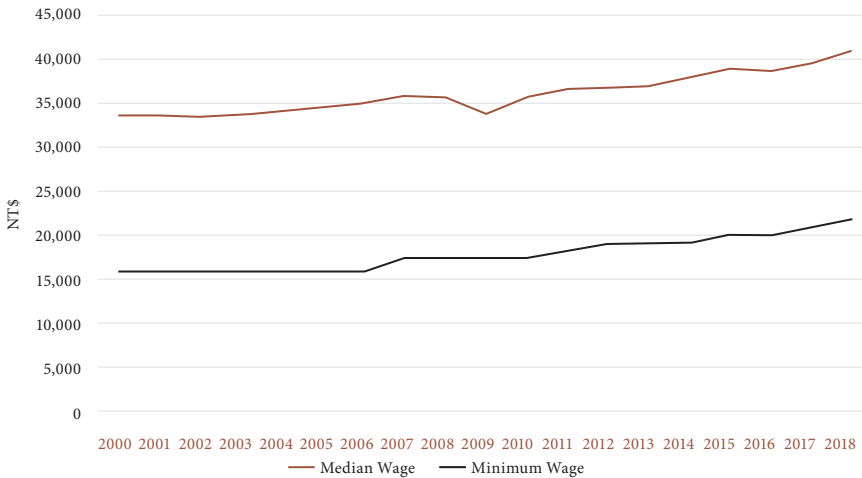
3.3. Dilemmas and Problems in the Taiwanese Society and Economy: Stagnant Salaries, Brain Drain, and Lack of New Jobs

Taiwan has a modern and developed economy with gradually shrinking government control on investment and foreign trade. Exports, led by electronics, machinery, and petrochemicals, provided the primary impetus on its economic development. This means strong dependence on exports that exposes the economy to fluctuations in world demand. Taiwan's diplomatic isolation, the low birth

rate, and the rapidly ageing population, stagnant salaries, brain drain, and the scarcity of new jobs are other major long-term challenges.

The real salary level has been stagnating for almost 20 years in Taiwan because of the imbalance of income distribution, not due to the lack of economic growth. Salary stagnation serves as an obstacle hindering Taiwan’s economic recovery. Although the speed of inflation in Taiwan is relatively low, the increase in salary is even lower (See Figure 1).

Figure 1: Taiwan’s Minimum vs Median wage between 2000 and 2018



Source: Ngerng (2020).

Comparing Taiwan with other economies with similar GDP per capita on the hourly compensation costs in manufacturing from 1996 to 2016 showed the same trend: Taiwan’s wages have barely grown, while South Korea (which until 1998 had similar wages as Taiwan) has seen its wages grow to more than twice as high as Taiwan. Even Argentina, which has less than 40 percent of Taiwan’s GDP per capita, has wages that have grown nearly twice as high. Countries in Central and Eastern Europe (CEE) like Estonia, Slovakia, and the Czech Republic, all of which used to have wages from a third to a half of that of Taiwan, have seen their wages grow to become higher than Taiwan’s, while Hungary and Poland were also catching up to Taiwan by 2016 (Ngerng, 2020).

Under such circumstances, Taiwan has been struggling to keep talent at home, but further reinforcing the diabolic circle of the low salaries (Wang, 2015). The young generation in Taiwan faces elementary problems establishing families because of the increasing gap between the growing real estate prices and the stagnating salaries, moreover, in the course of the last two decades, even cuts in salaries occurred (Cheng, 2017). Another scholar pointed out that 60 percent of college graduates in Taiwan are engineers, many of whom establish ventures and most of them become successful in the course of a couple of years (Chou, 2017). It was also revealed that the young generation (20-24 years old people) nowadays faces even bigger difficulties at the labor market than before. He reminded that Taiwan's labor market had gone through a major change over the past decade. In fact, unemployment among people aged 35 or above had declined since 2003, but joblessness of the 20-24 age group hit a new peak in 2013. He suggested that Taiwan should learn from the US and other OECD countries which use the so-called Active Labour Market Policy (ALMP) to structurally connect the youth to the labor market and also urged for more innovative strategies that systematically could bring back this underrepresented generation, whose members possess high educational attainment (Hsu, 2015). In addition, a note must be made about the fact that the role and activity of the labor unions are modest and weak, contrary to other economies, like South Korea, where they are strong and powerful (Neszmélyi, 2017), hence they are in strong bargaining position in terms of salaries and labor rights, while in Taiwan they are not in such a powerful position.

Taiwan's case reflects the fact that the low salary level cannot be a helpful competitive advantage for too long time. It definitely helped the economic growth during the take-off period, but after a time, it will be a constraint to catching up. There must be other driving factors, like innovation, Research and Development (R&D)-intensive industries to create more value added. Otherwise, there will always be competitive economies which invest more into their own, domestic R&D and innovation, thus in the longer run, such countries will be able to pay higher salaries. The author thinks Taiwan should follow this way. There will always be another place in the world—like PRC—where the salary level will be lower, but to deploy manufacturing industries to a bigger extent to such places, it may be too risky. There was a reason why, for example, Donald Trump, former president of the United States campaigned and strived for returning the manufacturing capacities of American companies (Bradner, 2017), which went long ago abroad to benefit from lower wages and more beneficial taxation.

Salary stagnation has been a very timely issue in Taiwan for the recent decade as well. In this respect, the weak position and activity of labor unions have to be underlined as well. This is also one reason why the salary level could not catch up, even though Taiwanese economic performance would enable significantly higher salaries by now. This would be of key importance to slow down or even turn back the brain drain, as it was mentioned, many young Taiwanese people who study abroad, rather remain there for better job opportunities and livelihood. In some specific professions (like semiconductor industry), brain drain strongly exists and may even accelerate if the government does not make sufficient efforts in this field. Till Taiwanese companies prefer keeping their manufacturing units in mainland China, the Taiwanese wages will not grow. If this stagnation continues, it will have an adverse impact to the economy and will be a hard constraint for future development.

3.4. The Issues of Sustainability in Reflection of the Taiwanese Economic Endeavors

The environmental load of the economies and climate change have increasingly necessitated green investments, financed by the so-called green bonds, invented by financial markets. The green goals to be achieved by issuing green bonds as market instruments, and the structuring of funding in terms of risks and cash-flows, through specific cases in progress (Sági, 2020).

Taiwan launched a Sustainable Bond Market (SBM) in May 2021, listing its first three tranches of social bonds, as part of its efforts to promote corporate sustainability. According to officials of Taipei Exchange (TPEX), social bonds are debt instruments that raise money for social projects such as gender equality initiatives, while sustainability bonds are a combination of green bonds and social bonds and are used to finance projects that bring environmental and socio-economic benefits. “Sustainable development has become a universal value that is a remedy to lead human beings to a better future” as it was underlined in a statement of TPEX, adding also that “this dedicated market is designed to provide detailed information to promote sustainability, to develop sustainable finance and to enhance the international visibility of Taiwan.” The first green bonds on the TPEX were listed in May 2017, and the first sustainability bonds in November 2020. In May 2021, the first three tranches of social bonds on the SBM were issued by CTBC Bank, SinoPac Bank and KGI Bank. CTBC Bank sold 1 billion NT\$ (35.71 million USD) in social bonds, which will be used to facilitate projects

related to socioeconomic advancement and empowerment. SinoPac Bank and KGI Bank issued 1 billion NT\$ and 700 million NT\$ worth of social bonds, respectively, and said that they will use the proceeds to increase job opportunities, fund affordable housing, and help mitigate the severe socioeconomic impact of the Covid-19 pandemic (Han – Huang, 2021).

Taipei Exchange specified the categories of Eligible Green Projects, in accordance with the TPEX Operational Directions for Green Bond, categories of potential eligible Green Projects are disclosed and specified (see below). These projects must bring about substantial improvement and benefit to the environment. The eligible green projects are as follows:

- Development of renewable energy and energy technology.
- Improvement of energy efficiency and energy conservation.
- Greenhouse gas reduction.
- Waste recycling or reuse.
- Agricultural and forestry resource conservation.
- Biodiversity conservation.
- Pollution prevention and control.
- Water resource conservation, purification, or reclamation, recycling, and reuse.
- Other climate change adaptation or matters approved by the TPEX.

It was also added that the green investment plan shall not be a fossil fuel power generation project, but it is not limited to those that meet the technical selection criteria set by the green bond standards adopted in customary practice in international financial markets (TPEX, 2021).

4. Taiwan with Hungarian Eyes

4.1. The Antecedents: the History of the Bilateral Economic Relations

The basis of the Hungarian-Taiwanese relations—from the political point of view—is that Hungary follows the One-China Principle, which means that it does not maintain diplomatic relations and official inter-governmental cooperation with Taiwan. However, beyond this frame, Hungary is interested in the development of relations in the fields of economy, culture, education, science and technology, and human relations.

The relations date back slightly more than a quarter of century now. As a starting point, the year 1990 can be considered, when the Hungarian Chamber of Economy (MGK)—with the consent of the Hungarian government—and its Taiwanese partner agreed to open a trade representation in Budapest (called Taipei Trade Office) functioning on the basis of the private international law. The intention and the objective were the improvement of the economic relations, tourism, and other fields. This office was the very first Taiwanese mission in Central and Eastern Europe. In 1995, it changed its name to Taipei Representative Office. For the same reasons and motivations and under similar conditions, the Hungarian Trade Office was opened in Taiwan on July 23, 1998 (Hungarian Trade Office, 2017).

The economic relationship, including the turnover in trade between Taiwan and Hungary, is relatively modest. The bilateral trade in 2015 was 1.6 percent of the total EU-Taiwan turnover (EU-Taiwan Factfile, 2016). According to the data of the Hungarian Central Statistical Office, (HCSO) in the year 2016, the value of Hungarian exports to Taiwan was 174.3 million USD (156.9 million EUR), however, it was an increase of 6 percent compared to the preceding year.

4.2. The Economic Relations between Taiwan and Hungary in Recent Years

In 2018, Taiwan was the sixth biggest export market for Hungary in Asia. According to the Hungarian Statistical Office (HCSO), the sum of the total Hungarian exports sent to Taiwan in 2018 was 176.6 million USD. This amount is similar in range to the exports of 2016 but less than the exports were in 2017 by 19 percent. On the other hand, according to the Taiwanese statistical office, it was 292 million USD which would mean a 5 percent growth compared to 2017. The vast majority of the Hungarian exports were machinery (36 percent), motor vehicles (32 percent) and food products (13 percent). The Taiwanese import ban imposed because of the African swine fever epidemic that appeared in Hungary in 2018 harmfully affected (-12.8 million USD) the Hungarian food exports to Taiwan which, in March 2018, still had a positive impetus due to the extension of the list of approved meet factories. The value of Hungarian poultry exports to Taiwan was 0.5 million USD, on which the negative impacts of the bird flu epidemic (2017) can also be seen (in 2016 the poultry meat exports were 2.5 million USD). However, the feather exports could further grow to 13.3 million USD. From animal products, after Japan and Mainland China, Taiwan is the third biggest export market for Hungary. The exports of plant-based food products (mainly

frozen vegetables) shrank by 30 percent since 2016. However, the exports of machines grew (+29 percent), while of motor vehicles decreased (-46 percent), the amounts in USD were 63.3 million and 56.8 million, respectively. In motor vehicle exports, Taiwan is still the fourth biggest export market for Hungary in Asia (after Mainland China, Japan and the Republic of Korea). The mentioned product categories (food products, machines, and motor vehicles) provided 81 percent of Hungarian exports to Taiwan. According to the HCSO data, Hungary's imports from Taiwan amounted 557.5 million USD in 2018, which was 19 percent less than in 2017. The total turnover was 734.1 million USD, the balance for Hungary was -380.9 million USD, both are the lowest values for many years (See Table 3) (Lőrincz, 2019b).

Regarding the structure of the Hungarian exports to Taiwan, it can be said that many years ago more than two thirds of the exports derived from the supplies of machines and motor vehicles, however, their proportion reversed. Since 2014, the ratio of the animal products has been increasing continuously and this trend still continues in spite of the import limitations in 2017-18. Moreover, during the recent years, from the category of "other goods", several groups of products became significant with gradually increasing proportion within the exports, like chemical products, medical and other precision instruments (Lőrincz, 2019b).

Table 3: Figures of the Hungarian-Taiwanese trade turnover (million USD)

	2012	2013	2014	2015	2016	2017	2018
Hungarian exports to Taiwan	91.9	138.6	147.6	164.7	174.3	217.4	176.6
Hungarian imports from Taiwan	1,176.5	990.0	800.9	660.7	642.6	688.3	557.5
Total turnover	1,268.5	1,128.6	948.5	825.4	816.9	905.7	734.1
Balance	-1,084.6	-851.4	-653.3	-495.9	-468.3	-470.9	-380.9

Source: Lőrincz (2019b), on the basis of HCSO data.

The data of the Taiwanese statistical office (DGBAS) usually show 30-40 percent higher values in Taiwanese imports (Hungarian exports), however, in case of the figures for 2018, the difference was over 60 percent. According to this, in 2018, the Taiwanese imports from Hungary were 292 million USD (176.6 million USD according to the HCSO). Analyzing the Central European region (See Table 4), it can also be seen that the Visegrád Group's exports to Taiwan grew by 18 percent (the exports of the total EU28 grew by 7 percent). In 2018, Hungary's share in the total Visegrád Group's exports to Taiwan was 27 percent (Lőrincz, 2019b).

Table 4: Trade turnover of Hungary and several other Central-Eastern European countries to Taiwan according to the Taiwanese statistical data (million USD)

Country	2012	2013	2014	2015	2016	2017	2018
Czechia	199.7	193.8	217.2	239.9	239.8	286.6	338.8
Hungary	115.8	159.8	202.8	236.3	245.6	277.1	292.0
Poland	205.2	216.2	252.1	203.1	214.8	276.6	250.0
Slovakia	57.9	52.6	60.9	58.0	61.0	61.5	179.6
Visegrad 4	623.6	622.5	733.1	737.3	761.2	901.8	1060.5
Austria	461.8	474.3	516.8	497.9	499.5	522.4	658.1
Romania	58.0	67.0	83.6	96.0	91.345	106.5	115.3

Source: Lőrincz (2019b), on the basis of DGBAS data.

Hungary remained the fourteenth exporter to Taiwan within the European Union², thus keeping the same position as in 2016 and 2017. Regarding the year 2018, there is an extremely huge gap between the Hungarian and the Taiwanese statistical databases: according to HCSO, Hungary's exports to Taiwan fell by 25 percent, while Taiwanese data show a 5 percent growth compared to 2017. It might make analysts confused as neither for the author nor for the source (Lőrincz, 2019a) it was clear what makes the differences between HCSO and DGBAS methodology. Anyhow, Taiwan and Hungary strive to mutually show gestures towards each other to broaden the chances of mutually beneficial trade activity. From January 2018, Hungary was authorized to export poultry meat to Taiwan again, and in March 2018, 11 further poultry and pork processing companies were registered to the list of approved companies by the Taiwanese quarantine authorities. These recently approved companies could potentially contribute to the Taiwanese food supply (and to the Hungarian food exports) in a value of 15-25 million USD. However, this favorable period was short as in April 2018, Hungary was put on the list of banned countries because of the swine fever, however, till then—in the first quarter of the year—Hungarian pork exports exceeded the amount of the six-month exports of the preceding two years. However, the potential of the market enlargement is still given as the main Hungarian suppliers of the meet exports to Taiwan (e.g., Pick, Pápa Meat) are located in non-infected areas and concluding negotiations on regionalization could bring a solution to this issue and the Taiwanese partner seems to be open for that (Neszmélyi, 2020 on the basis of Lőrincz, 2019b).

² After Germany, the Netherlands, France, Italy, Great Britain, Ireland, Estonia, Sweden, Austria, Belgium, Finland, Denmark and the Czech Republic.

According to the above-mentioned economic and business relationship, it can be underlined that both from Taiwanese and Hungarian point of view, the bilateral trade turnover is modest. By intensifying marketing promotion of a range of products, like high-quality foodstuffs, niches can be found in the Taiwanese market that could be beneficial for Hungarian exporters. However, it cannot be expected to be a spectacular success story. Rather, the bilateral cooperation should be extended and increasingly focused on those fields that can create wider and stronger fundamentals for the future between Taiwan and Hungary, like the cooperation in the field of higher education and research and development. It is worth mentioning that many Hungarian universities—including Budapest Business School University of Applied Sciences —have a mutually beneficial working relationship with Taiwanese universities.

4.3. Taiwan, as an Example for Facing the Middle-Income Trap

At the turn of the 1990s, when the political and economic system changed in the former socialist countries including Hungary, the main goals were to establish a market-oriented economy on the basis of merely privately owned corporate sector and—in parallel—to rapidly decompose the existing, state-owned and guided business entities. Even though in the Central and Eastern European (CEE) region the main obstacle of the development was the lack of domestic capital —therefore the need to involve FDI was urging—there were differences in the implementation of the privatization process, for example in terms of the involvement of the domestic stakeholders, like employees of the companies, or even the former owners or their descendants. As a heritage of the socialist system, heavy indebtedness, lack of working capital, inflexible and outdated economic structure were prevalent.

No need to say that the situation was considerably different from the one Taiwan (and other East Asian economies) faced after WWII, but the challenge was somewhat similar. Taiwan had also gone through a similar period around the 1970s and 1980s, when the socio-economic endowments enabled merely labor-intensive manufacturing with low level of added value. This period, even though it gave an impetus for a successful take-off for the Taiwanese economy, could not be kept for long, as low value-added containing goods cannot generate high returns and incomes. Rather, as it could be seen in case of several CEE countries, it may conserve the wage levels and the economic structure. Job manufacturing, assembly plants, attracting investors by low taxes and labor costs may mislead the way of

economic development. In principle, venture capital is not for charity but seeking for advantages, first of all, low wages and tax benefits while other purposes or points of view, like domestic market and purchasing power, developing knowledge-based, higher added-value containing industries were of secondary importance. This is the reason why even Taiwanese investors prefer going to PRC or Southeast Asia rather than investing at home. However, in the longer run, there is a paradox that investors prefer keeping wage levels low in order to save their production costs and maintain their competitiveness by that, they would be glad if the purchasing power increased which enabled them higher sales.

Taiwan—similarly to Japan and South Korea—has successfully shifted from sector to sector reaching the knowledge-intensive, higher added value containing industries (like semiconductors and many other IT products and parts) that is why Taiwan—in terms of its per capita GDP—belong to the wealthiest economies of the world. Should the wage level remain stagnant in the recent two decades as it was mentioned, but still significantly higher than in Hungary and in most of the CEE economies.

5. Conclusion

Taiwan has successfully gone through not only the take-off period of its specific developmental state-model, but also those challenges that are characterized by the newly industrialized Asian economies since the Millennium, that can be explained by the so-called middle-income trap. The robust performance of its economy, including electronic goods, parts, and semiconductors, underline the economic importance of the island. However, Taiwan faces serious social and economic difficulties at the same time. The phenomena of stagnant wage level and the brain drain process are most likely coupled, while the strongly limited sphere of action in the international environment gradually brings Taiwan closer to the PRC even if politicians of the incumbent governing party warn about its risks and try to foster other directions of external alignment of Taiwan, like in the framework of the New Southbound Policy. After all, the latter has not brought about noticeable success except for the cases of a few ASEAN countries (all of which have even much higher amounts of business and investment relations with PRC). Therefore, in the foreseeable future, Taiwan's major business partner will be the PRC (including Hong Kong), while Japan and the United States may still remain important partners but to a lesser extent compared to PRC. Other regions of the world, like the European Union or the rest of the developing world (like Africa,

Latin America etc.) will remain at the periphery in terms of Taiwan's business and investment partnership. The latter applies to Hungary as well, even though there are several fields that look promising in the field of bilateral trade. With more intensive marketing, Hungarian export may still be significantly increased to Taiwan, however, the dimension of the bilateral turnover is very little both for Taiwan and for Hungary as well. The best way is, therefore, to try to find market niches, inviting more Taiwanese investors to Hungary and focusing on other fields of cooperation that successfully work, like the academic field. Besides concrete cooperation in the field of business and investment, it is also worthwhile to learn from the experiences of Taiwan and how it could overcome the middle-income trap which is still an urging issue for Hungary.

6. Summary

Taiwan has a modern and developed economy with gradually shrinking government control over investment and foreign trade. Exports, led by electronics, machinery and petrochemicals provide the primary impetus to its economic development. This entails strong dependence on exports, which exposes the economy to fluctuations in world demand. Taiwan's diplomatic isolation, low birth rate and rapidly ageing population, as well as stagnant salaries, and brain drain are other major long-term challenges.

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Taiwan-V4: New Approach to Sustainable Economy and Deepening Taiwan-EU Relations

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1. Introduction

The Covid-19 pandemic became a global issue that radically changed all types of life and forced people to adopt digitalization in society. The European Union (EU) has also acknowledged the transformation of the economy that has affected all perspectives of working, learning, socializing and shopping. With the Covid-19 pandemic raging around the world, people work and attend classes at home and the demand for various electronic communication products is increasing day by day.

In 2020, the Covid epidemic hit the world hard, but Taiwan's economy grew against the trend because the government strictly managed and regulated public health at the airport. Furthermore, Taiwan had already invested in the semiconductor industry and had constructed the science park for digitalized industry in 1990, which helped the government to avoid suffering many of the impacts of Covid. All the domestic experts described the semiconductor industry as the core element of Taiwan's economy.

The V4 and other nations of the EU have experienced an unexpected demand for chips for Internet Communication Technology and smart automobiles, these have become a scarce and popular commodity and this phenomenon of "car chip shortage" and trends in the ecosystem of digitalization have affected various manufacturing industries and citizens since 2021.

The research proposes two explanations and has investigated significant phenomena in the V4 and analyzed their economic sustainability program, Horizon Europe. In addition, the author will analyze the results of V4 economy in global market that has strengthened V4's status in free market economy and they also participated in the European political and economic system after EU accession (OECD, 2001). The content of the paper investigates the V4's H2020 (Horizon 2020) and sustainable projects that have developed long-term vision, not only for

Taiwan-V4, but also for Taiwan-EU relations. In fact, the research analyzes the connections of Taiwan-V4 in industrial, scientific, and digital innovation that address international competitiveness, stable growth of free trade, sustainability and concludes with the positive impact of Taiwanese industrial policies to deepen Taiwan-EU bilateral relations with the V4 as significant mechanism in the contemporary era.

In the 1990s, Eastern European countries successfully carried out political and economic reforms and markets opened and began to attract many foreign multinational companies to invest. In addition, Western European countries gradually increased labor and production costs to cover costs. After 2000, with relatively low capital and manpower production costs, the countries of Eastern Europe joined the European Union, and Western European countries gradually shifted their commercial investment to Eastern European countries. The trend of the eastward shift of industrial production bases is especially obvious, and most of them are concentrated in Hungary, Poland, the Czech Republic, and Slovakia; countries with good infrastructure and stable markets. This type of opportunity in Europe was transferred from Western Europe to Eastern Europe. The main reason is that after these countries joined the European Union, various domestic policies and regulations had to be in line with the relevant European Union regulations. The policies became more transparent and convenient, coupled with the effects of globalization. Repeatedly providing motivation for Taiwan's small and medium-sized enterprises to deploy in the Visegrád region and other nations of the European Union.

In the report of *Trade for all*, the EU promoted more responsible, more effective and more transparent trade policies that will launch new approaches and a Bilateral Investment Agreement (BIA) with Taiwan (EU, 2015). The negotiation of the EU-Taiwan BIA is a key platform which provided opportunities for international business and market penetration of all Asian countries. Taiwan is a like-minded democracy and economic partner in Asia, and Taiwan and the European Union have similar interests and benefits in politics and business in an EU-Taiwan bilateral relationship.

In the extended study of the Taiwan-V4 approach, Taiwan's export to Central and Eastern Europe is 31.7 percent and the demand in the market currently includes electronic components and telecommunication products (Taiwan Today, 2022). EU-Taiwan relations require maintaining and growing the stable and multilateral exchanges of the two sides and the close political and economic relationships.

The European Union considers Taiwan as a valuable trade partner to launch economic discussions of the Bilateral Investment Agreement, because Taiwan is the EU's fourth largest trading partner in Asia, and the EU is Taiwan's fourth largest foreign market. Furthermore, Taiwan participated in trade blocs and joined cross-regional agreements that strengthened the political influences and trade liberation to merge into the world trade system at the beginning of the 21st century. The bilateral collaboration between the 27 members of the EU and Taiwan is not only for business, but also for technical industries with green values, information society research and innovation, education and culture, fisheries, and environmental protection to cultivate the circumstance of the bilateral investment agreement and a Taiwan-EU like-minded partnership.

2. EU Regionalism: Past and Future

To date, the European Union is the region that has launched political and economic regional integration. There are significant points that regional agreements are the major forces to deepen the internal and external level of regional integration. In the research of political science, Baylis, Smith and Owens consider regional cooperation that "regional agreements cover different mixtures of economic, social, political, and security concerns. Moreover, there are different forms of interaction between regionalization and the various ways in which states may promote regional cohesion, [...] state-led actions have been responsible for an increase in the development of ties has been more one of 'market-led integration'." (Baylis – Smith – Owen, 2020, p. 366). The EU considers itself a global player promoting economic interests with foreign markets and Taiwan is a major nation for cooperation with EU industries and sustainable economies.

In the context of Hettne and Söderbaum's research, regionalism is to be viewed as a concept of regional integration and adopted by theories of neoliberal economics, establishing contents and discussion around the political, economic and governance of regionness, known as new regionalism in a multipolar world. Their findings and results with origins and development in the process of economic integration have addressed non-governmental units and issues in globalization. These authors' methodologies are of limited value on regionness and consequently, we propose an alternative approach based on new economic cooperation and market-orientation of cross-region to link social, political and institutional aspects of region-building in a post-hegemonic era (Riggiozzi, 2010; Hettne – Söderbaum, 2005, p. 462).

This is a new perspective of cross-regionalism, dating back to the first decade of the 21st century, which has alternatively been called upon by various scholars and investigators with different outcomes and conclusions (Pereira, 2014):

1. Political views: Cross-Regionalism (Crawford – Florentino, 2005), Transoceanic Agreements (Péridy, 2004);
2. Economic views: Preferential Trade Agreements (Bhagwati – Panagariya, 1999), Polilateralism (De Sebastian, 1995);
3. Geopolitical views: Competitive Regionalism (Abugattas Majluf, 2004) and, last, but not least, Additive Regionalism (Harrison et al., 2002);
4. Trans-Geopolitical Views: Cross-Regionalism (Alfred Tovias, 2008), East-Asian Cross-Regionalism (Solís – Katada, 2007).

Considered with the facts of this new trend in cross-regionalism, the active and positive participation of nations in various free trade agreements (FTAs) by bridging economic integration, even if in different regions, these free trade agreements have very different trade standards and regulations, and include different countries in the world. There are many FTAs linking leading EU countries and the US with trade blocs in Asia and Latin America, thus increasing free trade and making cross-integration viable in different geographic regions (Pizarro, 1999).

In fact, the EU has become an important actor and a significant hub for a large variety of interregional arrangements with neighboring regions, and supports political cooperation, cultural interactions, and security cooperation around the world (Barbé, 2008). This research analyzes the EU's role in the world and as a global actor, which is acknowledged with an economic focus on interregionalism and promoted political values and governance with interaction with related nations in different continents by implementing the EU's external relations and foreign policies (Söderbaum – Langenhove, 2006).

In Krugman's study, he identified free trade agreements that promoted incentives for economic integration in the global market (Krugman, 1990). According to this research, the EU is a good trade partner with its members, market-driven cooperation, advanced democratic ethics, free trade, and development-driven focus among regional integrations. (Smith, 2008) The EU has already established free trade agreements with Japan and Korea in Asia and launched different rounds of negotiations with Mercosur in South America (The World Bank, 2010).

During the process of regional integration, nations and governments constantly manage the interdependences between free trade and the demands of the local market in the dynamics of globalization.

Based on neighborhood policy and enlargement policy, the V4 are able to seek a common interest, which is subsequently presented as a common position representing the V4 interest at the EU level. After EU accession in 2004, the V4, sub-regional and institutional unit, presented itself as the representative of regional interests and focused on the field of European foreign policy. The V4, EU sub-actor, has an economic hub to push its own agenda in a changing Europe and has created results in the fields of cooperation such as culture, science, and regional development to link to the EU international collaboration and its status as a global actor (Van Langenhove–Bauerová, 2016; 2018).

European countries, such as Germany and France, mainly rely on Chinese trade and economic cooperation, however, Central European countries, especially the V4, have relatively few free trade cooperations with China and believe that close ties to the United States are essential for national security. Many officials and experts have said that the failure of China's major investments has disappointed many governments and believe that finding another partner or nation would not cause too much loss. According to the article of Wall Street Journal, the governments of many countries in Central and Eastern Europe were disappointed with Chinese investment and the small volume of exports (Kantchev – Woo, 2021). In addition, Ivana Karásková, head of China Observers in Central and Eastern Europe (CHOICE), pointed out that “Central and Eastern European countries have relatively low dependence on China's trade, and they have a stake in the smoothing of Sino-European relations” (Karásková, 2022). Central and Eastern European countries do not need to look at China as much as Western European countries. In Slovakia, Chinese investment in 2019 was 269 million USD, accounting for only 1 percent of the country's total foreign direct investment. In the neighboring Czech Republic, the Ministry of Commerce of China estimated that the investment in the same year was 287 million USD (Kantchev – Woo, 2021).

The V4 has deepened their relations with Taiwan and strived for new cooperation in economic, scientific, and industrial planification in order to transform the market economy with Taiwan's industrial policies. After the EU's financial crisis in 2009, the focus of Taiwanese investment in Europe has gradually shifted to new member states such as Hungary, Poland, the Czech Republic, and Slovakia. The V4's market economy approach has common interests for manufacturing

industries and direct investments are mainly involved in the information communication and technology (ICT) industry, customer service electronics, and consumer electronics products.

3. Taiwan: Visegrád Matters?

After the EU expansion, Taiwanese public and private units' investment has gradually shifted to new member states such as Hungary, Poland, the Czech Republic and Slovakia, which are key countries in Central Europe, that have a high performance economic growth, a low rate of employment, and a well-constructed manufacturing sector. The Central European Free Trade Agreement (CEFTA) was founded by the members of the Visegrád countries. In Table 1, there are significant facts that indicate that the V4 is a new economic heart of the EU and the world, and that they had stable economic growth: Hungary 4.5 percent, Poland 4.5 percent, the Czech Republic 2.7 percent and Slovakia 2.4 percent before the pandemic.

Table 1: GDP Growth Rate: Hungary, Poland, Czech Republic and Slovakia

	2019	2018	2017
Hungary	4.58%	5.44%	4.45%
Poland	4.55%	5.36%	4.83%
Czech Republic	2.27%	3.18%	5.35%
Slovakia	2.4%	3.9%	3.04%

Source: CIA, 2020.

After the transition process in the first decade of the 21st century, the Visegrád countries planned to start their market economies, with different timing, all of the V4 opened up their economies to attract foreign nations. According to a study on Central Europe, the V4 were in the early stages of rearranging their external trade relations, and it was likely that this process would result in a temporary or even a longer-term decline in intra-regional trade (OECD, 2022). After the EU accession of the Visegrád countries in 2004, one of the most remarkable developments was the sudden upturn of mutual trade. In 2007, the value of aggregate intra-Visegrád trade was two and a half times higher than in 2003 (Richter, 2012). The V4 is a significant platform that has actively extended economic and technological cooperation with the EU and positioned themselves to attract foreign direct investment from other nations.

In the overviews of free trade in the V4, Poland is the world's major fishing boat manufacturer and exporter and its exports are well developed. Take fishing boats with a length of 24 meters or more exported by Poland as an example. The exports accounted for 20 percent of the world, but the price is only one-third of Taiwan's average export unit price. The Czech Republic also has an excellent foundation in transportation and basic industries. Take aircraft weighing less than 2 tons as an example, the global export market accounts for 6 percent, while the Czech Republic accounted for car seat belts 13 percent, generator sets 8 percent, trough-type single-head machine tools 9 percent, and shuttle power looms 7 percent of the global export market. Hungary's current global exports of starter generators, car mirrors, and vulcanized rubber are 10 percent, 9 percent, and 16 percent, respectively, compared to other nations. Hungary is also a major global exporter of agricultural products. Slovakia has developed rapidly in the automobile industry and the heavy metal industry, especially car bodies and car air conditioners. Not only does Slovakia accounts for 41 percent and 9 percent of global exports (Chang – Cheng, 2006; Ministry of Economy, 2022).

In Table 2, Gubik, Sass and Szunomár (2020) analyzed Asian FDIs in the Visegrád region and demonstrated that the main source countries in this content in 2017. Taiwan is the seventh FDI contributor in the V4 and it is a major important investor in Slovakia, whereas the data also demonstrates that Taiwan ranks fourth in the Czech Republic and fifth in Hungary (Gubik – Sass – Szunomár, 2020).

Table 2: FDI stock by Asian countries in the Visegrád countries, 2017 (million USD)

	Czech Republic		Hungary		Poland		Slovakia	
	direct	ultimate	direct	ultimate	direct	ultimate	direct	ultimate
Japan	1907.66	3314.14	1152.56	3185.93	887.43	4996.26	125.16	n.d.
Korea	3254.71	3046.01	1979.25	1986.48	1134.81	1783.54	3535.08	n.d.
China	707.27	1096.04	210.96	1973.42	223.11	826.51	55.12	n.d.
Hong Kong, China	115.69	204.41	319.81	207.51	347.08	465.06	25.03	n.d.
India	-1.12	99.51	-16.04	2657.56	103.38	299.41	-2.72	n.d.
Singapore	344.64	699.07	532.29	-55.72	84.74	109.56	118.49	n.d.
Taiwan	283.53	1007.46	47.28	971.91	30.76	254.14	18.27	n.d.
Sum of countries	6612.36	9466.65	4226.11	10927.09	2811.31	8734.48	3874.42	n.d.
Sum of countries in % of total FDI stock	4.42	6.33	4.64	12.01	1.18	3.66	6.94	n.d.

Source: Gubik – Sass – Szunomár, 2020; Wu, 2022.

All four countries have large shares of FDI as a mainstream of national development, due to their supply chain's close proximity to Western Europe and the

economic conditions offered by the V4 to Asian investors, Japan, South Korea and Taiwan in the long-term. In other words, in Central and Eastern Europe, especially the V4, there are favorable conditions, like industry 4.0 and they have the opportunity for free trade and investment from Asia.

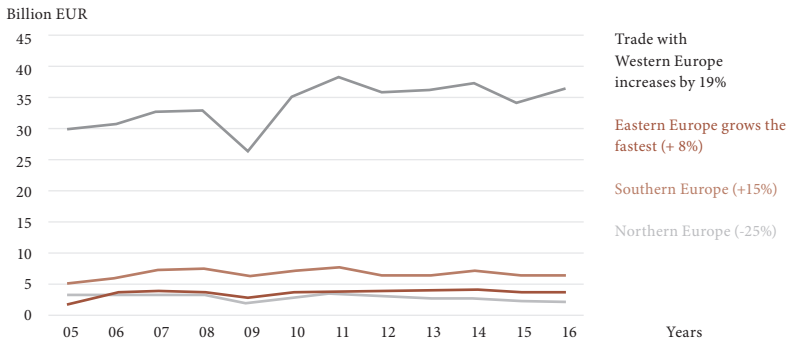
In the reports of the Ministry of Economy and Taipei Representative Office in the EU and Belgium we find the following (Taipei Representative Office EU and Belgium, 2016):

- a) According to the data of the Investment Review Board, Taiwanese businessmen invested in the Czech Republic a total amount of 157.08 million USD in 2016. One of the major Taiwanese investments in the EU was in the Czech Republic, where major investment industries were electronics, computers, optical products, and electrical equipment.
- b) Taiwan is Poland's seventh largest trading partner in Asia and has developed steadily. Products exported from Poland to Taiwan include electrical products, chemical products, and food; products imported from Taiwan include electrical products (LCD screens, semiconductors, and other electronic parts), metal products, and auto parts. Poland has a trade deficit with Taiwan. At present, there are 31 Chinese manufacturers investing in Poland. Poland occupies a strategic position in the center of Europe, its economy continues to grow steadily, and it is the largest manufacturer of home appliances in Europe. It also has a huge automobile and aviation industry, a solid industrial foundation, and complementary and synergistic effects with Taiwan's industry.
- c) Hungary is the Republic of China's 40th largest trading partner, 47th largest import partner, and 32nd largest export partner that has included wholesale and retail of information communication products, footwear, furniture, textiles, and food, as well as catering, and tourism. The value of exports to Hungary was 606,127 million USD, an annual increase of 4.672 percent. For example, ASUS Computer set up a branch in Hungary to sell network communication products; notebook computers and mobile phones in 2007.

Graph 1 and 2 show that trade between Taiwan and Western European countries accounted for 70.7 percent of exports and 7.2 percent of imports compared to East Europe's 11.4 percent of exports and 4 percent of imports. This is reflected in the investment figures, which indicate that Western Europe is an economic hub for Taiwanese investments. Eastern European countries take up a relatively smaller share of trade, however, this European zone has grown by 78 percent from 2005 to 2016 in terms of trade. According to statistical research, Taiwan considers

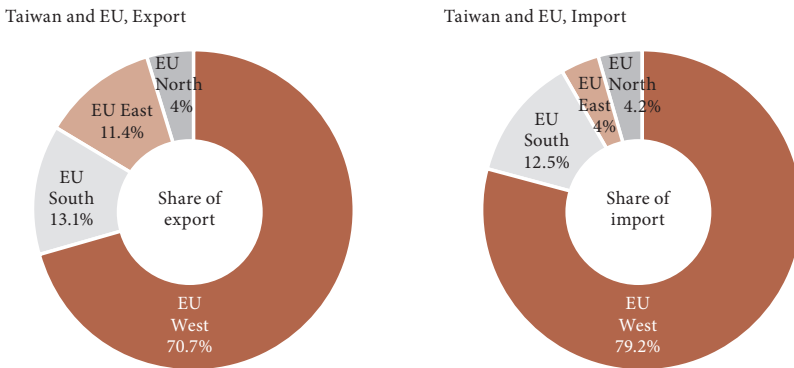
Western European countries important trade partners and the government has built up economic collaboration and investments in different fields of industries after 2016.

Graph 1: Evolution of trade between Taiwan and EU



Source: Taipei Representative Office in the EU and Belgium, 2016.

Graph 2: Distribution trade between Taiwan and EU



Source: Taipei Representative Office in the EU and Belgium, 2016.

From the perspective of political economy, the European Union is considered to be the world’s major market for investors who are concerned about the freedom of the market and the advantages of attracting foreign direct investments. In addition, Taiwan’s current investment in Europe is still dominated by manufacturing with nations of Western Europe. For example, among the European Union economies such as Germany, the Netherlands, and France, which have invested

in higher-developed countries, Taiwan also invests in service industries such as wholesale and retail, finance, and insurance in these countries.

Furthermore, the growth of Taiwanese investments in Europe has gradually shifted to new member states such as Hungary, Poland, the Czech Republic, and Slovakia, which are a new economic hub for EU. The scholar Szabo studied the V4's industry 4.0 policies noting that these nations have invested in new digital technologies like automation and robotization, 3D printing, machine learning or artificial intelligence (Szabo, 2020). In the V4-Taiwanese relationship, the V4 has not only insisted on building sustainability in the market economy, but also the Visegrád region has mainly focus on the automobile, manufacturing of Information and Communication Technology (ICT) and centers of customer service in the EU's industry 4.0 policy.

3.1. V4 from H2020 to Industry 4.0: Scientific and Sustainable Economy

In this part of the research, the author elaborates on successful examples of Visegrád 4's participation in the framework program H2020, which is the biggest EU Research and Innovation program ever with nearly 80 billion EUR of funding available over 7 years from 2014 until 2020. The results of the Czech Liaison Office for Research, Development and Innovation (CZELO) in cooperation with the National Research, Development and Innovation Office of Hungary (NRDIO), the Polish Science Contact Agency of the Polish Academy of Sciences (PolSCA), and the Slovak Liaison Office for Research and Development (SLORD) in the H2020 are as follows (CZELO, 2020):

1. The Czech Republic participated in the preparation of 5,689 complete eligible project proposals. Czech research institutions were direct recipients of funding in 817 funded projects with a claimed financial contribution of 286.2 million EUR, in which they cooperated with more than 12,000 foreign partners in the role of direct recipients of funds from the H2020 program budget. The success rate of coordinators from the Czech Republic (7.9 percent) is the third highest among the EU13 countries.
2. Poland has been traditionally strong in basic sciences such as mathematics, astronomy, chemistry, and physics but is also increasingly recognizing research and innovation as the engines for long-term growth. The network has become Europe's third largest research network which aims at promoting business and supporting the development of Polish companies. The main research fields are

automation, chemicals, biomedicine, ICT, materials, and advanced manufacturing.

3. Hungary has a longstanding tradition in scientific research. In the course of the H2020 program from 2014 to May 2019, 434 Hungarian research institutions were the direct recipients of funding in 916 funded projects with a claimed financial contribution of 299.8 million EUR, in which they cooperated with scientists from 96 foreign countries. In comparison to other Central and Eastern European countries, Hungary has a number of strong assets in its science system. For example, with 41 ERC grants, it is highly successful in Horizon 2020's European Research Council, which demonstrates that there are important pockets of scientific excellence in the country.
4. The strengths in Slovakia's Research and Innovation (R&I) system are found in human resources for research and innovation and in attracting business Research and Development (R&D) investments from abroad. In H2020 followed by the HES with 33.9 percent and the Slovak Academy of Sciences (SAS) with 15 percent. The most successful institutions in preparation of project proposals are those based in the Bratislava region (36 percent of the signed grants) and in Zilina (9.6 percent of the signed grants).
5. H2020 projects with V4 participation are: Social and innovative platform on cultural tourism and its potential towards deepening Europeanisation (Coordinator: Mendel University in Brno, Czech Republic); QuantERA ERANET Cofund in Quantum Technologies (Coordinator: National Science Centre, Poland); Cultural Opposition: Understanding the Cultural Heritage of Dissent in the Former Socialist Countries (Coordinator: Research Centre for the Humanities, Hungary); Investigation and development of a new generation of machines for the processing of composite and nanocomposites materials (Coordinator: Lublin University of Technology, Poland); Induced pluripotent stem cell seeded active osteochondral nanofibrous scaffolds (Coordinator: Institute of Experimental Medicine, Slovakia). Examples of projects carried out by V4 countries are: Electrochemical lectin and glycan biochips integrated with Nanostructures (Coordinator: Institute of Chemistry, Slovak Academy of Sciences); Bacterial evolution of hypersensitivity and resistance against antimicrobial peptides (Coordinator: Biological Research Centre, Hungary).

Horizon Europe will continue the Horizon 2020 plan and deepen industrial innovation and development. It is also the policy consensus reached by member states on innovation and excellence, and sustainable development in Europe. In the new framework of excellent and advanced science, the EU's implementation period of the 7-Year Plan is 2021-27, which is the second 7-year large-scale scientific and

innovative research project. The EU will focus on international cooperation with scientific innovation and R&D excellence, soliciting strong third-party countries with scientific research capabilities to become co-programmed and co-funded partner institutions or countries. Based on the EU research framework, the V4 could launch the bottom-up project that might develop the R&D excellence of technology and market economy between Taiwan and the V4.

Regarding EU-Taiwanese bilateral relations, Taiwan and Europe have tight relations because Taiwan was an important third country for the EU Horizon 2020. The EU should consider alternatives as scientific and innovative cooperation will reduce risk-dependency on the semiconductor industry and digital technology. Based on the Horizon Europe program, Taiwan will participate in long-term vibrant cooperation with the V4's universities, scientific communities, and industry, including small and medium enterprises and citizens wishing to reinforce the EU's efforts in global leadership.

In the light of the economic recovery following the Covid-19 pandemic, the V4 has developed strategies described below in EU's industry 4.0 (European Union, 2020):

- i. There is a large scope to increase domestic research and innovation. The V4 countries are at most moderate innovators according to the 2019 European Innovation Scoreboard. Apart from the Czech Republic, which ranks in the middle, the other three countries are at the bottom of the rankings. Public funding for research and innovation in ICT is very low.
- ii. Venture capital investment in new technologies is extremely low. It varies from 0.002 percent of the GDP in Slovakia to 0.008 percent in Hungary.
- iii. Until the private sector is mobilized, EU funding can help the V4 countries foster further digital innovation. There are various funding opportunities for extending the digital infrastructure and the digitization of the public sector.
- iv. The V4 Governments are rolling out Industry 4.0 related strategies and action plans. All V4 governments adhered to the European Artificial Intelligence (AI) Strategy launched in 2018 and the High-Level Expert Group on AI and joined the new European AI Alliance. The Polish government also prepared its AI strategy, focusing on issues such as AI R&D, digital public services, and infrastructure. Hungary created a new AI Coalition composed of more than 70 Hungarian and international firms.

In the studies of H2020 and Industry 4.0, different scientific and industrial estimations of public policies have been provided, but a majority suggest that the V4 countries will be particularly affected by the technological digitalization, transformation of manufacturing and openness of the market economy to face the change and reap the benefits. In the EU funding program, the V4 countries will be required to make an effort to adjust their R&D and economic benefits to assess in more detail the magnitude of the changes in the cooperation of the public sector with academia and the private sector.

4. Taiwan Industrial Policies: The V4's Opportunity for Competitiveness and Sustainability

In the World Competitiveness Yearbook (WCY) of the Institute for Management and Development, Taiwan ranks the eighth most competitive economy among 64 economies and highlights business and government efficiency as part of its long-term value creation. Based on the World Economic Outlook 2020, Taiwan emerged as the 18th world exporter in 2019 and its trade balance was in surplus, with 1,342 billion USD in 2019 (EU, 2021). Taiwan's good performance in free trade is because it constructed a healthy environment for competitiveness and efficiency in Asia.

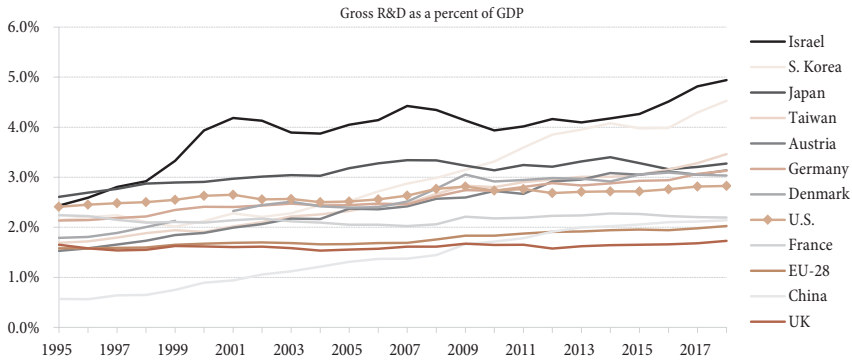
The 27 EU countries continue to invest in Taiwan and become Taiwan's major foreign investors, strengthening free trade and industrial investment. The EU Parliament and Council announced that "whereas the EU and Taiwan are like-minded partners that share common values of freedom, democracy, human rights and the rule of law." (EU Parliament, 2021). The EU continues to have multilateral dialogues and perspectives of exchanges with Taiwan such as human rights justice, gender equality, climate change, and renewable energy. The EU and Taiwan will conduct long-term policy exchanges and dialogues on multilateral issues in the industry, government, and academia in the era of globalization.

In the 21st century, Taiwan also launched a "five plus two"³ national policy that targeted advanced manufacturing of semiconductors, green energy, and smart production of Information Communication Technology (ICT). According to the

³ Taiwan Executive Yuan's national policy addresses a plan that covers seven industries and projects: intelligent machinery, Asia Silicon Valley, green energy, biomedicine, national defense and aerospace, new agriculture, and the circular economy in Taiwan.

competitiveness Index 4.0 of World Economic Forum (WEF) 2019, Taiwan ranked twelfth out of 141 economies and was identified as having good economic performance and benefits with its comprehensive growth (World Economic Forum, 2019).

Graph 3: Gross R&D as a Percentage of GDP



Source: American Association for the Advance Science, 2020.

In Graph 3, Taiwan shows an innovation capability of about 3.0 percent R&D investment, which is emerging as the fourth most competitive in the world, following Germany, the US, and Switzerland. The indicator gauges the quantity and quality of formal research and development as well as the capacity to turn ideas into innovative and sustainable ecosystems (Huang, 2019).

Seeking to advance the transformation of Taiwan’s industry and add new momentum to economic growth, the Executive Yuan, in line with President Tsai Ing-wen’s core principles of innovation, employment, and equitable distribution that has included the “five plus two” innovative and sustainable industries plan, which will serve as the central driver of Taiwan’s industrial growth in the next era (Taiwan Today, 2022). The government will forge a new model for sustainable development. The plan covers seven industries and projects: intelligent machinery, Asia Silicon Valley, green energy, biomedicine, national defense and aerospace, new agriculture, and the circular economy (Taiwan Executive Yuan, 2020). The innovative planification of national policy in these areas and policies, which will balance development in all counties in Taiwan are the following (Taiwan Executive Yuan, 2020 and 2021 & National Development Council, 2021):

- i. Industry: Increase competitive advantages in wafer production. Efforts include—toward the 2030 goal of 1-nanometer process capability—continuing to strengthen links and interconnections among Taiwan’s Silicon Valley science parks located in Hsinchu, and central and southern Taiwan, and ensuring that this semiconductor industry cluster remains a technology leader.
- ii. National: Bring industry and academia together to establish semiconductor research and development centers and set up research institutes within universities for national priority fields. Increase graduate and undergraduate enrollment in national priority fields (e.g., semiconductors, artificial intelligence, machinery, and materials). Recruit overseas talent through international exchanges facilitated by semiconductor industry and academic associations. These efforts are anticipated to yield 10,000 additional semiconductor professionals per year and will ensure a sufficient supply of quality talent for the semiconductor industry.
- iii. International: Ensure access to strategic resources and key technologies to eliminate supply chain concerns. For equipment, this includes stockpiling in advance niche equipment for 12-inch wafer production and moving toward the development of third-generation compound semiconductors. For materials, the primary focus is self-sufficiency in key chemicals and building a strategic local supply chain.
- iv. Taiwan Asian Silicon Valley: to promote innovation and R&D for devices and applications of the internet of things (IoT); to upgrade Taiwan’s startup and entrepreneurship ecosystem; to establish three global system integrators in Taiwan; to attract investments from two world-class international corporations; and to create an online learning platform for IoT related sectors.
- v. Green Energy Innovation: have a two-year solar energy program, which aims to strengthen the local solar energy industry and its supply chain; a four-year program to promote wind power, which builds up the offshore wind turbine industry and its supply chain; an advanced metering infrastructure (AMI) demonstration project, the installation of 3 million advanced meters by 2024 will drive growth in AMI-related industries and construction of the Shalun Smart Green Energy Science City that Tainan City will host a new industrial innovation cluster bringing together industry, academia and researchers as part of what will become a national hub for the research, development and demonstration of green energy technologies.

With knowledge of the economy and industry 4.0 as important factors in the economic prosperity of nations, Taiwan proposes national policies for an innovative economy, a national green energy policy and six core strategic industries that

create a new model economy and upgrade its manufacturing. Taiwan is proposing that its semiconductor and green energy policies collaborate with the EU's sustainable programs, mapping similar interests and deepening bilateral relations.

4.1. Taiwan-V4-EU Relations: The Taiwan Semiconductor Manufacturing Company (TSMC) Matters

Taiwan is a country where the economy traditionally depends on manufacturing production, Information Communication Technology (ICT) and the trade of Small and Medium sized Enterprises in the world economy. Taiwan's historical development allowed the government to obtain economic benefits and free trade, it had a technology sector of 100 million USD in 1980 and reached 21 billion USD in 1999 (Dempsey, 2020). The Taiwan Semiconductor Manufacturing Company (TSMC) is the leader in global chip foundry manufacturing and services and was founded in 1987 in Taiwan's Hsinchu Science Park where TSMC has manufactured chips for global customers in a wide range of equipment and devices, including computers, communication products, consumer and industrial applications (TSMC, 2021).

According to Rayane Haddou's studies, Taiwan has increased rapidly in the growth of semiconductors, equipment production and in the penetration of multinational companies around the world (Haddou, 2021):

1. TSMC: the world leader for semiconductor foundry, represents 52 percent of the world production
2. ASE: the world leader for semiconductor back-end activities
3. MediaTek: it is in the world's Top 5 companies for semiconductor design, especially in 5G networks
4. Foxconn: the first Apple subcontractor. Its 2019 turnover reached about 200 billion USD.

For example, TSMC estimated that it would adhere to its revenue growth forecast of 14-19 percent sales growth and MediaTek said its outlook was positive to foresee a 2-10 percent increase in sales in 2021 (Dempsey, 2020). These multinational companies are all in leading positions that supported Taiwan's global trade and global supply chains.

Taiwan was the largest producer of personal computers with traditional and original equipment manufacturing (OEM) production structure, but the government

also spent great volume of investment on semiconductor production with a non-traditional model of manufacturing. Based on the global supply chain, TSMC with its model has become the biggest semiconductor manufacturer producing 10,761 different products using 272 distinct technologies for 499 different customers worldwide (TSMC, 2021).

TSMC, with advanced process technology, has already moved into the advanced semiconductor manufacturing market. TSMC has also entered into the research and development of advanced packaging technology. Taiwanese chip companies represented by TSMC have become the strategic focus of the global industry. According to data from the beginning of 2021, TSMC has a market value of 550.9 billion USD, making it one of the top ten companies in the world, surpassing Intel and Samsung in South Korea to become the world's most valuable semiconductor company (Archyw, 2021).

In addition to TSMC, there are four advanced packaging and testing plants in Taiwan, which mainly provide services such as wafer bumping, advanced testing, and back-end 3D packaging. Based on the advanced technology of the semiconductor industry, it is the current trend in the industry to build a one-stop ecosystem for foundries. Based on the model of the one-stop semiconductor foundry, design for manufacturing (DFM), and customer service, it is equivalent to building a huge ecosystem for manufacturing and testing production capacity in line with the industry and is a win-win strategy (Liberty Time, 2021).

4.1.1. TSMC Sustainability and the UN's SDGs

With the vision of sustainable development in business, TSMC has executed the policies: Understanding SDGs and Priorities, Setting Projects and Integrating and Disclosure and Communication that has a connection with the UN's Sustainable Development Goals (SDGs) (TSMC, 2018). TSMC has also addressed social responsibilities with an environmental and educational link to SDGs with its 2025 long-term business strategy. TSMC 2025 Corporate Social Responsibilities and the UN SDGs are the following (TSMC, 2018; 2021):

1. TSMC Integrity management – UN SDG, Peace, Justice and Strong Institution
2. TSMC Innovative service – UN SDG, Quality Education
3. TSMC Responsible supply chain – UN SDG, Affordable Clean Energy
4. TSMC Green manufacturing – UN SDG, Responsible Consumption and Production

5. TSMC Inclusive workplace – UN SDG, Decent Work and Economic Growth
6. TSMC Good society – UN SDG, No Poverty and Climate Action

TSMC has tried to use key advantages to bring changes and innovations to the industry and society. The company practices corporate social responsibility, including the Cultural Education Foundation and the Charity Foundation, its committee convenes on technology development, business development and supply chain management. In fact, TSMC is also aiming for a green strategy that protects the environment and is adopting the goal of being carbon neutral with its customers in Taiwan.

4.2. The Hsinchu Science Park and Sustainability

The Hsinchu Science Park (HSP) was established by The Ministry of Science and Technology in 1980, it was mainly a science park that focused on the development of integrated circuits, computers and peripheral equipment, communications, optoelectronics, precision machinery, and biotechnology. In the 1990s, the purpose of the Hsinchu Science Park was to establish a high-quality humanized environment for Taiwan's R&D, production, work, life, and leisure, to attract high-tech talents, introduce high-tech technology, establish a high-tech industry development base, and promote Taiwan's industrial policy. For example, the output value of the wafer foundry as the world's largest; the output value of the IC design industry, thin film transistor liquid crystal display (TFT LCD), silicon solar cells and other products; and continue to develop core technologies such as the Internet of Things (IoT), artificial intelligence (AI), high-performance computing (HPC), digital convergence, cloud, massive data and B4G wireless broadband (Hsinchu Science Park, 2021). It is the first science park that the government has invested large amounts of funds in. In the short run, the park and Taiwan have also enjoyed an economic miracle with HSP's contribution to computer manufacturing industries and high-tech technology, including semiconductors. Based on the construction of the science park, Taiwan's semiconductor and optoelectronic industries, models of successful operation, occupy an important position in the world and has had firm impacts on development of Taiwan's technology industry.

In the first decades of the 20th century, the Ministry of Science and Technology finished two major science parks, the central science park, and the southern science park, where it successfully established Taiwan's high-tech industry's outstanding global reputation. In the development of high-tech industry and trends

of global supply chains, that incorporated innovation and sustainable economy, Taiwan has the clustering effects of science parks in Taiwan (Hinchu Science Park, 2020):

1. The Jhunan Science Park, located in Dingpu Village, opened in 2014;
2. The Tongluo Science Park, located in Gio-Hu Village, opened in 2022;
3. The Hsinchu Biomedical Science Park (HBSP), “HSR Hsinchu Station Special District Project”, in Jhubei City, established in 2019;
4. Yilan Science Park, opened on May 16, 2005;
5. The Longtan Science Park, located at the juncture of three townships in Taoyuan County, opened in 2004.

The science park is an important indicator of the development of science and technology, and a demonstration of the effects of industrial structure and the maintenance of economic prosperity. In this innovative and sustainable model, it has given Taiwan a place in the international high-tech industry; its north, middle and south high-tech industry innovation corridor formed by the parks is conducive to accelerating Taiwan’s development as a global innovation and R&D center.

5. Conclusion

As all the above points have demonstrated, the author highlights the V4’s FDI strategy with Taiwan where the government would implement scientific and industrial strategies to adopt demand of EU economic framework and market. Overall, V4’s economic status has impacted on Covid-19 that their industries of ICT and automotive relied on cooperation of semiconductor and digital production in Asian countries. Furthermore, V4 has stable economic growth with good condition labor employment and presents significant candidates of EU scientific program sustainable semiconductor production in different economic and academic projects. Notably, Taiwan-V4 platform has reflected impacts and benefits from the Horizon Europe program in order to create a sustainable model of economy at EU level. In fact, V4 could implement EU funding of H2020 and Horizon Europe that launch the projects of digitalization and advance industries, 5G, semiconductor and supply chains of smart auto, with Taiwan’s government and multinational companies. The V4 would focus on ecosystem of semiconductor industry or digitalization of ICT in order to construct a new economic model with Taiwan’s customers, manufacturers, and suppliers.

To sum up, in the analysis of this research, the Visegrád countries' digitalization industries have transformed themselves into relevance of foreign direct investments as a source of economic growth that has considered high-technology cooperation between V4 countries and Taiwan under the EU's implementation. With regard to the Taiwan-V4 economic model, we believe that it is also impetus of the Taiwan-EU BIA, however, the EU already has concluded the EU-Korea FTA in 2015, and EU-Japan FTA in 2019. The Taiwanese government would launch the new round of negotiation of the Taiwan-V4 free trade agreement or economic framework with advanced technology that has developed stable growth with regard to the Taiwan and EU relations. The EU-Taiwan BIA is a new economic orientation that provides institutional opportunities of business and benefits between the EU and East Asia. The Taiwan-V4 economic alliance will steer the EU's future competitiveness of its emerging industries of digitalization and sustainable economy for the EU 2030 long-term strategies.

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The State of the Cross-Strait Affairs

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1. Introduction

Taiwan and the People's Republic of China (PRC) have evolving economic relations, but Beijing's One-China policy, growing global economic and political weight and leverage on its Asian partners have recently raised questions whether the near future brings peaceful reunification or a military operation.

This paper aims to analyze the complexities of the most recent developments of the cross-strait relations, including the political positions and economic interests of the most relevant actors in Asia, Japan and South Korea, and Taiwan's largest global partner interested in containing the rise of China, the United States. Based on a secondary research methodology involving a range of international literature we seek to find similarities and differences in Taiwan's relations with Seoul and Tokyo, and analyze the level of their possible involvement if Beijing resorts to more assertive moves towards reunification. Recent changes in the PRC's and the United States' bilateral and international positions as well as the political stance of the current leadership in Taipei give the topic a specific relevance.

2. Factors Influencing Taiwan's Current International Position

2.1. Taiwan as a Global Value Chain Champion

Seventy percent of Taiwan's gross domestic product (GDP) relies on exports, which makes it the seventh most trade-dependent economy participating in global value chains (Ezell, 2021). Taiwan has successfully positioned itself over the decades via its conscious economic development policies as the supplier of semi-conductors and other high-tech sectors including chips that are vital to the most dynamically developing and most advanced industrial sectors and global value chains (GVCs). Taiwanese suppliers play key roles in a number of sophisticated advanced-technology sectors from information and communication technologies

(ICT), and electrical vehicles to pharmaceuticals and are important elements in the success of Chinese mainland companies in these and related sectors. However, Taiwanese companies not only play an important role in the economic dynamics of the PRC, but are also crucial for global value chains and for the economies of other key partners analyzed in this paper, the US, Japan or South Korea, which makes the position of Taiwan in both economic and political relations more complex and stable at the same time.

Taiwan has been among the most effective nations at integrating itself into GVCs, in terms of both backward and forward linkages. Backward linkages refer to the use of imported goods and services in the production of exports, while forward linkages mean the use of a country's exports in the production of other goods and services. By 2011, Taiwan had achieved the deepest backward GVC trade linkages among any ASEAN country, and achieved some of the strongest forward trade linkages, which have undoubtedly deepened in the decade since, basically as a result the country's increasing strength in semiconductor exports, which have become a critical input to a wide variety of downstream industries (Ezell, 2021).

Taiwan, on the other hand, also dynamically attracts foreign direct investments (FDI). Despite the fact that global FDI flows fell 49 percent worldwide in the first half of 2020 compared to 2019 as the Covid-19 pandemic dramatically hit the global economy, Taiwan actually remained a quite attractive location for investment, attracting 1,220 FDI projects worth a total value of 2.96 billion USD from January to April 2020, which represents an increase of 8.9 percent in the number of cases, and 48.7 percent in FDI value compared with the same period in 2019 (Santander Trade Markets, 2021).

2.2. Relations with the People's Republic of China

The two political entities have been separated for more than 70 years, since 1949. The Chinese civil war that started in 1927 ended with the Communists' victory and the Nationalists' retreat to Taiwan, founding the Republic of China. Ever since, the strait has been under regular pressures and tensions but no incidents could be labeled as outright war and for decades, cross-strait relations had been relatively stable. Beijing emphasizes its longstanding will of "peaceful reunification" in a hope to convince Taiwanese people of the mutual benefits of returning to the homeland and shows its positive interpretation via enhancing cultural and economic ties. Meanwhile, on the global scene, China seeks to further isolate

Taiwan and to use its economic leverage as a carrot and stick policy in the form of both incentives and threats to persuade the few remaining countries who diplomatically acknowledge the Republic of China to abandon Taiwan for Beijing and adhere to its One-China policy.

Beijing also successfully uses its growing weight in global economy and politics to weaken Taipei's position in international organizations and to ensure that not only countries but corporations, universities, media sources and even individuals acknowledge the PRC's official stance.

There are also growing uncertainties in Beijing with regard to the possible political intentions of the US to stop China from taking Taiwan—or the international support—to formulate an effective coalition against the PRC. Although a Chinese invasion of Taiwan may not be an immediate threat, analysts also point out that for the first time in more than seven decades, it is time to take seriously the possibility that China could soon use force to end its almost century-long civil war and separation. Support for a possible military operation in both the general public as well as the military and political leadership has been growing in the past years and there are signs that Beijing might consider every possible option (Mastro, 2021).

Meanwhile, Chinese leaders certainly keep an eye on the currently ongoing war between Russia and Ukraine, as well as the unity of the Transatlantic Alliance to support Ukraine by weapons, and for the first time, introduce painful sanctions against Russia, they might also consider if the international response to a quick invasion against Taiwan would receive a milder opposition. China began to sign strategic partnerships in the mid-1990s, as it required other countries and regional organizations, including the European Union, to sign long-term agreements to prioritize their relationships with mainland China and proactively manage any tensions. Since the 1996 cross-strait crisis, China has managed to gain more than a dozen countries' international support and officially switch their diplomatic recognition to Beijing, leaving Taiwan with only 15 remaining allies, all of them of relatively low economic and political influence.

2.3. Taiwan's Domestic Politics

There are two main political parties in Taiwan that support Taiwan's status quo, but at the same time have opposing approaches toward the PRC: the Kuomintang Party (KMT) and the Democratic Progressive Party (DPP). The KMT has a

pro-unification platform that promotes dialogue with Mainland China under the “1992 Consensus”, according to which the two sides of the Taiwan Straits agreed that there is only one China: both Mainland China and Taiwan belong to the same China. Although Beijing and Taipei defined the meaning of “China” differently: Beijing claims that “China” means the People’s Republic of China with Taiwan as a “Special Administrative Region”, Taipei, however, considers “China” as the Republic of China with de jure sovereignty over all of China. However, this was the first political compromise reached between Taiwan and mainland China in more than 40 years. The Kuomintang therefore adheres to the title of ROC for Taiwan, accepts the “One China” principle and prioritizes cross-strait relations over foreign relations, claiming that only better relations with the PRC can overcome an international isolation and improve international presence as well as economic positions. The DPP, on the contrary, has a pro-independence program that doubts the legacy of the “1992 Consensus”, does not accept the “One China” principle, prioritizes foreign relations over the cross-strait relations and emphasizes Taiwanese identity. In foreign politics and economic relations, the New Southward Policy announced by Tsai Ing-wen, who has been the president since 2016, also shows the direction of balancing against the cross-strait relations.

2.4. Thriving Economic Relations Across the Strait

We could assume that the cross-strait economic cooperation and exchanges should thrive during the KMT leadership and stagnate during the DPP. As Taiwan went through three waves of power transitions, the cross-strait economic cooperation and exchanges have had a zigzag pattern: increasing during the KMT leadership and decreasing during the DPP leadership. However, the change of the ruling party in Taiwan does not significantly influence cross-strait economic cooperation. As a general trend, the cross-strait trade has been increasing since 1991, (since President Lee Teng-hui’s period), despite the power transitions.

The PRC is Taiwan’s largest export market, as well as the largest source of imports. According to the Bureau of Foreign Trade of the Taiwanese Ministry of Foreign Affairs, exports in 2019 to Mainland China amounted to 91.8 billion USD, which means a decrease of 4.85 percent from 2018, meanwhile imports from Mainland China arrived in a value of 57.4 billion USD, an increase of 6.68 percent from 2018 (Bureau of Foreign Trade, 2020a).

Taiwan's main exports to Mainland China are electrical machinery products, semiconductors, machinery products, optical apparatus, plastic products and organic chemical products. Main imports are also basically electrical machinery products, machinery products, optical apparatus, iron and steel, and plastic products.

To strengthen trade and economic ties, Taiwan signed the Economic Cooperation Framework Agreement (ECFA) with Mainland China in June 2010. The ECFA is a framework agreement with an early harvest program on goods and services that entered into force in September 2010. Currently, tariff reductions for the listed products and opening of the services market are being implemented according to the provisions of ECFA.

In terms of bilateral investment, it is again the PRC that is Taiwan's biggest outbound investment destination. Data from Taiwan's Investment Commission shows that cumulated investments from Taiwan to Mainland China totaled 186.51 billion USD (43,925 cases) by 2019 (Bureau of Foreign Trade, 2020a).

The top three investment targets were electronic parts and component manufacturing, electronic products, photographic and optical instruments manufacturing, and the financial and insurance industries. In addition, investments from Mainland China to Taiwan amounted to 2.28 billion USD (1,371 cases) from the period of June 30, 2009 till 2019 (Bureau of Foreign Trade, 2020a). The top three investment targets were the wholesale and retail trade, electronic parts and component manufacturing and the banking industry.

The Investment Protection Agreement was signed by both sides in August 2012 and took effect in February 2013 to protect the rights and interests of Taiwanese businesses investing in Mainland China.

Although the DPP's position in 2016 meant a clear departure in terms of commercial focus from the strait and aimed at concluding further FTAs with new partners, this aim has not yet been realized. Taiwan has less than a dozen of FTAs, including the ECFA and with the exception of New Zealand and Singapore, most of them are concluded with weightless economic partners who politically back the recognition of the ROC. Australia was the only country since the declaration of the new policies to enter into trade negotiations with Taiwan but ended the talks in 2018 as a result of pressures from the Chinese government.

Nevertheless, in the field of FDI, the New Southbound Policy shows its relevance. Recently, a Taiwanese divestment happened from the PRC, partly due to Taiwanese fears concerning the possible implications of a trade war between the USA and the People's Republic of China. However, this huge amount of capital was not invested in Taiwan to create new jobs and develop new, high value-added industries, rather, it flows to Southeast Asia, focusing on the low-cost labor-intensive manufacturing sectors (Neszmélyi, 2020). Investors, with the active assistance from the government, channel FDI towards these more lucrative sectors in the Southeast and South Asian regions. The New Southbound Policy serves two goals: it provides the government with a broader geographical scope and room to maneuver and diversify risks that might arise by a possible trade war between the US and China.

3. The Potential Reunification

Ever since the establishment of the Republic of China and especially since the 1970s, when international recognition has shifted to Beijing, and even more importantly, the US has given up the mutual defense cooperation with Taiwan in 1979 and resorted to the much less explicit military involvement via the Taiwan Relations Act, the PRC has preserved its intentions for the unification, preferably via peaceful means. The current situation is significantly different from the 1996 Taiwan crisis, when the US could successfully deter China by dispatching two aircraft carrier battle groups to sail near the strait. Since then, the military modernization and its economic power seem to entitle China to reconsider any possible solutions for reunification.

Xi Jinping has clearly indicated several times since he became the president of the PRC in 2012, that Beijing feels differently about the status quo and has publicly made the reunification an inevitable requirement for realizing the “Chinese Dream”, or the rejuvenation of the Chinese nation (Chengliang, 2013). The “Chinese Dream” is interpreted as the “Two Centenaries”: the material goal of China becoming a “moderately well-off society” by 2021, by the 100th anniversary of the Chinese Communist Party, and the modernization goal of China becoming a fully developed nation by about 2049, the 100th anniversary of the founding of the People's Republic of China. There is no explicit timeline for the reunification, but Xi's declarations and the recently evolving, strong global and regional position of the PRC both suggest that he wants reunification to be part of his personal legacy.

Although only peaceful unification is emphasized, no options are excluded. Over time, fewer Taiwanese people see themselves as Chinese and have strong feelings opposing their return to mainland China. Tsai Ing-wen's first and second election success (in 2016 and 2020, respectively) have deteriorated the cross-strait relations and have convinced Beijing that peaceful reunification might be only a dream. In June 2020, when China exerted its power over Hong Kong via a new national security law, the options to convince Taiwanese people about the attractiveness of the "one country, two systems" formula shrunk further and rather reinforced their rejection of a similar solution. The assumption that peaceful reunification is only a theoretical solution, is further enhanced by the regular and deliberate violations of Taiwan's air space. In 2020 alone, there were 380 incursions into Taiwan's air defense system, and in April the same year, China sent its largest-ever fleet, 25 fighters and bombers, into Taiwan's air defense identification zone (Mastro, 2021). The more frequent its activities there become, the harder it will be for the United States to determine when a Chinese attack is imminent, making it easier for the People's Liberation Army (PLA) to present the world with a *fait accompli*.

China has accelerated the modernization of its military capabilities further, undertaking the most ambitious restructuring of the PLA since its founding. The reforms have enabled Chinese forces to conduct joint operations in which the air force, the navy, the army, and the strategic rocket force fight seamlessly together, whether during an amphibious landing, a blockade, or a missile attack. With the visibly growing military capabilities, voices are also growing louder in the Chinese military leadership that the longer China waits, the harder it will be to take control of the renegade island. A further warning sign shows the growing public support for a military operation. According to a survey by the state-run Global Times, 70 percent of mainlanders strongly support using force to unify Taiwan with the mainland, and 37 percent think it would be best if the war occurred in three to five years (Sheng et. al., 2021). Still, unless the United States or Taiwan moves first to alter the status quo, which seems highly unlikely, Xi will probably consider initiating armed unification only if he is confident that the PLA can successfully gain control of the island with acceptable physical and also economic losses as a result of the possible sanctions.

The full-scale involvement of the US cannot be taken for granted and depends on the proper timing and preparation of a possible attack. The "strategic ambiguity" of the US as well as the questions concerning the possible partners in Asia raise relevant questions and might fuel hopes in Beijing that they can successfully conduct a fast military operation even before the US or its allies respond.

However, even if China was to get involved in a protracted war with the United States, Chinese leaders may believe they have the social and economic advantages that would enable them to outlast the Americans. First of all, public enthusiasm and support stands on their side. They can see the Chinese people as more willing to make sacrifices for the cause of the reunification than the Americans and their possible allies against it. Second, China's large domestic market makes it less reliant on international trade than many other countries. Especially since the announcement of the Belt and Road Initiative, in the last decade, China could be seen successfully stretching its own economic influence zone, meanwhile also decoupling from the United States. The trade war initiated by Donald Trump has also pointed out that such measures are already late to contain China economically. Technologically, even in terms of artificial intelligence development, the PRC is also self-sufficient. Beijing's conscious development strategies have all contributed to its current position and to the most significant shifts in terms of power that happened mainly in the last decade.

Most recent embargoes against Russia, however, might question the validity of the arguments listed above. Eight of China's top ten trading partners are democracies, and nearly 60 percent of China's exports go to the United States and its allies. If these countries responded to a Chinese attack on Taiwan by concerted and severe trade and financial sanctions, the economic costs could threaten the development perspectives of the PRC. On the other hand, Russian energy exports along with the Shanghai Cooperation's larger regional framework, or even the Regional Comprehensive Economic Partnership (RCEP), both of which are under the influence of China, might compensate for potential economic losses. The RCEP that entered into force on January 1, 2022 comprises a market of 2.2 billion people, almost 30 percent of the world's population, with a combined GDP of 26.2 trillion USD or about 30 percent of the global GDP, and accounts for nearly 28 percent of global trade (based on 2019 figures), making it the world's largest free trade agreement. Although some members of the RCEP would definitely introduce sanctions (Japan, for instance), it still marks the success of China playing a crucial role in the integration of the wider region.

4. Japan-Taiwan Relations: the Deepest Ties

4.1. The Warmest Political Relations

Japan and Taiwan share a deep and multifaceted relationship, although official diplomatic relations ended in 1972. Since then, Tokyo declares its official support for the One-China policy, stating that Japan respects Taiwan as the inalienable part of the territory of the People's Republic of China. Nevertheless, Japan maintains a pragmatic approach towards Taipei and their shared history, strategic goals, common values, and thriving economic relations create mutually respectful and informally deep ties between them.

As for their shared history, imperial Japan seized Taiwan from the Qing dynasty after the Sino-Japanese war at the end of the 19th century and ruled the island for 50 years, until the end of World War II. The issue of Taiwanese comfort women and half a century of colonial rule left a negative mark on mutual relations, however, unlike South Korea, Taipei rarely asked for apologies from Japan. This is mainly due to two factors. First, colonial rule also brought modernization for the island. Formosa, as the first Japanese colony experienced significant improvements in terms of infrastructure, health care, compulsory primary education, vocational trainings, public works and the Japanese made efforts to turn it into a showpiece model colony. Even though Taiwanese people did not like being second class citizens, they appreciate the developments of the Japanese era. Students are taught about half a century of Japanese colonial rule in a neutral manner, unlike their Korean or Chinese counterparts. As some Japanese analysts also point out, the autocratic and corrupt rule of the Kuomintang after World War II also contributed to the more positive picture concerning Imperial Japan (Tachikawa, 2020). Furthermore, members of the post-WWII, and even of the currently ruling elite, have family ties stretching back to the beneficiaries of the era of Japanized Taiwan. The current president, Tsai Ing-wen, has been accused of her too pro-Japanese stance as her father also worked as a car technician for the Imperial Japanese and also of her preference to use Japanese and English in her Twitter messages instead of Chinese. However, as Twitter is banned in most of the Chinese-speaking world except for Taiwan, there would be no rationale for her using Chinese. Nevertheless, her pro-Japanese position is prominent even among recent Taiwanese leaders, as she regularly delivers warm speeches enforcing Taiwanese-Japanese ties and emphasizes common positions and interests. Second, Taiwan is more dependent on its relatively narrow international support than South Korea and their shared interests with Japan make the darker times of

their common history fade into the past. Bilateral relations are mutually beneficial but even more crucial for Taiwan as they raise Taiwan's international profile, integrate Taiwan into the international community, and demonstrate the support for their shared security concerns, of both traditional and non-traditional nature.

Japan and Taiwan regularly hold commemorations on the anniversary of the Great East Asian Earthquake of March 11, 2011, the biggest earthquake in Japanese history, when Japanese politicians also regularly express the gratitude of their people for the help Taiwan offered during those hard times. Their warm relations were also highlighted by illuminating simultaneously Tokyo Tower and Taipei 101 with LED messages displaying the warm friendship of the two countries.

In addition to the positive impressions the people of Taiwan and Japan have of each other, the ties between the two countries are also built on decades of practical cooperation, shared values, and mutual security interests. Though the unofficial nature of the relationship and the lack of official diplomatic relations create a challenge at the highest political levels, there is undoubtedly strong cooperation in multiple policy areas based on private-sector-led economic relations and people-to-people exchanges ranging from education, art and sports to health care. As for domestic politics, the emphasis on foreign relations with Japan has been even labeled as the "secret weapon" to politically mobilize the youth of the island. Clear Japanophile trends date back to the 1990s, when Lee Teng-hui, pro-Japan politician who was born in Taiwan but finished his education in Japan, became president in 1988 and completed Taiwan's democratic transition in 1996. Japanese popular culture, videogames, anime characters and even Japanese language have become popular in Taiwan, and the younger generation who was born in a democracy and has departed from traditional Chinese values and identity, feels much closer to Japan than to mainland China.

Cooperation has deepened even further in the last few years based on the commonly perceived threat of China's growing influence. The US also plays a key factor in the strong bilateral ties as both allies represent crucial East Asian partners for Washington in the containment of China. Japan, as the most stable and unquestionable ally of the US sharing the same concerns about the more obvious and potential threats about China's growing economic, diplomatic, political and military power, hosts the largest military base of the US on the island of Okinawa and is an enthusiastic partner of Washington in the Quadrilateral Security Dialogue (the Quad), holding annual joint military exercises as a deterrence in the Indian Ocean and the South and the East China Seas.

4.2. Comprehensive and Deep Economic Partnership

Japan has long been one of Taiwan's most important trade and investment partners. Japan is the third largest trading partner for Taiwan, while Taiwan is the fourth largest trading partner for Tokyo. Bilateral trade between Taiwan and Japan has been steadily developing and totaled 67.3 billion USD in 2019 (Bureau of Foreign Trade, 2020b). As for exports, Japan was Taiwan's fourth largest export destination in 2019, accounting for 7.071 percent of Taiwan's total exports, while Taiwan was Japan's fourth largest export destination, accounting for 6.0 percent of Japan's total exports. Taiwan's exports to Japan totaled 23.1 billion USD in 2019.

As for imports, Japan was Taiwan's second largest source of imports in 2019, accounting for 15.4 percent of Taiwan's total imports. Taiwan was Japan's sixth largest source of imports, accounting for 3.7 percent of Japan's total imports in 2019. In 2019, Taiwan's total imports from Japan amounted to 44 billion USD.

Japan is the fourth largest source of foreign investment in Taiwan, with a cumulative investment of about 22.5 billion USD. By the end of 2019, Japan's foreign direct investments (FDI) in Taiwan consisted of over 10,922 cases, the largest sector of Japan's FDI in Taiwan is in the service sector, including wholesale and retail trade, construction, real estate, and insurance. The second largest sector is in the manufacturing sector, including chemical manufacturing, electronic parts manufacturing, and metal product manufacturing. Comparatively, Taiwan has invested more than 9.22 billion USD in Japan. In recent years, Taiwanese companies have been actively cooperating with Japan in the manufacturing of semiconductors, electronics and electrical products.

The Taiwan-Japan Economic and Trade Conference has been held annually by the Japan-Taiwan Exchange Association and the Taiwan-Japan Relations Association 44 times consecutively. The two sides use this platform to resolve difficulties encountered in trade, for example, they lifted import controls on Japanese beef in 2017. In addition to difficulties encountered in trade, this platform has been used to discuss cooperation in industries, agriculture, medicine, intellectual property, and other fields. Furthermore, economic and trade cooperation between Taiwan and Japan has received specific impetus by bilateral agreements and memoranda regarding cooperation in such areas as investment (2011), industrial bridging (2012), e-commerce (2013), taxation (2015), customs cooperation and mutual assistance (2017), promotion for cooperation in import and export of organic food

(2019) as well as other important economic and trade agreements to deepen bilateral economic and trade cooperation (Bureau of Foreign Trade, 2020b).

5. Relations between South Korea and Taiwan

5.1. Diplomatic Relations

Diplomatic relations between the Republic of Korea (ROK) and Taipei ended in 1992 when South Korea, as the last country in Asia, switched to the recognition of the People's Republic of China (PRC), followed by mutual acknowledgement and the establishment of bilateral relations between them. Previously, Taiwan came just second after the United States to recognize the ROK as the sole legitimate government on the Korean peninsula when the first republic was established there in 1948. Shortly before Seoul's position changed, it was the ROK that facilitated the integration of Taiwan into the Asia-Pacific Economic Cooperation in 1991 by modifying the term "member states" to "member economies" and shortly after, the official termination of diplomatic relations, the New Relations Framework Agreement was signed in 1993. Taipei City is the first sister city of Seoul, and similarly to other important economic and political partners for Taipei, relations are stable and close, even though not at the highest possible diplomatic level.

South Korea's stance on Taiwan has been affected by mainly two conflicting parties. The US, which is its most important political and especially military ally, and by the PRC, which is undoubtedly the most important economic partner of the ROK. Therefore, for decades, the leadership on the peninsula has relatively cautiously expressed any politically questionable statements and maintained a strategic ambiguity over the highly sensitive issue. In May 2021, amidst growing tensions between the US and China, as well as between Beijing and Taipei, President Moon Jae-in, previously famous for his careful balancing policies, visited Washington D.C. where they issued a joint statement with President Biden. Analysts noted the departure from the famously vague policies in a number of terms and expressions used either for the first time or in a different context. For example, the statement uses the name "Taiwan Strait" for the first time in the history of recent South Korean declarations. The joint statement also pledged to extend the scope and deepen the nature of the US-ROK cooperation, which has been primarily centered on deterring North Korean hostilities, to "far beyond the Korean Peninsula". In particular, they mentioned increased economic cooperation in the areas of semi-conductors, supply chain resilience, cyber security, and

developing 5G and 6G technologies. The statement also included phrases such as the “Quad” referring to the Quadrilateral Security Dialogue, including the US, Australia, Japan and India, or “a free and open Indo-Pacific”, a term introduced originally by Japanese then-Prime Minister Abe Shinzo and endorsed by the Trump Administration, or the “freedom of navigation”, and other terms promoted by the US (and also by Japan) in the strategic rivalry and containment policies concerning China (Lee, 2022).

Despite the seemingly more articulate and more hardliner position of the South Korean government on Beijing, both President Moon and his Foreign Minister quickly tried to calm down the diplomatic waves after the declaration and appease China by downplaying its significance as well as by clarifying its wording. In this attempt, they could also differentiate Korea from the Japanese position issued in a US-Japan joint statement only a month earlier which explicitly mentioned China regarding the Taiwan issue and openly criticized Beijing for its violation of human rights in Hong Kong and Xinjiang. Moon also refused to explicitly answer a journalist at a press conference in December 2021, when he referred to the remark of the Australian Defense Minister stating that “it would be inconceivable for Australia not to join the US in some kind of operation to defend Taiwan”. Regarding the question if it would be also inconceivable for South Korea not to join in some kind of defense of Taiwan, were that to be needed?” Moon refused to answer and instead emphasized the importance of “a peaceful management of the Cross-Strait issues” and that the ROK is interested in a harmonized relationship between the two sides of the Strait as well as between the US and China (The Prime Minister of Australia, 2021).

Ironically enough, Taiwan first praised Seoul’s unprecedented move by the joint declaration in a Twitter message posted by the Ministry of Foreign Affairs, but became soon disappointed by Korea’s quick turn. As a result, instead of warming the ties, relationships became sourer afterwards.

On the recent presidential elections (March 9, 2022)—contrary to the mainstream analysts’ expectations—finally, Yoon Seok-youl, the candidate of the more conservative and pro-American party, the People Power Party won. As for the cross-strait affairs and China-Taiwan relations, there was no dramatic turn expected in case of either presidential candidates. The ruling Democratic Party’s candidate, Lee Jae-myung, was more likely to prefer cautious foreign policies in the version of “Moon Jae-in 2.0”. Yet Yoon Seok-youl is not expected to cross the lines in domestic politics that consider economic relations with China crucial, though

he might side with the US in more articulate declarations about human rights. The Taiwan Strait issue is raised only by a handful of security experts in the ROK and discussions are limited to the scope of the event of the United States Forces' Korea's possible deployment in the event of a contingency (Lee, 2022).

5.2. Taiwan-South Korea Economic Relations

In 2019, bilateral trade totaled 34.56 billion USD, with a slight decrease of 1.66 percent over the previous year. South Korea is Taiwan's fifth largest trading partner, accounting for 5.63 percent of Taiwan's total trade, while Taiwan is South Korea's sixth largest trading partner, accounting for 3 percent of South Korea's total trade (Bureau of Foreign Trade, 2020c).

In 2019, Taiwan's exports to South Korea amounted to 16.9 billion USD, which shows a dynamic increase of 7.68 percent over 2018. Thus, South Korea has become Taiwan's sixth largest export destination. The main export items include integrated circuits, petroleum and oil (except crude oil) extracted from bituminous minerals, transmission receivers used in radio broadcasts or television etc. Comparatively, South Korea's exports to Taiwan in 2019 amounted to 17.7 billion USD. As a result, South Korea has become Taiwan's fourth largest source of imports. The main import items include integrated circuits, petroleum and oil derived from bituminous minerals (excluding crude oil), cyclic hydrocarbons, machines and appliances specially designed for manufacturing semiconductor crystals or wafers, semiconductor devices, and machines or equipment used for integrated circuits and flat displays and screen.

Given the aforementioned main export and import items, there is large-scale inter-industry trade and intra-industry trade between Taiwan and South Korea, which has strengthened bilateral economic ties over the previous decades. According to statistics from the Investment Commission of the Ministry of Economic Affairs, Taiwan's investment in South Korea in 2019 consisted of only 8 cases, which totaled around 220 million USD. Taiwan's cumulative investment in South Korea since 1952 has consisted of 237 cases, amounting to 1.57 billion USD. The main sectors of investment include electronic component manufacturing, finance and insurance, pharmaceutical manufacturing, computer and electronic products, and optical products manufacturing. By comparison, South Korea's investment in Taiwan in 2019 comprised 151 cases, which totaled around 36.53 million USD. South Korea's cumulative investment in Taiwan since 1952

has consisted of 1,672 cases, amounting to 1.26 billion USD. The main sectors of investment include electronic component manufacturing, wholesale and retail, computer and electronic products, optics manufacturing, finance and insurance, information and communications, and construction. Additionally, the two sides have successively signed agreements and memoranda regarding cooperation in such areas as exchange of electronic certificates of origin (2008), patent prosecution highway (2015), exchange of industrial property information and PDX (2015), as well as mutual recognition of authorized economic operators (2016), which have deepened bilateral economic and trade ties (Bureau of Foreign Trade, 2020c).

There have been striking similarities between the economic development of Taiwan and South Korea, and in many aspects, even with Japan. The main common features include a relatively small geographic dimension with limited natural resources but a significant population, the heritage of a colonial past (with the exception of Japan) and WWII—meaning that the underdeveloped economies of South Korea and Taiwan were further devastated after the war—strong, dictatorial political leadership until the late 1980's then a democratization process (again not relevant for Japan), export-oriented economic development policy in the industrial sectors, the role of American economic assistance in the recovery and the establishment of the take-off period, following Japanese and American development patterns, conflicts and continuous tensions in the immediate geographic neighborhood, and high savings ratios, especially during the take-off period (1970s) (Neszmélyi, 2017). On the other hand, in spite of the similarities, there were also prominent differences in the development paths between Taiwan and South Korea. The most significant differences can be recognized in the role of the state: while in both cases the guiding and developmental role of the state has been strong, in case of Taiwan, it was less direct than in South Korea where the government even monopolized the credit allocations giving preference to the selected huge and export-oriented companies (Neszmélyi, 2017). Still, we can conclude that basically all the three economies based their developmental path on very similar models of the Asian developmental state.

6. China's Position in the Cross-Strait Relations

6.1. Differences in Chinese Policies towards Japan vs. South Korea

Although both countries expressed their support for US policies concerning Taiwan in the most recent 2021 joint declarations with Washington, the response

from Beijing differed significantly. In case of Japan, the Chinese Foreign Ministry was surprisingly harsh and critical even compared to previous reactions to Japan's moves. The statement issued called the US and Japan "villainous colluders ignoring the truth" (Sun, 2022). The condemnations went as far as to claim that Japan was "serving as a US strategic vassal, abandoning its promises, damaging Sino-Japanese relations, showing wolves into the house, and selling out the region's interest," and that Tokyo was "shameless and unpopular". Except for 2012, when Japan nationalized the Senkaku/Diaoyu Islands and bilateral relations became frozen, Beijing has not used such an outspoken and bitter wording in its communication against the Japanese government.

This harsh criticism puts China's reaction to the Korean reference on the same issue in an even softer light. The Chinese Foreign Ministry merely encouraged "related countries to be careful about their words and actions and to not play with fire" (Sun, 2022). Although Seoul has also made significant efforts to downgrade the importance of the joint statement's critical points, the significantly different reactions are due to the general differences between Japan and South Korea concerning both Taiwan and the United States. Japan hosts not only the most important US military base on the island of Okinawa, and has deeper and more explicit ties with Taiwan, but also openly participates in the US-led alliance formulated to contain China in the framework of the Quadrilateral Security Dialogue or Quad, where Australia, more wholeheartedly, and India, more reluctantly, also take part in joint military exercises. Japan also included Taiwan in the US-Japan defense guideline. Beijing therefore can realistically conclude that Japan's physical involvement in the strait in case of a military attack would be inevitable, meanwhile South Korea's involvement remains at the rhetorical level at its most.

6.2. China's Coercive Methods

China's response to Japan's potential commitment and role in a Taiwan contingency leaves no question about its potential response to South Korea in case the latter also embarks on a more unfavorable path for Beijing. Two potential policy instruments emerge as the most likely and most effective measures. The first are economic sanctions. Although non-Chinese observers argue about the efficiency of economic sanctions, as they failed to change South Korea's decision to deploy the THAAD system in 2016, China views it as mostly effective as it pushed South Korea to commit to the "Three No-s": 1) no additional deployment of the THAAD system, 2) no participation in a US-led regional missile defense system, and 3)

no morphing of a trilateral security alliance with the US and Japan into a military alliance. Moreover, the economic impact and damage by the sanctions was so severe that they efficiently serve as a prevention of similar future actions that could harm Chinese interests and offend China. Taiwan is evidently crucial for China, and Beijing's response to South Korea's involvement in a Taiwan contingency would definitely include strong economic sanctions.

The second coercion channel could be the North Korean front. While China may not be in a position to prompt North Korea to launch a new round of provocations just to punish or distract South Korea, closer Sino-DPRK ties, including political and economic support, could be efficient to prevent Seoul's involvement in a theoretical contingency or even to strengthen the US-South Korea alliance. Seoul's agenda on national unification and US efforts to revitalize the denuclearization process of the peninsula further complicate this hypothetical situation.

The role of South Korea in a Taiwan contingency is both important and impactful, especially for potential Chinese war plans. South Korea is in an extremely difficult position, as both the US-ROK alliance and South Korea's ties with China are vital for Seoul's national security and unification agenda. As US-China strategic competition deepens, and as the possibilities of a forceful unification cannot be excluded, Seoul cannot permanently avoid taking stance in such sensitive questions. Understanding and preparing for China's strategic reactions will be highly important for the plans of all parties.

7. The US as Taiwan's Crucial Partner

7.1. Vital Economic Relations between the United States and Taiwan

Taiwanese companies represent main suppliers to a number of key American original equipment manufacturing (OEM) firms, meaning that the success of these US companies, particularly in the information and communications technology (ICT) industry, depends on the stability and the innovation capacity of key Taiwanese suppliers. Especially in the semiconductor, related ICT, and electric vehicle sectors, Taiwanese exporters have become vital players in global supply chains for the manufacture of sophisticated high-technology products.

Bilateral trade relationship is highly complementary, interdependent, and increasing especially in advanced-technology industries. Taiwan has become America's

tenth largest goods trading partner and thirteenth largest goods export destination, with US goods and services trade with Taiwan totaling 103.9 billion USD in 2019 (Office of the United States Trade Representative, 2021). In fact, the United States now trades more with Taiwan than it does with France, India, or Italy (Sack – Hillman, 2021). In 2019, the United States exported 42.3 billion USD worth of goods and services to Taiwan, while its import totaled 61.6 billion USD, producing a trade deficit of 19.3 billion USD. On the other hand, the United States represents Taiwan’s second largest trading partner, accounting for 13.2 percent of Taiwan’s total trade and receiving about one-third of Taiwan’s exports of ICT goods (Office of the United States Trade Representative, 2021).

The Congressional Research Service (CRS) points out that “US data on trade with Taiwan may understate the importance of Taiwan to the US economy because of the role of global supply chains (Congressional Research Service, 2022). Eighty-six percent of Taiwan’s exports to the United States comprise intermediate goods, such as semifinished products, parts, and capital goods US companies use to make final products in the United States. Taiwanese inputs play a critical role in US-manufactured final products in a wide range of industries, and not only for ICT goods but also others including medical devices and pharmaceuticals, automobiles (especially electronic vehicles), heavy machinery, and transportation equipment. The United States has deeper inter-industry trade linkages with Taiwan than with almost any other East Asian trade partner, with the percentage of Taiwan’s exports feeding into the US global supply chain greater than those of Indonesia, the Philippines, and Thailand combined (Chen, 2017).

Taiwan had a slight trade surplus of 19.3 billion USD with the United States in 2019. This represents a slight fraction of the US global trade deficit and is in many ways far outweighed by the value Taiwanese exports produced in the American economy. The concentration of specific industries is clearly visible: in 2020 in six high-tech industries—automobiles, chemicals, computers and electronics, machinery, pharmaceuticals, and other transportation (including aerospace)—Taiwan ran a trade surplus of more than 17 billion USD, including 8.9 billion USD in computers and electronics and 8.4 billion USD in machinery. On the other hand, the United States ran a trade surplus in value-added terms in the automobiles, chemicals, pharmaceuticals, and other transportation sectors. However, the value produced by America’s Taiwanese suppliers—especially in ICT-based sectors such as semiconductors—far outweigh any minor sector-specific trade deficits. The global semiconductor production and supply would be far less stable in the absence of the Taiwanese supply and could cause a 1.28 million-vehicle

shortfall in US automotive production in 2021 at a cost of 110 billion USD (NBC, 2021). To summarize, US-Taiwan trade flows are overall mutually productive and beneficial to both nations.

Foreign direct investment (FDI) also represents an important aspect of the relationship, with the total stock of FDI from Taiwanese companies in the United States at 47 billion USD, according to the latest data available from the American Institute in Taiwan. Taiwanese companies currently operating in the United States support 19,100 US jobs, invest almost 159 million USD annually in research and development (R&D), and contribute 1.6 billion USD to US goods exports (American Institute in Taiwan, 2021). As mentioned before, Taiwan managed to remain an attractive destination for FDI even in the midst of the worst pandemic-related recessions, when global FDI flows fell 49 percent worldwide in the first half of 2020 compared to 2019 as the Covid pandemic hit the global economy, Taipei, as a rare counterexample, managed to increase the number of cases by 8.9 percent and the value of FDI by 48.7 percent compared to the same period in 2019 (Santander Trade Markets, 2021).

An example of the dynamics of the bilateral relations is represented by the Taiwan Semiconductor Manufacturing Company (TSMC), which previously announced it would invest 12 billion USD to build a new 5 nanometer (nm) chip factory near Phoenix, Arizona, which in May 2021 was announced to be more than doubled by constructing a 25 billion USD second factory capable of building 3 nm chips. TSMC also announced its intentions to build a total of seven facilities in Arizona (Statler, 2021). Furthermore, TSMC will also bring its own key suppliers, with as many as 12 TSMC suppliers that also open facilities in the United States. LCY Chemical, for example, one of the world's biggest producers of chemicals for semiconductor plants (producing isopropyl alcohol, which is essential for cleaning wafers and equipment in the chip manufacturing process) announced in February 2021, it would build a new chemical-purifying factory in Arizona which will represent its largest-ever overseas investment (Ting-Fang – Li, 2021). The Covid pandemic has pointed to the strategic importance of crucial industries, including exactly the ones where Taiwan is rated in the global top categories. The importance of Taiwanese FDI in the US as well as the relevance of the industrial sectors represented by this capital also explains why Taiwan sent the largest delegation to the June 2021 Select USA Summit, America's annual FDI attraction conference, with 220 delegates representing 153 companies from across Taiwan (American Institute in Taiwan, 2021).

7.2. The Prospective of a US-Taiwan Free Trade Agreement

After a five-year hiatus, on June 30, 2021 the United States and Taiwan held trade talks for the first time in 5 years, since 2016. In these negotiations, the two countries agreed to work together to strengthen supply chains and address a number of other concerns including workers' rights, climate change, and wildlife trafficking. Analysts from both sides have long called upon for more than the revival of the talks. As they point out, it is high time to move on from the TIFA (Trade and Investment Framework Agreement), originally signed in 1984, and create a bilateral free trade agreement. A US-Taiwan FTA would make the nation a more attractive location for sourcing advanced technology production as an alternative to China in global supply chains. Moreover, it would help Taiwan ensure stable trade access to the US market, help increase its growth rate, and promote political stability in the country.

Furthermore, a US-Taiwan FTA would generate positive economic impacts for the United States. Assuming zero tariffs on commodity trade, a 25 percent liberalization of service trade, and a 10 percent improvement in trade facilitation, a computable general equilibrium model simulation estimates that a US-Taiwan FTA would result in a welfare increase in the United States of 3.6 billion USD, an increase in real GDP of 3.5 billion USD, a decrease of the American trade deficit with Taiwan by 75 percent, and the generation of an additional 27,000 US jobs (Rigger – Hickey – Chow, 2017). Taiwan's average trade-weighted tariff is 2 percent, similar to the United States. According to these calculations, in dollar-value terms, the positive economic benefits of a US-Taiwan FTA would be more significant for the United States as a result of a trade deal than in case of most of the other 12 bilateral deals examined. In August 2020, Taiwan's President Tsai Ing-wen removed long-standing barriers to US beef and pork imports by executive order, and the following month, Taiwan's Council on Agriculture announced it would remove restrictions on ractopamine as a feed additive for pork which has long been a conflict issue with Taiwanese farmers and ranchers, both movements show Taiwan's commitment to address critical and long-standing issues in order to further pursue negotiations.

An FTA with the US would mean a definite breakthrough for Taiwan that has FTAs with 11 countries, most of which recognize Taiwan instead of the PRC (like Belize, Honduras, and Guatemala). It also has an ECFA with Beijing and with only two developed countries, New Zealand and Singapore. Nevertheless, the feasibility of the agreement is affected by Beijing's disapproval.

7.3. The US in the midst of Growing Tensions

The framework for the de facto diplomatic relations and close military alliance is the Taiwan Relations Act that replaced the Sino-American Mutual Defense Treaty in 1979, the same year when the US shifted to the official recognition of the People's Republic of China. The Taiwan Relations Act does not guarantee that the US will intervene militarily if the PRC invades Taiwan, nor does it relinquish it, as its primary purpose is to ensure that the US's Taiwan policy will not be changed unilaterally by the president and guarantee that any decision to defend Taiwan will be made with the consent of Congress. The Act declares that "the United States will make available to Taiwan such defense articles and defense services in such quantity as may be necessary to enable Taiwan to maintain sufficient self-defense capabilities" (Taiwan Relations Act, 1979). The Act also enables de facto diplomatic relations, but instead of recognizing Taiwan as the "Republic of China", uses the terminology of "governing authorities on Taiwan". This decades long "strategic ambiguity", has two goals: first to dissuade Taiwan from a unilateral declaration of independence, second, to dissuade the PRC from unilaterally unifying Taiwan with the PRC.

Nevertheless, Taiwan has grown an important foothold for the US in the post-WWII world order and also after the end of the Cold War. The linchpin of the US post-WWII military hegemony has been based on military alliance systems, and hegemony over the Pacific and Indo-Pacific territories has played an important element of the containment doctrine. The "island chain doctrine", a famous Cold War strategy that fitted into the containment policy against the USSR and China, formulated three chains, the first beginning at the Kuril Islands and ending in Borneo, and most importantly, including Taiwan. The second island chain already lies behind the Philippines, from Japan to the Mariana Islands that are US territory. The third chain refers to the Aleutian Islands (close to Alaska) and stretches towards Oceania, with key parts like Guam. The island chain strategy has also been referred to as the "unsinkable aircraft carrier" of the US as it is built on landmasses. To strengthen the US positions, five out of the seven collective security treaties that the United States signed during the heights of the Cold War, which are still in effect today, are related to this region, out of which two bilateral defense treaties concern Korea (1953) and Japan (1960), respectively.

In December 2016, the Chinese navy deliberately crossed the first island chain for the first time and since then has carried out several military exercises beyond this line, thus setting these drills as the new norm. The most remarkable is how

the Chinese media commented on the event, calling the first island chain and the whole island chain concept as a mere psychological barrier that no longer exists (Huang, 2017). Militarily speaking, the Obama administration responded to the growing and more assertive Chinese presence over the years on the South China Sea basically by stepping back, shifting its major military deployments to the second island chain and urging allies to form a closer cooperation in the wider area by creating an “arrow” from Japan to Australia and more recently, by adding India, the Quad. The US position in the Indo-Pacific region and more specifically, concerning its commitment to maintain the first island chain has been weakened over the past period not only by the rising Chinese power, but also by its own policy decisions that have resulted in a strategic overreach and cracks on previously functioning alliances and coercive deals. China could capitalize on the overreach of and the global discontent with US power while its own rising power has been increasingly acknowledged globally. Nevertheless, the US has never given up its positions officially and US administrations have persistently supplied Taiwan with arms of defensive character and, depending on the nature of the Washington-Beijing relations, have regularly reminded the Chinese leaders with more hawkish actions or more rhetorical threats that any option to determine the future of Taiwan by other than peaceful means, including boycotts or embargoes, is considered a threat to the peace and security of the Western Pacific area and of grave concern for the United States.

Recently growing tensions are also reflected by the three military sales with Taiwan the US State Department has approved only during the Biden administration so far, the latest deal valued at up to 95 million USD (which is in the range of the typical values of such deals recently) to support the Patriot Air Defense System and other defense items, including military training (Reuters, 2022). During the Trump administration, even significantly larger deals were approved, the last one in October 2020 at the value of 1.8 billion USD, raising severe tensions with Beijing (BBC, 2020).

8. Conclusions

For decades, cross-strait relations have been relatively stable and characterized by steadily growing and thriving economic relations. More recently, the People’s Republic of China seems more motivated to question the status quo and put a greater emphasis on its reunification agenda, either peacefully, or even non-peacefully. The moment seems right for such a confrontational step: the modernization

of the PLA, regular incursions into Taiwan's air space by the PRC, the Chinese position in world economy and global politics, Xi Jinping's personal ambitions along with the "Centennial Goals" and the "Chinese Dream" as well as China's successful Belt and Road Initiative, and the formation of the RCEP all show that China is able to question the sovereignty of Taiwan in the near future.

The United States, on the other hand, has very recently managed to move strategically important Taiwanese investments in the field of semiconductors and chips to US territories. Strategic ambiguity about a US involvement in countering a possible Chinese invasion prevails since the Taiwan Relations Act has been further questioned by the US giving up its strategically important first island chain including Taiwan and the South China Sea of its "island chain doctrine", which provides the linchpin of its post-WWII Asian security architecture. However, Washington's hegemonic position in the Indo-Pacific region has not yet been openly challenged.

Both South Korea and Japan have close and deep economic relations with Taiwan, though falling short of the PRC which is the largest partner of Taipei in terms of both trade and investments. The difference in Beijing's approach towards the 2021 bilateral joint declarations with the US, which include explicit reference to the Straits, differed significantly in terms of South Korea and Japan. This is a further clear sign that Beijing knows exactly which party would be ready to actively interfere and who would stay only at the rhetorical level. The recently ongoing sanctions policy against Russia can also be an important benchmark for China to measure the likely consequences of a possible move towards reunification.

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From the US-Taiwan Economic Relationship to Sustainable Global Economic Development

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1. Introduction

Taiwan performed an economic miracle from the 1960s to the 1990s, which made it into one of the Four Asian Tigers, along with Hong Kong, Singapore, and South Korea. Taiwan specifically transformed itself from an agricultural society into an industrial society and became a leading manufacturer of high technology goods, especially electronics, information communications technology, semiconductors, petrochemicals, textiles, etc. Taiwan's manufacturing sector comprises more than 36 percent of the country's gross domestic product (GDP) and provides jobs to 35 percent of the workforce. The country is one of the largest suppliers of semiconductors, computers, mobile phones, and monitors to the world market. The nominal GDP ranks twentieth in the world and is the seventh largest economy in Asia. While the country is known for its semiconductor and electronics industries, Taiwan's economy is still dominated by the services industry. The services sector accounted for 62.7 percent of Taiwan's GDP in 2020, employing 59.7 percent of the labor force. Taiwan's economy is highly export-oriented and reliant on international trade. Although its economic performance seems to make Taiwan a major global economic actor, the future development of its economy is dependent on its foreign relations, especially the relationship with major economic powers, like the United States and China. China continuously attempts to isolate Taiwan diplomatically and its ability to maintain its presence in global markets, restrain Taiwan's economic stability and the wills of other countries to maintain a stable economic relationship with Taiwan.

The unique relationship between Taiwan, China, and the United States makes the study of Taiwan's economy complicated because of how politicized economic policy is. It seems to be understood that Taiwan needs the world market and current world economic development needs Taiwan, however, the great power struggle makes this relationship uneasy and inaccessible. The political games of global powers play a critical and determinate role with countries that want to develop economic relations with Taiwan. The impact of being excluded from most global

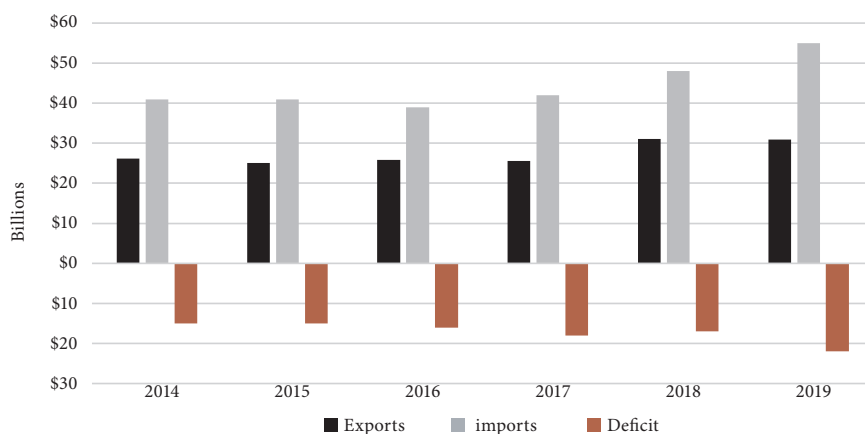
free trade agreements (FTAs) brings uncertainty to Taiwan's economic future. This research studies the complex triangular relationship between Taiwan, China, and the United States and how it affects Taiwan's and the United States' economy, and its impact on the world's economic sustainability.

2. Taiwan's Economic Strength

The success of Taiwan's strategy against Covid-19 has won international praise, showing itself to be a "beacon of democracy" in many ways, which has brought it stable economic growth. After containing its own domestic outbreak, Taiwan has earned the world's reputation for being a "nation of resilience". The economy is structured around the services sector, which contributes around 60 percent of the GDP. The prosperity of this services-based capitalist economy stems from its dynamic and entrepreneurial private sector, which employs over 90 percent of the working population. The economic environment and performance of Taiwan work quite well. The country scores very well on factors such as economic freedom and ease of doing business and is highly competitive internationally, particularly due to its efficient goods and labor markets and developed financial markets. Taiwan is one of the major information technology (IT) suppliers to some of the world's leading multinational corporations (MNC) in the IT sector. Taiwan's high degree of openness, with total exports and imports of goods and services amounting to 140 percent of the GDP (2012), is, however, also the economy's main weakness. It makes the economy overly dependent on external demand, especially from its main trading partners China, Japan, and the US (Blaauw, 2013).

Taiwan was the United States' thirteenth largest supplier of imported goods in 2019, up with 18.6 percent from 2018, and up with 91.3 percent from 2009. US imports from Taiwan accounted for 2.2 percent of the overall US imports in 2019 (Figure 1). The United States does have a trade deficit of 30 billion USD, including 17 billion USD in advanced technology products with Taiwan. Taiwan is a good market for US electronic components, aircraft, defense equipment, and raw materials like oil and grains. US manufacturers of the highly sophisticated equipment used in semiconductor fabrication plants account for more than half of the sales in this subsector and Taiwanese firms are premier customers. Taiwan is almost totally dependent on imports for its growing energy needs, including inputs like raw metals and feedstocks for the chemicals industry. The United States is a major supplier of these products and has the capacity to increase exports to meet Taiwanese demand (Duesterberg, 2021).

Figure 1: The US and Taiwan: Total Trade in Goods



	2014	2015	2016	2017	2018	2019	2014-2018 Average
EXPORTS	\$26,675.1	\$25,826.0	\$26,033.9	\$25,735.9	\$30,560.4	\$31,218.8	\$26,966.3
value	--	-\$849.0	\$207.9	-\$298.0	\$4,824.5	\$658.4	
Pct	--	-3.2%	0.8%	-1.1%	18.7%	2.2%	
IMPORTS	\$40,839.5	\$40,911.4	\$30,198.8	\$42,425.8	\$45,756.3	\$54,256.3	\$41,826.3
value	--	\$71.9	-\$1,712.5	\$3,226.9	\$3,330.5	\$8,500.0	
Pct	--	0.2%	-4.2%	8.2%	7.9%	18.6%	
BALANCE	(\$14,164.4)	(\$15,085.3)	(\$12,164.9)	(\$16,689.9)	(\$15,195.8)	(\$23,037.5)	(\$14,860.1)
value	--	(\$920.9)	\$1,920.4	(\$3,524.9)	\$1,494.0	(\$7,841.7)	
pct	--	6.5%	-12.7%	26.8%	-9.0%	51.6%	

Note: Values are in million USD.

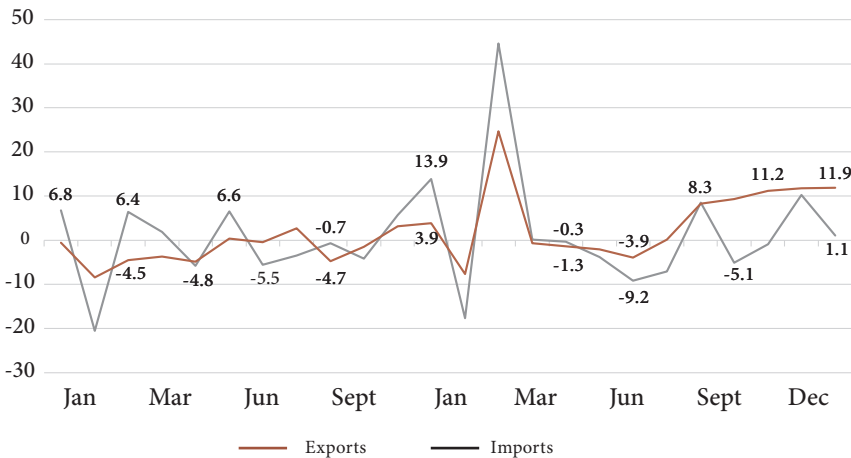
Source: Bureau of Industry and Security, 2019 and the US Census Bureau, 2019.

2.1. How Can Taiwan Help

According to the sustainable development goals report 2021 of the Department of Economic and Social Affairs, Sustainable Development of United Nations, the pandemic has led to a loss of the equivalent of 255 million full-time jobs, about four times the number lost during the global financial crisis from 2007-2009. From January to May 2020, most Asian economies have experienced economic slowdowns due to Covid-19. China's economic growth rate declined by 7.7 percent and South Korea's by 11.2 percent. Japan's economic growth decreased by 8.4 percent in the first four months 2020, and Singapore's by 6.9 percent. However, Taiwan was able to maintain an average growth rate of 1.5 percent in the first five months of 2020. In April, Taiwan's export orders rose more than 2 percent

compared to the previous year, marking the second consecutive month of a year-on-year increase (Figure 2), even though the global economy was negatively impacted by the pandemic. The increase in orders for Taiwanese high-tech device exports helped offset the impact of the virus on traditional industrial firms during this time. The restriction on people's routine activities and business interactions, as well as the resulting increase in remote work and online learning boosted the demand for 5G communication applications, high-performance computing devices, electronic components, and other information communications technology-related products, as well as video components.

Figure 2: Annual Growth Rate of Taiwan's Exports and Imports



Source: Ministry of Finance, ROC, 2020.

“TSMC is becoming more and more dominant,” said Kazumi Nishikawa, an official working on technology issues at the Japanese Ministry of Economy, Trade, and Industry. “This is something everybody in the chip industry must find a way to deal with.” (Crawford – Dillard – Fouquet – Reynolds, 2021). Taiwan is being praised for its capacity to make cutting-edge computer chips, mostly done by the Taiwan Semiconductor Manufacturing Company (TSMC), the world's largest foundry and producer of chips for Apple Inc smartphones, artificial intelligence, and high-performance computing. Taiwan's role in the world economy largely existed below the radar, until it came to recent prominence as the auto industry suffered shortfalls in chips used for everything from parking sensors to reducing emissions. With some major international automakers, including Germany's Volkswagen AG, the United States' Ford Motor Company, and Japan's Toyota

Motor Corporation, forced to halt production and idle plants, Taiwan's importance has suddenly become too big to ignore. American, European, and Japanese automakers are lobbying their governments for help, with Taiwan and TSMC being asked to step in. The auto industry's pleas illustrate how TSMC's chipmaking skills have handed Taiwan political and economic leverage in a world where technology is being enlisted in the great power rivalry between the United States and China, a standoff unlikely to ease under US President Joe Biden's administration (Crawford – Dillard – Fouquet – Reynolds, 2021).

The EU aims to bolster the bloc's "technological sovereignty" through an alliance armed initially with as much as 30 billion EUR (36.4 billion USD) of public-private investment to raise Europe's share of the global chip market to 20 percent (without a target date) from less than 10 percent. It is also encouraging Taiwan to increase investments in the 27-nation bloc, with some success. Global Wafers Co, based in TSMC's hometown of Hsinchu, just boosted its offer for Germany's Siltronic AG to value the company at 4.4 billion EUR, an acquisition that would create the world's largest silicon wafer maker by revenue. Tokyo is also wooing TSMC to set up in Japan. With 110 billion yuan (1.06 billion USD) earmarked 2020 or research and development, and another 90 billion yuan for 2021, some of that might go to a TSMC facility, which reports have said the company is considering setting up in Japan. That is not to say Taiwan is the only player in the semiconductor supply chain. The US still holds dominant positions, notably in chip design and electronic software tools; ASML Holding NV of the Netherlands has a monopoly on the machines needed to fabricate the best chips; Japan is a key supplier of equipment, chemicals, and wafers (Crawford – Dillard – Fouquet – Reynolds, 2021).

3. Taiwan's Obstacles regarding FTAs

Thanks to global semiconductor demand boosting exports from Taiwan, Taiwan upgraded its growth forecast for 2021. According to the Statistic Data Bureau, Taiwan's economy was forecasted to grow by 4.64 percent by 2021—making it the quickest expansion since 2014. Taiwan's projected growth for 2021 is an upgrade of the previous forecast with a 3.83 percent expansion and an acceleration from the revised growth of 3.11 percent for the whole of 2020. Gary Ng, an economist at the French investment bank Natixis, said that Taiwan's economy is in a "sweet spot" of very strong demand for tech products globally, as well as a relatively successful containment of the pandemic (Lee, 2021).

Despite Taiwan's successes, its ambiguous international status has been the main obstacle to its joining international organizations for years. A civil war in the 1940s between the ruling Kuomintang (KMT) and the Chinese Communist Party (CCP) on the Chinese Mainland ended when Chiang Kai Shek's government withdrew to Taiwan, withholding the official name Republic of China (ROC). For many years, the ROC held its claim to be the only legitimate government of China and even managed to retain the permanent Chinese seat in the UN Security Council until 1971, but during the Cold War, a growing number of states abandoned Taipei in order to establish diplomatic relations with Beijing. Decolonization and Beijing's close ties to an important number of emerging states helped China to eventually gain support within the UN against Taiwan, which lost its seat in most international organizations, including major economic and trade organizations. Although Taiwan's economic strength won it the ability to be a member of the World Trade Organization (WTO) in 2002, China was not yet a leading global actor, and the increasing trend of free trade negotiations between economies halted Taiwan's economic expansion for nearly two decades.

3.1. Political Issues

The idea of the "One China Principle", which is recognized by several countries in different ways, is a major cause of Taiwan's dilemma. Another element of the "One China Principle" was that no country could recognize the ROC and the PRC at the same time, as both claimed to represent China and would break relations with any third state that approached the other side. Most powerful nations have made statements to express their opposition to such a unilateral change in Cross-Strait relations. The United States and others have vested interests in good relations with China, therefore their long-standing policy is to discourage Taiwanese independence from China. Instead, the United States and other influential powers only support a peaceful solution in the form of a mutual agreement with talks between China and Taiwan. The economic rationale behind this stance is becoming increasingly powerful: China is the biggest foreign creditor of the United States, the EU is looking to China to save the Euro, and most other countries also have intensive trade relations with China (Winkler, 2011).

Taiwan's leaders have been seeking the best solution to boost its economy and maintain a peaceful relationship with China. From 2008 to 2016, the Kuomintang's Ma Ying-Jiu took the presidency and immediately installed a stable and peaceful relationship with Beijing by lifting the bans on communication

from both sides. Taipei and Beijing enjoyed 8 years of stability from every perspective, however, this so-called “good and solid relationship” ended up with the “Sun-Flower Movement”. At that time, the then opposition party, the DPP, accused Ma and the KMT of trying to “sell Taiwan” to China. Taiwanese youngsters and students occupied the Legislative Yuan (Congress) to demonstrate their anger and resentment that forced the Ma administration to put the Cross-Strait Service Trade Agreement (CSSTA) of the Cross-Straits Economic Cooperation Framework Agreement (EFCA) aside. The Ma administration believed signing the ECFA with Beijing would increase the willingness of other countries to sign FTAs with Taiwan. Since the DPP candidate Tsai Ying-wen won the presidential election in 2016, the relationship between the two sides has never recovered to what it was under Ma. China is much more influential and has pushed Taiwan harder for its international space.

3.2. Trade Issues

FTAs and regional economic integration have become the global trend in recent years, countries have been competing against one another to negotiate FTAs. However, Taiwan is one of the exceptions. Many countries have benefited from the consequences of globalization. In Asia, regional integration has been moving rapidly, however, the impact on Taiwan, which is heavily dependent on trade with other parts of East Asia, has been significant. China’s opposition has prevented Taiwan from participating in regional economic integration, which has had a severe impact on Taiwan’s economic development. Although Taiwan has expressed its interest in becoming a member of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the Regional Comprehensive Economic Partnership (RCEP), “the One-China Policy” has diminished the willingness of potential member countries to negotiate an agreement with Taiwan.

For instance, Taiwan played a very important role as a supplier of intermediate goods and components within the Asia-Pacific region, although its total exports were only around 2-3 percent, a small share of the eleven existing CPTPP members. Taiwan had close trading ties with CPTPP members in many industries, making Taiwan a key partner within the members’ production networks (Figure 3). For example, according to the 2020 trade statistics released by Japan’s Ministry of Finance, Taiwan was ranked Japan’s fourth largest source of imports, which was two places up from 2019 and its highest ranking so far. Statistics from Japan’s Ministry of Finance show that Japanese imports from Taiwan reached 2.9 trillion

Japanese Yen in 2020. Even though this was a drop of 2.4 percent, it was the smallest decrease among Japan's top 10 sources of imports. Additionally, statistics from Taiwan's Ministry of Finance, Taiwan's exports to Japan reached 23.4 billion USD in 2020, or an increase of 0.5 percent; and imports from Japan amounted to 45.9 billion USD, or an increase of 4.2 percent. This adds up to 69.3 billion USD in total trade between the two sides (Figure 4). These figures are all record highs, indicating the close trade relationship between Taiwan and Japan.

Figure 3: Bilateral Trade between Taiwan and CPTPP Members in 2020

Country	Total Bilateral Trade Amount (A+B)	Amount of Exports (A)	Amount of Imports (B)	Share in Total Trade
Japan	69,297.207	23,414.861	45,882.346	10.78%
Singapore	27,202.532	18,214.491	8,988.041	4.5%
Malaysia	18,991.181	9,112.714	9,878.467	3.14%
Vietnam	15,403.786	9,911.567	5,492.219	2.55%
Australia	11,067.841	3,045.212	8,022.629	1.83%
Mexico	3,717.696	2,644.309	1,073.387	0.62%
Canada	3,661.462	2,125.538	1,535.924	0.61%
Chile	1,489.77	166.937	1,322.833	0.25%
New Zealand	1,242.657	374.804	867.853	0.21%
Peru	415.142	186.01	229.132	0.07%
Brunei	211.436	56.793	154.643	0.04%
Total	148,500.71	65,053.236	83,447.474	
World	604,014.088	318,897.556	285,116.532	
Ration of CPTPP	24.59%	20.4%	29.27%	

Note: Values in million USD.

Source: Customs Administration, Ministry of Finance, 2021.

Figure 4: Bilateral Trade between Taiwan and Japan

Year	Total Amount		Export		Import		Balance of Trade	
	Amount	Growth Rate	Amount	Growth Rate	Amount	Growth Rate	Amount	Growth Rate
2017	625.2	4.0	205.7	5.7	419.4	16.3	-213.7	1.0
2018	669.9	7.1	228.0	10.8	441.5	15.5	-213.5	-0.1
2019	673.3	0.6	323.8	2.1	440.5	15.4	-207.8	-2.7
2020	692.9	2.9	234.0	0.5	458.8	16.1	-224.8	8.2

Note: Values in one hundred million USD;

Source: Bureau of Foreign Trade, MOEA, ROC, 2021.

Singapore, a member of the CPTPP, is also one of Taiwan's key trade partners. According to Taiwan's Customs' statistics for 2020, Singapore is Taiwan's sixth largest trading partner, fifth largest export market, and seventh largest source

of imports, with a bilateral trade of 28 billion USD. On the other hand, Taiwan is Singapore's fourth largest trading partner, seventh largest export market, and fourth largest source of imports. Until January 2021, Singapore was Taiwan's seventh largest source of foreign investment (Figure 5).

Figure 5: Bilateral Trade between Taiwan and Singapore

Year	Total Amount		Export		Import		Balance of Trade	
	Amount	YoY	Amount	YoY	Amount	YoY	Amount	YoY
2017	26,331	11.23	17,620	9.12	8,711	15.75	8,908	3.33
2018	25,740	-2.24	17,324	-1.68	8,416	-3.39	8,908	-0.01
2019	26,106	1.42	18,184	4.96	7,922	-5.87	10,262	15.20
2020	28,072	7.53	19,084	4.95	8,988	13.45	10,096	-1.61

Note: Values in billion USD;

Source: Bureau of Foreign Trade, MOEA, ROC, 2021.

Statistics from Taiwan's Ministry of Economic Affairs show that, in 2020, Taiwan was Malaysia's fifth largest global trading partner, eighth largest export destination, and fifth largest source of imports. Malaysia's trade with Taiwan contracted by 2.7 percent to reach 21.80 billion USD in 2020. Exports to Taiwan decreased by 8.6 percent to 8.06 billion USD in 2020 (Figure 6). Major exports were electrical and electronic (E&E) products, optical and scientific equipment, metal products, chemicals and chemical products, and petroleum products. Imports from Taiwan increased by 1.1 percent to 13.73 billion USD in 2020. Major imports were E&E products, chemicals and chemical products, as well as iron and steel products.

Figure 6: Bilateral Trade between Taiwan and Malaysia

Year	Total Amount		Export		Import		Balance of Trade	
	Amount	YoY	Amount	YoY	Amount	YoY	Amount	YoY
2017	17,547	24.42	10,368	32.69	7,178	14.15	3,190	109.14
2018	19,906	13.45	10,602	2.25	9,305	29.62	1,297	-59.34
2019	19,765	-0.71	9,400	-11.34	10,366	11.40	-966	-
2020	19,337	-2.17	9,458	0.62	9,878	-4.70	-420	-56.45

Note: Values are in billion USD;

Source: Bureau of Foreign Trade, MOEA, ROC, 2021.

Due to its special international status when applying for membership in international organizations or regional trade agreements, Taiwan will not only need to engage in bilateral trade talks with member countries, but also have acquiescence with the US or China. Then Taiwan can secure their support only if it is willing to resolve some trade disputes with those members. Taking the United States as an example, Taiwan must develop a concrete solution to the issue of opening up its

agricultural sector. Whether Taiwan is willing to open up its market to imports of US pork and beef products will have a particularly pronounced impact on the success or failure of Taiwan's negotiations with the United States regarding accession to future trade agreements. For example, the TPP agreement requires a high level of transparency in sanitary and phytosanitary standards (SPS) and technical barriers to trade (TBT); there must be no discrimination, and inspection, and quarantine measures need to be based on sound scientific reasoning. In the case of US beef and pork, however, Taiwan has failed to offer adequate scientific grounds for separate treatment and has been unable to offer a roadmap towards opening its market that is acceptable to the US government (Liu, 2016).

The relationship between Taiwan and China will also affect Taiwan's chances to become a member of international FTAs. China will have the power of influence over whether Taiwan is to be granted membership. Most countries have formal diplomatic relations with China and not with Taiwan, when faced with Taiwan's applications, they are bound to consider not only whether Taiwan is ready to be a member, but also if the United States and China support its entry. When Taiwan President Tsai took office in May 2016, managing relations with China became a key challenge for Taiwan regarding its efforts in establishing trade agreements.

Because of many external factors, Taiwan's trade relationship with the United States has been uncertain and unstable, though the United States has continued to be an important trading partner for Taiwan. Taiwan still has many bilateral trade issues that will need to be resolved if it is to negotiate any regional or bilateral agreements; the successful resolution of these issues is also key to the continued growth of trade between Taiwan and the United States, and to Taiwan's maintenance of an important position within global supply chains.

4. Taiwan's Economic Dependency on the United States and China

The United States has been the most important trading partner for Taiwan since Chiang's government moved to Taiwan from Mainland China after the civil war in 1949. Because of the political factors, the United States has since become one of Taiwan's main export markets. In 1990, the United States was Taiwan's largest export market and its second-largest source of imports, accounting for 72.31 percent of Taiwan's overall trade surplus. However, during the past few decades, Taiwan has faced some critical issues such as losing its diplomatic ties with most countries and its membership within the United Nations and other international

organizations; the domestic democratization; the rise of China; the trends of globalization and anti-globalization and the change of American Cross-Straits policy and so on, affecting the steady growth of both Taiwan's exports to and imports from the United States.

4.1. The US-Taiwan Trade Relations

By 2015, Taiwan's trade with the United States had risen to 34.2 billion USD and 26.4 billion USD respectively, but the share of Taiwan's total US-bound exports had fallen from 23.42 percent in 2000 to just 12.21 percent, and the share of Taiwan's total US imports fell from 17.96 percent in 2000 to 11.54 percent in 2015. The share of Taiwan's overall trade surplus with respect to the United States also declined, from 72.31 percent in 1990 to 15.22 percent in 2015. There has thus been a dramatic weakening of the bilateral trade relationship; overall, the United States has fallen to the fourth largest trading partner for Taiwan (Liu, 2016), mainly due to the cheap labor and large domestic markets in China and ASEAN member countries.

Taiwanese semiconductor manufacturing is important to the US economy which, in terms of value, represents over 47 percent of the total value added in global markets in this industry. Taiwanese firms account for at least 48 percent of total semiconductor fabrication. The US semiconductor leading companies such as Apple, Qualcomm, and NVIDIA base their economic model on chip design and outsourcing actual fabrication to leading firms like Taiwan's TSMC (Taiwan Semiconductor Manufacturing Company) and South Korean Samsung. The US chip design firms also account for 85 percent of the software needed for this segment of the industry. TSMC does have two fabrication plants in China but protects its best intellectual property by keeping its leading-edge processes in Taiwan. The company already has one plant in the United States and has announced a second plant, valued at 10-12 billion USD, in Arizona. About 60 percent of TSMC's business is with US firms. The wider importance of such manufacturing interdependence has been underscored recently by shortages of chips designed for the auto sector, which has led to months-long closures of major plants in the United States, Japan, and Europe. TSMC manufactures nearly 70 percent of all auto-specific chips.

For its part, the United States benefits from robust economic ties with Taiwan. Increased suspicion of Made in China's advanced technology products has led some US firms to view Taiwan as a secure and trusted partner. And the growing aversion in many economies, including, but not limited to, the United States, to

China-origin artificial intelligence-enabled products, and other software applications have made Taiwan a potentially attractive substitute for products designed or manufactured in China. Likewise, Taiwan benefits enormously from robust economic ties to the United States—one of its top five export markets and an essential technology partner. Taiwan, in effect, discovered Silicon Valley decades before the rest of the world. Since the 1970s, the process of “brain circulation” of Taiwan-born, US-educated, and trained engineers has driven a wave of entrepreneurial growth in semiconductors, personal computers, and other hardware-related industries.

In summary, even apart from the geopolitical considerations which have led to the US-China rivalry in high technology industries and global political influence, the economic case for an FTA is compelling. The United States would like to have better access to Taiwanese food and energy sectors and to see improved protection for intellectual property rights. These are traditional problems for an FTA to resolve. The mutual danger of Chinese efforts to displace the semiconductor industries in both countries as well as the mutual interdependence of the US and Taiwanese firms in this sector should motivate efforts to facilitate even stronger innovation ecosystems in the two countries. An FTA could also facilitate more Taiwanese investment on the safer shores of the United States (Duesterberg, 2021).

4.2. China-Taiwan Trade Relations

China is a natural trade and investment partner for Taiwan. Taiwan’s continued dependence on China is partly due to the common language, culture, proximity, and the attraction of its lower wages and large market. Nonetheless, overdependence poses risks for all of China’s trade partners, as the US trade war with China has shown and as China uses economic dependence for political leverage. It is therefore wise for Taiwan to diversify its commercial relationships (Lin, 2021) from the “Go South” policy in 1993, and now under current President Tsai’s “New Southbound Policy” (NSP) since 2016. Both policies intended to lead Taiwanese trade and investment away from China or to Southeast Asia. The rising costs in China and the US-China trade war caused the profits of Taiwan’s investments in China to decline, but trade with China keeps growing. China and Hong Kong combined now represent 34 percent of Taiwan’s overall trade, compared with 13 percent with the United States and 11 percent with Japan. Despite policy incentives, the Association of Southeast Asian Nations’ (ASEAN) share of Taiwan’s total trade volume has dropped from 16 percent in 2017 to 14 percent in 2022.

Taiwan is a critical provider of high-end semiconductors that Huawei and other Chinese companies need and that Chinese manufacturers cannot produce themselves. On the other hand, China is an important market for Taiwan's semiconductor companies. For example, 20 percent of the Taiwan Semiconductor Manufacturing Company's (TSMC) sales go to the Chinese market. After Apple, Huawei is TSMC's biggest customer. And within the technology sector, the oversized role of the semiconductor industry carries high risks. Taiwan's semiconductors are key to the ambitions of Washington and Beijing in advanced technologies ranging from self-driving cars to artificial intelligence to 5G telecommunications. But making products attractive to both superpowers may not be as enviable as it appears. A recent report from the US National Security Commission on Artificial Intelligence expressed concern about American overreliance on Taiwan, warning that the United States must try to localize semiconductor production to manage risks and ensure supply. If China gains ground and reduces its dependence on Taiwanese chips, it will not only buy less from Taiwan, but may also become a competitor for Taiwanese firms, eventually even including the flagship Taiwan Semiconductor Manufacturing Company. The risks from Taiwan's continued economic dependence on China are exacerbated by the strained political relationship between Taiwan and the mainland. After Taiwan democratized, it developed a different set of political and civic values from those in China (Lin, 2021).

5. Global Issues affecting Taiwan's Economy

5.1. ASEAN

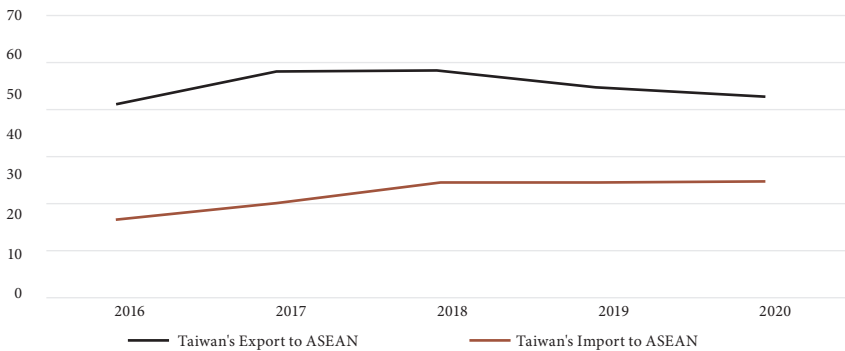
ASEAN accounts for an overwhelming majority of Taiwanese exports and foreign direct investment (FDI) with NSP countries. Between January 2016 and April 2018, ASEAN received over 86 percent of Taiwan's exports to NSP countries. In 2017, Taiwanese exports to ASEAN totaled 58.51 billion USD, a 14.2 percent increase from the previous year. In 2020, Taiwan's exports to ASEAN have only slightly decreased during the Covid pandemic (Figures 7 and 8). Malaysia alone saw a 32.7 percent jump in Taiwanese exports from 2016, while exports to Laos grew by an astonishing 74.5 percent on the year. Within ASEAN, Singapore, Vietnam, and Malaysia accounted for 38.5 billion USD of total exports in 2017. Between 2016 and 2018, of the top ten NSP countries as a destination for Taiwanese exports, seven were ASEAN countries. India was sixth with a 5 percent share of Taiwan's export market, and Australia and Bangladesh followed eighth and ninth on the list (Marston – Bush, 2018).

Taiwan's investment flows to ASEAN rose to 4.2 billion USD in 2016, up 73.3 percent from the previous year (before Tsai's inauguration), making Taiwan the region's seventh largest source of FDI. In 2017, according to Taiwan's Ministry of Economic Affairs, Taiwan's investment in the six largest ASEAN economies of Singapore, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam, grew by more than 25 percent from the previous year to 2.82 billion USD. Meanwhile, Taiwanese FDI in India more than doubled to 30.56 million USD in 2017, while investment in Australia leapt to an impressive 615.88 million USD (Marston – Bush, 2018).

Of the 2.3 million tourists from NSP countries in 2017, 2.14 million come from the ASEAN region. The eight non-ASEAN NSP countries account for a meager remainder of 147,380 travelers. The number of tourists traveling from ASEAN countries rose 16 percent in 2016 and more than 29 percent in 2017. Tourism from the Philippines saw a 69 percent jump in arrivals between 2016 and 2017 following similar visa policy changes. Vietnamese tourist figures nearly doubled from 196,636 in 2016 to 383,329 in 2017.

Taiwan managed to evade political pressure from Beijing when signing FTAs with Singapore and New Zealand in 2013, but that was under the Ma Ying-jiu government, which China was more willing to accommodate, in part because Taipei took a more China-friendly approach to Beijing's One-China policy and in part because it was willing to delay concluding those FTAs until after it had signed a Cross-Straits Economic Cooperation Framework Agreement with Beijing in 2010 (Marston – Bush, 2018).

Figure 7: Trade Relationship between Taiwan and ASEAN



Note: Values in billion USD;
Source: Bureau of Foreign Trade, MOEA, ROC, 2021.

Figure 8: Taiwan's Bilateral Trade with ASEAN

Year	Export		Import	
	Value	YoY	Value	YoY
2020	53,216	-1.33	35,880	2.61
2019	53,935	-7.21	34,965	1.21
2018	58,126	-0.67	34,549	11.45
2017	58,518	14.19	31,000	14.06
2016	51,248	-0.66	27,179	-6.38

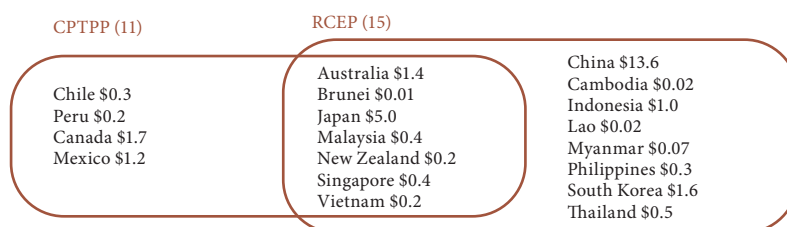
Note: Values in million USD;

Source: Bureau of Foreign Trade, MOEA, ROC, 2021.

5.2. CPTPP and RCEP

The good relationship between Taiwan and China did not last long, when Trump withdrew the United States from the Trans-Pacific Partnership (TPP) immediately after his inauguration, the TPP was dead without US participation. Taiwan has expressed interest in joining the CPTPP, and Japan expressed its support when it held CPTPP's rotating chair in 2021. Taiwan joining CPTPP would be both powerfully symbolic and practically important. Roughly one-fourth of Taiwan's total trade is with current CPTPP members (Figure 9), and if Taiwan were to be a member, its economy would be the fifth largest. Still, Taiwan's CPTPP accession faces enormous political hurdles. Ratifying its inclusion in the CPTPP is a risky move for the bloc, especially as China is the top trading partner for nearly all CPTPP member states. As China has actively worked to ensure that Taiwan remains isolated from regional and international multilateral agreements. By applying political and economic pressure, China has reduced the number of states that recognize Taipei from twenty-two to fifteen since 2016. Taiwan's wish to join RCEP was quickly vetoed by China, leaving CPTPP as Taipei's only remaining viable option to consolidate its economic benefits (Solís – Mason, 2018).

Figure 9: Members of RCEP and CPTPP



Source: Petri P. A. – Plummer, M. (2020).

RCEP will connect about 30 percent of the world's people and output and, in the right political context, will generate significant gains. According to the study by Peter A. Petri and Michael Plummer, RCEP could add 209 billion USD annually to world incomes, and 500 billion USD to world trade by 2030.

The effects of RCEP are impressive even though the agreement is not as rigorous as the CPTPP. It incentivizes supply chains across the region but also caters to political sensitivities. Its intellectual property rules add little to what many members have in place, and the agreement says nothing at all about labor, the environment, or state-owned enterprises all key chapters in the CPTPP. However, ASEAN-centered trade agreements tend to improve over time (Petri – Plummer, 2020).

Southeast Asia will benefit significantly from RCEP (19 billion USD annually by 2030) but less so than Northeast Asia because it already has free trade agreements with RCEP partners. But RCEP could improve access to Chinese Belt and Road Initiative (BRI) funds, enhancing gains from market access by strengthening transport, energy, and communications links. RCEP's favorable rules of origin will also attract foreign investment (Petri – Plummer, 2020).

RCEP, often labeled inaccurately as “China-led,” is a triumph of ASEAN's middle-power diplomacy. The value of a large, East Asian trade agreement has long been recognized, but neither China nor Japan, the region's largest economies, were politically acceptable as architects for the project. The stalemate was resolved in 2012 by an ASEAN-brokered deal that included India, Australia, and New Zealand as members, and put ASEAN in charge of negotiating the agreement. Without such “ASEAN centrality,” RCEP might never have been launched (Petri – Plummer, 2020). Since RCEP negotiations began in 2013, Taiwan has expressed interest in joining the regional trade pact as part of broader efforts to participate in multilateral economic cooperation and free trade negotiations, as well as to institutionalize bilateral and multilateral cooperation with ASEAN countries.

For Taiwan, exclusion from RCEP could have significant implications for its economy, which is heavily dependent on foreign trade. RCEP countries, which account for nearly 60 percent of Taiwan's foreign trade, and Taiwan's major trade partners and investment centers such as China, ASEAN, and Japan are also RCEP member countries. In response to the announcement on RCEP, Taiwan's Minister of Economic Affairs argues that 70 percent of trade between Taiwan and RCEP countries are already tariff-free. Taiwan also has two free trade agreements (FTAs) with New Zealand and Singapore, signed in July and November of

2013, respectively. The 2013 signing of the Agreement between Singapore and the Separate Customs Territory of Taiwan, Penghu, Kinmen, and Matsu on Economic Partnership (ASTEP), demonstrates Taiwan's commitment to trade liberalization and globalization and will pave the way for Taiwan's entry into the CPTPP and RCEP (Chang, 2019).

In contrast, the CPTPP and RCEP could add 121 billion USD and 209 billion USD to world incomes, respectively, if they are implemented as planned. These gains—due to additional trade and production in East Asia—would offset the effects of the trade war for the region, if not fully for China and the United States. The agreements will reduce the cost of doing business in East Asia, connecting strengths in technology, manufacturing, agriculture, and natural resources. They will deepen linkages between China, Japan, and South Korea, which are already among each other's largest trade partners. RCEP and the CPTPP make East Asia a natural sphere of Chinese economic influence and will generate skewed benefits. China will gain the most from RCEP (100 billion USD), followed by Japan (46 billion USD) and South Korea (23 billion USD). Southeast Asia will also benefit (19 billion USD), but less since free trade accords are already in place with RCEP partners. Meanwhile, the United States and India will forego gains of 131 billion USD and 60 billion USD, respectively. But compromises are increasingly possible—in part—due to Covid-19 many countries now support a larger economic role for the state. Even the United States is using or proposing “Buy American” laws, controls on trade and investment, public investments in technology, and government stakes in global champions. Limited industrial policy space could coexist with market disciplines, though defining that space will take thoughtful leadership. RCEP and the CPTPP will benefit China economically, but they put Chinese leadership to the test. They offer an unusual chance to reverse the freefall in international cooperation (Petri and Plummer, 2020a).

5.3. The US-China Trade War

Following China's accession to the World Trade Organization (WTO) in 2001 and its broader integration into the global economy, the United States significantly increased its economic ties with China. US trade ties with China peaked in 2017, with the share of US export goods going to China reaching 8.6 percent, and the share of import goods reaching 21.6 percent. However, since 2018, the US-China trade war has caused bilateral trade flows to decline, threatening to reduce the benefits this trade generates for the US economy.

The United States has benefited from increased economic integration with China. Even after a recent decline in bilateral trade, the US exported 106 billion USD in goods and 57 billion USD in services to China in 2019 according to the Oxford Economics reports in 2021. Other than that, American families and consumers have benefited from cheaper imported goods from China. Businesses have benefited from cost-effective inputs that have boosted their competitiveness, while globally integrated supply chains have improved efficiency and lowered production costs for US firms. This has enabled US businesses to grow and create jobs in the US. China has also invested directly in the United States, creating jobs, and providing incomes for American households. Moreover, US-based multinationals have invested directly in China, allowing them to reinvest profits from their China operations. The success of US companies in China will be essential for US global competitiveness going forward, as China is projected to drive around a third of global growth over the next decade. Profits made by US companies through investing in China can also benefit the American economy through dividends, R&D spending, and increased domestic investment.

The US-China trade war began in April 2017 when the United States launched a national security investigation into international steel and aluminum products. A series of trade measures were aimed at China for the purpose of investigating unfair trade measures and to solve the trade deficit problem. China faced increased tax pressure, while it imposed tariffs on some products in retaliation. The nature of the US-China trade conflict is a trade issue involving tariffs on products that began as a measure to solve the trade deficit problem, but it also wants to target China's unfair trade measures. Such measures include its continuing subsidies for state-owned enterprises (SOEs), infringement of intellectual property rights (IPRs), and forced technology transfer, which are seen as threats to US interests.

Taiwan's economy seems to benefit from the impact of the US-China trade war. Its economic growth rate is expected to be more than 2 percent in early 2021. From the supply chain perspective, the triangular trade model, where Taiwan takes orders, China produces and the US consumes, the US-China trade war will disrupt this kind of Taiwanese investment and production structure. Although Taiwan's trade performance has been affected, with the annual growth rate of exports in the first half of this year at -3.4 percent, it benefited from a transfer effect/transfer production base, such as ICT and audiovisual products, along with Taiwan's trade with the US showing breakthrough growth.

The United States and China are likely to continue amassing disproportionate weight in the international system going forward. Their growing role in the global economy is fueled largely by both countries' technology sectors. These two countries have unique traits. These include world-class research expertise, deep capital pools, data abundance, and highly competitive innovation ecosystems. Both are benefitting disproportionately from a clustering effect around technology hubs. For example, of the roughly 4,500 artificial intelligence-involved companies in the world, about half operate in the US and one-third operate in China. According to a widely cited study by PricewaterhouseCoopers, the United States and China are set to capture 70 percent of the 15.7 trillion USD windfall that AI is expected to add to the global economy by 2030 (Hass and Balin, 2019).

Another area of US-China interdependence has been knowledge production. As US-China technology expert Matt Sheehan has observed, "With the rise of Chinese talent and capital, the exchange of technological know-how between the United States and China now takes place among private businesses and between individuals." Leading technology companies in both countries have been building research centers in the other. Alibaba, Baidu, and Tencent have all opened research centers in the United States, just as Apple, Microsoft, Tesla, and other major American technology companies rely upon engineering talent in China (Hass, 2021).

6. Taiwan's Stability and the Sustainability of the Global Economy

6.1. From Trump to Biden

The Trump administration argued that a broadened partnership with Taiwan could be an additional element of American power and purpose in the Indo-Pacific. Taiwanese firms may continue to relocate factories to other developing countries due to geopolitical uncertainty and cost considerations. However, the relocation of manufacturing production away from China does not mean weakening manufacturing ties across the strait. The enactment of China-ASEAN free trade members and RECP would facilitate Taiwanese firms' construction of a production network between China and ASEAN countries. The greater regional economic integration, coupled with Taiwan's New Southbound Policy, are expected to expand cross-strait production network through ASEAN's greater involvement.

The Biden administration continues Trump's policy to encourage the supply chain to move back to the United States. Apple's two largest production partners, Foxconn, TSMC, and other Taiwanese semiconductor firms echoed Trump's policy to invest in the US manufacturing industry. As a result, Taiwan's investment in the US in 2020 increased significantly. The United States is now the second largest investment destination, accounting for 24 percent of Taiwan's total outward investment, after China's 33 percent in 2020. In the same year, Taiwan's investment in electronic parts and component manufacturing in the United States is two times larger than that in China.

Taiwan's manufacturing investment in the United States aims to supply the local demand in the country. This indicates a potential decline in Taiwanese exports to the United States as goods could be produced locally. On the contrary, Taiwan's imports from the United States are likely to rise. With Taiwan's relaxation of import restrictions on US pork in January 2021, Taiwan's import of US agricultural goods is expected to increase. Taiwan also increased its imports of crude oil from the US after 2018. Moreover, it has prepared to increase its imports of natural gas from the US. Taiwan's potential declining exports to and growing imports of agricultural and petrochemical goods from the United States may cut its trade surplus with the country in the future.

Unlike Trump's bilateral approach, the Biden administration vowed to contain China by working with US allies. Nevertheless, the effectiveness of Biden's multilateral approach to counterbalance China's power rise is uncertain. A few decades ago, many US traditional allies were economically reliant on China and did not intend to choose between the two. But now China has already taken the lead in developing a multilateral network over the past few years and has become an important member of RCEP. It also expressed its interest in joining the CPTPP. In comparison, the United States is not involved in any FTA yet. It will take time for the new administration to rebuild the US-centered multilateral economic network.

Given the development of 5G, ICT goods, and electric cars, Taiwan's manufacturing-oriented economy is likely to maintain decent growth in the short term. In the long run, geopolitical uncertainty and the US-China competition in high technology remain the most important variables in Taiwan's economic outlook.

6.2. Taiwan's role in Global Economic Sustainability

TSMC is one of Taiwan's largest businesses and the world's leading semiconductor foundry. As the Carnegie Endowment's Evan Feigenbaum has described in a recent study, TSMC relies on its massive scale to spread out fixed costs, push down the price per unit, and pump resources into next-generation research and development. If TSMC loses scale, e.g., by losing a market that accounts for 20 percent of its global sales, it could lose its edge over its competitors (Feigenbaum – Weisel, 2021).

Taiwan will have to continue to maintain its manufacturing strength, encourage innovation, and attract talents and investors. Taiwan will also have to strengthen its financial services to better serve the highly developed manufacturing industry's financial demand. The policy will also need to encourage the synergy between the highly profitable semiconductor industry and other industries so that Taiwan's economic development will be more balanced. The domestic legal environment must ensure that all domestic and foreign businesses can compete fairly. A strong and competitive economy will be the best weapon to protect Taiwan's sovereignty and secure its national interests going forward (Chiang, 2021).

A new administration, therefore, offers an opportunity to reevaluate. But even with broad-based bipartisan political support for a bilateral trade agreement (BTA) in Congress and the change in administration, BTA negotiations with Taiwan may not be in the future anytime soon. After all, the Biden team will need many months to settle on its trade agenda, decide whether and how to prioritize prospective bilateral and multilateral trade agreements, and then launch negotiations when necessary. The danger is that advocates for a deepened US-Taiwan economic partnership could find themselves at least twelve to eighteen months into the Biden administration before US trade officials even begin weighing the prospect of an agreement. Focusing solely on a BTA and little else thereby risks crowding out other productive ideas, initiatives, and policy innovations. But Taipei also views closer economic ties with the United States as a strategic benefit in the face of pressure from Beijing. Taiwan wants a broader array of commercial ties and partnerships and has bet that, as the United States seeks to expand its economic partnership with Taiwan, other major economies could potentially follow.

With or without a BTA, a stronger trade, investment, and innovation relationship between the United States and Taiwan would help to lock in mutually beneficial gains. And because both Washington and Taipei are members of the Asia-Pacific

Economic Cooperation (APEC) forum, a broader agenda in APEC would be one way to negotiate a formal system of shared standards, principles, and understandings. Another would be to broaden the scope and nature of their bilateral economic engagement. The immediate priority for both Washington and Taipei should be an early harvest of quick wins. It will take time for the Biden administration to decide whether to launch a multilateral sectoral trade initiative in which Taiwan might participate. So other complementary bilateral initiatives that could move more quickly should, at this point, be the immediate goal to demonstrate the strengthening of economic ties between the United States and Taiwan.

The United States with the participation of other relevant agencies should host senior-level meetings inviting Taiwan and other like-minded nations with an agenda focused on immediate deliverables, including the negotiation of an enhanced and more comprehensive science and technology agreement covering innovation in addition to the existing emphasis on basic research, and an understanding on investment screening coordination, agreement on specific ways the two sides will coordinate on renewable energy and environmental sustainability, and women's economic empowerment, etc. For Washington, hosting a US-led dialogue trade and investment meeting regularly in coordination with its Taiwan counterparts and leading business associations, to promote bilateral trade, investment opportunities, and partnerships among the participating nations is a good idea. The meetings with counterparts from Taipei would signal the United States' commitment to reestablishing regular engagement with Taiwan and deepening trade relations. The participating nations may directly reach out to Taipei to gain high-tech products or skills to sustain their economic development. The agenda could aim at leveraging commercial partnerships, such as encouraging US energy firms to make greater use of engineering, procurement, and construction (EPC) partners based in Taiwan. Many of these US companies are already working with local EPCs on their projects in Taiwan. One prospective model would be to leverage existing US-Taiwan EPC partnerships so that Taiwan-based EPC firms could be bidding partners on projects in Southeast Asia or elsewhere. Ultimately, deepening such partnerships would require measures by Taipei to bring down costs; Taiwan needs policies that incentivize competition among EPCs. But this topic could be addressed within a US-led dialogue track, showcasing the many ways Washington and Taipei are looking not just at a potential BTA but well beyond it to capture the full range of bilateral, regional, and global opportunities to sustain global economic growth.

The United States and Taiwan and any other countries aiming to boost their economic growth have every reason to develop their economic partnership further. Making good on this opportunity, however, will require broadening their agenda; pursuing a multifaceted set of dialogues, agreements, projects, and other initiatives; and reflecting the interests of a wider array of public and especially private players (Feigenbaum – Weisel, 2021). The Financial Times reported that the Trump administration has asked the Taiwanese government to compel TSMC to do just that. Per the article, Washington wants Taipei to restrict sales of semiconductors to Huawei and to institute stricter controls on technology exports to China. Washington also reportedly is considering tightening the US content threshold for export controls from 25 to 10 percent, meaning that chips manufactured in Taiwan with 10 percent or greater American content would require a license for export to China. This could constrain chip sales in the short run, and over the longer term compel Taiwan foundries to engineer American content out of chips bound for China (Hass, 2020).

Beijing relies on imports of high-end chips, many of which originate in Taiwan. At the same time, the United States wants to slow down the rate of China's technological progress, including but not limited to Huawei. So, if it has not done so already, Washington may soon increase pressure on Taipei to support its strategic objectives vis-à-vis China, including the tightening of restrictions on sales of high-end chips to China. There is a risk that US-China technology competition will end up hurting Taiwan. Whether or how Taiwan's economic equities are protected amidst the intensifying US-China technologic competition will depend on the work of policymakers in Washington and Taipei (Hass, 2020).

7. Conclusion

The US-China trade war can only damage the world economy. The two major powers may try to win the war to monopolize its leadership or economic growth, however, the rest of the world will lose economic development. There is a high probability that US-China relations will continue to deteriorate in the months to come. The US-China phase one trade deal slowed the rate of decline in the relationship, but it did not reverse the downward trajectory. The reality is that tariffs are the side-show. The real action now is in the technology sphere and Taiwan will be torn between them. The more the US-China technology competition intensifies, the greater the risk of collateral damage to Taiwan, even though that is not the intention of any American policymaker.

A major factor in Taiwan's economic growth is the continuing diversification strategy adopted by the Taiwanese businesses in China. In fact, this trend started way before the pandemic and before the recent US-China trade war. Starting roughly in 2010, there has been an incremental decrease in foreign direct investment from Taiwan to China, despite some fluctuations in 2015. This has something to do with the structural changes to Cross-Strait economic relations (Liu, 2020). Diversifying its economy and reducing economic dependency on and political tensions with China will be the key turning point in Taiwan's economic development. However, without creating more economic and trade partnerships, Taiwan's businessmen will be reluctant to leave China's markets. Taiwan's dilemma on its economic future could be solved with the following approaches: (1) Internally, no matter which party is in power, Taiwan needs to pursue a peaceful resolution between the United States and China to attract more foreign investment, at the same time to balance its relationship with the United States and China to stabilize its business environment. (2) Externally, the United States needs to show the world its determination to strengthen and stabilize the world economy again through free trade and to ensure that other countries have the option to participate without any costs.

Trade liberalization and globalization can have both positive and negative effects on sustainable development. There is a continued need to support efforts by more players to integrate themselves into and derive benefits from the multilateral trading system. At the same time, attention also must be given to enhancing the contribution of the multilateral trading system to sustainable development. A supportive international economic environment is crucial. Two of the SDGs goals of the United Nations call for promoting sustainable development through trade liberalization; and making trade and the environment mutually supportive (UN SDGs Goal 8, Agenda 21). Taiwan is not a member of the UN but "Taiwan can help" the slogan of Tsai's administration declared to the world during the pandemic shows the strong will of Taiwan to participate in the international community. The Taiwanese have been struggling with the two core values of whether to prioritize Taiwan's security or prosperity. The United States and China are the only two actors that can resolve these issues. Taiwan's global participation can solve its current economic issues. The stability and the continuous growth of the world economy rely on the harmony between the United States and China. China needs social and economic stability to secure its leadership. The United States needs economic growth to stabilize its leadership as well. However, a secure and prosperous Taiwan may contribute to what the United States and China both need. The three parties need each other to sustain global economic growth and

prosperity. Optimal scenarios for these three actors to engage in global economic sustainability are:

- (1) The United States and China agree to create a “semiconductor manufacturing zone” by inviting companies to focus on research, develop and produce the chips that help the world economy.
- (2) The UN invites some developing countries to work with high-tech companies or educational institutions from Taiwan by proposing an NGO training center to cultivate talents in high-tech industries to fulfill its SDGs.
- (3) The United States holds a “world high tech industry summit” as a second track to link Taiwan to the world.

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Taiwan's Foreign Relations with Developing Countries

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1. Introduction

Taiwan, officially called by its own government the Republic of China (ROC), was led by the only legitimate Chinese government acknowledged by most countries of the world even after the unification of mainland China by the Communists in 1949. Later, due to regional developments and the changing interests of the great powers, the international influence of the government of the island diminished, with a major turning point in 1971, when a UN resolution gave the People's Republic of China¹ (PRC) representation in the organization instead of Taiwan. Subsequently, a significant number of the countries in the world, for political and economic reasons, sided with Beijing, acknowledging the Communist leadership as the real government of China (Salát, 2017). Today, in addition to the Holy See, only 13 of the 193 UN member states maintain full diplomatic relations with Taiwan, the vast majority of which are in the developing world (by the end of 2021, Nicaragua was the last state to sever diplomatic relations with Taiwan).

Diplomatic recognition is an important expression of a state's sovereignty. Therefore, the countries maintaining full diplomatic relations with Taiwan are extremely important international allies of the island's government. For this reason, their examination also points to the essence of Taiwan's foreign policy aspirations. At the same time, in some respects, relations between Taiwan and its diplomatic allies are more of a question of prestige, as third world states have little ability to advance Taipei's interests on the international stage. In addition, Taiwan has informal diplomatic missions in 57 countries around the world,² which is of great importance; it is enough to mention the case of the United States, Taiwan's most important patron.

¹ Hereafter: China.

² The name of these institutes varies: Taipei Economic and Cultural Representative Office, Taipei Representative Office, Taipei Economic and Cultural Office. In addition to their regular consular duties, they are also working to strengthen bilateral relations.

Overall, the study of the relationship between Taiwan and the developing countries is still relevant today, as it highlights the process by which Beijing's global influence continues to grow while that of Taiwan recedes, and the Latin American, African, and Pacific countries need to respond appropriately.

2. The Development of Taiwan's Foreign Relations and the Foundations of its Relations with Developing Countries

The Kuomintang government, led by Chiang Kai-shek, was on the side of the victorious powers at the end of World War II and was considered the recognized government of China. However, it was defeated in the civil war by the communist forces of Mao Zedong and was pushed back to the island of Taiwan in 1949. The outbreak of the Cold War fundamentally determined the foreign relations of the Republic of China, as in contrast to the countries supporting Beijing, the US and its allies maintained relations with the Taiwanese government until the early 1970s (Dumbaugh, 2006). The transformation of the international environment and the UN Resolution No. 2758, adopted in 1971, which deprived Taiwan of China's representation in the organization and handed it over to the People's Republic, led to major changes in which more and more countries established diplomatic relations with Beijing, turning their backs on Taiwan. The US took this step in 1979 (Embassy of the PRC in the U.S., 2012). While Taiwan was recognized by 71 countries in 1969, only 23 states remained on the island's list of "allies" by 1986, mostly developing countries in a fragile political and economic situation.

In the international arena, Taipei has long sought to present itself as the only legitimate government of China, but since the 1990s, gaining dual recognition with the People's Republic has become an increasing priority. However, a serious obstacle to this was the "One China policy", which in turn is the basis of Beijing's foreign policy. The point is that there is only one sovereign Chinese state, the PRC, therefore a country that wants to establish diplomatic relations with it, must sever official ties with Taiwan (BBC News, 2021). To obtain support from third-world countries, Taiwan has essentially decided to make the most of the opportunities offered by development aids (McCord, 2017). A key feature of Taiwan's international aid policy³ was providing generous support for states in need from Latin America to the Pacific, while not imposing serious conditions on accountability. At the end of the Cold War, when ideology mattered little, a positive perception

³ It is no coincidence that Taiwan is a major supporter of Official Development Assistance.

of Taiwan's aid also helped stabilize foreign relations in the developing world. The success of "dollar diplomacy" is evidenced by the fact that between 1988 and 2000, during the Lee Teng-hui administration, Taiwan established diplomatic relations with 7 new states (Dahmer – Rich, 2018). At the same time, it should also be mentioned that Taiwan's political system has changed a lot over the years, and the democratization that began in the 1980s offered an attractive alternative to countries with reservations about authoritarian regimes.⁴

In 2008, under Ma Ying-jeou's presidency, a new phase of cross-strait relations began as part of Taiwan's diplomatic ceasefire, in which the PRC and the ROC informally promised to discontinue competition for international recognition, meaning that Beijing did not pressure Taiwan's remaining allies to change sides. The agreement, even if valid only for a short time, can be considered a success for Taiwan, as the island lost an ally almost every year before 2008, as the PRC's growing political and economic influence in the Third World became more and more felt (Yen, 2010).

Overall, Taiwan's most successful diplomatic efforts are related to the least developed part of the world. This is both a positive and a negative aspect of Taiwan's foreign policy, which has again come under increasing pressure from the PRC in recent years. In the 2010s, in parallel with the emergence of the new world order, the global influence of the PRC increased spectacularly, thanks to, among other projects, the Belt and Road Initiative (BRI)⁵, which most developing countries wanted to join and hoped significant benefits from closer economic cooperation with China. Not surprisingly, in the last few years, Burkina Faso, the Dominican Republic, El Salvador, São Tomé and Príncipe, Kiribati, Panama, and the Solomon Islands have severed diplomatic ties with Taiwan and switched sides. In early December 2021, Nicaragua cut diplomatic ties with Taiwan as well.

It is clear that the Tsai Ing-wen administration, which has been in office since 2016, has put a great strain on its relationship with Beijing since it did not accept

⁴ The first direct presidential election was held in 1996, when Lee Teng-hui of the incumbent Kuomintang party won the majority of votes.

⁵ In the fall of 2013, China announced a global project called Belt and Road Initiative (BRI), thus committing the Beijing leadership to building and modernizing transportation networks following the ancient caravan routes that once connected Europe and Asia. BRI is envisioned as an international development program led (funded) by China, which also meets Beijing's geostrategic goals by connecting remote regions to major trade routes. The project consists of two main parts: a land route (connecting China to Central Asia, the Middle East and Europe) and a sea route (covering the main trade routes of South and Southeast Asia, Africa, Europe, Oceania) (Klemensits, 2020, pp. 137-138).

the “One-China principle”. Therefore Tsai Ing-wen is not in an easy position to keep its current allies, especially when even the US pressure is insufficient to prevent the changing of sides. Hence, the evolution of Taiwan’s foreign relations in the developing world will be increasingly determined by Beijing’s intentions (ChinaFile, 2019).

3. Development of Taiwan’s Relations with Latin American Countries

3.1. Taiwanese Presence in the Region, Diplomatic Rivalry with the PRC

Taiwan’s foreign policy has attached great importance to Latin America from the beginning, and it is no coincidence that Taipei has developed close ties over the years, especially with the states of the Caribbean and Central America. During the first half of the Cold War, under American pressure, most countries in the region agreed unanimously to choose Taiwan, but later the region became the focus of a diplomatic struggle between the PRC and the ROC, with both sides trying to help with “dollar diplomacy”—i.e., primarily through aid—and gain foreign policy benefits (Maggiorelli, 2019). After Asia, Latin America has become the main target of aid in Taiwan’s foreign policy, where the real needs of the host country mattered less than the political expectations of the donor.⁶ However, the region has benefited greatly from Taiwan’s aid policy, as it has offered a real alternative primarily to the poorest Caribbean states.⁷ It can be observed that the possibility of economic cooperation with the PRC is more attractive to more resource-rich, developed, and larger countries, meanwhile, the aid from Taiwan is more attractive to the smallest, non-self-sustaining nations (Esteban, 2008). Geographical factors are also worth considering here, as the distance from the PRC also gives more leeway to the states involved. In the 21st century, sustainability is becoming increasingly important for Taiwan, and in supporting its allies, it is primarily trying to promote its sustainable development agenda.

In addition to aid, Taiwan has sought to strengthen its position in trade and investment as well. Narrowing down our study to Central America, it can be stated that the volume of Taiwan’s trade in the region is only a third of that of the

⁶ Taiwan has generally dedicated 30-50 percent of its foreign aid to Latin America, which is quite significant given that Taiwan’s total foreign aid in 2015 reached 290 million USD.

⁷ Assistance to Latin American countries has focused mainly on the following areas: agriculture, infrastructure, business development, natural disaster recovery.

PRC, and the region also plays an insignificant role in the island's trade. In terms of investment, Taiwan enjoys an advantage over China, and increasing it has been a major goal in recent years.

In return for the aid, Taiwan, in addition to establishing and maintaining official diplomatic relations, also expected support from the host countries on the international stage, which, however, they did not provide in all cases. Naturally, they also did not have enough influence to effectively promote Taiwan's membership in the United Nations.⁸ All things considered, the effectiveness of aid-based foreign policy is controversial and it poses serious risks. It is undeniable, however, that Taiwan still has the most allies in Latin America (8), even though Beijing has enticed several of its rivals to its side in recent years. Panama, for instance, which had a significant influence in Central America for a long time thanks to the canal, was a key partner for the ROC until June 2017, when the small country established diplomatic relations with the PRC. Economic relations between Panama and China have steadily grown in recent years, and as Beijing is the second biggest user of the Panama Canal after the United States, it is clear that its political and economic influence has strengthened accordingly, with which Taiwan could no longer compete through its aid policy (BBC News, 2017). In 2018, both the Dominican Republic and El Salvador cut diplomatic ties with Taiwan in favor of China. The former switched sides after China offered a package of 3.1 billion USD in investment and credit, and the latter established diplomatic relations with the PRC after Beijing proved willing to fund a port project previously not supported by the ROC (Ellis, 2021). At the end of 2021, Nicaragua broke its diplomatic ties with Taiwan in favor of Beijing. Nicaragua recognized the ROC between 1962 and 1985, and after a brief transition to the PRC, the two countries re-established diplomatic relations in 1990. In 1985, Daniel Ortega, the leader of the left-wing Sandinista forces, severed ties with the ROC in hopes of cooperating with Beijing, but in 2006, when he took over the presidency again, in consideration of Taiwan's aid he maintained the pro-Taiwan foreign policy represented by his predecessor. Taipei also committed itself to strengthening ties. The development of personal relationships is indicated by the personal participation of President Tsai-Ing-Wen in the inauguration of President Ortega in January 2017. Despite the substantial financial support, technical assistance, and regular scholarships to Nicaraguan

⁸ Under pressure from Beijing, Taiwan cannot be a member of many important international organizations, but in Latin America, its foreign policy influence is strengthened by the fact that it has gained membership in a number of regional organizations, such as the Central American Bank for Economic Integration.

students and the prospering bilateral trade thanks to the FTA, on December 9, 2021, the PRC and Nicaragua signed a joint communique on the resumption of diplomatic ties in Tianjin (Aljazeera 2021).

3.2. Taiwan's Allies and Key Features of Bilateral Relations

3.2.1. Guatemala

At present, Guatemala is considered the oldest ally of the ROC, the two entities established diplomatic relations in 1933. Over the years, intensive cooperation has developed between the two states in areas such as infrastructure, medicine, health, education, and economy, along with trade, and technology. In addition, agriculture and innovation in small and medium-sized enterprises have also been important areas for cooperation (EFE, 2019). Economic cooperation is facilitated by the free trade agreement between the two entities coming into force in July 2006 (SICE OAS, 2021). According to official data, trade between the two countries amounted to 230 million USD in 2017, while imports from Guatemala increased by 50 percent and exports by 6.4 percent (Yang – Huang, 2018) the same year. In terms of international politics, the ROC has always enjoyed the support of the Central American country, and this is still true today.⁹ In June 2021, the President of Guatemala, Alejandro Giammattei, knowing of the support of the United States, said his country remained firmly on Taiwan's side while ruling out the possibility of accepting vaccines against the coronavirus from the PRC. According to Taiwan's Ministry of Foreign Affairs, the relationship between the two countries is "proud and friendly". The two parties continue to deepen cooperation in various fields, emphasizing the fight against Covid-19 and the promotion of mutual, sustainable prosperity (McCartney, 2021a). The fight against Covid-19 is an important part of the two countries' cooperation, and Taiwan has promised to give Guatemala access to vaccines as soon as domestic production begins. According to Guatemala, Taiwan is a key partner in sustainable development, as Taipei makes a crucial contribution to "the effective implementation of Agenda #2030 for sustainable development in Guatemala" (Hsu, 2018).

⁹ Bilateral relations were overshadowed by the fact that in March 2014, Former Guatemalan President Alfonso Portillo admitted in a New York court that he had received 2.5 million USD in bribes in exchange for continuing to recognize Taiwan diplomatically (Raymond, 2014).

3.2.2. Honduras

After Guatemala, Honduras is Taiwan's most loyal ally, given that the Central American republic established diplomatic relations with the ROC in 1941. In April 2021, on the occasion of celebrating the 80th anniversary of the establishment of diplomatic relations between the two entities, President Tsai Ing-wen stressed that Honduras is a reliable ally for Taiwan and a more and more important trading partner. Tsai pointed out that Honduras had managed to turn the trade deficit with the ROC into a trade surplus, largely due to white shrimp, Honduran melon, coffee, and cocoa exported to Taiwan (Asialink, 2021). Honduras is Taiwan's tenth largest trading partner in Latin America. Following the signing of the free trade agreement between the two territories in May 2007, total bilateral trade increased by 150 percent from 66 million USD to 166 million USD between 2007 and 2019, of which Taiwan's imports increased by 305 percent, clearly reflecting the positive impact of the free trade agreement (Ministry of Economic Affairs, ROC 2020a).

In addition to sharing views on freedom, democracy, and respect for human rights, the ROC has provided substantial humanitarian and reconstruction assistance to Honduras in recent years in the events of natural disasters. However, the coronavirus epidemic put some strain on the relations as a result of a serious health crisis in the Central American republic, and in May 2021, President Juan Orlando Hernandez raised the possibility of opening a trade office in the PRC to procure Chinese vaccines, while not intending to sever ties with Taiwan (Reuters, 2021). A diplomatic switch of Honduras does not seem likely, but it cannot be completely ruled out after the 2018 case of El Salvador. In response to China's active vaccine diplomacy, the US has felt the gravity of the situation, and sold 4.4 million Pfizer vaccines to the Honduran government, helping to stabilize Honduras-Taiwan relations, of which health cooperation will continue to be a priority (Pantano, 2021).

3.2.3. Belize

Belize, another Central American country, established diplomatic relations with Taiwan in 1989. The two territories have since then maintained a friendly relationship based on mutual benefits. Belize has received significant technical and financial support from Taipei over the years. In return for the assistance, the small Central American state strongly supported Taiwan's aspirations on the international stage, aimed primarily at membership in major international organizations (Embassy of Belize Republic of China, 2021). During his American tour in

August 2018, President Tsai-Ing-Wen also visited Belize, where she offered hundreds of thousands of dollars of support to the country. The Belizean Minister of Foreign Affairs, Wilfred Elrington, reaffirmed in 2019 that his country made the right decision to stand up for Taiwan against the PRC, as Taipei does not impose severe conditions in exchange for aid and “they don’t flood the country with their citizens”, adding that Taiwan’s territorial dispute with Beijing is comparable to that between Guatemala and Belize (Everington, 2019). To strengthen relations, the parties concluded several significant agreements in September 2020. The Agreement on Economic Cooperation could be a step forward in reducing tariffs to promote investment and technical cooperation. According to official Taiwanese data, trade between Taiwan and Belize amounted to 7.51 million USD in 2019. The new agreement will allow Taiwanese producers to increase exports of industrial products to Belize while opening local markets to agricultural products imported from the Central American ally. The agreement to allow designated airlines to operate an unlimited number of cargo and passenger flights is also of great importance. The third agreement allows mutual legal assistance on criminal matters (Taiwan Today, 2020). In March 2021, the parties also signed a Memorandum of Understanding on Bilateral Cooperation 2021-2025, which provides for public health, agriculture, trade, education, women’s empowerment, and an environment for safeguarding the wellness and welfare of the peoples of both countries and driving sustainable development (Government of Belize Press Office, 2021). Climate change is also hitting Belize hard, with hurricanes, floods, torrential rains, and droughts causing severe economic damage in recent years. As a reaction, Taiwan has set up the Belize Urban Resilience and Disaster Prevention Project in 2019 to try to transfer Taiwan’s disaster management experience and techniques to the Central American country.

3.2.4. Haiti

The Caribbean country established diplomatic relations with Taiwan in 1956 and has remained loyal to its Asian partner ever since, despite the PRC’s intensified diplomatic efforts to isolate the ROC in recent years. In 1993, Beijing opened a commercial office in Haiti, but diplomatic relations were eventually not established. In May 2018, Haitian President Jovenel Moise visited Taiwan, which was returned in July 2019 by President Tsai Ing-wen. Contributing significantly to the fruitful relationship was the substantial assistance provided by Taipei to alleviate the damage caused by the earthquake in 2010, including an offering of 150 million USD in 2018 to develop the electricity grid (Everington, 2018). Some tension appeared in the relationship between the two territories in early 2020, when

Haiti expelled the Taiwanese Ambassador for “a small incident”, however, the “long-term partnership” of the two entities was not questioned (Strong, 2020). Celebrating the 65th anniversary of diplomatic relations in April 2021, the parties recalled that in the international arena, Haiti had always strongly supported Taiwan’s efforts, while the ROC had launched significant infrastructure projects in the country in addition to aid and investment. Among the areas of cooperation, education, energy, the environment, infrastructure, and public health have also gained prominence, with the latter gaining particular importance following the outbreak of the Covid-19 epidemic. Besides, Taiwan’s assistance in the field of sustainable development cannot be considered negligible. Much is revealed about economic ties by the fact that in 2017, Taiwan’s exports to Haiti were worth 34 million USD, up 45 percent from 2016. Imports from Haiti were worth 3.6 million USD, up 55 percent from 2016 (Taiwantrade, 2018).

In the political upheaval following the assassination of President Jovenel Moïse in July 2021, the Caribbean nation’s rapprochement with the PRC again emerged as a real threat to Taiwan.¹⁰ According to US political circles, it is highly probable that Beijing will take advantage of the situation to try to put pressure on Port-Au-Prince. However, a break with Taiwan does not seem likely, as the majority of Haitians have a positive view of their relationship with Taiwan, and changing sides in favor of China would not sit well with Washington. The 500,000 USD grant from the Taiwanese government to mitigate the damage caused by the earthquake in early August is also expected to weigh a lot (Taipei Times, 2021).

3.2.5. Saint Vincent and the Grenadines (SVG)

The state of Saint Vincent and the Grenadines, covering just 389 square kilometers and having just over 111,000 inhabitants, has had diplomatic relations with Taiwan since 1981. It can be said that fruitful cooperation has developed between the two territories which rests on 5 pillars: diplomatic relations; people-to-people friendship; physical infrastructure cooperation; private sector investment; and trade (iWitness News, 2019). Approximately 220 Vincentian students have received scholarships to Taiwan since 2004, and the opening of an embassy in Taipei on August 8, 2019 (Yu-Chen & Lim, 2021a) helped to improve relations. On the 40th anniversary of the establishment of diplomatic relations in August 2021, the Foreign Ministry of Taiwan confirmed that Saint Vincent and the Grenadines

¹⁰ Interestingly, several of the assassins fled to the Taiwanese Embassy, where 11 people were arrested by the police (Khaliq, 2021).

is an important ally in the region and the two entities are working closely together for peace and prosperity while also cooperating in the fight against Covid-19. It is worth mentioning that infrastructure projects such as Rabacca Bridge, completed in 2007, and Argyle International Airport, which opened in 2017 to promote the country's tourism potential, were implemented with Taiwanese assistance, but Taipei also helped its partner after the eruption of the La Soufrière volcano in April 2021 (Yu-Chen – Lim, 2021b).

China has also tried to put pressure on SVG in recent years, but the small state still stands firmly in favor of Taiwan, appreciating its benevolence. The projects also demonstrate that Taipei is doing its utmost to ensure that its partner successfully achieves the UN's Sustainable Development Goals.

3.2.6. Saint Kitts and Nevis

The island country, officially known as the Federation of Saint Christopher and Nevis, has a population of 53,000. It established diplomatic relations with Taiwan in 1983, immediately after gaining its independence. At the beginning of the 21st century, in addition to public health, agriculture, and education, combating climate change is also an important part of bilateral cooperation. Today, the two countries are committed to supporting small and medium-sized enterprises, education, and infrastructure development, while Taiwan also supports the socio-economic development of its partner. The scholarship opportunities for students in Taiwan are also appreciated by the island nation. In July 2019, President Tsai Ing-wen visited Saint Kitts and Nevis during his American tour, where she received high honors from the Governor-General in Basseterre as a token of appreciation for bilateral relations (Teng, 2019). The Prime Minister of the Caribbean state stressed on Taiwan National Day in October 2020 that Saint Kitts and Nevis have an interest in strengthening bilateral relations and his country appreciates the “treasured friendship” with Taiwan (Caribbean National Weekly, 2020).

3.2.7. Saint Lucia

The Caribbean island populated by just over 184,000 inhabitants has recognized Taiwan between 1984 and 1997, but after Dr. Kenny Anthony's Labor Party came to power, it committed itself to the PRC. In 2007, Saint Lucia re-established diplomatic relations with Taipei, which did not change after Anthony returned to power in 2011, acknowledging that the cooperation with China had not proved satisfactory and that the country could not behave “like a Jack-in-the-Box,

jumping from one country to another every few years.” (Edmonds, 2021). Saint Lucia opened its first representative office in Asia in Taiwan in June 2015, and during his visit to Taiwan in November 2017, Prime Minister Allen Chastanet stated that Taiwan was a real model for Saint Lucia in the areas of technology development, innovation, agriculture, science and technology, and education (Office of the President of the Republic of China, 2017). The two countries have achieved harmonious cooperation mainly in the fields of agriculture, fishing, information and communications technology, public health, and education. Addressing natural disasters caused by climate change is also an important part of bilateral cooperation, making Taiwan a reliable partner in sustainable development. Although the coronavirus epidemic has pushed the economy of the Caribbean state to the brink of collapse, it is firmly committed to the ROC, which has provided significant assistance in the form of medical equipment. Therefore, approaching the PRC is by no means an alternative.

3.2.8. Paraguay

In South America, Paraguay is Taiwan’s last remaining ally, with which the ROC established diplomatic relations in 1957. During the Cold War, close cooperation developed between the heads of the two entities, Alfredo Stroessner and Chiang Kai-shek, and officers from the Paraguayan army were happy to attend training at the Fu Hsing Kang College in Taiwan. Over the years, several important agreements have been reached between the two countries: the Cultural Convention in 1961, the Treaty of Friendship in 1968, and the Conventions of Tourism and Investments in 1975. In the early 1990s, under the new democratically elected President Andres Rodriguez, the possibility of rapprochement with the PRC arose, but Taiwan managed to prevent it. The ROC has provided significant support to the South American state and economic relations have also developed.¹¹ Taiwan’s commitment is well illustrated by allowing Paraguay to reschedule the 400 million USD loan in March 2009 (Central News Agency, 2009). At the same time, most of Paraguay’s exports (especially soybeans and beef) go to the PRC and Chinese investment has also strengthened, raising the possibility of the development of closer ties between the political elites from time to time. Bilateral trade with Taiwan has grown significantly since the February 2018 entry into force of a free trade agreement. In 2020, total trade turnover reached 155.4 million USD, an increase of 227 percent compared to 47.5 million USD in 2016. Of this,

¹¹ Since 2000, Taiwan has given 70 million USD in donations every five years, a figure that has doubled since 2019.

Paraguayan exports accounted for 123 million USD.¹² The total value of investments by Taiwanese firms in Paraguay was 157.35 million USD in May 2021, contributing to the creation of 1,900 jobs (Ministry of Economic Affairs, 2021).

On the international stage, Paraguay has always been a committed supporter of Taiwan's efforts, and while its relations with Taipei are motivated by mutual respect between small states, they both view China's vast political and economic power as a source of danger. President Maria Abdo Benitez, taking up office in 2018, stressed in this regard that his country is seeking to expand economic ties with the PRC, but it is "always respecting our historic friendship with Taiwan" (Long – Urdinez, 2020).

The outbreak of the Covid-19 epidemic has also put Paraguay in a difficult position—some politicians have called for recognition of the PRC—but in the spring of 2021, the President categorically stated that he would not accept vaccines from China under the condition of cutting off diplomatic ties with Taiwan (Premat, 2021). To counter Chinese diplomacy, India then sent 200,000 doses of the Covaxin vaccine to Paraguay at the request of Taiwan, and Taipei later made further offers.¹³ At the moment, it looks like Taiwan's last South American ally will continue to hold on to it and there is certainly no need to fear a severance of bilateral ties ahead of the 2023 elections.

4. ROC Relations with African States

4.1. The Situation of Taiwanese Diplomacy on the Black Continent

Taiwan's relations with Africa can be seen in part of the legacy of the Cold War, in which both the PRC and the ROC sought to have themselves recognized as China's legitimate government and gathered allies in the region to do so. Initially, due to American influence, Taiwan's superiority proved to be overwhelming, but later on, when ideology mattered less and less, the influence of Taiwan diminished. By 1979, only 5 of the 50 African states recognized Taiwan (Rich – Banerjee, 2015, p. 146). Like in Latin America, it can be observed that more resource-poor, less developed small states tend to maintain closer ties with Taiwan.

¹² Main export articles: beef, sesame, grain sorghum, sawed wood, mate, and essential oils.

¹³ Among other things, in July, ROC donated 120 oxygen concentrators to Paraguay (The Times of India, 2021).

To facilitate relations, the ROC provided significant technical assistance to African states, focusing primarily on agricultural development. In addition to disbursing the Official Development Assistance (ODA), “dollar diplomacy” worked here as well, with, for example, Niger receiving 50 million USD in 1992 and the Gambia 35 million USD in 1995. At the beginning of the 21st century, however, Taipei could hardly compete with the PRC in this regard. Angola received 9 billion USD in loans in 2006 and the Democratic Republic of Congo 9 billion USD in 2008 (Rich – Banerjee, 2015, p. 150). After the launch of the Belt and Road Initiative in 2013, the trend became even more spectacular, with the PRC gradually becoming the continent’s dominant economic partner. Not surprisingly, in the second half of the 2010s, Taiwan lost additional allies, namely São Tomé and Príncipe and then Burkina Faso.

São Tomé and Príncipe, an African island nation established diplomatic relations with Taiwan in 1975, from which it received significant assistance over the years in the fields of agriculture, energy, technology, and health. Nevertheless, in December 2016, after not receiving the 200 million USD aid demanded from Taiwan, it severed diplomatic ties with its former partner and recognized the PRC (Hsu, 2016).

Burkina Faso recognized Taiwan from 1961 to 1966, then the PRC until 1994, and then again Taiwan until 2018. Taiwan’s role in humanitarian aid and investment, as well as in health and agriculture, is unquestionable in the country. Yet, in May 2018, the Burkina Faso government decided to sever the relationship and recognize the PRC, justifying the step by stating that the partnership with Beijing had huge economic potential (Blanchard, 2018).

4.2. Eswatini

Taiwan’s last remaining African ally established a diplomatic relationship with the ROC in 1968. The absolute monarchy, formerly known as Swaziland, stands by Taiwan even after the rest of the whole continent recognized the PRC. For Taiwan, Eswatini is an important ally as well as an investment and trading partner that is also of great importance in exploiting market opportunities in Africa. The Taiwan-Eswatini Economic Cooperation Agreement, concluded in 2018, allowed Eswatini to export duty-free products, e.g., honey and avocado to Taiwan (Ministry of Economic Affairs, ROC, 2018). According to official figures, bilateral trade surged to 9.82 million USD during the first 11 months of 2018, up 41

percent from the same period in 2017. Twenty Taiwanese companies are operating in the country, investing a total of 80 million USD and creating nearly 13,000 jobs (Taiwan Today, 2018). In addition to the aid, Taiwan also helped Eswatini through the development of the electricity network and providing scholarships. It is noteworthy that for the African country, after South Africa, Taiwan is the second most important partner. The two countries are also committed to the United Nations Sustainable Development Goals, in which Taiwan is helping its African partner by transferring technology and experience. To further strengthen ties, in April 2018, President Tsai Ing-wen first visited Eswatini, and two months later King Mswati III travelled to Taiwan.

In 2018, the PRC stepped up diplomatic pressure on Eswatini while trying to isolate the African country. Saying “no diplomatic relations, no more business benefits,” China has made it harder for Swazis to gain access to visas. Nevertheless, the current government led by King Mswati III has rejected the PRC’s attempts and is adhering to the ROC. Following the outbreak of the coronavirus epidemic, Taiwan’s health support will certainly weigh a lot. The ruler appreciated that he himself had recovered from the Covid-19 disease thanks to, among other things, antiviral drugs received from Taiwan (Nikkei Asia, 2021). However, due to the domestic political events of recent months—protests and subsequent violent action by the authorities—the government’s popularity is declining, and its room for maneuver in foreign policy has narrowed. All of this could result in the administration being forced to turn to the PRC for political and economic support for survival in the future, with which Taiwan will no longer be able to compete, and this could lead to the severance of relations (Du Plessis, 2021).

5. Taiwan and the Pacific Region

5.1. The Results of Taiwan’s “Dollar Diplomacy” in the Region

After Latin America, the Pacific archipelago is of the greatest importance to Taiwan regarding diplomacy, since four of the 14 island states here still recognize Taipei. During the decolonization process, the newly independent countries welcomed the support of the ROC and the PRC, and in return, the latter sought diplomatic recognition and support for their affairs on the international stage.¹⁴ As

¹⁴ As the Pacific island states hold 7 percent of the vote in the UN, each of the largest donor states would need their support.

a significant part of the world's most aid-dependent countries are in the region, "dollar diplomacy" has intensified, contributing greatly to the strengthening of Sino-Taiwanese diplomatic rivalry.

Between 2011 and 2016, China distributed 1.05 billion USD in aid to states in the region, compared to Taiwan's 271 million USD, while in per capita terms, Taiwan leads with 237 million USD versus PRC's 108 million USD (Zhang, 2020). PRC is spending more by several orders of magnitude on infrastructure development, e.g. in 2017 it provided 4 billion USD to the Pacific islands.¹⁵ For China, the main significance of these countries is that one of the important routes of the "21st Century New Maritime Silk Road", which is part of the BRI, passes through the region.¹⁶ For individual countries, China is not only an attractive alternative because of its huge economic potential, but also due to Beijing's UN membership (Saleem, 2020).

Taiwan is also trying to gain influence by joining regional organizations, for which the Taiwan-Pacific Allies Summit was held in 2006 for the first time.¹⁷ In 2007, Taipei provided 700,000 EUR in aid to regional organizations. Taiwan's foreign policy priorities are well reflected in the announcement in 2016 of President Tsai Ing-wen's New Southbound Policy (NSP) initiative, which envisioned closer cooperation with the Pacific islands alongside South and Southeast Asia (Zhang, 2020).

The US and its allies are not welcoming the PRC's increased influence and they are constantly warning of the dangers of indebtedness to China, yet Taiwan is less and less able to compete with its rival. A serious foreign policy blow to the ROC was the loss of two allies in September 2019, the Solomon Islands and Kiribati. The Solomon Islands established diplomatic relations with Taiwan in 1983. However, in September 2019, after the island's parliament assessed that they could not rely on aid from Taiwan in the long term, while the country could benefit much more from economic-political cooperation with China, diplomatic relations with Taipei were severed (Lyons, 2019). Kiribati was on the side of the PRC from 1980 to 2003, after which it established diplomatic relations with the ROC. However, in September 2019, Taiwan rejected the request of Kiribati's head of state for aid

¹⁵ Taiwan's assistance focuses primarily on technical support, scholarships, and small and medium-sized infrastructure investments in agriculture and health care.

¹⁶ To be more specific, the China-Oceania-South Pacific blue economic passage.

¹⁷ In addition to Taiwan, the participants were from the Marshall Islands, Tuvalu, Nauru, Palau, Solomon Islands and Kiribati.

to buy an aircraft, so the President decided to normalize relations with the PRC, citing the interests of the nation (Reuters, 2019).

5.2. Regional Allies of the ROC

5.2.1. Tuvalu

The Polynesian state with a population of approximately 12,000 was the first of the Pacific states to establish diplomatic relations with Taiwan in 1979. The two countries are cooperating effectively in the areas of climate change, education, energy, fishing, and health care, while Taipei is working to promote sustainable development in the region (Taiwan Today, 2019). Taiwan is willing to share its experience with its partner, as both states face similar challenges. The PRC also tried to influence Tuvalu, as in November 2019, Chinese companies offered help to implement a 400 million USD government plan to build artificial islands. However, Foreign Minister Simon Kofe said the government, fearing indebtedness and the possibility of the establishment of Chinese military bases, rejected the offer and remained firmly on the side of Taiwan (BBC News, 2019). He also stressed that they intend to work together with Taipei, as well as with the other three countries supporting Taiwan (China says Tuvalu's government has misunderstood its intentions, as Beijing has only tried to help by bridging the development gap left by the West with good intentions) (Korybko, 2019). Following the outbreak of the coronavirus epidemic, to neutralize Chinese vaccine diplomacy, in July 2021, Japan promised economic assistance and vaccines to the Pacific states that remain on the side of Taiwan (Okuyama, 2021).

5.2.2. Nauru

The small state in Micronesia, with a population of less than 11,000, entered into diplomatic relations with the ROC in 1980, but in 2002, after receiving 135 million USD in aid from China, it recognized the PRC (BBC News, 2002). However, this situation did not last long, and in 2005 Nauru and Taiwan re-established diplomatic relations. For Nauru, besides Australia, Taiwan is the most important donor country, playing an important role in regular health care in addition to economic assistance, and from 2011, Taipei sent a permanent medical team to the country with a five-year mandate. Following the change of diplomatic partners by the Solomon Islands and Kiribati in September 2019, the new President of Nauru, Lionel Aingimea, immediately reaffirmed his commitment to Taiwan,

and during his visit to Taipei in December 2019, the parties pledged to further strengthen bilateral relations, including an agreement allowing direct flights to be launched (Taiwan News, 2019). President Aingimea has repeatedly praised Taiwan's achievements in the field of sustainability on the international stage and described the ROC as an example for small oceanic states to follow. The 25th United Nations Framework Convention on Climate Change "called upon the world to embrace Taiwan and recognize the rights of the Taiwanese people" (Embassy of the Republic of China, 2019). Although Taiwan has repeatedly accused China of buying the support of individual states and politicians, in early 2010, thanks to WikiLeaks, it became clear that many Nauru politicians were receiving a monthly allowance from Taiwan, while in election campaigns the presence of both Chinese and Taiwanese money can be detected.

5.2.3. The Marshall Islands

The Micronesian state of 1,100 small islands, with just over 59,000 inhabitants, established diplomatic relations with Taiwan in 1998, after cutting ties with China. This unexpected foreign policy move greatly helped stabilize President Imata Kabui's power. The most important areas of bilateral cooperation with Taiwan are nuclear waste management, climate change policy, development assistance and trade, tourism, and Austronesian cultural ties. An important goal of the Taiwanese government for small island countries is to promote the energy transition and to enhance resilience to climate change. It is no coincidence that the ROC is the first actor to help the Marshall Islands develop renewable energy. After 1999, in addition to investment in infrastructure, the Marshall Islands owed a great deal to the ROC in terms of agricultural development. Strengthening cultural ties also deserves attention: in October 2019, the Marshall Islands and the Taiwanese Council of Indigenous Peoples signed an agreement aimed at "strengthening Austronesian exchanges" (Stünkel – Tucker, 2020). During President Hilda Heine's visit to Taiwan in October 2019, the parties signed several bilateral agreements, including an Economic Cooperation Agreement. In 2020, the new government led by President David Kabua also appreciated Taipei's help after receiving significant health support following the outbreak of the coronavirus epidemic. The Marshall Islands have even asked the WHO to allow Taiwan to participate in the talks, sparking resentment from China. And in October 2020, it called on China to refrain from using intimidation tactics, while reaffirming its support for the ROC (Rovoi, 2020).

5.2.4. Palau

With a population of 18,000, Palau established close cooperation with the Taiwanese government as early as the second half of the 1990s, and in 1999 diplomatic relations were formally established. Cooperation is particularly significant in the fields of agriculture, culture, education, fishing, medical services, tourism, and water supply infrastructure (Harwit, 2000). Considering the touristic significance of Palau, substantial investments have also been made by Taiwan, suffice it to think of the construction of the Palasia Hotel, Palau Royal Resort, Hung Kuo Resort, and Papago International Resort. The Palau government was also open to economic cooperation with the PRC, and in 2010, the two states signed an agreement on joint oil production. Palau appreciates Taiwan's commitment to the sustainable development of the Pacific region and its willingness to support the countries concerned. It maintains its commitment to Taiwan. After Taiwanese President Tsai Ing-wen visited Palau in 2019, Palau President Surangel Whipps returned her visit in March 2021, during which the two parties set up a Covid-19 travel bubble for tourists. Whipps, who is a serious critic of China in the region, complained that China wanted to put pressure on the Micronesian country in 2017 by withholding tourists (McCartney, 2021b). With the outbreak of the pandemic, the travel bubble was suspended in May 2021 but restarted in mid-August the same year, while Palau offered 2,000 doses of vaccine to Taiwan tourists visiting the island, citing its cordial relationship with the ROC (Focus Taiwan, 2021).

6. Conclusion

Taiwan had extensive foreign relations in the first half of the Cold War, but this changed in the 1970s, and the People's Republic gained a dominant position internationally. Serious competition has begun between the ROC and the PRC to gain diplomatic recognition, and developing countries have welcomed support due to the unfolding "dollar diplomacy". Thus, Taiwan has sought to build closer ties with the third-world countries in Latin America, Africa, and the Pacific. The balance of aid-based foreign policy in Taiwan is not clear, but it is a fact that despite its negative effects, it produced several achievements, especially in Latin America, where today the majority of the ROC's allies (8 states) are located.

China has tried to isolate Taiwan, albeit with varying intensity, and has stepped up its efforts in this regard since the election of pro-independence President Tsai Ing-wen in 2016. In both areas mentioned above, Taipei is becoming less and

less able to keep pace with the economic opportunities offered by Beijing (aid, credit, investment, trade), as since 2013, the Belt and Road Initiative has offered an extremely attractive alternative for most countries around the world. All of this has led to Taiwan losing more allies, leaving only 13 developing countries in addition to the Holy See. The coronavirus epidemic has opened a new chapter in the competition between the PRC and the ROC, in which the PRC's active vaccine diplomacy can be counterbalanced by Taiwan only with the help of the US and its allies (Japan, and in this case, India). While the position of Eswatini, the last ally in Africa, is precarious, Taiwan's partners in Central America and the Pacific archipelago are expected to stand by Taiwan in the longer term. This is especially true for the Pacific states worrying about Chinese dominance, such as Tuvalu, Nauru, the Marshall Islands, and Palau. In Central America and the Caribbean, in the case of Guatemala, Honduras, Nicaragua, Belize, Haiti, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and in South America the situation is vaguer, but the active US presence could be grist to Taiwan's mill. While the transition from the PRC to the ROC by some states is unlikely, there is also no need to fear the immediate loss of allies. On the whole, the development of Taiwan's bilateral relations with its partners who are strongly representing Taipei's interests on the international stage in exchange for economic support, is spectacular. In the longer term, however, it is clear that Taiwan's foreign relations are heavily dependent on China's actions. Of course, this will also raise serious questions about the future of cross-strait relations, which will be further complicated by the process of the Cold War-like struggle between the PRC and the US, in which Taiwan has profound geopolitical value.

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Taiwan's Trade and Investments in the Hyper-Globalized World, its Participation in the Activities of the World Trade Organization (WTO) and in other International Organizations

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1. Introduction

Economic development of Taiwan (Republic of China, ROC) has largely based during the last 60 years on Export Oriented Development Model, though its forms developed deeply during the last decades. At the same time, diplomatic isolation makes Taiwan unable to receive and hold full-fledged membership in international organizations or to join international agreements. A peculiar exception is the World Trade Organization (WTO), which Taiwan could join using a special name of "Separate Customs Territory of Taiwan, Penghu, Kinmen, and Matsu (Chinese Taipei)" which was not objected by the People's Republic of China, PRC (Mainland China). However, Taiwan still has difficulties when trying to benefit from its membership in other international organizations. But today, in the time of hyper-globalization, foreign direct investments (FDIs) are getting increasingly important and international commerce is getting to be more and more negligible, the WTO membership is not as important as it used to be some years or decades ago. Today, OECD is perhaps more important, therefore, Taiwan should focus on this organization in the future.

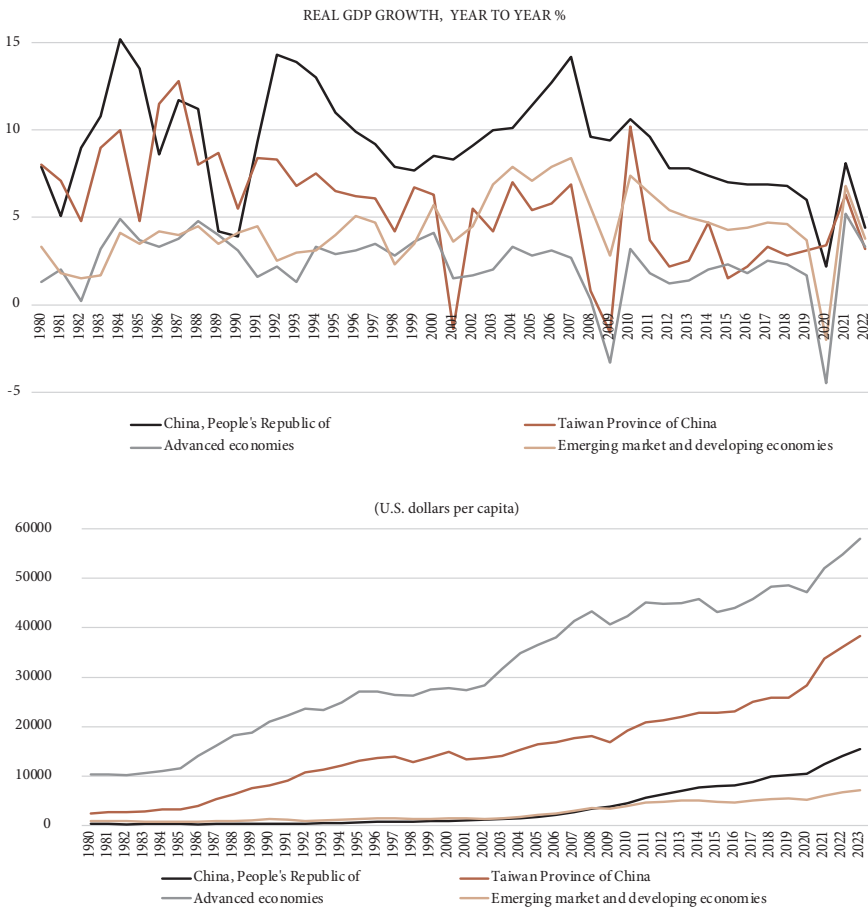
However, as memberships of Taiwan in the international organizations were influenced mainly by political factors, it is also possible that new diplomatic, political and military developments might change the international atmosphere, and especially in the time of increasing tensions between the USA and the European Union on one hand, and the People's Republic of China and Russia on the other, in the near future, Taiwan might return again to some of these international organizations.

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2. Economic Development of China (PRC) and Taiwan (the ROC)

Looking at the GDP per capita data, it becomes clear that the People’s Republic of China (PRC) was economically lagging behind Taiwan (Republic of China, ROC) during the last 70 years, because this small island country started its economic development much earlier than China. Taiwan started to apply the methods of the “Developmental State” after the 1960s, and even later, Taiwan remained faithful to this “Developmental State” paradigm. (Debanes – Lechevalier, 2014). PRC has started this type of development only after the 1980s.

Figure 1.



Source: IMF Data Mapper (2022).

As Syaru Shirley Lin has stated in his new book, “after decades of impressive growth, Taiwan achieved the status of ‘high-income economies’, according to the World Bank’s definition of approximately 12,000 USD gross national income per capita, more than three decades ago. In so doing, Taiwan experienced an economic miracle. It not only built a high-income society with a solid middle class, avoiding the middle-income trap that has plagued so many other emerging economies. But even more miraculously, the majority of Taiwanese, ordinary workers and elites alike, benefited from increasing prosperity creating an unusually high degree of equality compared with other economies making the same transition. During its evolution from middle-income to high-income status, Taiwan relied primarily on the export of more highly valued products” (Lin, 2021a).

3. Specificities of Hyper-Globalization: Decline of Importance of Foreign Trade and Increasing Importance of Foreign Direct Investments and Transnational Companies in Our Days

Despite the large number of different misinterpretations and often politically motivated debates, globalization has been a very popular and widely researched topic in the last decades. In addition to economic globalization, some experts usually examine the globalization process of culture, politics, and the value systems as well (See for e.g., McLuhan, 1962; or Hofstede, 2005). Economic globalization during the first five hundred years of this process concentrated mainly on foreign trade, and economic aspects of globalization were measured traditionally by the share of international trade in the total gross domestic product (GDP) of the world or of a given country. But later, by the end of the 20th century, as Transnational Companies (TNCs) became more widespread and an increasing share of international commerce grew into intra-company trade, traditional foreign trade came to be less and less important compared to foreign direct investments (FDIs).² This new form of globalization, which is often called hyper-globalization (or neo-globalization), became a relatively new tendency at the end of the 20th century and in the 21st century (Rodrik, 2011; Stiglitz, 2012). After the 1970s, FDIs and transnational companies became dominant in the world, though even before, there were

² At the same time, recently, final country origins of trade or of foreign investments are getting increasingly difficult to measure. Consequently, it is not easy to make meaningful quantitative analysis of international economy, though some new scientific measurements have appeared lately, such as the TiVA (Trade in Value Added), or the NGI, the New Globalization Index of Petra Vujakovic from the Joint Vienna Institute (Wien). But unfortunately, these—otherwise very good—indices are either not renewed regularly, or not accepted generally.

some (relatively rare) examples of TNCs in the 19th and in the early 20th centuries. However, from the end of the 1970s—when corporate governance systems introduced the use of new and developed IT solutions for computing, and the use of Internet³ became widespread, as well as transportation cheaper—transnational corporations began to have subsidiaries abroad and started to operate in an integrated way in different parts of the world. Consequently, a completely new form of globalization has emerged and has become dominant.

An important feature of neo-globalization was the emergence of the globally organized TNCs (transnational companies) in the world economy. These companies have outsourced their production to their subsidiaries working in poorer peripheric countries, where wages were much lower and environmental regulations less severe, and these transnational companies (TNCs) are selling their products at higher prices in the more developed centrum economies. This is the geographical optimization of the Global Value Chains (GVCs). This model successfully applies the golden commercial principle of “buy your products cheap and sell them at high prices”.

Based on these price and wage differences, multinational corporations gained extra profits without much effort. In addition, less developed countries often offered tax benefits and special subsidies and tax advantages for multinational corporations in order to attract more foreign investments to their country. Due to the flow of semi-finished goods, materials, knowledge and other goods and services between their different subsidiaries, multinational corporations, by distorting their inner prices (called transfer pricing), gained tax advantage as well, and by that, their extra profits increased (OECD, 2010).

The structure of world economy was completely transformed by neo-globalization, and while formerly it could be properly described by analyzing the export and import flows of goods and services, after 1975, Foreign Direct Investments (FDIs) and the activities of TNCs' characterized and determined the world economy.

Perhaps, it would be an exaggeration to say that foreign trade has completely lost its importance, but by the emergence of transnational companies, foreign trade

³ Though commercial use of internet become widespread only in the 90s, when Hyper Text Transfer Protocol (HTTP) was introduced, but even in the 70s and 80s some elements of internet have already emerged. This -- naturally with the new transportation technics -- can be regarded the first steps in the direction of the Neo- or Hyper Globalization.

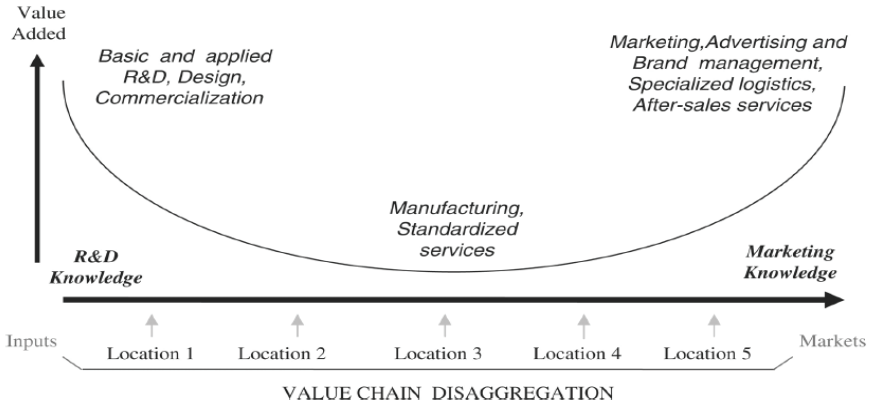
became more and more intra-company trade between different subsidiaries of the big international companies (TNCs), where traditional theories of foreign trade have lost their relevance. By the end of the 20th century, according to some estimations, more than 60 percent of international trade developed into “intra-company trade”, i.e., trade between the different subsidiaries of the transnational companies. Therefore, traditional analyzing tools of foreign trade lost their relevance, as the big TNCs had several other aspects influencing how to sell their products abroad (generally through their own subsidiaries located in foreign countries).

4. Taiwan in the System of Hyper-Globalization

During the last decades, Taiwan was able to avoid not only the middle-income trap (Gill – Kharas, 2007; Csath, 2019; Arva – Pasztor – Pyatanova, 2020), but the high-income trap as well, and climbed on the global value chain (GVC) from the simple products to the more sophisticated, higher value added activities. At the same time, some countries in the Eastern Asian region, such as the People’s Republic of China (PRC), Malaysia, Thailand, Vietnam (and other Indochinese countries) or Indonesia were seriously endangered by the middle-income trap. The solution for them was to rapidly attract FDIs to their countries, and either to learn the production techniques (and sometimes to copy illegally the more complicated products, like the PRC often does it), or to get involved into the GVC with their cheaper labor force (like Vietnam, Thailand, Malaysia, and Indonesia have done it). The PRC tried to attract lots of FDIs from Hong Kong and Taiwan, and also tried to learn the production methods in those foreign owned subsidiaries (FDIs).

Today, the Smiley Face Curve is one of the most important tools to analyze geographical optimization of the global value chains of the TNCs (Figure 2).

Figure 2. The Smiley Face Curve



Source: Mudambi, 2008.

The smiling face or smiley curve is a graph measuring value added (y-axis) against the steps of value chain (x-axis) of a TNC. The concept was first proposed around 1992 by Stan Shih, the founder and CEO of the Acer Inc., a high-tech IT company headquartered in Taiwan. This graph's major message is that the TNCs are geographically optimizing their production and that is why low value-added activities are outsourced to countries of cheap labor force. (Arva et al., 2020).

As the PRC and the other Southeast Asian countries have a definite wage advantage over Taiwan, that is why lots of Taiwanese firms started to invest in these countries during the 1980s and 1990s as well as outsourced the assembling activities of some of their high-tech products there. The PRC—using the knowledge obtained in the Taiwanese subsidiaries—often copied some of the products developed in Taiwan.

Following these actions of the PRC, companies became more complicated due to the restrictions by Tsai Ing-wen, the new president of Taiwan, who aimed at blocking or at least slowing down the outflow of high-tech technologies to the PRC from Taiwan. In order to compensate the Taiwanese companies, a new initiative was introduced to help these companies to invest in the poorer Southeast Asian countries. This was the so called “New Southbound Policy”. György Neszmélyi, Professor of the Budapest Business School, University of Applied Sciences, wrote a very good paper on this topic and of other characteristics of the Taiwanese economy (Neszmélyi, 2020).

5. The Asian Development Model⁴

Taiwan developed very rapidly thanks to the so-called Asian Development Model, which is a specific version of the Developmental State Model (Öniş, 1991). The Developmental State Model had two versions: the Import Substituting Industrialization (ISI) and the Export Oriented Industrialization (EOI).

The Import Substituting Industrialization was first defined, promoted, and applied in the Latin American countries after WWII. In the Latin American region, the Import Substituting Industrialization (ISI) was used following the suggestions of Raul Prebisch (1950, 1970) and Celso Furtado (1970) and other leading economists of the ECLAC, the United Nations Economic Commission for Latin America and the Caribbean. UNECLAC, or “CEPAL” in Spanish and Portuguese languages, is a United Nations regional commission to encourage economic development and cooperation. However, during the 1970s, it was realized that this ISI model was not successful, because generally, economies of those countries were not large enough to be able to enjoy economies of scale. To rectify this problem, the Southeast Asian countries have developed a special version of Developmental State Model, the Export Oriented Industrialization, where the limited local markets were not real barriers of development.

The Export Oriented Development Model, or the Export Oriented Industrialization⁵ follows the same logic that the ISI, but the products are sold abroad, through export. This is very practical, as export (theoretically) does not have the same limitations as internal consumption.

A special version of the Export Oriented Development Model is the Asian Development Model (or East Asian Development Model), where the most important point is to apply the special Asian value systems. Concerning the (East) Asian Development Model, it is assumed that the local elite has consensus on the following issues:

⁴ See for e.g.: Berger, P. L. – Hsiao, M. H. H. (1988).

⁵ For the Export Oriented Industrialization, it is much more difficult to name single economists as in the case of Import Substituting Industrialization (Raul Prebisch and Celso Furtado). In the case of Export Oriented Industrialization, generally leading Southeast Asian politicians as Lee Kuan Yew, who served as Prime Minister of Singapore from 1959 to 1990, or Mahathir bin Mohamad, the fourth and seventh Prime Minister of Malaysia might be mentioned.

- High priority given to achieving high and sustained economic growth rates, so as to catch up with developed countries “quickly” (i.e., within a few decades);
- Very high rates of investment to GDP so as to achieve rapid movement of the production structure into higher productivity activities;
- The need for the state to coordinate the catch-up strategy and promote some sectors and functions ahead of others, whether through public enterprises or through steering private actors into sectors they would otherwise not enter (Kim et al., 1993; Zhang, 2005);

The Asian Development Model has several important features: state-controlled banks supply of cheap loans to favored industries; the currency is kept at an undervalued level in order to boost exports; domestic consumption is suppressed to create savings for investment, and rapid modernization is achieved by adopting foreign (bought or copied) technologies. Since World War II, this combination of policies proved remarkably successful at narrowing development gaps between Asia and the West.

But at the same time, this model in the longer term has some drawbacks as well. Chinese President Xi Jinping perhaps has a better understanding of the economic challenges facing his country in applying the Asian Development Model than anyone else. In recent years, he has warned of some of the dangers posed by the Model, like the real estate bubble, excessive debt levels, widespread corruption, and rising inequality. These problems are not unique to the People’s Republic of China. In the past, every country in the region that adopted the so-called Asian Development Model faced similar problems. Xi’s dilemma is that there is no easy way for China to surmount and correct them.

Unfortunately, there are some examples of the Asian Development Model where this model helped corruption and cronyism. In the Philippines, during the 1960s and 1970s, when President Marcos ruled in the country, corruption was very widespread, and the Marcos family was obliged to flee from the country in February 1986, with cash and gold worth more than 700 million USD packed in suitcases. But it is seemingly unavoidable that the Asian Development Model leads to widespread corruption. Singapore’s Lee Kuan Yew (1959-1990) and Ferdinand Marcos of the Philippines (1965-1986) coexisted under similar geopolitical pressures and espoused similar socio-political philosophies. Yet, as Root has written, “Lee Kuan Yew’s rule derived credibility from a reputation for corruption-free governance, sobriety, and growth, while Ferdinand Marcos’ regime became famous for grand

scale larceny, and stealing foreign aid for personal profit and gain. Lee established critical and durable limits that channeled government behavior into activities compatible with economic development thereby surpassing any of his regional rivals in competent public policy.” (Root, 2019, p. 1).

Unfortunately, it is not clear how cronyism and corruption can generally be avoided in the Asian Development Model, so this question perhaps should be analyzed later in more detail.

6. Mainland China (PRC), the Asian Economic Model and Common Prosperity

As it was written by the Reuters in the beginning of the 21st century, “growth in Asia is inherently unstable. Artificially low interest rates fuel real estate bubbles, such as Japan experienced in the late 1980s and Thailand in the following decade. Easy money also leads to the build-up of excessive debts, as occurred across Southeast Asia in the early 1990s. Cheap capital encourages wasteful investments that undermine productivity growth. The policy of suppressing domestic consumption creates an unbalanced economy. Furthermore, opportunities for corruption abound when credit is distributed by state-run banks, as Indonesia experienced under the kleptocratic Suharto regime. Japan’s long period of economic expansion ended when in late 1989, the Bank of Japan decided to burst the property bubble. The Asian ‘Tigers’—as the fast-growing economies were called—ran off the cliff a few years later. As economist Paul Krugman demonstrated at the time, the economic ‘miracle’ could only be sustained with ever-larger inputs of capital and labour. When foreign creditors started to withdraw their capital in the mid-1990s, the region experienced a financial crisis” (Chancellor, 2021). Predictions of the Reuters became true rapidly, as after the Covid-19 pandemic and the Russo-Ukrainian war, long value chain dependent economies have collapsed and a 1970s-type world stagflation has emerged in 2020-2022, and we still don’t know how long this economic crisis might be present.

No wonder Chinese President Xi was calling for “common prosperity” which entails a reduction in inequality in China. At the same time, the President wanted to cut excess capacity, reduce leverage and make housing more affordable. All this is to be achieved while “promoting smooth economic growth” and avoiding a “Black Swan”, or a grave financial crisis (Wu, 2022). “Common prosperity” has become a major theme of China’s official rhetoric since the start of 2021. This followed the

delivery of a number of speeches on the topic by Chinese President Xi Jinping, and then the issuing of a range of official documents. Although the term “common prosperity” has a long history in the discourse of the Chinese Communist Party (CCP), including its use by Deng Xiaoping and during the post-Mao years, the re-emergence and re-elevation of the slogan to a lynchpin position certainly indicates a fundamental adjustment of the Party’s policy platform. While raw economic growth has been the foremost priority governing China’s political economy for decades, this has now changed with the shift in emphasis to common prosperity.

As Guoguang Wu summarized, “Xi Jinping’s common prosperity campaign is a comprehensive, redistribution-centered program with multiple layers of policy implications; yet, it remains teeming with intrinsic contradictions. It is proposed as China’s strategy for its next stage of development, as the country seeks to move from eliminating absolute poverty to facing the challenge of avoiding the middle-income trap. It is rooted in the CCP’s traditional communist ideology, while envisioning the establishment of a global advantage over the Western capitalist world’s ability to tackle inequalities. It is a long-term plan but is in part expected to yield immediate political utility for Xi and his allies. This is especially true in the absence of institutional reform to rebalance a series of contradictions in China’s political economy of development, ranging from that between stimulating economic growth and promoting income equality, and between the growing role of the state in redistribution and the foreseeable consequences of this resulting in market and civil-society atrophy” (Wu, 2022).

7. Asian Development Model in Taiwan (ROC) and in Other Southeast Asian Small Tigers

During the last decades, Taiwan has successfully applied a special version of the Developmental State paradigm, the Asian Development Model. Originally, perhaps it was the idea of Import Substituting Industrialization to follow, but later, in the Eastern Asian countries, especially in the case of the future “Small Tigers”, Taiwan, Singapore, South Korea, and Malaysia, it was realized that local markets were too small, and it was nearly impossible to build competitive local industries on these limited markets. Therefore, Eastern Asian industrialization has largely been based on the Export Oriented Industrialization (EOI). Mainland China has followed later this example, but in a much greater scale.

The small dragons', and the Taiwanese economy were strongly export-oriented. According to the IMF Database and other similar databases (WTO, 2018; Trading Economies, 2021), Taiwanese exports accounted for around 70 percent of total GDP and its composition have changed from predominantly agricultural commodities to industrial goods (now 98 percent) during the past 40 years. Main export products of Taiwan were:

- electronics (33.1 percent of the total),
- information, info-communication, and audio-video products (10.8 percent),
- base metals (8.8 percent),
- plastics and rubber (7.1 percent),
- machinery (7.5 percent).

Main export partners of Taiwan were the PRC and Hong Kong (40 percent of the total), ASEAN countries (18.3 percent), the USA (12 percent), Europe (9 percent), and Japan (7 percent) (Trading Economies, 2022).

8. Taiwanese Outbound Investments in the World and in the PRC

By the mid-1990s, when Taiwan entered the time of neo-globalization, a decade after Taiwanese small- and medium-sized enterprises (SMEs) first went to China, the majority of cross-strait investments shifted from traditional sectors, such as garments and footwear, to informatics industries, particularly personal computer (PC) components, and peripherals. An acute labor shortage and the relatively high costs triggered this emigration of Taiwanese high-technology industries, starting from the most labor-intensive and price-sensitive keyboards and mice to power supply units, and then to motherboards and monitors. In undertaking cross-strait investments, a series of governance and coordination issues were posed for Taiwanese firms. The first of them is related to the location of a new plant. Most Taiwanese personal computer firms initially chose the Pearl River Delta (PRD) and the Yangtze River Delta (YRD) as their destinations; in fact, the site of many Taiwanese investments have shifted from the former to the latter since 1997, once China's membership into the World Trade Organization (WTO) was assured.

9. Taiwanese FDI to the PRC during the Presidency of Ma Ying-jeou (2008)

Since his election as Taiwan's president in 2008, Ma Ying-jeou (from the party of the KMT) has embarked on an active policy of rapprochement with China, leading to the signing of a string of economic and technical agreements with Beijing that have further liberalized and normalized cross-strait economic relations. But as Frank Muyard has written in 2015 "later as the economic crisis that struck Taiwan for most of the first two years of Ma's administration and a series of missteps and mismanagements by the president and the Kuomintang (KMT) government, have generated a crisis of confidence and widespread discontent among the Taiwanese. It resulted in consistently low approval ratings and several setbacks in regional and by-elections in 2009 and 2010, as well as the resurgence of a reformed opposition under the leadership of Tsai Ing-wen of the Democratic Progressive Party. [...] The discrepancy between Ma's increasingly apparent Chinese nationalism and the Taiwan-centered national identity of the majority is further indication of a significant disconnect between the KMT administration and the Taiwanese mainstream" (Muyard, 2010, p. 5).

According to Muyard, press reports indicate that, since the signing of the ECFA (Economic Cooperation Framework Agreement, Taiwan and China, June 29, 2010), China has somewhat backed away from opposing Taiwan seeking trade agreements with other countries, which Taiwan calls "economic cooperation agreements" (ECAs). On July 10, 2013, Taiwan concluded an ECA with New Zealand and signed the Agreement between Singapore and Taiwan on Economic Partnership (ASTEP) on November 7, 2013. Taiwan has also pursued exploratory talks with the European Union, the Philippines, India, Indonesia, and Israel about the possibility of an ECA.

Taiwan is a major source of foreign direct investment (FDI) flows to the PRC, although the exact level remains unknown. According to the Taiwan Investment Commission, Taiwan's approved FDI flows to China grew from 2.6 billion USD (2000) to 13.1 billion USD (2011), but declined during the next two years (totaling 8.7 billion USD in 2013). The stock of Taiwan's approved FDI to China from 1991 to 2013 was 133.7 billion USD, 80 percent of which is in manufacturing. The top five sectors of Taiwan's cumulative FDI in China from 1991-2013 were electronic parts and components manufacturing (25.3 billion USD); computers, electronic, and optical products manufacturing (18.4 billion USD); electrical equipment manufacturing (9.8 billion USD); wholesale and retail trade (7.0 billion USD); and finance and insurance (6.2 billion USD). Some analysts argue that a large level

of Taiwan's investment in China is not reported to the government. For example, many Taiwanese investors are believed to invest in China through a Hong Kong entity in order to avoid scrutiny by Taiwan's government. It is highly probable that the total level of Taiwan FDI in China could be as high as 300 billion USD.

US data on trade with Taiwan perhaps underestimates the importance of Taiwan to the US economy because of the role of global supply chains. To illustrate, Taiwan's manufacturers and traders report data on the amount of export orders they receive from various countries. These data indicate that annual orders for products from US buyers are much larger than the reported level of annual US imports from Taiwan. For example, while US imports from Taiwan in 2013 were 37.9 billion USD, US entities placed export orders for 107.2 billion USD with Taiwan firms in the same year. This was nearly three times higher than the US-reported level of imports from Taiwan. The gap between US imports from Taiwan and US export orders to Taiwan firms has widened considerably over the past 10 years⁶ (UNCTAD, 2022; World Bank, 2020; WTO, 2018; EIAS, 2018; Trading Economics, 2018).

A significant amount of Taiwan's ICT hardware products that are assembled in China are exported to the US and to the EU. The US trade data indicate that computer products and parts are the single largest category of US imports from Mainland China. Thus, it is likely that a large part of US imports of computers and computer parts from China originates from Taiwan-invested subsidiary firms in Mainland China. In many cases, the US ICT firms place orders for products with Taiwan's firms, which manufacture the products in China, then ship them to the United States, where the US firms sell the products under their own brand names. According to Taiwan's Ministry of Economic Affairs (MOEA), US firms such as Apple, Dell, Verizon, and HP are among the major global purchasers of ICT products made by Taiwan firms (primarily Hon Hai/Foxconn) (ITIF, 2021).

According to the official Taiwanese government sources⁷, overseas production accounted for 13.3 percent of Taiwan export orders in 2000, but by 2013, this level reached 51.5 percent. For Taiwan ICT firms, this ratio rose from 24.9 percent to

⁶ A very interesting analysis was made by Jiandong Shi, a Chinese PhD student at the National University of Public Service, Doctoral School of Public Administration Sciences of Hungary in 2021, where he has pointed to the statistical problems of proper measurement of the international trade between the USA, the PRC, Taiwan, and Hong Kong (Shi, 2021).

⁷ Reliable statistical sources are rather scarce and are often contradictory on the Taiwanese economy, so it is not easy to analyze this topic.

87.3 percent. The disparity between the data on Taiwan's export orders and US import data is largely explained by the fact that a significant level of products designed and sold by Taiwan's firms are actually built elsewhere, especially in the PRC, and then shipped to different countries worldwide, among others, to the United States. For example, from 2001 to 2008, the value of Taiwan's information technology (IT) hardware (such as computers) production increased from 42.8 billion USD to 100.0 billion USD.

Major US exports to Taiwan included industrial machinery; semiconductors and other electronic components; basic chemicals; and aerospace products. In 2013, Taiwan was the seventh-largest export market for US agricultural products, valued at 3.1 billion USD. Major US agricultural exports to Taiwan include soybean and soybean products, wheat and wheat products, processed foods, and beef. In addition, Taiwan is the seventh-largest foreign holder of US Treasury securities, which totaled 179 billion USD as of January 2014.

The Brussels based European Institute for Asian Studies⁸ (EIAS) conducts interesting studies on the PRC and on Taiwan, and in one of its latest reports of October 2018, entitled the Taiwan's Outward Foreign Direct Investment (OFDI) into the European Union, it made very interesting statements on Taiwan's outward FDI and Trade Relations.

10. Taiwan's Government's Efforts Against Chinese Technological Spying

The new government of Tsai Ing-wen⁹ is formed by the anti KMT Democratic Progressive Party (DPP). As the Financial Times (Financial Times, 2021) mentioned at the end of 2021, "Taiwanese regulators wanted to slow down high-tech FDI outflows to the PRC in order to stop copying by companies from the PRC. The latest move by Taipei to prevent the leak of sensitive technologies, including semiconductors, to the mainland have made lots of problems for the Taiwanese businessmen. In order to stop outflow of high-tech products to the PRC, the

⁸ According to the homepage of this institute: "The European Institute for Asian Studies (EIAS) is a leading Think Tank based in Brussels, the capital of the European Union, focusing on EU-Asia relations since its founding in 1989. As a policy research center, its aim is 'to promote understanding between the European Union and Asia.'" In addition, "it aims to strengthen ties between Asia and Europe through in-depth, comprehensive research, as well as acting as a knowledge exchange platform and forum for dialogue between policymakers, members of academia and think tanks, civil society and the corporate sector" (EIAS, 2018).

⁹ Tsai Ing-wen was the president of Taiwan from 2016 till 2020 and was re-elected in 2020.

Taiwan's Ministry of Economic Affairs announced the revision of current regulations to require Taiwanese companies to seek approval if they planned to sell or dispose of any of their assets, plants or subsidiaries in China to their Chinese counterparts or other local buyers, as such a move could involve the transfer of sensitive technologies. Current regulation only requires Taiwanese companies to notify authorities of such transactions. A set of revised regulations, which were designed to protect Taiwan's valuable chip technologies, was sent to the Executive Yuan for further review on December 17, 2021, and would take effect before the end of 2021 at the earliest, or in January 2022, an official of the Taiwan Investment Commission told Nikkei Asia. Currently, Taiwanese companies' investments in China, including setting up subsidiaries there, must be approved by the commission (Financial Times, 2021). The article goes on as follows: "the Taiwanese Ministry of Justice and the Mainland Affairs Council, are drafting new regulations to prevent Taiwanese professionals from leaking trade secrets and critical technologies to 'foreign counterforces' in places such as China, Hong Kong and Macau, in an elevating effort to discourage people from working for companies across the strait." According to the Financial Times, "the stricter scrutiny comes as many Taiwanese tech companies have sold their Chinese subsidiaries over the past few years. Lite-On, a leading power management solutions provider, sold 51 percent of its solid-state drive storage subsidiary in the Chinese city of Suzhou to Tsinghua Unigroup in 2017 and the remaining stake to a local investment firm this June. ASE Technology Holding, the world's biggest chip packaging and testing service provider, is the latest example. The Taiwanese company earlier this month sold stakes in two of its Chinese subsidiaries to Wise Road Capital, a Chinese private equity firm that recently became involved in rescuing embattled Chinese chip conglomerate Tsinghua Unigroup. Wise Road's 1.4 billion USD takeover bid for South Korean chipmaker Magnachip Semiconductor was dropped this week due to stricter US government scrutiny over the deal due to national security concerns [...]. We have noticed that there's a vulnerability in the current legal system that needs to be patched," Investment Commission spokesperson Lu Chen-hui told Nikkei Asia. "Although the cases of Catcher and Wistron are less technology-intensive, it reveals that there's a loophole for possible sensitive technology leakage going forward" (Financial Times, 2021). A dedicated ministry team will be tasked with looking more closely at transactions that involve technologies surrounding "chipmaking, chip packaging and testing, and panels", the officials said. The administration of President Tsai Ing-wen has been tightening its screening of Chinese investments in Taiwanese companies to protect sensitive technologies and has banned staffing companies from listing jobs openings for sensitive industries, such as semiconductors, that are located in China (Ibid.).

But it is probable that official data on foreign trade and even FDI flow between China and Taiwan are not showing the reality, as the real Taiwanese export and direct investment data might be two or three times higher than in the official PRC or ROC statistics. Taiwanese FDIs to China often go through third countries such as Thailand, the Philippines, and Singapore etc. with large Chinese business communities in order to hide the real origins from the Taiwanese government.

It is interesting to note that there are important political differences between older and younger people in Taiwan. Syaru Shirley Lin (2021a) has stated that “The older generations remain focused on Taiwan in high-income trap, economic prosperity and have strong ideological views on China, young people prefer candidates who are firmly Taiwanese with strong commitment to progressive values, but are result-oriented in governance, and pragmatic about cross-Strait relations. Even if China is not their top choice as a place to live and work, they want to have the choice just like young people anywhere else. Politically, the experience of living and studying in China has not made them more supportive of unification, and in some cases, they have actually become more opposed to it. To younger generations, there is no contradiction in working in China but supporting a more autonomous and separate Taiwan” (Lin, 2021a, p. 61).

11. The New Southbound Policy Initiative After 2019

During the last 30 years, Taiwan, the ROC, and Mainland China, the PRC, had strong economic ties, but the Tsai Ing-wen government tried to loosen these relations just in order to reduce the copying of Taiwanese products by the PRC’s companies. That is why the New Southbound Policy initiative was introduced with the aim of redirecting the international economic relations of Taiwan to a new geographical area (Neszmélyi, 2020). Eighteen countries are targeted by the New Southbound Policy: Thailand, Indonesia, the Philippines, Malaysia, Singapore, Brunei, Vietnam, Myanmar, Cambodia, Laos, India, Pakistan, Bangladesh, Nepal, Sri Lanka, Bhutan, Australia, and New Zealand. It is important to see that in some of these countries there are significant Chinese business communities that play a crucial role in the local economic life, and this generally helps to strengthen the economic ties of Taiwan with these countries. In order to support the goals of the New Southbound Policy, the Department of East Asian and Pacific Affairs of the Ministry of Foreign Affairs of Taiwan established the Indo-Pacific Affairs Section. One focus of the Indo-Pacific Section is to forge more cooperative ties with the

United States, Australia, and Japan, as they have shared similar visions for a Free and Open Indo-Pacific (FOIP).

This Taiwanese “New Southbound Policy” has lots of similarities with the Hungarian “Opening to East”, or later the “Opening to South” initiative, and both are similar to the Chinese “Belt and Road Initiative (BRI, or B&R)”, formerly known as “One Belt One Road”, but the major difference is that China regards this B&R initiative as a “global infrastructure development strategy” with the aim to invest in nearly 70 countries and international organizations. While the Hungarian government announced the Opening to East policy in 2012, China accepted its B&R initiative in 2013, and the Taiwanese project was officially launched on September 5, 2016, and the present Hungarian “Opening to South” initiative was announced in 2015. It is interesting to note that, in reality, the Hungarian “Opening to East” policy was one of the oldest of these three initiatives: moreover, it had been initiated even earlier, when in 2003, the former Minister of Economy, István Csillag, entrusted KPMG Budapest to work out the details of a government program called “Opening to East”, with the aim of getting back the former export markets of Hungary. China and Taiwan followed it only some years later.

12. How can Taiwanese Businessmen Overcome Outward FDI Government Regulation? Can the GUANXI System Help That?

Though the New Southbound Policy of the Tsai government might provide solutions for the Taiwanese companies, at the same time, it should see that in reality, it is not very difficult to overcome the restrictions of the new Taiwanese government, simply, some reliable Chinese businessmen should be found in the Southeast Asian region, for example in the Philippines, in Thailand, in Malaysia or in Singapore where Chinese businessmen are dominating local economic life. Taiwanese businessmen can easily invest without much government scrutiny in those countries and can ask the local Chinese partners to invest in their own name and country of origin in the PRC. By this, Taiwanese companies can avoid government control of their FDIs in China, and the (Chinese) companies in the PRC can enjoy the benefits of the Taiwanese investments and can continue copying those high-tech products. Thus, the emerging question is how the traditional Guanxi system might help these acts?

As Nigel Bowen mentioned in the Sydney Morning Herald some years ago, “the two Chinese characters that make up the term *guanxi* mean ‘a gate’ and ‘to connect’, thus *guanxi* is usually loosely translated as ‘relations’ or ‘connections’ in English” (Bowen, 2015). *Guanxi* refers to the durable social connections and networks a firm uses to exchange favors for organizational purposes, Flora Gu, Kineta Hung and David K. Tse in their research examined how and when *guanxi* operates as a governing mechanism that influences firm marketing competence and performance in the transitional economy of China (Gu et al., 2008). Drawing on social capital theory, they proposed an integrative framework that unbundles the benefits and risks of *guanxi* and delineates the organizational processes to internalize *guanxi* as a corporate core competence. The authors surveyed senior executives in 282 firms in China’s consumer products industries. The findings confirmed *guanxi*’s direct effects on market performance and its indirect effects mediated through channel capability and responsive capability. The authors also confirm that technological turbulence and competition intensity can be effective structure-loosening forces, thus reducing the governing effects of *guanxi*. The findings suggested that firms can improve market access and growth through *guanxi* networks, but managers need to capitalize on them from the personal to the corporate level. In addition, managers should be aware of *guanxi*’s dark sides, which include reciprocal obligations and collective blindness. Their study shows that personal networks are popular universally, but in China, they have unique, distinct ways of operation (Gu et al., 2008).

As Jing Vivian Zhan stated in her article in 2012, corruption exists all around the world and throughout human history, but societies undergoing rapid modernization and institutional transition tend to be more susceptible to this problem. In her article she analyses the corruption facilitating roles of the *guanxi* network in China. When deficient political and economic institutions hamper the effective flow of information and resources and when fast structural changes generate uncertainty, people can resort to *guanxi* network, an informal institution, to overcome these difficulties and advance their private interests. Using empirical evidence from reform-era China, she demonstrated in her article how the communication, exchange, and normative functions of the *guanxi* network enhanced the opportunities, means, and incentives for public officials to engage in corruption, especially transactional corruption, through particularistic ties (Zhan, 2012).

Finally, the *guanxi* network can distort norms by falsely presenting certain illicit behaviors as standard and normatively acceptable practices. This is especially true during the transition period. As rules are in constant flux and political morality

based on the Communists (or more specifically the Maoists), ideologies quickly erode, and considerable confusion arises on the part of cadres as to what are morally justifiable behaviors. If an official is embedded in a guanxi network with many other officials who engage in corrupt activities but behave as if their activities were legitimate and justified, this official over time may lose his/her own judgment and accept their practices as normal.

Well established political-legal institutions and market mechanisms are generally thought to be crucial for the prevention of corruption. Ideally, opportunities for corruption can be minimized under a transparent and democratic regime with a strong rule of law and an open and fair market free from state intervention and distortion. However, even the most advanced economies and political systems cannot achieve such ideal status, although they do much better than those underdeveloped and nontransparent regimes with weak rule of law. Transition systems are particularly problematic, because when the old political and economic systems are torn down, but the new ones are yet to be established, tremendous gaps exist in the formal institutions and can be exploited for rent-seeking.

Empirical evidence from reform-era China demonstrates how the guanxi network creates both means and incentives for officials to exploit the structural opportunities under transition and engage in corruption, especially transactional corruption through particularistic ties within relatively small, exclusive networks. The corruption-facilitating effects of guanxi network are realized through its communication, exchange, and normative functions.

- First, when the nontransparent system blocks the free flow of valuable information, guanxi network provides secret, exclusive, and safe channels of communication for officials to disclose crucial information in exchange of economic or noneconomic benefits.
- Second, when state intervention and underdeveloped market prevent open and fair distribution and exchange of resources, the guanxi network enables corrupt exchange between haves and have-nots.
- Third, guanxi network can distort officials' norms and induce them to particularistic behaviors. When such norms override the legal norms, officials will feel obliged and justified to engage in corrupt activities (Zhan, 2012).

13. The Foreign Trade of Taiwan during the last 60 years

During the years of Export Oriented Industrialization (from 1960 till now), economic development was rather rapid in Taiwan. As we have already mentioned, export was Taiwan's main source of economic growth, like in other developing countries in East Asia. The weight of exports in Taiwan's gross domestic product (GDP) from 1960 to 1975 rose from 9.4 percent (1960) to 33.7 percent (1975). During the 1980s, Taiwan's exports were around 43-52 percent of its GDP. At the same time, it maintained an elevated GDP growth rate, between 3.5 percent and 12.7 percent. After 2000, the proportion of exports in the GDP increased even higher. By 2007, Taiwan's exports accounted for 64 percent of its GDP (Chianga – Gerbierb, 2010, p. 149).

Table 1. Taiwanese exports, GDP and Economic Growth

Year	Exports (\$million)	GDP (\$million)	Exports/GDP (%)	Annual economic growth (%)
1960	164	1736	9.4	6.3
1965	450	2843	15.8	11.2
1970	1481	5739	25.8	11.4
1975	5309	15,747	33.7	4.9
1980	19,811	42,285	46.9	7.4
1981	22,611	49,288	45.9	6.2
1982	22,204	49,606	44.8	3.5
1983	25,123	53,479	47.0	8.3
1984	30,456	60,384	50.4	10.7
1985	30,726	63,409	48.5	5.0
1986	39,862	76,929	51.8	11.5
1987	53,679	103,520	51.9	12.7
1988	60,667	125,789	48.2	8.0
1989	66,304	152,724	43.4	8.5
1990	67,214	164,513	40.9	5.7
1991	76,563	184,267	41.6	7.6
1992	82,122	218,712	37.5	7.9
1993	85,957	230,926	37.2	6.9
1994	94,300	252,227	37.4	7.4
1995	113,342	273,792	41.4	6.5
1996	117,581	289,315	40.6	6.3
1997	124,170	300,005	41.4	6.6
1998	112,595	276,105	40.8	4.6
1999	123,733	298,757	41.4	5.8
2000	151,950	321,230	47.3	5.8
2001	126,314	291,694	43.3	-2.2
2002	135,317	297,668	45.5	4.6
2003	150,600	305,624	49.3	3.5
2004	182,370	331,007	55.1	6.2
2005	198,432	355,958	55.7	4.1
2006	224,017	365,503	61.3	4.9
2007	246,677	383,343	64.3	5.7

Source: Chianga – Gerbierb, 2010. p. 149.

Clearly, in Taiwan (as in other rapidly developing Far East countries), there were at least two distinct phases of Export Oriented Industrialization:

- The first phase was before hyper-globalization, when direct export was dominant, as in Taiwan wages were relatively low and consequently, the country exported products directly to the final markets. That is why direct exports were important after the 1960s for sustaining Taiwan's rapid economic growth.
- In the second phase, after the 1990s—following the logic of hyper-globalization—“exporting directly the final goods to the world market” was replaced by “FDI outflow” and by “exporting the intermediate goods and services to a third country for manufacturing and assembling”, and final exports came from the affiliates working in third countries. These affiliates exported to the final markets. As we have already mentioned, it is rather difficult to analyze foreign trade, as it is practically impossible to make meaningful quantitative analysis of international economy, though, some new measurements have appeared lately, such as the TiVA (Trade in Value Added), or the NGI, the New Globalization Index of Petra Vujakovic from the Joint Vienna Institute (Wien). But unfortunately, these indices are either not renewed regularly, or not widely accepted. This is the second phase of Export Oriented Industrialization. The Taiwanese exportation was transformed from high labor intensity to high capital and technology intensity activity during this phase. According to the Ministry of Economic Affairs in Taiwan (hereafter MOEA), the export of heavy, chemical, and technology-intensive sectors in Taiwan's total manufacturing exports increased from 60 percent (1990) to 85 percent (2005). On the other hand, exports of high labor intensity goods diminished from 46 percent (1985) to 28 percent (2005) (Taiwan Statistical Data Book, 2006).

This is why traditional foreign trade is less and less important today than foreign direct investments, and trade is realized inside the great global transnational companies.

Meanwhile, Taiwan's main export destination also changed from the US, the “final market”, to China, which can be regarded as the “indirect market”. The US market took 49 percent of Taiwan's total exports in 1984; however, this dropped to 13 percent by 2007. In fact, since 2000, exports to China (including Hong Kong), have exceeded exports to the US. The Mainland Affairs Council (MAC, established in 2008) estimated that the proportion of Taiwan's exports to China of the total export rose from 6.5 percent (1990) to 30 percent (2007) (Cross-Strait Economic Statistics Monthly, MAC). Most of the exports to China were parts and

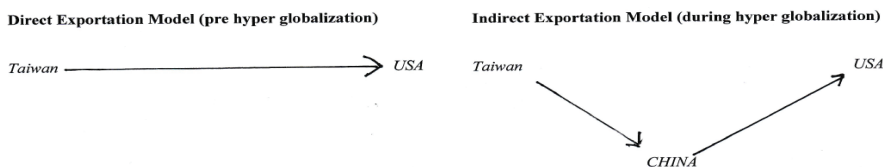
accessories for optical and photographic instruments, electronic equipment, and mechanical appliances, and it is highly probable that the final products made in PRC (China) were later exported to the US and to other developed countries.

According to Min-Hua Chianga and Bernard Gerbierb (2010), the main reason for the change of export destination and category was that Taiwan's outward foreign direct investments (OFDI) exceeded inbound foreign direct investments (IFDI) received by Taiwan. Following the New Taiwan Dollar's appreciation and wage increases in the latter half of the 1980s, Taiwan was no longer an ideal production site for labor-intensive sectors. Instead, Taiwanese firms began to invest abroad increasingly in order to enjoy labor-cost advantages and to export intermediate goods to lower wage countries for manufacturing, especially in China.

Consequently, exports remained the main source of Taiwan's economic growth, but exports changed drastically: it was not Taiwan who exported final goods directly, but these exports were realized indirectly, through FDI's abroad. Taiwan transformed itself from a "directly exporting country, inward-investment driven economy" to an "outward-investment-driven economy", where a large part of Taiwanese export was actually produced in other countries, in companies partially or totally owned and controlled by Taiwanese companies or Taiwan based TNCs. Therefore, we may conclude that Export Oriented Industrialization was replaced by Foreign Direct Investments Oriented Industrialization. This new type of industrialization helped Taiwan avoid the middle-income trap, thus endangering all countries which were not able to realize this new phase of Export Oriented Industrialization.

The weight of Taiwan's inward and outward Foreign Direct Investments in its GDP has changed largely. Taiwan's inward investment as a percentage of GDP increased slightly from 5.8 percent (1980) to 12.7 percent (2007), while its outward investment as a percentage of GDP increased from 0.2 percent to 41.3 percent, and these outbound FDI's have largely contributed to the hidden increase of Taiwanese exports. This transformation of export pattern is a characteristic of hyper-globalization, as formerly the Export Oriented Development was characterized by direct export, but in the time of hyper-globalization, export became indirect, where Taiwan is not directly responsible for the exportation, but through foreign direct investments, intermediate goods and knowledge is exported to countries where wages are relatively low, and the final exportations are coming from those countries.

Figure 3. Direct and Indirect Export Orientated Models



Source: author's own compilation.

14. Taiwan and Its Representation in International Organizations

Since Taiwan was replaced in the United Nations by the People's Republic of China 50 years ago, the Republic of China's (Taiwan) formal presence in international organizations has been greatly restricted, but not eliminated completely. On October 25, 1971, the Republic of China (ROC), by American initiatives, was formally expelled from the United Nations by a vote of the General Assembly and replaced by the People's Republic of China (PRC), formed in Beijing at the end of the country's civil war in 1949. Nevertheless, Taiwan maintains membership in several important international organizations, including the International Olympic Committee, Asia-Pacific Economic Cooperation, the Asian Development Bank, the Governmental Advisory Committee of the Internet Cooperation for Assigned Names and Numbers, and, most recently, the World Trade Organization (WTO). Yet, Taiwan desires greater participation on the international stage, especially within the United Nations and in the World Health Organization (WHO), and its efforts to promote them are generally met with strong resistance from China. At the same time, it is important to note that Taiwan is not the member of the OECD. The OECD was created in more steps and members have also changed during the time.

In addition to the Asian Development Bank, Taiwan is a member of over forty organizations, but maintains only fifteen diplomatic ties with other countries, among them with the US, France, Germany, Japan, Russia, and the United Kingdom.

WTO

When the General Agreement on Tariffs and Trade (GATT) was established in the post war era, China, under civil war between the Nationalists (Kuomintang) and the Communists, was represented by the Nationalist government of the ROC.

In the 1950s, ROC (Taiwan) withdrew from GATT. However, the PRC applied for membership at the GATT, the former body of the WTO. Meanwhile, the government of the ROC re-applied for its membership at the WTO under the name: “custom territory” of “Taiwan, Penghu, Kinmen, and Matsu”. By August 1999, Taiwan completed trade negotiations with all its partners except for Hong Kong and Canada. The government of the PRC insists that it must be admitted first before Taiwan is allowed to join the WTO. It happened and Taiwan has been a member of the WTO since January 1, 2002, under the name of “Separate Customs Territory of Taiwan, Penghu, Kinmen, and Matsu (Chinese Taipei)” (Chiang, 2017).

CPTPP – (Comprehensive and Progressive Agreement for Trans-Pacific Partnership)

Taiwan has also applied to join the CPTPP under the name, the Separate Customs Territory of Taiwan, Penghu, Kinmen, which was used in the World Trade Organization (WTO). The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), also known as TPP11 or TPP-11 is a trade agreement among Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam. It evolved from the Trans-Pacific Partnership (TPP), but it has never entered into force due to the withdrawal of the United States.

The OECD, the Organization for Economic Cooperation and Development

The OEEC (Organization for European Economic Co-operation) was formed originally in 1948 to administer American and Canadian aid in the framework of the Marshall Plan for the reconstruction of Europe after WWII. Similar reconstruction aid was sent to the war-torn Republic of China and post-war Korea, but not under the name of “Marshall Plan”. The OEEC started its operations on April 16, 1948 and originated from the work done by the Committee of European Economic Co-operation in 1947 in preparation for the Marshall Plan. Since 1949, it has been headquartered in the Château de la Muette in Paris, France.

When the Marshall Plan was over, the OEEC focused on important global economic issues. In the 1950s, the OEEC provided the framework for negotiations aimed at determining conditions for setting up a European Free Trade Area, to bring the European Economic Community of the six and the other OEEC members together on a multilateral basis. In 1958, a European Nuclear Energy

Agency was set up under the OEEC. By the end of the 1950s, when the rebuilding of Europe had been done effectively, some leading countries felt that the OEEC had outlived its purpose but could be adapted to fulfill a more global mission. In January 1960, a resolution was reached in Paris to create a body that would deal not only with European and Atlantic economic issues, but also devise policies to assist less developed countries. The plan of this reconstituted organization was to bring the US and Canada, who were already OEEC observers, on board as full members and also to set to work straight away on bringing in Japan. Official founding members of the OECD were the following: Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States. Following the 1957 Rome Treaties to launch the European Economic Community, the Convention on the Organization for Economic Co-operation and Development was drawn up to reform the OEEC. The Convention was signed in December 1960, and the OECD officially superseded the OEEC in September 1961. It consisted of the European founder countries of the OEEC plus the United States and Canada. Three countries, Netherlands, Luxembourg, and Italy—all OEEC members—ratified the OECD Convention only after September 1961 but are nevertheless considered founding members.

In 1989, after the political transitions of East and Central Europe, the OECD started to assist countries in Central Europe (especially the Visegrád Group) to prepare market economy reforms. In 1990, the Centre for Co-operation with European Economies in Transition (now succeeded by the Centre for Cooperation with Non-Members) was established, and in 1991, the Program “Partners in Transition” was launched for the benefit of Czechoslovakia, Hungary, and Poland. This program also included a membership option for these countries.

As a result, Poland, Hungary, the Czech Republic, and Slovakia, as well as Mexico, and South Korea became members of the OECD between 1994 and 2000. In 1995, Cyprus applied for membership, but, according to the Cypriot government, it was vetoed by Turkey. In 1996, Estonia, Latvia, and Lithuania signed a Joint Declaration expressing willingness to become members of the OECD. In 2012, Romania reaffirmed its intention to become a member of the organization, and in September 2012, the government of Bulgaria confirmed its application for membership before the OECD Secretariat. The OECD established a working group headed by Ambassador Seiichiro Noboru to work out a plan for the enlargement with non-members. The working group defined four criteria that

had to be fulfilled: “like-mindedness”, “significant player”, “mutual benefit” and “global considerations”. The working group’s recommendations were presented at the OECD Ministerial Council Meeting on May 13, 2004. On May 16, 2007, the OECD Ministerial Council decided to open accession discussions with Chile, Estonia, Israel, Russia, and Slovenia and to strengthen cooperation with Brazil, China, India, Indonesia, and South Africa through a process of enhanced engagement. Chile, Slovenia, Israel, and Estonia all became members in 2010. In March 2014, the OECD halted membership talks with Russia in response to its role in the 2014 Annexation of Crimea. In 2013, the OECD decided to open membership talks with Colombia and Latvia. In 2015, it opened talks with Costa Rica and Lithuania. Latvia became a member on July 1, 2016, and Lithuania on July 5, 2018. Colombia signed the accession agreement on May 30, 2018 and became a member on April 28, 2020. On May 15, 2020, the OECD decided to extend a formal invitation for Costa Rica to join the OECD, and the country joined as a member on May 25, 2021. Other countries that have expressed interest in OECD membership are Argentina, Peru, Malaysia, Brazil, and Croatia.

The OECD works as a real “think tank”, analyzing important economic questions and working out proposals, which are generally not binding but the member countries are normally signing them. Major topics of the OECD during the last years were the following:

- Tax reform (the OECD publishes and updates a model tax convention that serves as a template for allocating taxation rights between countries),
- OECD Guidelines for Multinational Enterprises (these are a set of legally non-binding guidelines attached as an annex to the OECD Declaration on International Investment and Multinational Enterprises),
- Transfer Pricing Guidelines since 1995,
- The OECD’s work on bid rigging includes the publication of guidelines for fighting this practice in the context of public procurement,
- Regular publications (books, economic outlooks, thematic publications, such as Education at a Glance, or Health at a Glance, etc.),
- Country papers presenting all major countries of the world.

It is interesting that there is no news about the application of Taiwan to the OECD, though:

- perhaps it could be easier to get access there than to other international organizations,

- the PRC is not member of the OECD either therefore, it would not be able to protest against membership of Taiwan,
- topics analyzed by OECD are more important in our days generally than that of other international organizations.

To sum up Taiwan's efforts to join international organizations, Taiwan's seventh attempt to join the WHO failed in 2003, and its eleventh attempt to join the United Nations seems to be also doomed to failure.

Taking into account the former failures and the changing pattern of globalization of our days, when instead of foreign trade, the more important Foreign Direct Investments and transnational companies are dominating the international economic life, perhaps instead of the United Nations, it would be wiser for Taiwan to try to become a member of the OECD.

A counter example is the dispute between Lithuania, a small Baltic state and the huge People's Republic of China over the official name of Taiwan. It is interesting to see that accession to international organizations does not seem to be completely hopeless, as Chinese veto on Taiwan's accession is largely political and as the ties between the US, the EU and the PRC are deteriorating, in the (near) future Taiwan could be accepted by some international organizations. An interesting example for that is the relations of Taiwan with Lithuania. As the BBC reported on January 7, 2022 (Nevett, 2022): "a tiny European state of Lithuania announced the opening of a Taiwanese representative office in its capital, Vilnius. To the casual observer, the statement may have seemed unremarkable. To China, it was an intolerable declaration of diplomatic hostility. When the office opened last November 2021, it was the first time a European Union member state had let Taiwan use its own name for a foreign outpost. That touched a nerve in China, which claims Taiwan as part of its territory, even though the island has long seen itself as a self-governed democratic state. To avoid offending China, most countries eschew official relations with Taiwan and recognize its representative office under the name of its capital, Taipei."

Though for a while it seemed that Lithuania also would accept the logic of the PRC, later it became clear that to stick to their original decision, Lithuania might have even gained a lot. As the Politico wrote, "Lithuania's showdown with China over Taiwan is poised to deliver an unexpected windfall to the small Baltic nation that France and Germany could only dream of: investment in microchip manufacturing. Europe is a laggard in the all-important semiconductor industry and

a key plank of the EU's industrial strategy—intended to keep Europe in the economic big league with rivals such as China and the US—is a drive for microchip production. Although EU bigwigs have sought cooperation with heavyweight (and democratic) Asian players in the electronics sector such as Taiwan and South Korea, their overtures have so far yielded little. That impasse looks like it could be broken, however, as a bitter trade dispute between Lithuania and China turns Vilnius and Taipei into an unusual pair of geopolitical Davids allied against Goliath in Beijing. Because of the warming diplomatic ties between Lithuania and Taiwan, China has unleashed a strict embargo against the Baltic nation—boycotting not only its exports but even goods from other EU countries made with Lithuanian components (Lau – Cerulus, 2022; Hickson, 2013).

15. How the USA and International Politics can help Taiwan to get into the International Organizations

Stephen Ezell quoted Alex Wong, Head of the US State Department's Indo-Pacific strategy, in his paper as follows: “[Taiwan] can no longer be excluded unjustly from international organizations. [It] has much to share with the world. The United States should continue to facilitate Taiwan's engagement in these types of international forums” (Ezell, 2021, p. 28). Beside this, Stephen Ezell proposed that the US and Taiwan should increase their cooperation in the following areas:

- Advocate that international economic institutions produce more Taiwanese research,
- Increase STEM education exchange,
- Increase investment in publicly funded research,
- Turbocharge Taiwanese digitalization, especially in manufacturing,
- Complement Taiwan's strengths in hardware with greater strengths in software,
- Collaborate on supply chain security, especially in the semiconductor sector,
- Collaborate on semiconductor export controls,
- Establish an innovation experts' working group,
- Develop a strategic sovereign wealth fund,
- Collaborate to support the competitiveness of allied high-tech enterprises.

And its major conclusions are that “Taiwan and the United States represent free, like-minded, democratic societies that constitute key economic and national security partners for one another. The competitiveness and innovation capacity of

a wide range of US high-tech enterprises and industries depends on the vitality of the key Taiwanese suppliers they depend on. This report has endeavored to showcase the depth and importance of US economic, trade, innovation, and supply chain linkages with Taiwan and offer a broad range of policy recommendations that, if undertaken, would strengthen the depth and strength of those relationships to the mutual benefit of both nations.” (Ezell, 2021, p. 34).

But as the exclusion of Taiwan from the UN and from international organizations was the consequence of a purely political step, to get back also might be the consequence of political decisions.

16. War or Peaceful Cooperation between China and Taiwan?

It is clear that peaceful economic relations between Taiwan, the PRC and even the United States are much more advantageous than a war, in spite of the fact that relations between Taiwan and the PRC are getting increasingly tense nowadays. Though it is not clear what the future might bring, at the same time, it would be very bad (or even catastrophic) for not only to the countries directly interested, but also for the whole world, if a full-fledged war erupted between Taiwan and China. Such a war might destroy not only the economy of Taiwan, but also the economy of the PRC as well, and also might disrupt Global Value Chains all over the world, too.

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Social and Cultural Aspects in Taiwan's Economic Development with Special Focus on the Education System and Gender Equality

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1. Taiwan's Economic Achievement

Taiwan (officially known as the Republic of China, ROC) as one of Asia's Four Little Dragons (Wong, 2003) has gained economic strength by the end of the 20th century and became an important regional player. Its democratic achievements and economic prosperity have won recognition internationally (Mahbubani, 2011).

Amidst the significant changes and reordering of economic powerhouses in terms of world geopolitics, academics and researchers have constantly made efforts to understand the main factors driving economic growth in countries the world over. As part of this process, Taiwan has also gained international attention and experts hope to learn from the Taiwan experience.

Taiwan's history in brief: mostly independent existence until the 15th century followed by episodic, periodic, and extended periods of rule by mainland Chinese dynasties, interrupted by the presence of Portuguese explorers, Spanish settlers, Dutch colonizers, and Japanese colonial rule (1895-1945) until it reached its present status, and the country has been operating with a democratically elected government since 1996.

Since the 1990s, Taiwan has been a vibrant and an increasingly prosperous democracy. In 2020, Taiwan's gross domestic product (GDP) amounted to around 668.51 billion USD (almost 20 times the world median). Using purchasing power parity (PPP) dollars, Taiwan's GDP per capita (59,398 USD) is more than in the EU (44,539 USD) or in Japan (42,248 USD) (World Data Atlas, 2021).

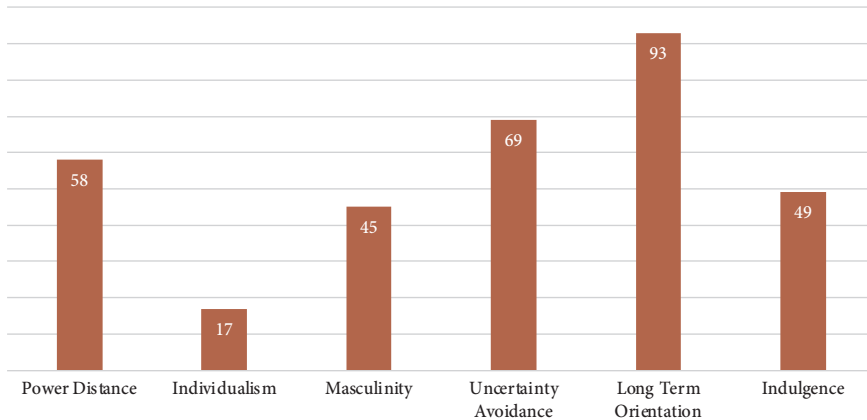
2. Factors Contributing to Economic Growth in Taiwan

When trying to identify factors that have contributed to this significant economic performance, several elements can be mentioned from geographical location to cultural traits (Huntington – Harrison, 2000), from education to female empowerment. In this paper, we will briefly highlight the last three, those that in the author’s view have had the strongest input in supporting economic growth.

2.1. Cultural Traits

Taiwan has gone a long way in forming and evolving its modern culture: beginning with indigenous people of Austronesian origin, Chinese ethnic, linguistic and cultural heritage, and Japanese colonial rule, just to mention the most important formative phases, all adding up and contributing to the shaping of its values, mentality and lifestyle. For understanding modern Taiwan, we turn to Geert Hofstede’s Cultural Dimensions Model (Hofstede, 1997). Its latest elaborated version, the 6-D (six dimensions) model (Hofstede Insights, n.d.), gives a brief but characteristic overview about Taiwanese culture.

Chart 1: Six cultural dimension scores of Taiwan



Source: Hofstede Insights, (n.d).

- *Power Distance* (it is the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally): Taiwan has a relatively high score of 58 (out of 100) on

this dimension, which indicates that it is a hierarchical society. This means that people accept a hierarchical order in which everybody has a place, and which needs no further justification. Hierarchy in an organization is seen as reflecting inherent inequalities, centralization is popular, subordinates expect to be told what to do and the ideal boss is a benevolent autocrat (Hofstede Insights, n.d.).

- *Individualism* (it demonstrates the degree of interdependence a society maintains among its members): It has to do with whether people's self-image is defined in terms of "I" or "We". Taiwan, with a score of 17, is a collectivistic society. This is manifest in a close, long-term commitment to the "member" group, be that a family, extended family, or extended relationships. Loyalty in a collectivist culture is paramount and overrides most other societal rules and regulations. Such a society fosters strong relationships, where everyone takes responsibility for fellow members of their group. In collectivistic societies, offence leads to shame and loss of face. Employer/employee relationships are perceived in moral terms (like a family link), hiring and promotion take account of the employee's in-group position, management is the management of groups (Hofstede Insights, n.d).
- *Masculinity* (the fundamental issue here is what motivates people, wanting to be the best, i.e., Masculine, or liking what you do, i.e., Feminine). Taiwan scores 45 on this dimension, a lower intermediate, and it is therefore considered a slightly Feminine society. In Feminine countries, the focus is on "working in order to live", managers strive for consensus, people value equality, solidarity, and quality in their working lives. Conflicts are resolved by compromise and negotiation. Incentives such as free time and flexibility are favored. Focus is on wellbeing, and status is not shown. An effective manager is a supportive one, and decision making is achieved through involvement (Hofstede Insights, n.d).
- *Uncertainty Avoidance* (it demonstrates the extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these): Taiwan scores 69 on this dimension and thus has a high preference for avoiding uncertainty. Countries exhibiting high Uncertainty Avoidance maintain rigid codes of belief and behavior and are intolerant of unorthodox behavior and ideas. In these cultures, there is an emotional need for rules (even if the rules never seem to work), time is money, people have an inner urge to be busy and work hard, precision and punctuality are the norms, innovation may be resisted, and security is an important element in individual motivation (Hofstede Insights, n.d).

- *Long Term Orientation* (how every society has to maintain some links with its own past while dealing with the challenges of the present and the future): Taiwan scores 93, making it a pragmatic, long-term orientation culture. Societies with this orientation show an ability to adapt traditions to a modern context, i.e., pragmatism, a strong propensity to save and invest, thriftiness, perseverance in achieving results and an overriding concern for respecting the demands of virtue. The countries of East Asia are typically found at the long-term end of this dimension and Taiwan is no exception (Hofstede Insights, n.d).
- *Indulgence* (it shows the extent to which people try to control their desires and impulses): Taiwan has a very intermediate score of 49, which does not indicate the dominant preference on this dimension (Hofstede Insights, n.d).

What becomes clear from this characterization—which is predominantly applied for business purposes—is, that modern Taiwan, whilst maintaining several elements of its historic cultural heritage (Confucianism), has also incorporated a number of values that are attributes of a democratic society.

However, in the author’s view, the following two factors—that is education and female empowerment—had an even greater impact on the growth of economic performance in Taiwan.

2.2. Education’s Importance

Taiwan’s central educational authority is the Ministry of Education of the Republic of China. It is responsible for setting and maintaining education policies and managing public institutions of education throughout Taiwan. Compulsory education comprises: elementary education (6 years), junior high school (3 years), and—since 2014—senior secondary education (3 years), i.e., altogether 12 years.

Taiwanese students regularly achieve one of the world’s best results in mathematics, science and literacy, as tested by the Program for International Student Assessment (PISA), a worldwide evaluation of 15-year-old school pupils’ scholastic performance. Taiwan is one of the top-performing among the OECD countries in reading literacy, mathematics, and sciences with the average student scoring 523.7, compared with the OECD average of 493, placing it seventh in the world, and has one of the world’s most highly educated labor forces among OECD countries (PISA results from 2018, 2018).

In Taiwan, adhering to Confucian values, parents believe that receiving a good education is of high priority and an important goal in their children's life. Many parents in Taiwan are convinced that effort and persistence matter more than innate ability if their children want to receive better grades in school. These beliefs are shared by teachers, guidance counselors, and schools as they regularly keep the parents abreast on their child's overall academic performance in school. Many parents have high expectations for their children, emphasize academic achievement and actively intervene in their children's academic progress by making sure that their children receive top grades, and would even make great sacrifices, including borrowing money, to put their children through university. On all levels of public education, supplementary cram schools (after-class private education) or *buxiban* are the norm. The cram school system is one of the remnants of Japanese colonial education. Another one is the practice of day-to-day cleaning of classrooms and school-facilities by the pupils.

Due to its role in promoting the country's economic development, Taiwan's education system, high test results, and high university entrance rate, has won worldwide recognition. The literacy rate, as of 2021, is 98.5 percent. Well over 5 million Taiwanese (2019) hold post-secondary degrees; an estimated 1.3 million have graduate degrees, up from 570,000 in 2005. Between 1984 and 2014, the total number of higher education institutions in Taiwan jumped from 105 to 159—a growth rate of 66 percent (Magaziner, 2016). Presently, the number of tertiary education institutions is 152 (Education, 2022).

Students in Taiwan are faced with immense pressure from their parents, teachers, peers, and society as a whole to succeed academically, thus securing prestigious white collar job positions, while eschewing vocational education, critical thinking, and creativity.

The language of instruction is Mandarin Chinese. Due to the multicultural heritage and multiethnic composure of the population, however, additional language classes in Taiwanese and Hakka Chinese, as native languages, are gaining popularity. Nevertheless, this fact does not overshadow the importance of the lingua franca of our age. For any individual or nation that attempts to remain advantageous in global competition, the command of the most important language for international communication, English is imperative. In order to enhance the English abilities of students in the Republic of China, the Ministry of Education (MOE) promulgated the policy of The Program on Bilingual Education for Students in College (BEST) in April 2021. It is intended to strengthen students'

English proficiency and promote an English-taught environment or courses. Mr. Pan Wen-Chung, Minister of Education, elaborated on this policy: “To carry out bilingual teaching, the MOE will assist schools in recruiting international teaching talents for co-teaching with domestic faculty and for setting up an English-taught system. In addition, more teaching assistants will be introduced, and scholarships will also be established for the construction of an English-taught environment” (BEST 2021, p. 2). “Cultivation of major domains” and “Popularized enhancement” are the two themes in the BEST program. First of all, as to the cultivation of major domains, the Ministry of Education will select the universities and colleges which are more developed with international competitiveness to be transformed into beacon bilingual schools and will select professional domains academies to be transformed into beacon bilingual colleges and serve as models for promoting bilingual education for domestic universities and colleges (BEST, 2021). A beacon school is a notably successful school whose methods and practices are brought to the attention of the education service as a whole in order that they may be adopted by other schools.

Concerning the “cultivation of major domains” for universities and colleges, the two goals set by the MOE to be achieved step by step are “25-20-20” by 2024, and “50-50-50” by 2030. The goal of “25-20-20” means that at least 25 percent of sophomores in 3 beacon universities and 18 colleges will reach effective operational proficiency and mastery above The Common European Framework of Reference for Languages (CEFR) B2 in listening, speaking, reading, and writing by 2024, and at the same time, at least 20 percent of the sophomores and first-year graduate students will take more than 20 percent of English-taught course credits for the year (BEST, 2021).

The goal of “50-50-50” means that at least 50 percent of sophomores in 6 beacon universities and 30 colleges will reach effective operational proficiency and mastery above CEFR B2 in listening, speaking, reading, and writing by 2030, and at the same time, at least 50 percent of the sophomores and graduate students will take more than 50 percent of English-taught course credits for the year. In addition, the graduation certificate with English-Medium-Instruction Courses (EMI) certification will be promoted in order to be in line with international trends and the business world. The realization of the goal to build ROC (Taiwan) as a bilingual nation by 2030 starts with the cultivation of college and university students with the ability to communicate in English (BEST, 2021, p. 3).

This ambitious goal reminds the author of the report of a Hungarian colleague, whose article gives an account of her impressions upon meeting Taiwanese athletes. She entitled her writing as “From illiteracy to bilingualism” (Bérce, 2004), thus appreciating the rapid growth of Taiwanese society in terms of education.

As pointed out by Jessica Magaziner (2016, p. 3), “over the last 30 years, Taiwan’s higher education system has undergone rapid massification, transforming from an elite system to a universal one.” This paradigm change explains not only the impressive economic achievements, but also serves as a prerequisite for tackling challenges of our global age, of digitalization—a telling example is the way how Taiwan combatted Covid-19. This will be discussed in chapter 3 of this writing.

2.3. Female Empowerment

The figures and data depicting the rate of female employment; political and economic empowerment of women; gender wage gap; the ratio of women in managerial positions—all reveal conditions that manifest the deprived status of women in several countries of the world. This happens in spite of the fact that, unlike in the past, nowadays, most women of the developed world are raised to get proper education, make a career and be able to support themselves. More women than men pursue higher education worldwide. In this day and age, women are more educated than men: today women earn more bachelor’s degrees than men. In fact, the ratio of women in the labor force has been steadily growing in most countries of the developed world and has almost reached the level that of men. Therefore, it is no longer assumed that only men will be the “providers”. Women—if they wish to do so—can often provide for themselves now. The result is a growing number of career women, a growing number of singles, or late marriages at the least, with obvious consequences like decreasing number of children per family, if any.

Taiwan—like many countries of the world—had to go a long way until gender equality issues have been put on the agenda of social narratives, of policy making and of legislation (Hidasi, 2016). The first wave of Taiwanese feminist movements started in the Japanese colonial era (Chen, 2012), and the second wave was the feminist activism that Nationalists’ anti-communist political forces enhanced in Taiwan. However, some scholars consider the period that followed after the appearance of Annette Hsiu-lien Lu’s *New Feminism* in 1974 as the first wave of Taiwan women’s movement. Lu, who was Taiwan’s foremost women’s rights activist in the 1970s, advocated that the following four views from the Confucian

teachings were the root of the problem, i.e., women's low position and lack of self-confidence: "continue the family-line"; "three obediences and four virtues"; "men outside – women inside", and "one-sided chastity".

The emergence and evolution of women's movements in Taiwan during the subsequent decades arose from the interplay of several impacting factors: liberalization (human rights), modernization, and democratization. In the meantime, the attitude and perception of gender issues have greatly improved, and with the growth of feminist consciousness, the need to tackle gender disparities has also appeared at the level of legislation and governance (Chang, 2022). The Ministry of Education established the Gender Equity Education Committee in 1997 for promoting substantive gender equality and equity. After the announcement of the Gender Equity Education Act on June 23, 2004, the Committee was renamed the Gender Equity Education Committee and a budget was drawn up for executing relevant projects every year, including developing the policies in gender equity education, promoting the ideals and supervising the practices of gender equity education, as well as designing the courses and teaching materials for it, evaluating the effectiveness in teaching, and subsidizing activities held by NGOs, along with popularizing gender equity education through media.

In December 2011, following numerous dialogues between the government and the civil society, the Committee on Women's Rights Promotion (now renamed as Gender Equality Committee) of Executive Yuan issued the Gender Equality Policy Guideline as a blueprint for building a more diversified, inclusive, and sustainable society in Taiwan. "The Gender at a Glance in R.O.C.(Taiwan) – Version 2021" (published by DGBAS, DG of Budget, Accounting and Statistics/ Executive Yuan) gives a comprehensive overview of the gender status quo in Taiwan in an international comparison. It uses the composite Gender Inequality Index (GII) —proposed by United Nations Development Program (UNDP) in 2010 (Gender Inequality Index, 2021). This methodology measures gender inequalities in 3 dimensions: reproductive health, empowerment, and labor market. The overall GII score for Taiwan in 2019 stood at 0.045. Since it measures inequalities, the closer the scores to zero, the better the performance. This is the sixth best rank in comparison to the 155 countries of the Human Development Report of 2019 (Human Development Report, 2019). It is remarkable that Taiwan scores much better than South Korea (0.062, 12th in the rank) or Japan (0.094, 25th in the rank).

Looking at Taiwan's achievements from the point of view of the *Gender Equality* ranking, it can be affirmed that Taiwan had the second highest gender equality ranking in the world already back in 2012. In 2020, 41.6 percent of the parliamentary seats were held by women in Taiwan. Cross-national studies in terms of women's share of parliamentary seats have shown that proportional representation (PR) has been identified to have strong and significant effects on women's parliamentary representation as opposed to the single-member district system (SMD). Gender quotas have been used as a highly effective way of increasing the number of women in public office—both candidate quotas and reserved seats. Taiwan's electoral system (partly proportional representation system) and the constitution's mandate for reserving seats for women (25 percent since 1999) in the Legislative Yuan are assumed to have contributed to the high participation rate of women in politics. However, it is widely argued in scholarly literature: what does "representation" in fact mean? Is it "descriptive representation" or "substantive representation"? Statistical figures do not reflect the differences: descriptive representation means "standing for", while substantive representation means "acting for" (Pitkin, 1967). To represent women substantively, it is not enough to be in an elected position of power, one also has to get engaged in enhancing women's interests and enacting policies that would improve women's status.

The overall increase in women's economic status and visibility in Taiwan are likely to have contributed to women's political power: women accounted for 37.5 percent of county magistrates or mayors, and 35.8 percent of municipal counselors in 2018.

Since May 2016, Taiwan has had a female president, Tsai Ing-wen (Pletcher, 2021). As the seventh president of the Republic of China, she is the first woman elected to the office, and also the first president to be of aboriginal (Hakka) descent. She was one of nine children born to a wealthy business family—but without political dynasty background. She received a degree in law (1978) from the National Taiwan University in Taipei, then attended the Cornell University in Ithaca, New York, and the London School of Economics, earning a master's (1980) and a doctorate (1984) degree in law, respectively. Mme Tsai then returned to Taiwan, where, until 2000, she taught law at universities in Taipei. As a member of the Democratic Progressive Party (DPP), she has served as Chair of the DPP since 2020, and previously, from 2008 to 2012, and 2014 to 2018. Her strong commitment to Taiwan's independence and sovereignty resonates well with many Taiwanese voters. Mme Tsai was included in Time Magazine's 100 Most Influential People of 2020 (Time Magazine, 2020). Considering the issue of tendencies, it becomes clear that the

increase of women's share in managerial positions has accelerated considerably in Taiwan, which might be partly attributable to demographic changes. An increasing number of families are left but with a single female heir: hence their fortune or business will be taken over by a female successor, and unlike in Japan, where the unique adoption system (either for passing on the family name; or for passing on business or inheritance) creates "artificial", but legal male heirs, the entrepreneurial spirit and skills of Taiwanese women have been traditionally outstanding.

Despite Taiwan's relatively late expansion of higher education, the percentage of high school graduates entering university has exceeded 95 percent since 2008. Women's educational attainment ("population with at least some secondary education" in 2019 stands at 82.4 percent for women; in 2019, women accounted for 48 percent of tertiary education students in Taiwan) is on the rise (Education, 2022).

For small enterprises, which make up the majority of businesses in Taiwan (in 2011, 49 percent of Taiwanese workers were employed by firms with less than 30 employees), it is more beneficial to keep women in the workplace after marriage and childbearing than bear the costs of job turnover. Therefore, companies (particularly SMEs) have been traditionally more willing to accommodate family obligations and needs of their employees with children by facilitating work-family compatibility. The increase in married women's employment has ultimately led to a large percentage of dual-income families—particularly among the well-educated, the white-collar workers. In 1990, the Taiwanese government removed the tax penalty for dual-earner families. As a contrast, in Japan for instance, the tax penalty on double income is still in place, which prevents many women from taking jobs or at least from taking full-time jobs. The increasing tendency of Taiwanese women to continue their jobs after marriage and childbearing is an important driving force for closing the gender gap in the workplace. Female hourly wages have been increasing since the early 1990s, reaching 86 percent of male wages in 2019, which results in a 15.5 percent pay-gap calculated on the OECD's definition. The gap is much bigger in Japan (26.6 percent) and in South Korea (36.6 percent). Like many countries in the world, Taiwan has undergone a steady increase in women's participation in the labor force during the past several decades. Whereas 38 percent of women over 15 were in the labor force in early 1978, by 2020, this rate rose to 51 percent. Although women in their 30s were also less likely to participate in the workplace than those 25-29 years old, the rate of female employment between ages 25-40 in Taiwan was markedly higher than those in Japan or Korea. Older women, at the same time, had lower levels of labor force participation in Taiwan than in Japan and Korea. The role of women in

many parts of the world remains bound by traditional views, but more and more women come to power in the economic, academic, or political arena. Women can contribute to the economy as much as men in today's knowledge-based era. Therefore, it is in the best interest of a country to adopt a new mindset with regard to gender roles, so as to make full use of the ability and talent of both sexes to create a better, sustainable society. Taiwan has taken significant steps on this route.

The question arises as to why is Taiwan performing best in terms of gender equality in the East-Asian region? One might assume that countries of East Asia sharing a similar ethical and philosophical background (Confucianism) might have similar gender equality scores. However, statistical data and reports confirm, that notwithstanding the common ethics denominator—Confucianism—there are considerable disparities in gender issues among Taiwan, Japan, and South Korea, taking only these three countries of East Asia for the purpose of comparison. Statistical data and resources prove that Taiwan stands way ahead in terms of gender equality in the region. Therefore, in spite of the long-lasting impact of Confucianism in these countries, the status of gender equality shows different outcomes and levels of development in the first decades of the 21st century:

- a) Taiwan is more international than its Asian neighbor countries. International in the sense of multiculturalism, not only because of indigenous communities and minorities, but also because of the relatively great number of mixed marriages, and the influx of workers from countries of East Asia. And most importantly, international in the sense of the mindset of its people: proportionally, there is a great number of intellectuals with a highly and internationally educated academic background. Many of them studied abroad, lived abroad, worked abroad, and their openness to the world and societal issues must have greatly contributed to the acceptance of diversity, to the appreciation of diverse values and to the respect of diverse mentalities. Taiwan's international mindset can be compared only to that of Singapore's in Asia.
- b) In Taiwan, women's liberation and gender equality evolved hand-in-hand with political liberation from autocracy to democracy and human rights movements. These movements exerted a cross-fertilizing influence on one another, and hence, proved to be very powerful. It was well understood that "advocacy alone is not enough, that power is needed to make a difference, and political will, financial resources and action are indispensable to accomplishing desirable objectives" (Lu, 2012, p. 6). In other countries of East Asia, these processes were happening more or less independently and therefore the synergy that could have resulted from their working intertwining each other could not

be attained to that extent as it did in Taiwan. We can see in Taiwan that the process of gender equality evolution is embedded in other important social processes, and therefore it has become an irrefragable part of them.

- c) In Taiwan, the idea of gender equality is conceived, and its implementation is happening not as an isolated concept, but as an integral part of several modernization accomplishments: legislation endorsed Gender Equality in Employment Law (2002, amended in 2007); the Gender Equality Education Act of 2004; the Sexual Assault Prevention Act of 1997; the Domestic Violence Prevention Act of 1998; the Sexual Harassment Prevention Act etc. Organizations and agencies—inter-agency Committee of Women Rights Promotion (CWRP) in 1997; The Foundation for Women’s Rights Promotion and Development (FWRPD) in 1998; the Committee for the Equal Rights and Advancement of Women; the Gender Equality Committee (GEC) in 2012 etc. —have been working and acting in a cooperative manner to promote the rights and wellbeing of women. Presently, the DGE (Department of Gender Equality/Executive Yuan) coordinates gender equality policies across various government bodies. In a sense, in Taiwan, law is ahead of collective thinking!
- d) In Taiwan, gender equality is part of the curriculum, however, it is not something young people have to learn about and become aware of after growing up, but they grow up in fact with this notion. The Ministry of Education initiated the Gender Equity Education Committee in 1997. Since the implementation of the law (Gender Equality Education Act) in 2004, it underwent amendments on some 18 occasions, which only proves that experts keep their eyes on the changes in society, on the changing needs, and make efforts to include these evolutions into the law. Accordingly, the concept of gender equality, as part of the education content, is not a static law that stayed intact ever since its formulation, but it is an ever-improving construct, undergoing amendments, necessary improvements, and reforming. This assures that it does not get outdated, but rather renewed and accommodated to emerging changes.

According to the author’s observation, the above four factors are the main drivers behind the undeniable accomplishments of gender equality in Taiwan. These results definitely set Taiwan apart from other countries in the region, which—for several particular reasons—are far behind in terms of gender equality. As international research emphasizes (Matsui, 2014), female empowerment ultimately leads to a better utilization of manpower and of intellectual potentials which can contribute to the improvement of economic achievements.

3. Global Challenges, Local Solutions for Sustainability – Lessons from Controlling the Covid-19 Pandemic

Taiwan's response to the Covid-19 pandemic has been among the world's best. It has reported a total of 16,056 confirmed cases of the disease and only 837 deaths until September 2021 (COVID world statistics, 2021). Taiwan was among the first countries in the world to detect and respond to the virus, thanks to crowd-sourced, collective intelligence through online bulletin boards. A “humor over rumor” strategy has also been very successful to combat misinformation, fake news, and disinformation. Taiwan is engineering memes to spread public awareness of positive behavior through the virality of social media algorithms. Citizens learned to interact with live maps, distributed ledger technology and chat bots to find the nearest pharmacy to claim free masks. Taiwan's experience in controlling the virus and curbing the impact of Covid-19 on its economy proved to be successful, particularly in comparison with other nations not only in the East Asian region, but worldwide (Sachs, 2020).

The factors that contributed to Taiwan's early success in fighting Covid-19 can be summarized as follows:

- the early establishment of a command center: timely government reaction to set up a centralized command center helped to prevent the virus from spreading in the initial stages;
- the “precision-prevention” model of strategies that included tight border control and strict quarantine policy: an affordable and high-coverage national health insurance system (99 percent of the population is covered) also played a crucial role in tightly tracing cases;
- as an island, Taiwan has a geographic advantage. Without land borders with other countries, it was relatively easier for Taiwan to enforce border control;
- the procuring of sufficient anti-pandemic medical supplies: the Taiwan government's intervention to secure relevant medical supplies also contributed toward ensuring public confidence and also prevented the medical system from being overloaded;
- information that was provided regularly and transparently by the government also eased public uncertainty caused by the Covid-19.
- educating residents regularly and continuously about public health awareness (e.g., promoting face mask wearing in public, maintaining proper social distance, and handwashing procedures). Its previous SARS experience made the

Taiwanese populace a highly alerted society that was willing to cooperate in practicing hygienic habits;

- the country's medical facilities and a national health insurance program that were already in place could be instantly mobilized and utilized;
- it was also quickly understood that medical supplies are essential, strategic products are as important as national defense equipment. It is better for countries to manufacture medical supplies themselves rather than rely on supply chains from abroad;
- the use of technology and big data—that Taiwan is highly advanced in—for contact tracing and isolation of those potentially exposed to the virus was crucial to Taiwan's successful efforts to prevent the spread of Covid-19 at the early stage. Taiwan applied its artificial intelligence and big data technology not only to detect and track cases, but also to enforce and monitor the home quarantine process.

Taiwan's success story may open up opportunities for the country to assume a leading role as a facilitator in the reallocation of the global supply chain, to ensure sustainability not only of manufacturing, but also of the society and the creation of a new worldwide health coalition that includes Taiwan. Due to the close economic and geographic ties between Taiwan and China, the relatively low figures of infections were impressive, which has gained Taiwan widespread acknowledgment and respect from all countries. Taiwan's earlier detection and aggressive responses tended to be better than those in other countries. The government's prudent and immediate response is characterized by the term "advanced deployment" (*chāoqián bù shǔ*). Taiwan is one of the few places in the world that allowed its citizens to have a near-normal life during the pandemic—for instance, citizens went to work and attended school (Kuo, 2021).

Government statistics indicate that more than 1 million Taiwanese live or work in China and travelers between Taiwan and China numbered about 10 million annually during the 2016-2018 period. There were thousands of regular cross-strait flights every week before the outbreak. On January 26, 2020, five days after its first confirmed case, Taiwan rapidly acted to ban all arrivals from Wuhan. It also substantially reduced the existing 50 flight routes between China and Taiwan and limited them only to five airports, permitting only Taiwanese nationals to enter the country. Being one of China's close neighbors with inseparable economic ties, Taiwan's situation looked dim and pessimistic when the first wave of Covid-19 infections started from China in January 2020. China and Hong Kong account for nearly 40 percent of Taiwan's exports and over one-fifth of Taiwan's imports. China

is also Taiwan's main overseas manufacturing production site. As the virus spread globally, the Taiwan government responded quickly with simultaneous plans of disease prevention, industrial relief, and economic stimulus packages (Kuo, 2021).

The pandemic, which has made many countries aware of their growing economic dependence on China for goods in several critical sectors, has led to calls to delink global supply chains of major industries from China. Taiwan's successful handling of the pandemic makes the country an attractive and relatively safe place for manufacturing. This may win more long-term contracts from both returning Taiwanese and foreign businesses. International companies have been searching for supply chain providers outside China since the 2019 US-China trade war. If the pandemic continues while Taiwan maintains its good epidemiological performance, it can have opportunities to gain a more important role in the future realignment of the global supply chain in industries such as 5G, artificial intelligence, big data, printed circuit assembly supply chains, and the semiconductor subsector (Kuo, 2021).

Taiwan's culture of civic participation follows the model of open-source software communities. This means working from the bottom up, sharing information, improving on the work of others, mutual benefit, and participatory collective action. Other countries might like to pick up both lessons and digital solutions from Taiwan's innovations. Taiwan with its experience and innovation potential could creatively contribute to the challenges of sustainability and the solution of global issues of our age.

4. Summary

Taiwan's economic performance and achievements can be attributed to the synergy of contributing factors, several of which are cultural and societal in nature. Investment in and modernization of education and growing female empowerment stand out of these. Taiwan is more international than its Asian neighbor countries. International in the sense of multiculturalism, not only because of indigenous communities and minorities, but also because of the relatively great number of mixed marriages, and the influx of workers from countries of East Asia. And most importantly, international in the sense of the mindset of its people. In Taiwan, women's liberation and gender equality evolved hand-in-hand with political liberation from autocracy to democracy, and human rights movements. These movements exerted a cross-fertilizing influence on one another and hence proved to be very powerful.

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The Role of the Retail Sector in the Taiwanese Macroeconomy

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1. Introduction

Taiwan is one of the most dynamic economies in the region, driven largely by industrial manufacturing, and especially exports of electronics, such as semi-conductors, machinery, and petrochemicals. This heavy dependence on exports exposes some volatility in the economy due to fluctuations in global demand, such as increasing competition with China.

An important landmark was the signing of the Economic Cooperation Framework Agreement (ECFA) with China in June 2010. In July 2013, Taiwan signed a free trade deal with New Zealand—Taipei's first-ever with a country with which it does not maintain diplomatic relations—and, in November of the same year, inked a trade pact with Singapore. However, follow-on components of the ECFA, including a signed agreement on trade in services, and negotiations on trade in goods and dispute resolution, have stalled. In early 2014, the government bowed to public demand and proposed a new law governing the oversight of cross-Straits agreements, before any additional deals with China were implemented; the legislature has yet to vote on such legislation, leaving the future of ECFA uncertain (Central Intelligence Agency, 2018.) Taiwan moves to greater economic integration with South and Southeast Asia and has also expressed interest in Taiwan joining the Trans-Pacific Partnership (TPP) as well as bilateral trade deals with partners such as the US.

The TPP was thrown into limbo in early 2017, when then-US President Donald Trump pulled the United States out of the pact. The grouping, which was renamed the CPTPP, currently links Canada, Australia, Brunei, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam. Taiwan is excluded from many international bodies because of China's insistence that it is part of "one-China" rather than a separate country. China views Taiwan as its own territory. But Taiwan is a member of the World Trade Organization and the Asia-Pacific Economic Cooperation (APEC) grouping. In September 2021, Taiwan has

formally applied to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), the government said on Wednesday (September 22, 2021), less than a week after China said it, too, had submitted an application (Reuters, 2021).

Largely because of the low-level fertility rate (just over one child per woman) or the aging of the population (people over 65 made up 16 percent of the population in 2020) raising the prospect of future labor shortages, falling domestic demand, and due to all of these, declining tax revenues. The restricted labor force also explains why Taiwan focuses on intensive skill-driven industries and services. Thanks to the economic policy, the country runs a trade surplus compared with many economies, so its foreign reserves are the world's fifth largest.

The relationship with China is a very important issue. China became Taiwan's second-largest source of imports after Japan, and China is also the island's number one destination for foreign direct investment. Closer economic links with the Mainland, PRC, and China provide opportunities for Taiwan's economy, but also pose challenges as political differences remain unresolved and China's economic growth is slowing, and, besides, the discussion of the nature of the political relationship is not part of this survey.

This study covers topics as follows:

At first, Asian retail trends are described which demonstrate the importance of the digital era, and its effect on the expansion of e-commerce.

One of the presented research methods and considered theoretical schools stems from the Keynesian multiplier, which is the ratio between output variation and the initial exogenous variation of aggregate demand (Benassy-Quere et al., 2018). The primary assumption is on the Keynesian multiplier that the consumption is the linear function of current income. The marginal propensity to consume means that out of one additional US dollar of disposable income, people spend and save some.

The other used method to analyze the role of the retail sector in Taiwan is the input-output model. The Leontief input-output model was formulated as a generalized econometric complementary problem. Input conditions for the existence of solutions are given, and solution results are based on assumptions. An application of the model to figure out the regional effects is proposed. This is a basic

introduction to the input-output analysis, which was founded by Wassily Leontief in the 1930s (Leontief, 1986).

The main goal of the research is to examine and analyze the role of the retail sector in the macroeconomy and help to understand how retail consumption contributes to the economic growth in Taiwan.

2. Methods of Research

The analyzed macroeconomic issues are at the center of Taiwanese economic policies. Many types of data are used to measure the performance of the Taiwanese economy. In this research, three macroeconomic variables are especially important: real gross domestic product (GDP), the income which accounts for the sources of households' spending and savings, and the consumption denoting the money people spent for buying goods and services. It is examined how these variables are determined, how they change over time, and how they interact with one another, and how the retail sector's performance developed on the macro level. A model is worked out to help explain economic variables, such as GDP, income, and consumption. The used economic models illustrate the relationships among the retail consumption's variables. Two kinds of variables will be examined from the retail point of view: endogenous variables and exogenous variables. Endogenous variables are those that a model tries to explain, such as retail spending. Exogenous variables are those that a model takes as given, such as income. The goal of the presented models is to show how the exogenous variables affect the endogenous ones, although the retail consumption on one side comes from outside the model, such as in the multiplier analysis, and the other side, serves as the model's input, whereas endogenous variables are determined inside the model, so the retail consumption is the model's output, such as in equilibrium calculation.

The main sources of secondary data analysis are provided by the National Statistics of Republic of China (Taiwan), the Ministry of Economic Affairs of the Republic of China, the GfK Retail and Technology Taiwan Ltd., the World Economic Forum: The Global Competitiveness Report 2017-2018, the Nielsen Company: Quarter By Numbers, the Fung Business Intelligence: Asia Retail, TEMAX, and Reports¹.

¹ National Statistics of Republic of China (Taiwan) (<https://eng.stat.gov.tw/mp.asp?mp=5>); Ministry of Economic Affairs of the Republic of China (<https://www.google.com/search?q=Ministry+of+Eco->

The role of the retail and the influence of this sector are analyzed in terms of methods, such as trend analysis, benchmark analysis, Keynesian consumption theory and the equilibrium, as well as the multiplier effect of consumption based on the input-output table.

This research presents many different methods that address different questions and make different assumptions as can be found in the following parts:

2.1. Consumption Analysis

This subchapter analyzes how Taiwanese households decide how much of their income can be used for consumption today and how much to spend in retail? This microeconomic question addresses the answer to macroeconomic consequences. It is examined how households' consumption decisions affect the way the economy will fare in the long run in Taiwan. The analysis is part of a study of consumption that relies on techniques of data regression analysis. The aggregate data on the behavior of the overall economy come from the national income accounts of the National Statistics of the Republic of China.

Keynes conjectured that the marginal propensity to consume—the amount consumed out of an additional dollar of income—is between zero and one (Mankiw, 2003). The ratio of consumption to income is called the average propensity to consume, so income is the primary determinant of consumption. The consumption, and therefore the retail spending as well, is determined by the level of production and the distributed income to households, as disposable income. One of the main goals of the research is to show how economic equilibrium changes - in the market for goods and services in Taiwan - due to retail and consumption. The following equations summarize the examinations of the demand for goods and services in the research:

$$Y = C + I + G.$$

$$C = C(Y - T).$$

conomic+Affairs+of+the+Republic+of+China&rlz=1C1GCEU_huHU898HU898&oq=Ministry+of+Economic+Affairs+of+the+Republic+of+China&aqs=chrome..69i57j0i22i30.437j0j4&-sourceid=chrome&ie=UTF-8); GfK Retail and Technology Taiwan Ltd (<https://www.gfk.com/home>); World Economic Forum: The Global Competitiveness Report 2017-2018 (<https://www.weforum.org/reports/the-global-competitiveness-report-2017-2018/>); The Nielsen Company, Quarter By Numbers (<https://nielseniq.com/wp-content/uploads/sites/3/2019/04/quarter-by-numbers-sell-sheet-2018-1.pdf>); Fung Business Intelligence, Asia Retail (<https://www.fbcgroup.com/>).

The demand of the economy's output is measured by GDP, which comes from partly consumption, and consumption depends on disposable income; retail spending is the endogenous variable from this point of view.

2.2. Input-Output Model to Retail Sector Analysis

In the applied Leontief's input-output model, there are four measures of changes in regional economic activity that can be estimated: gross output of different sectors, value-added, earnings, and employment. The crucial question is how the retail sectors' intermediate relationships can be quantified in the national input-output model. The method applied in this research is to use the national level sector metrics (such information is available in the Statistical Office database), and calculated coefficients can be figured out from national level statistics. In addition to understanding the effect of assumptions in the input-output model, it is important to quantify the macro level effects by using the model's multipliers. Each of the additional one New Taiwan Dollar (TWD) of demand for the buying of a sector results in both indirect and direct income effects on the economy as a whole, so the linkage between the initial spending and the total effects generated by the spending is known as the multiplier effect of the sector, or more generally, as the impact of the sector on the economy as a whole (O'Connor – Henry, 1975). For this reason, this study of multipliers could be called an impact analysis.

In this survey, multipliers are used to figure out the secondary effects of the retail sector in Taiwan. Indirect effects are the changes in sales, jobs, and income within supplier industries in the country, i.e., businesses that supply goods and services to tourism-related firms. The economic mechanism that causes an initial reaction to be amplified by following effects among suppliers is the examined indirect multiplier effect, regardless of whether the shock triggers change in technology or in the financial market (Acemoglu et al., 2016). For example, retail companies purchase a variety of goods and services in Taiwan in order to sell products, these indirect effects are described by Type I multipliers.

$$\text{Type I sales multiplier} = \frac{(\text{direct sales} + \text{indirect sales})}{\text{direct sales}}$$

The additional income that ultimately gets to households is called disposable income, which explains the induced effects. These evoked effects are the changes in income in Taiwan, resulting in more consumption because of retail spending.

Employees in the service sectors and supplier industries are spending their income in Taiwan, thus causing additional sales and economic activity. Type II multipliers integrate both indirect and induced effects.

$$\text{Type II sales multiplier} = \frac{(\text{direct sales} + \text{indirect sales} + \text{induced sales})}{\text{direct sales}}$$

The main findings of the research are compared to benchmark countries where the statistical methods are not differentiated resulting in significant distortion in analysis.

3. Overview of the Retail Commerce in Asia

Asia comprises many countries, each with different geographic, economic, political, cultural, and social spheres. Consumer preferences and buying habits are different; there is no such thing as an “average Asian consumer”. However, rising disposable incomes across the region have given rise to a new group of consumers—the fast-growing middle class. Asia’s consumer market is and will continue to be driven by preferences of the exploding middle-class, particularly the growing, influential younger consumers in the region.

The rise of e-commerce has redefined shopping and revolutionized retailing in the APAC (Asia Pacific) region. The research findings prove, that APAC is better positioned and hosts five of the top ten most attractive retail markets globally (Deutsche Bank Market Research, 2017). Structural issues such as consumption upgrades, technological advancement, and cyclical trends are pulling APAC’s offline brands/retailers in various directions. Consumers in China (including Taiwan) and South Korea are fully embracing online, with those in Singapore and Hong Kong lagging, while Japan and Australia are moving at a tepid pace as preference for offline retail remains high. Consequently, retailers in China, Taiwan, and Korea need to be proactive by adopting an omnichannel (integrated online/offline) strategy in order to stay relevant, while their counterparts in other markets face less imminent pressure and are able to co-exist with rising online retail (in selected products) or to develop online on their own.

Department stores have felt most severely the rise of e-commerce, with its portion of total retail sales shrinking from 10-12 percent to 3-9 percent across countries between 2007 and 2016. According to statistics from the Ministry of Finance,

there were just 713 department stores in Taiwan as of September 2020, 40 fewer than in 2019. Few brands/retailers in APAC have demonstrated successful online strategies. Fast Retailing's vertical model and self-run store format have allowed it to develop a seamless online module.

In the digital era, consumers are more connected, tech-savvy, mobile, and socially fluid. They demand personal products and services, look for greater satisfaction in life experience, and have a strong desire for convenience and immediacy, rather than merely static material possessions.

3.1. Retail Snapshot of Selected Countries

This part gives a brief outlook of selected countries' retail performances. The main figures for retail sales and internet sales of selected Asian economies are shown in Table 1.

Table 1: Retail sales and Internet sales of selected economies in Asia, 2016

	Retail sales (USD billion)		YoY growth (%)		Internet sales (USD billion)		YoY growth (%)		Share of internet sales in retail sales (%)	
	2016	2020	2016	2020	2016	2020	2016	2020	2016	2020
China	2,016.7	5,681.0	8.1	12.42	347.4	1,343.5	33.9	11.8	17.2	24.9
Japan	947.2	1,318.0	0.9	-0.3	67.7	150.13	8.5	6.24	7.1	9.75
South Korea	234.3	403.0	7.8	5.56	43.0	80.0	20.4	22.3	18.4	32.0
Taiwan	90.8	130.07	2.6	1.38	8.9	16.2	12.5	19.0	9.8	n.d.
Singapore	21.9	27.0	-1.7	-15.3	1.1	3.2	33.1	40.7	4.8	14.0

Source: Euromonitor International; compiled by Fung Business Intelligence (Data of 2016); globaldata.com; marketresearch.com; sbr.com.sg; ceicdata.com; unctad.org (Data of 2020).

China is the largest country in the region, notwithstanding medium-level living standards (Table 1), it is the leader in e-commerce (especially mobile commerce), and the offline retailers remain the victims. It is expected that the future supply of retail space in China remains ample even after fast growth over the past decade,

² Forecast for 2021.

³ According to data of JP Morgan.

⁴ According to data of JP Morgan.

⁵ Expected by 2019.

⁶ Based on data the Ministry of Trade, Industry and Energy of South Korea.

⁷ 2019.

⁸ Average from 1/2000 to 7/2021.

but the rapid growth of e-commerce (33.9 percent in 2016, and 10.6 percent in 2020) will continue to put overall unit rent and rental yield under pressure. The whole e-commerce sales added up to 1,345.5 billion USD in 2020 and 49 percent growth is expected by 2025, based on data from statista.com. Fifty-two percent of China's retail sales derive from e-commerce in 2021, up from 44.8 percent in 2020, China being the first country to have e-commerce make up more than half of its total retail sales (Wilson, 2021). The increase of the relatively high-level traditional retail sales indicates that mall operators with strong executive power will continue to grasp the strong demand through proactively adapting to the new competitive landscape by adjusting their tenant mix (e.g., more F&B and experience shops that online shops cannot replicate).

The Covid-19 pandemic reshaped China's economy as well. Digitalization has accelerated in the B2C sector and further growth is expected. China is a leader in this field of innovation. Shortening of value chains affects export activities in the long term. With the headway of digitalization, international competitiveness will increase. In communication, the role of social media will strengthen.

In Japan, new store openings have slowed down due to the rise of construction and labor costs, as well as to the rebalancing of offline/online store portfolios by current players. Traditional retail in department stores has been particularly affected on both sales and earnings by the growth of e-commerce, while their fall has already begun since the beginning of the deregulation of location controls on large commercial facilities since 1990. The threat of e-commerce has also reached areas such as shopping centers and train-station fashion buildings, which used to be considered relatively secure (Deutsche Bank Market Research, 2017). The further growth of the retail sector is driven by technology and the increasing young population. With the rising GDP, the purchasing power and disposable income are rising as well. The expansion of the retail industry is relatively low in the APAC region. The development of Japan is adversely affected by high operating costs, the disadvantageous availability of geographical area, and the aging population (average age is 47.7 years) (JP Morgan, 2021). The Olympic Games of 2020 enhanced the retail turnover, but this was a temporary effect. E-commerce is expected to expand; especially mobile commerce will increase in a few years.

The South Korean e-commerce market is estimated to expand by 20.2 percent compound annual growth rate (CAGR) until 2021, significantly outgrowing the overall retail industry. It is expected that the Korean e-commerce market will remain fragmented with no clear winner, while a number of leading players

compete, due to non-dominant players, limited merger and acquisition (M&A) opportunities, and solid financial capabilities of major traditional retail participants. The offline sales rose by 8.6 percent in the first half of 2021, and sales at the hypermarket chains edged down by 3.0 percent as all item categories decreased (in the whole year of 2020). South Korea is one of the most developed e-commerce markets globally and due to the Covid-19 pandemic, the growth of this segment will further accelerate. Online retailers experienced the largest growth in sales (up by 27.2 percent) since February 2020 mainly because of the year-end discount events and a continued upward trend in online shopping based on the data of the Ministry of Trade, Industry and Energy of South Korea.

In Singapore, retail sales declined in 2016, but later, the rise in retail sales was mirrored by an aggressive build-out of retail space. The change in sales was very volatile in 2020. Since the drop of the Covid-19 cases in 2020, the retail sales have been growing by 20.7 percent year-over-year until June 2021, and the CAGR also raised by 2.3 percent between 1986 and 2021.

Singapore continues to be challenged by growing e-commerce and abundant supply. The recovery in the underlying economy and the positive outlook for the residential market should see a cyclical recovery in retail in Singapore. Because of the very concentrated traditional retail department stores, the share of e-commerce is relatively low (4.8 percent) compared to other regional countries, but because of the effects of the Covid-19 pandemic it is still growing.

Very relevant is the difference between traditional and internet selling growth rates discernible in Taiwan. The figures are evaluated separately in Chapter 3.

3.2. Comparison of Asian (APAC) and European Retail Economic Environment

3.2.1. Purchasing Power

The key macroeconomic indicators of selected Asian economies show how GDP changed in 2016 compared to the previous year, and how GDP per capita figures determine the retail consumption (Appendix 1). The retail market in APAC has been driven by increased purchasing power in strong economies, such as China, South Korea, Japan or Taiwan. The Asia Pacific region is anticipated to be at the forefront of global economic growth in the 21st century. Its main cities have historically been the principal drivers and areas for retail investment, however,

across certain countries, most evidently China, there is an increasing shift of activity towards smaller urban regions thanks to growing incomes and improving standards of living. In China, the GDP per capita was 8,313 USD in 2016 (Table 2). Still, this is not a regular trend as other markets in the territory are still more dependent on their main cities.

Table 2: APAC leader countries' data

Countries	GDP growth in % in 2018	GDP growth in % in 2019	GDP growth in % in 2020	GDP per capita in USD in 2018	GDP per capita in USD in 2019	GDP per capita in USD in 2020
Singapore	3.5	1.4	-5.4	66,679	65,641	59,798
Hong Kong	2.9	-1.7	-6.1	48,543	48,355	46,324
Japan	0,6	0.3	-4.8	29,159	40,113	40,146
South Korea	2,9	2,0	-1.0	33,423	31,846	31,489
Taiwan	2.8	2.7	3.1	25,780	25,873	26,910
China	6,8	5.9	2.3	9,977	10,271	10,500

Source: Worldbank, 2021.

Despite the Brexit negotiations in 2017, the European economy had experienced an upturn, which was due in part to moderate increases in private consumption. In 2017, each citizen of the EU-28 countries had an average purchasing power of 16,436 EUR (GfK, 2018). This is equivalent to a nominal increase of 1.9 percent compared to the previous year. Among the EU countries, only Great Britain (-1.5 percent) underwent a purchasing power decline, which is partly a result of the devaluation of the British pound. Great Britain aside, the momentum from previous years continued, resulting in and above the average growth rates, particularly for central and eastern European countries. Romania (+7.8 percent) had the greatest gain in purchasing power. But this country's low per-capita purchasing power (4,556 EUR) demonstrates the persisting immense gap in wealth levels across Europe. The highest values of GDP per capita are listed in Table 3.

Before the Covid-19 pandemic, except for Japan and Taiwan, the Asian GDP growth rates exceeded 3 percent, while in Europe, in the majority of countries, the growth rates were below 3 percent. The relative differences in GDP per capita figures are reflected in purchasing power data as well. Purchasing power corresponds to the population's disposable net income, including government subsidies such as pension payments, unemployment assistance, and child benefit. The households use their purchasing power to cover expenses related to food, accommodation, services, vacations, insurance, private pension plans, and retail purchases. Some low per-capita purchasing power figures demonstrate the persisting

immense gap in wealth levels across both Asia and Europe. For example, with 12,473 EUR per person, Poland's capital city of Warsaw has a higher purchasing power than Spain's Andalusian region (10,985 EUR). This is the case even though Spain's average per-capita purchasing power is more than twice as high as Poland's. In terms of data from 2015, Hong Kong's purchasing power was higher fifteen times (sic), than that of Vietnam.

Table 3: European leader countries' data

Countries	GDP growth in % in 2018	GDP growth in % in 2019	GDP growth in % in 2020	GDP per capita in USD in 2018*	GDP per capita in USD in 2019*	GDP per capita in USD in 2020*
Denmark	2.8	2.1	-2.1	61,599	60,213	60,909
Sweden	2.8	2.9	-2.8	54,589	51,687	51,926
Netherlands	2.4	2.8	-3.8	53,019	52,295	52,304
Austria	2.6	1.4	-6.3	51,453	50,122	48,105
Finland	1.1	1.3	-2.9	50,013	48,712	49,041
Germany	1.1	1.1	-4.6	47,787	46,468	45,724
Belgium	1.8	1.8	-6.3	47,555	46,414	44,594
France	1.9	1.8	-7.9	41,526	40,380	38,625
United Kingdom	1.3	1.4	-9.8*	42,993	42,354	40,285

Source: Eurostat, 2021; *Worldbank, 2021.

The pandemic caused a lot of unexpected changes in the function of the different countries, the efficacy of economies fell back considerably.

Driven by domestic components across Europe's countries, the economic upturn resulted in multiple upward revisions of the prognoses made by economic research institutes for the years after 2017. Increases in consumer expenditures were also anticipated for all European countries in 2018. The former year's growth in demand was able to compensate for stationary, traditional retail's market share losses due to online trade. The pandemic effected changes in this part of the commerce industry as well. Because of the restrictions and home office, the market share of online sales is increasing constantly and further growth is expected in the next few years.

3.2.2. Consumer Confidence

The Consumer Confidence Index measures perceptions of local job prospects, personal finances, and immediate spending intentions. When the Consumer confidence Index level is above or below the baseline of 100, it indicates optimism and pessimism, respectively. In this survey, the used index and other findings

related to consumer confidence are based on data from the Nielsen Global Survey of Consumer Confidence and Spending Intentions.

Europe achieved a consumer confidence increase of five points in the second quarter of 2017, reaching an index score of 85. The job outlook surged six percentage points to 37 percent, personal financial sentiment rose three percentage points to 45 percent, and immediate spending intentions increased two percentage points to 36 percent. Terrorism continued to be a leading concern for Europeans.

Confidence in the Asia-Pacific region strengthened modestly, rising three points to 114 in Q2 2017. Sixty-seven percent of respondents in the region said they expected their personal finances to be good or excellent in the coming year, up to three percentage points from the fourth quarter of 2016. Nearly as many (64 percent) expressed optimism about job prospects in the year ahead, an increase of one percentage point from the fourth quarter of 2016. More than half of regional respondents (52 percent) said it is a good or excellent time to buy the things they want and need, which represents no change from the fourth quarter of 2016. In the Asia-Pacific region, concerns about the economy decreased five percentage points to 27 percent in the second quarter of 2017. The share of respondents expressing fears about job security also declined three percentage points to 20 percent. Concern increased around health (27 percent, up to two percentage points), work/life balance (26 percent, up to three percentage points), parents' welfare and happiness (16 percent, up to one percentage point), and children's education and welfare (13 percent, up to one percentage point). India held the second highest index in the Asia Pacific, remaining one of the most optimistic markets in the region and globally. Meanwhile, among the region's developed economies, confidence increased significantly in South Korea (63, up 20 points) and Japan (87, up 13 points). In Hong Kong (102), Taiwan (79), and Singapore (89), confidence increased by nine, six, and four points, respectively (Nielsen, 2017).

To sum up, in Asian countries—similarly to most European regions—the traditional retail has acquired a new function to rise of omnichannel strategies: Attractive retail spaces are important no longer just for their ability to generate store turnover, but also for their role as promotional vehicles for the associated online stores, as we have shown in chapter 2.2. Direct store-to-web turnover is just one aspect of this phenomenon in both regions. The illustrations show that a traditional retail presence boosts brand awareness among customers, which can lead to above-average online turnover in the affected areas of the retail sites. Retailers can consider future expected parameters when evaluating the turnover potential

of retail spaces. As in the case of increasing GDP per capita, sales provision varies between the two continents. In the majority of Asian countries, the growing rates of national output indicators exceed the figures of the European average. In both continents, restrictive protectionist tendencies can slow down the expansion of international retailers. Dynamic growth in sales area productivity also counterbalanced to some degree the rising rental costs in tight commercial real estate markets in Asian countries. Rising turnover accompanied by a simultaneous decline in retail space increased sales area productivity. Although development stagnated due to the Covid-19 pandemic, it is expected to continue growing.

4. Analysis of the Taiwanese Commerce

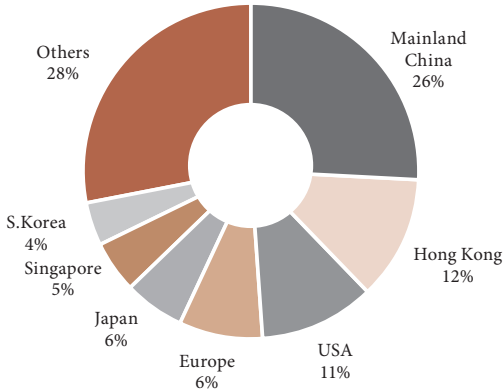
In this chapter the authors give an in-depth analysis of the macroeconomic background of the Taiwanese retail sector, demonstrate the resources of economic growth, elaborate on how heavily the economic environment influences consumption, as well as show the share of retail spending, and the way the retail structure changed in the past years.

Taiwan's economy benefited from a favorable macroeconomic context. This could be partly explained by the stabilization of the regional financial market after the volatility of late 2016, although the recent escalation of tensions in the Korean peninsula has again raised uncertainty. Taiwanese global competitiveness ranked twelfth in 2019 (fifteenth in 2017-2018 and fourteenth in 2016-2017) (World Economic Forum, 2018). The compounded average growth rate of GDP was 2.5 percent in the past five years, and one of the main pillars of the national competitiveness is the macroeconomic stability and the low unemployment rate, which was 4.3 percent in July 2021.

Taiwanese exports are rebounding at a healthy pace, setting the stage for stronger economic growth. In recent years, exports to China and the rest of Asia have risen strongly, and those to the United States have also grown at a strong pace, albeit from a smaller base.

Export destinations of Taiwan can be seen in Figure 1.

Figure 1: Export destination of Taiwan, 12-month rolling, 2018



Source: ING, Bloomberg.

The Chinese story is the most important. China is Taiwan's principal trading partner. Indeed, Taiwanese exports to China and Hong Kong combined, account for close to 40 percent of the total. The stabilization of China's economy and the improvement in the state of its manufacturing industry has evidently helped boost Taiwan's exports. Taiwan's fortunes are, to some extent, tied to the trends of the consumer electronics industry, and there is considerable talk about how to diversify the economy so that it become less vulnerable to the vicissitudes of the electronics market. The net export exceeds 10 percent of the yearly GDP since 2014, in 2020, these figures were 14 percent (10 percent in 2019) in Taiwan (Table 4) and 2.8 percent in 2019 in Hungary.

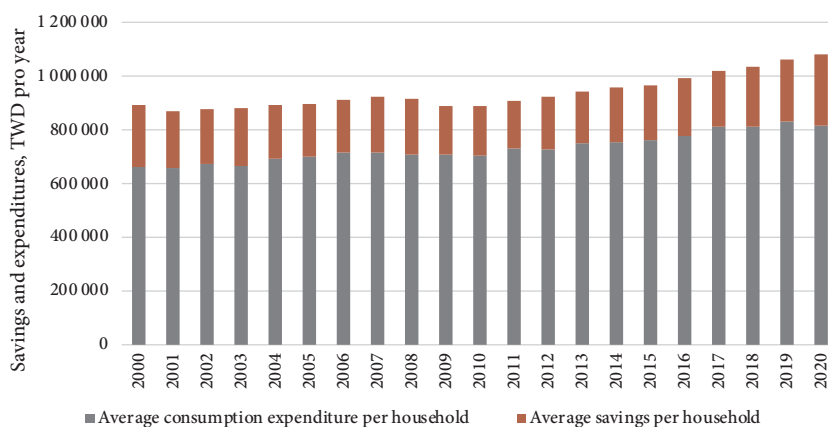
It is worth examining in more detail what happened in 2016. Taiwan's GDP growth reached 1.5 percent in 2016, increasing from 0.72 percent in the previous year due to the improving figures in private consumption, investment and exports. The economic recovery has had a positive effect on the retail sector. Retail sales registered a historical peak of 4.1 trillion TWD in 2016, increasing by 1.9 percent year-on-year (YoY), with the main contributors being supermarkets (9.3 percent YoY), auto sales (5.4 percent YoY), and convenience stores (4.7 percent YoY) (Savills World Research, 2017). Retail sales in Taiwan totaled 4.15 trillion TWD (143 billion USD) in 2017, up 1.2 percent from 2016 when the previous peak of 4.10 trillion TWD was reached, MOEA data showed. The retail sales added up to 3.8 trillion TWD in 2020 after the 3rd wave of the Covid-19 pandemic, the average index was +4.6 percent MoM (Month on Month). The sales in the first half of 2021 were higher than

one year before (in 2021/Q1 2.2 trillion TWD, based on data from the Ministry of Economic Affairs Department of Statistics of Taiwan) (MOEA, 2022).

4.1. Consumption

Although consumer spending value in Taiwan has been growing modestly, a trend that is likely to continue in the coming years, the portion of the households' consumption has stagnated for several years. Spending is being driven by rising employment, which is the result of improved exports. In addition, a strong equity market is boosting consumer wealth. Also, the Taiwanese labor market is relatively tight, and productivity has been rising, thus setting the stage for wage gains that could have a positive impact on consumer spending. On the other hand, wages in Taiwan have been remarkably resistant to improvement, unlike in the neighboring South Korea. Thus, it remains uncertain whether an improvement in the export environment will actually generate significant wage gains.

Figure 2: Average Expenditure and Savings of Households



Source: MOEA, 2022.

In the past ten years, the share of consumption of household income fluctuated between 75-80 percent. It is assumed that the level of consumption depends directly on the level of disposable income (Appendix 2). The higher the disposable income, the greater the consumption, so the main question is how strong the relationship between consumption and disposable income is: this is called the consumption function.

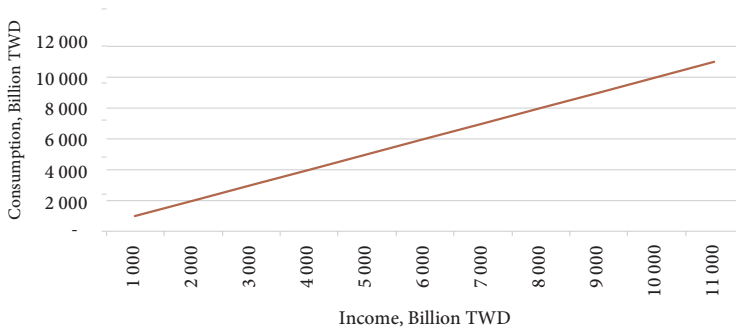
The main research topics in this part are how households decide about spending income, how much of their income to consume, and how their income correlates with consumption. This is a typical microeconomic question, but the answer has macroeconomic consequences from the aspect of research. In this chapter, it will be seen how the Taiwanese households' consumption decisions have been influenced by incomes and how they affect the national GDP. It is depicted in Figure 3 that the marginal propensity to consume, which is the portion of spent money out of an additional dollar of income in terms of the statistical data (Appendix 3). The relevance of the country-specific marginal propensity to consume is the power and ability of fiscal policy to influence the economy and stems from the feedback between income and consumption.

Based on statistical data, the components of the consumption are shown in the next equation:

$$C = c_0 + \hat{c}Y$$

C is consumption, Y is disposable income, c_0 is a constant, and \hat{c} is the marginal propensity to consume.

Figure 3: Linkage of income consumption (date in Billion TWD)



Source: authors' own compilation on the basis of MOEA data (MOEA, 2022).

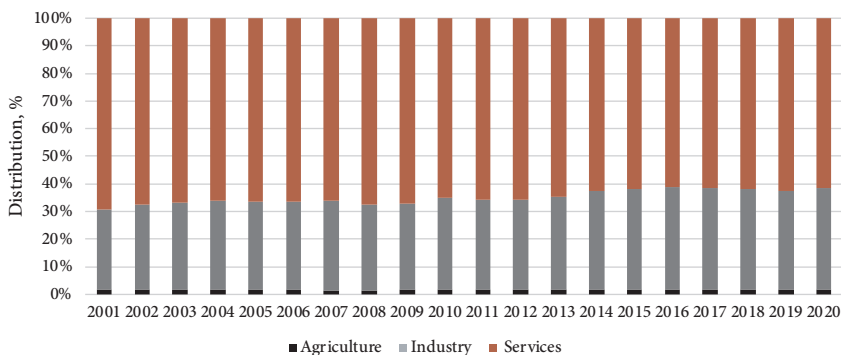
The equation in numbers means, that $\hat{c} = 0.95$ and $c_0 = -719,030$. The autonomous yearly consumption—which is not driven directly by income—is represented by a negative figure, meaning a very strong correlation between income and consumption. One dollar of additional income results in 0.95 dollar plus consumption, which denotes the average propensity to consumption as well.

It is worth comparing this to the corresponding figures of other countries. For example, in Hungary, the values of the $C=c_0+c_1Y$ regression equation are the following: $c_0 = 69,064.00$, and $c_1 = 0.74$. Value “ a ” indicates where the point of intersection of axis Y is, that is, how the theoretical value of consumption would develop if the income was 0. This value is similar to the term “autonomous consumption”, which was previously marked by c_0 . Value “ b ”, that is, c_1 was examined when determining marginal propensity to consume. This signifies the rise of the regression line, that is, in the case of a one-unit change in income, the value of the consumption category increases by 0.74 (Kozák, 2015). One of the potential explanations could be the altered savings rate. The long-term saving rate, which is the linkage between the income and savings, are similar in the two countries, for example in the period 2003-2016, 13 percent and 11 percent in Taiwan and Hungary respectively.

4.2. Retail Spending within the Consumption

Knowing the consumption function, it is worth examining the sensitivity of the equilibrium of Supply and Demand in respect of the economy’s output in Taiwan. The Gross Domestic Product (GDP) by Kind of Activity includes the retail figures (Appendix 4) to analyze the sector’s share in the economy in terms of value-added performance. In Taiwan, as in other developed countries, the service sector dominates, 65 percent of the GDP (Figure 4) stems from services, out of which 27 percent comes from ICT Industry (ten years ago this figure was only 22 percent).

Figure 4: Gross Domestic Product by Share of Activity



Source: authors’ own compilation based on data from the National Statistics, Republic of China (Taiwan), 2021.

In Taiwan, the share of the wholesale and retail sector in recent years has been 15 percent of GDP, (in Hungary, the same figures are 10-11 percent), therefore, the examined sector plays a relatively important role in the economy. Within the 15 percent, retail represents a 6 percent value-added contribution to GDP. Despite the increasing role of the service sector, the retail value-added expenditures to GDP remained at the 16-17 percent belt in the past ten years. The main reason for this stagnating share of GDP is the growing competition in the sector.

In the next part, in terms of the presented figures, the sensitivity of the relationship between GDP and retail is calculated, it also is shown what happens if the disposable income is growing, resulting in additional consumption, which causes more spending in retail.

The following equations denote the linkage of the demand for goods and services in the analysis of equilibrium:

$$Y=C+I+G$$

As the consumption function relates consumption (C) to disposable income (total income deducted by tax and social contribution), it is analyzed how the total GDP expenditure changes when the consumption increases due to the rise in disposable income. In Table 4, the demand for the Taiwanese economy's output comes from the consumption, investment, and government purchases of the year 2016, while the basic figures come from the National Statistics (National Statistics Republic of China (Taiwan), 2021).

Table 4: The effect of the consumption function on aggregate output (data in Billion TWD)

Basic Version	Planned						
Output (Income)	Disposable Income		Consumption Domestic	Investment Spending	Government Purchases	Net export	Aggregate Expenditure
Y	Y _d	Y - T	C	I	G	I	C + I + G+I
17,152	10,067		9,032	3,570	2,466	2,085	17,152
18,867	11,074		9,856	3,570	2,466	2,085	17,977
20,754	12,181		11,633	3,570	2,466	2,085	19,753
22,829	13,400		12,796	3,570	2,466	2,085	20,917
25,112	14,740		14,076	3,570	2,466	2,085	22,196
27,624	16,214		14,764	3,570	2,466	2,085	22,885

Source: authors' own compilation on the basis of National Statistics, Republic of China (Taiwan), 2021.

In this model, the consumption depends on disposable income, and investment does not depend on the real interest rate; and also, government purchases and tax level are fixed. In addition, it is important to examine the sensitivity of the GDP expenditure to the supply of goods and services consumption. As 46 percent of consumption expenditure is spent in retail, it can be calculated how growing income results in increased retail sales. In Taiwan, 1 percent additional income generates 1.04 percent more retail sales.

It is assumed that the rising income affects consumption, which influences the level of production, and the production function determines the payable income for economical actors, —causing additional demand for the economy. In terms of the analysis, it could be stated, that a 1 million TWD increase in households' income causes 249,426 million TWD plus sales in retail, therefore—*ceteris paribus*—a GDP growth by 67,212 million TWD. This detailed relationship is called a multiplier effect as described in chapter 3.4.

4.3. The Multiplier Effect of Retail

In the previous model, the GDP was computed in the way of the expenditure approach to calculating the total spending of GDP. The other way is to add up the income—wages, rents, interest, and profits—received by all factors of production in producing final goods and services by different sectors (Case et al., 2012). These two methods must lead to the same value as every payment (expenditure) by a buyer is at the same time a receipt (income) for the seller. The income approach can be used to calculate the share of the retail sector in GDP and examine its relationships to other sectors. The Statistical Bureau of Taiwan compiles the benchmark IO tables produced according to the results of the Industry, Commerce, and Service Census Survey every 5 years. However, it regularly disseminates the Input-Output Tables (the matrices), which represent interrelationships between each industry. These tables include various kinds of transactions tables, input coefficient tables, and impact coefficient tables, which are described in this survey too.

4.3.1. Transaction Table

The Transactions Table is the basic table of Input-Output statistics. Each row represents the destination, for intermediate consumption or final use, of commodities, for example, sold by retail companies. Each column details the production

function of a specific commodity or service activities acted, for example, by retailers, including the value of the commodity's total output, the mix of commodities it consumes to produce this output, and the value-added by labor, and the capital producing this output. The final use columns detail the commodity composition of the final use components of GDP. Inputs are consumed by producing and by the service provider sectors—these are the intermediate inputs, such as raw materials or semi-finished inventories—and by final use. Value added is equal to the net income earned in production—this includes labor earnings, i.e., the resource to pay for income owners, which stems from the difference between total sales and input purchases, this means that the total gross output is equal to the sum of intermediate inputs, and value-added summed up across all industries is equal to regional GDP. Out of 21.0 trillion TWD of total intermediate demand, the retail sector represents 4.1 trillion TWD input goods and services purchases (Table 5).

Table 5: Retail in Transactions Table at Producers' Prices unit: million TWD

	Wholesale and Retail Trade	Intermediate Demand
Intermediate Inputs	1,223,492	21,035,327
Compensation	1,589,996	7,295,871
Operating Surplus	1,116,025	3,824,430
Consumption of Fixed Capital	154,450	2,409,901
Taxes on Production and Imports Less: Subsidies	54,052	404,269
Net Commodity Taxes	-	132,194
Net Import Duties	-	-
Value-Added Taxes	-	56,061
Other Taxes, Less Subsidies	54,052	216,014
Primary Inputs	2,914,523	13,934,471
Adjustment Item	-	6,885
Total Inputs	4,138,015	34,976,683

Source: authors' own compilation on the basis of National Statistics, Republic of China (Taiwan), 2021.

Value-added is defined as the value of gross output minus intermediate inputs excluding any income accumulations among companies. The added value is the source of the payments made for economic actors, namely for example, the rewarding of employees in the form of wages or salaries, and the taxes on production and imports. Therefore, the transaction table shows the economic actors' contributions to the national gross domestic product through household consumption, (local) government expenditures, net export figures, company investments, capital expenditures, and import value (Moss, 2007). In the statistical data, wholesale figures are integrated into retail figures. Nevertheless, on the national level model, the value chain accumulation is avoided.

Noteworthy is the high portion of the primary input out of the total input, which signs relevant value-added sharing in retail (70 percent), this is the source of income payment for business actors, such as employees. The compensation level represents 30 percent in Taiwan. In Hungary, the share of value-added disbursement in retail is 65 percent (Central Statistical Office of Hungary, 2022), while the employees' compensation is on the Taiwanese level, and the taxes dominate more in Hungarian commerce, the VAT in Taiwan 5 percent, as in Hungary the main tax key is 27 percent.

On the national level, the gross output is equal to the sum of the intermediate inputs and value-added, which can be measured as the sum of the intermediate inputs and final use. As the total demand equals the total supply—considering the operational surplus—the retail sector performance is the same as the input buying in the input-output model. In this survey, the benchmark input-output tables are compiled for the year 2016.

4.3.2. Impact Effects Coefficients

Input coefficients are obtained by dividing input with output in terms of the Input Coefficients Table of Domestic Goods and Services (D) (National Statistics, Republic of China (Taiwan), 2022). The input coefficient in the case of retail and wholesale sectors denotes the input required under existing selling technologies. It represents a certain production technological standard and is called technology coefficient, thus the input goods purchasing represents 25 percent of the total expenditures in the retail sector.

The Impact coefficients are also known as the Inverse Matrix Coefficients, or Interdependence Coefficients, or Impact Effects Coefficients. “Coefficient” means the number of units that have to be bought, either directly or indirectly, from various sectors for every additional unit needed for a given sectoral output. What is eventually needed to influence the output, either directly or indirectly, added value and input through industry linkage is called “Feedback Effects of the Final Demand”. The retail multiplier effect is used for evaluation, which calculates the domestic inverse matrix results of the feedback effects on the final demand (National Statistics Republic of China (Taiwan), 2022.). The Impact coefficients are also named Inverse Matrix Coefficients, Interdependence Coefficients, or Impact Effects Coefficients. In the case of retail this means the numbers of units or values that are received, directly or indirectly, from each industry to deliver one unit of the retail sector to final users, and also expresses the degree of interdependence

between different industries. The value of the coefficients of wholesale and retail trade is 1.032370, so for example, 1 million TWD additional trade purchases increase the total intermediate input generation by close to 3 percent. In other words, any 1 million TWD local additional buying goods and services by retailers lead to a plus 376,000 TWD direct effect in Taiwan spent by those companies who produce the inputs for retailers.

5. Sustainability in Taiwanese Commerce

The climate change is a growing problem in every aspect of life. Commercial activities contribute to the tremendous damage to the environment.

The retail sector accounts for around 24.5 percent of all jobs in Europe. However, it is also responsible for 2-3.5 percent of the total CO₂ emissions (European Commission, 2012). The transfer of goods causes huge environmental pollution. Additionally, the activities of commerce are responsible for a lot of waste. The pandemic resulted in a huge expansion of online sales activities that consequently multiplied the quantity of used packaging and increased transfer needs, causing growing environmental damage.

The commercial sector generates 10-15 percent of the local waste. The long value chains increase the effect of environmental damage as well.

The countries try to manage the problem of pollution with regulations, for instance, with the restriction on plastic packaging. In addition to this, it will be more and more important to call the commercial firms' attention to change their business policy and inform them, how they can contribute to the solution of environmental problems.

Taiwan's objective is to grow and farm most of the food the population consumes, instead of importing it. These activities serve the aims of sufficiency and sustainability, and additionally, help to decrease the environmental damage caused by transportation of imports. A further aim is to reduce food waste with the help of "circular economy", which is a method that can manage the food system in an effective way. The Environmental Protection Administration (EPA) is currently working on this concept, dealing with the creation of a regenerative and restorative economy.

Since Taiwan has to import most of its fossil fuels, they are trying to find alternative ways to cover energy needs. One suggestion is to set up new bioenergy plants, where they could utilize food waste as well.

It will be increasingly important to find methods which can encourage the recycling of waste because the landfills will run out soon. Recycled and recyclable packaging and other products become more and more important in commercial circulation, although Taiwan is a leader in the development of recycling.

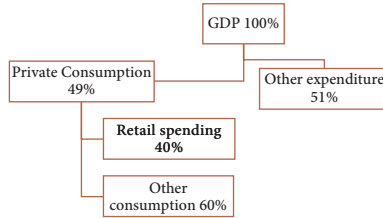
The government is supporting the development of the green economy by acting on the four pillars of green growth: legislation and regulation, market incentives, innovation, and networking (European Chamber of Commerce, Taiwan, 2018).

6. Conclusion

The Asia-Pacific region continues to be heralded as a region of opportunity and growth. Moreover, across the majority of markets, local economies fared well before the pandemic. Generally, consumers across the region appeared more confident in the last years, buoyed predominantly by increasing optimism in job prospects and the state of their personal finances. But while the economic environment might seem favorable, the majority of consumers across almost all markets are trying to curb their spending habits to save on expenses. The pandemic enhanced this process. Saving on groceries is also a top priority for one in five consumers in the Asia-Pacific. This feeling remains, as savings continue to be a top priority for people after they have covered their essential living expenses. The Fast-Moving Consumer Goods (FMCG) industry is feeling the effect of this cautiousness, with offline growth being a mixed bag across the region. While e-commerce is often touted as a major disruptor, stealing consumers' dollars from brick-and-mortar stores, the story in the Asia-Pacific isn't that simple. E-commerce affects and will continue to affect our retail landscape, but it's not an immediate game-changer for all markets. Conditions need to be right for e-commerce to thrive. Variables will differ by market, and no single market will achieve a perfect score across all measures. Therefore, it's critical to have the right foundations and market dynamics at play for e-commerce to grow and prosper. A number of these variables are cultural, systematic, and infrastructural changes need to occur. This means that offline retail will not disappear soon. Consequently, while e-commerce is a "must-have" for horizon planning in the short, medium and long term, it's important not to get too caught up in the hype and buzz of the press and

lose focus on where the majority of your business rests today. Remembering this varies by market and category.

Figure 5: The role of retail spending in Taiwan



Source: authors' own compilation on the basis of National Statistics, Republic of China (Taiwan), 2021.

The share of private consumption in Taiwan exceeds 49 percent (Figure 5), and in Hungary, the same figure is the same, 49 percent, so in both countries, consumption is one of the main drivers of growth. From the sectors' activities point of view, it can be seen that the commerce (including retail and wholes) added value contributes to GDP by 15 percent, in Hungary the same is 10 percent, so this difference is significant between the two countries. On one side, the explanation could be the higher standard of living, which is reflected in GDP per capita, Taiwanese data is 1.5 times higher than the Hungarian figure. On the other side, more services allow higher margins at the company level, so the added value can be higher for Taiwanese entrepreneurs. The Retail Sale in General Merchandise Stores represents 34 percent of total selling, and an increasing portion if online sales, so the strengthening omnichannel model helps to achieve higher profitability for Taiwanese retailers.

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Appendix 1: Key macroeconomic indicators of selected economies in Asia, 2016

	Population (million)		GDP (USD billion; at market exchange rate)		GDP per head (USD; at market exchange rate)		Consumer price inflation (avg; %)	
	2016	2020	2016	2019 ¹	2016	2020 ²	2016	2020 ³
China	1,366.0	1,398.0	11,357.0	14,723.0	8,313	10,500	2.1	2.4
Japan	126.3	125.8	4,941.0	5,065.0	39,110	40,113	-0.1	0.0
South Korea	50.5	51.7	1,402.5	1,647.0	27,770	31,489	1.0	0.5
Taiwan	23.6	23.5	529.3	612.2	22,487	32,747	1.4	-0.2
Singapore	5.6	5.7	297.0	374.4	52,961	59,798	-0.5	-0.2
Malaysia	30.8	31.9	295.1	364.7	9,598	10,402	2.1	-1.1
Thailand	68.1	69.6	405.2	544.3	5,946	7,189	0.2	-0.8

Source: Euromonitor International; compiled by Fung Business Intelligence (data from 2016); Worldbank. 2019-2020.

¹ Based on data of Worldbank, 2019.

² Based on data of Worldbank, 2020.

³ Based on data of Worldbank, 2020.

Appendix 2: Taiwanese expenditures on Gross Domestic Product at Current Prices (Unit: Million TWD)

Period	GDP	Domestic Demand			Demand of Rest of The World	
		Private Final Consumption	Government Final Consumption	Gross Fixed Capital Formation	Changes in Net Export Inventories	Subtotal
2006	12,640,803	6,947,802	1,854,009	3,063,352	47,643	727,997
2007	13,407,062	7,197,916	1,922,075	3,205,121	16,361	1,065,589
2008	13,150,950	7,260,169	1,991,181	3,045,433	171,594	682,573
2009	12,961,656	7,175,511	2,055,721	2,761,737	-181,488	1,150,175
2010	14,119,213	7,497,682	2,098,717	3,335,881	188,764	998,169
2011	14,312,200	7,798,976	2,167,595	3,346,945	35,921	962,763
2012	14,686,917	8,035,105	2,254,282	3,282,131	22,029	1,093,370
2013	15,230,739	8,248,385	2,242,637	3,378,731	-18,535	1,379,521
2014	16,111,867	8,588,741	2,342,754	3,493,834	27,323	1,659,215
2015	16,770,671	8,755,829	2,346,110	3,493,267	19,845	2,155,620
2016	17,152,093	9,031,513	2,465,870	3,584,910	-15,206	2,085,006
2017	17,444,666	9,246,526	2,456,036	3,580,972	-46,213	2,207,345
2018	18,375,022	9,610,482	2,623,385	4,001,128	84,773	2,055,254
2019	18,932,525	9,885,165	2,656,205	4,490,003	-26,325	1,927,477
2020	19,766,240	9,608,671	2,770,148	4,682,607	5,782	2,699,032

Source: National Statistics, Republic of China (Taiwan), 2021.

Appendix 3: National Disposable Income, Consumption and Savings, at current prices, (Unit: Million TWD)

Year	National Disposable Income Households	National Consumption Households	Net National Savings Households
2006	8,087,876	6,947,802	1,140,074
2007	8,469,505	7,197,916	1,271,589
2008	8,560,131	7,260,169	1,299,962
2009	8,176,998	7,175,511	1,001,487
2010	8,583,814	7,497,682	1,086,132
2011	8,769,454	7,798,976	970,478
2012	9,104,584	8,035,105	1,069,479
2013	9,174,381	8,248,385	925,996
2014	9,884,804	8,588,741	1,296,063
2015	10,084,659	8,755,829	1,328,830
2016	10,067,332	9,031,513	1,035,819
2017	10,719,915	9,325,676	1,394,239
2018	11,328,750	9,610,482	1,718,268
2019	11,508,541	9,885,165	1,623,376

Source: National Statistics, Republic of China (Taiwan), 2021.

