

How Cross-Strait Trade and Investment Is Affecting Income and Wealth Inequality in Taiwan

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Very preliminary, please do not quote.

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Abstract

In this paper, we study the income and wealth inequality phenomena in Taiwan in recent years. We find the usual Gini coefficients and percentiles of income distribution are hard to match what people feel. Then we identify that slow economic growth and housing bubble may force people to be antisocial and thus as the cause of social turmoil. However, matters become ever complicated in the case of Taiwan due to the long political standoff across the Strait. In this case, an explanation is provided to the seemly fallacy between data and political reality. Finally, we offer some remedial proposals and draw some conclusions with some conjecture for the near future.

I. Introduction

Since the start of the 90's, the economic tie between Taiwan and Mainland China has been very prolific. The political turmoil at the time did not stop the ambition of many Taiwan businessmen to explore the economic potential in China. Remarkable economic success has largely been achieved despite the periodic political tension and worrisome of investment protection. Notice that lack of formal peace treaty as well as bilateral trade agreements between the two sides of Taiwan Strait has prevailed for over half a century.

After the successful attempt of 2008 election, normalization of the tie between Taiwan and Mainland China has become top priority for President Ma, Ying-Jeou and the ruling party Kuo Min Tang (KMT). The underlying belief was that an improved cross-Strait relationship would not only reinforce Taiwan's security, but also expand the economic opportunities for the world as a whole. President Ma's and his administration has walked a fine line by the approach to 'engage in negotiations on issues of pragmatic concerns while shelving out those with political disagreements¹.'

The centerpiece of his first term was to reach the agreement of scheduled direct flights across the Strait and the Economic Cooperation Framework Agreement (ECFA). It is like any other free trade agreement (FTA) between member economies under WTO, aimed to reduce tariffs and any administrative and commercial barriers among them. The final pact, signed in Chongqing on June 29, 2010, was seen as the most significant agreement since the formal split after the Chinese Civil War in 1949.

The newly elected government then pushed hardly to sign the deal of ECFA with mainland China and wished for the pact as a great chance for leveling competition within and out of China. Unlike the administration of ex-president Chen, Shui-ben, the pragmatic approach to Mainland China resulted in better economic performance compared to some neighboring countries. However, the three ASEAN Plus One has come into effect consecutively so that goods and services from ASEAN member states could enter mainland China, Japan and Korea of tariff-free. These situation changes do place Taiwan at a great disadvantage.

The first milestone of ECFA is through the accomplishment of "Early Harvest Program." The mechanism of this harvest program setup phases of tariff reduction in three years. It aimed mainly to speed up reduction of tariffs on goods and allow for market access in banking and some service industries between the two sides of the

Also refer to "Political Changes in Taiwan Under Ma Ying-jeou: Partisan Conflict, Policy Choices, External Constraints and Security Challenges," *Routledge Research on Taiwan Series*, in ch. 7, p.139-140.

Strait. The Early Harvest program involves 539 items of Taiwanese goods, covering 16 percent of Taiwan's exports to Mainland China and close to the amount of US\$14 billions. On the PRC side, in return, it receives tariff cuts on 267 Chinese products, which makes up 11 percent of China's exports to Taiwan and is worth of US\$3 billion approximately.

Before the formalization of signing ECFA, people protested under the organization by Democratic Progressive Party (DPP). No surprise that DPP would claim the trade agreement of damaging the local economy and undermining Taiwan's sovereignty under Doctrine of One China. As free trade agreement is not limited to goods exchange only, DPP believes that service trade and personnel exchange will push Taiwan to the final unification with mainland China.

The protest gathering was estimated at 100,000 people by DPP, while the police said that there were around 32,000 of presence. However, most people understand clearly the possibility and potentials under ECFA. As Taiwan enjoys a huge trade surplus with the PRC for long, the Early Harvest program appeared to enhance Taiwan's trading edge more, even before additional liberalization of merchandise and agreements in services in a completed ECFA.

China seems to use ECFA to summarize of her generosity towards Taiwan. As Taiwan appears to receive more items for tariff reduction, China often claims favor of "yielding interest" to Taiwan. Although this is like an economic propaganda, some people do believe that it can generate "peace bonus" indeed. To Ma's administration, they take ECFA as a watershed in cross-Straits relations and would hope that it also gives Taiwan the chance to be integrated more fully into the East Asian economy.

The exporting share increases to nearly 40 percent when incorporating exports routed through Hong Kong. The reduction of tariff tends to drive down market prices in trade and can lead to higher trading amount as well, which benefit both buyers and suppliers. In this regard, capital flow across strait indeed increases dramatically after this change. Certainly, the split of social surplus still depends on the relative elasticity of demand and supply.

According to Taiwan's Mainland Affairs Council (MAC), Taiwan had an overall trade volume of US\$124 billion with China in 2013, nearly three times of that in 2000. Taiwan has maintained trade surplus with mainland China, valued at US\$39.2 billion in 2013. During the same period, the share of Taiwan's exports to mainland China rose to 28.5 percent from 16.9 percent, while the share of its imports from China rose to 15.8 percent from 4.5 percent.

Meanwhile, the Cross-Strait Service Trade Agreement (CSSTA) is one of the two planned follow-up treaties under ECFA. It was signed in June 2013 but not

ratified by the Taiwanese legislature. The other one closely related, the Cross-Strait Goods Trade Agreement, has not been negotiated to its end. Under the terms of service trade, relevant industries such as banking, healthcare, tourism, film, telecommunications, and publishing would be opened to investment and businessmen would be able to obtain renewable visas indefinitely from the other territory.

Once CSSTA is put into effect, the new agreement would reduce or eliminate restrictions on trade in services gradually across the Taiwan Strait. As it is designed to help local businesses expanding their market in the mainland, one would wish to see the lifting up of economic development in Taiwan. Besides, it would become easier for businesses to set up branches in the other territory and for large stakes in businesses to be sold to investors from the other side.

Unfortunately, in March of 2014, the issue of economic inequality in Taiwan rose to the public consciousness with the student-led seizure of the Legislative Yuan. The movement was dubbed as Sunflower Movement. The apparent reason of this demonstration was the worrisome and uncertainty out of CSSTA, but the driving force behind is the frustration over the distribution of economic pie on this island.

Most students and young generation are not satisfied on low salaries and the limited opportunity for advancement available to university graduates. The sprouting anger forced Taiwan government to address the issue of growing inequality, both in economic well-being and the opportunity for social mobility. Some newly graduates make NT\$22,000 (or \$750) per month and they don't see much chance for a raise.

Therefore, some people accuse that trade and investment in mainland China would affect income and wealth negatively here in Taiwan. Given the stagnant economy at home and difficulty of breaking into the international arena, they don't seem to have many opportunities. They could go abroad other than China to work were they to have enough language and foreign experience. Essentially, they have to compete with young people from Hong Kong, China, Korea, or Singapore anyway.

From inequality measure, the data does not provide with supporting evidence, however. In this paper, we will study of the widening inequality and give an explanation why the data and the reality do not seem to coincide. The data we used is mainly drawn from the Directorate General of Budget, Accounting and Statistics (DGBAS), which is the Taiwan's official source for government statistics.

The plan of this paper is as follows. In section 2, we will give a broad account of the Taiwan economy. In section 3, relevant data of cross-strait trade and investment are fully analyzed and compared. Section 4 would examine pattern of income and wealth inequality in past two decades. In section 5, we would provide the explanation of a seemingly fallacy between data and political reality and offer some

remedial proposals in section 6. In section 7, we draw some conclusions and make conjecture for the near future.

II. Overview of Taiwan's Economy

Taiwan's economic progress after the WWII is unmatched by most developing economies. In the early 1950's, Taiwan was still situated in the group of low-income countries -- the world's poorest countries in terms of GNP per capita. The per capita income then was below US\$200, 100 times less, and commodities were in short supply. Agricultural Taiwan did not have enough foreign reserves for trade, making it nearly impossible to import foreign equipment and raw materials. Its weak industrial base meant that job opportunities were also scarce.

Besides, the Nationalist government retreated from China after the end of China's civil war and had brought in an extra million people to the island. As military personnel and public employees created an extra burden on the limited resources, meeting the needs of food and payment posed a severe challenge to the authorities. Thus, land reform at the time not only created more equality in wealth distribution but also gave stimulus for more diligent work on farm to increase production.

Table 1. Historically GDP Growth Rate, Household Disposable Income, Consumption, Net Savings, and Saving Rate in Taiwan.

	GDP growth rate	disposable income	consumption	net savings	saving rate%
1951	11.84	226,123	196,949	29,174	15.21
1956	5.3	330,581	303,221	27,360	10.61
1961	6.32	461,146	412,856	48,290	13.67
1966	8.72	712,867	624,753	88,114	15.7
1971	12.45	1,179,457	974,026	205,431	22.59
1976	13.45	1,759,538	1,417,604	341,934	26.4
1981	6.46	2,585,563	2,071,468	514,095	26.76
1986	11	3,900,486	2,784,950	1,115,536	35.96
1991	7.88	5,950,643	4,536,126	1,414,517	32.51
1996	5.54	7,886,586	6,262,622	1,623,964	30.27
2001	-1.65	9,143,290	7,674,198	1,469,092	28.19
2006	5.44	10,803,679	8,717,640	2,086,039	29.55
2011	4.19	11,760,901	9,530,267	2,230,634	26.87

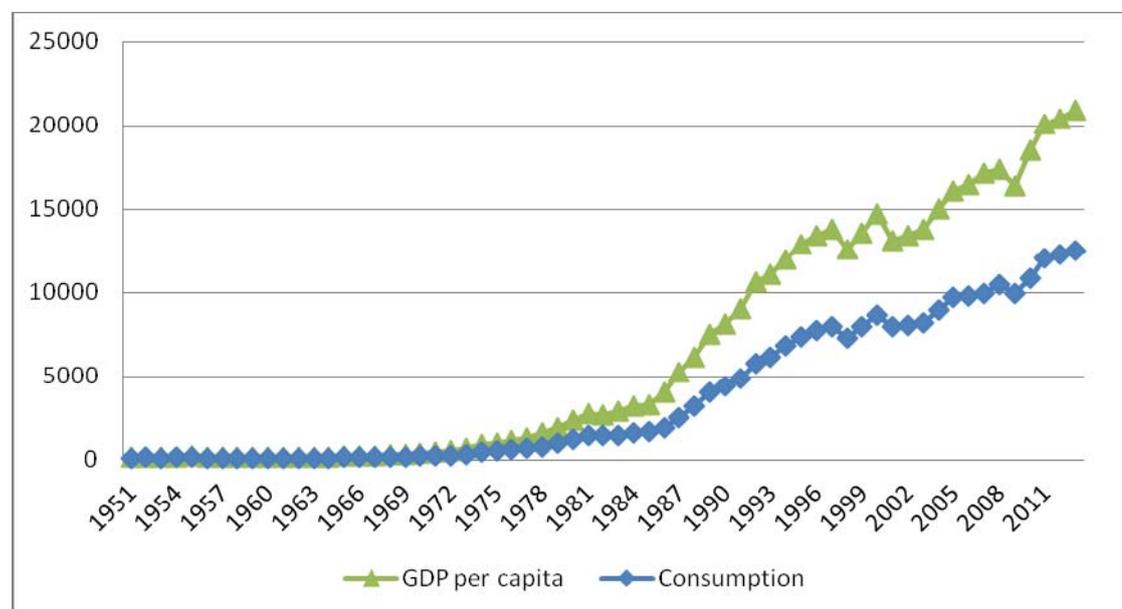
2012	1.48	11,997,596	9,673,977	2,323,619	27.18
2013	2.09	12,351,914	9,831,102	2,520,812	28.12
2011/1971	0.33	11.06	10.02	18.43	1.93
Average of 1950s	9.36	329,344	294,652	34,693	13
Average of 1960s	8.46	710,114	622,099	88,015	16
Average of 1970s	9.89	1,766,413	1,422,390	344,023	25
Average of 1980s	6.67	3,830,675	2,904,811	925,864	31
Average of 1990s	6.84	7,727,014	6,091,842	1,635,172	31
Average of 2000s	4.56	10,459,874	8,535,825	1,924,049	29

Unit: million New Taiwan dollars, in 2006 dollar.

Source: DGBAS.

Taiwan's economic achievement has been closely followed around the world. The successful development of industrial export and related technology has transformed Taiwan from an agricultural society into an industrialized one in a short period of time. The economic success was marked by an average of 9.46% in the 1950s, 8.36% in the 1960s and 9.89% in the 1970s. Please refer to Table 1 above.

Chart 1. The Nominal GDP Per Capita and Individual Consumption in Taiwan, 1951 to 2013.



Source: DGBAS.

Taiwan's economy has benefited from the enthusiasm and perseverance of Chinese entrepreneurs from abroad and small and medium enterprises (SMEs) domestically. Together with industrial strategies such as "Import Substitution" and

“Export Promotion,” these policy changes have successfully restructured and upgraded industries, resulting in the continual expansion of Taiwan’s imports and exports.

Total trade volume has risen significantly from US\$310 million in 1952 to US\$466.07 billion by 2007. Taiwan becomes the 16th largest trading country in the world despite its high population density and lack of natural resources. Meanwhile, the export-led growth also made the general public richer and can afford with more consumption. The evolution pattern through time is shown in Chart 1 above. We can see that the gap for saving become wider apart as companies withhold more and more cash earnings, but the rate of growth is quite steady respectively.

During the oil crises occurred in the 1970s, Taiwan's exporters then had to face the threat posed by protectionism and unfavorable trade policies in other countries. However, Taiwan SMEs seemed to weather out of oil crises with flexibility and getting strong. The sub-contracting system and black market for lending and borrowing, the relationship and network built among the SMEs, acted as a stabilizing mechanism for the economy and helped to soften the impact through several business cycles. The share of production value, employment and capitalization accounted by SMEs also grew significantly overtime.

Even after the challenge of severe oil crisis, the economy as a whole continued to grow and Taiwan began to enjoy trade surplus. The government launched its Ten Major Construction Projects then and Twelve Major Construction Projects in order to improve Taiwan's infrastructure. The government also worked to promote the development of capital-intensive basic industries such as petrochemicals, iron and steel, machinery and auto manufacturing, etc. During this period, we also saw the establishment of the Industrial Technology Research Institute and the project of Hsin-chu Industrial Park.

After almost thirty years of rapid growth, Taiwan's per-capita GNP by 1978 already exceeded the average of the middle-income group: US\$ 1,400 for Taiwan versus US\$1,250 for the benchmark (World Development Report 1982). Household income and assets values increased dramatically in the past as indicated in Table 1 (DGBAS, 2004). Down to the late 80’s, the business environment in Taiwan changed as wages rose and Taiwan dollar appreciated. At the same time, people in Taiwan were becoming more aware of the environmental issues and labor rights .

The government then switched to the promotion of strategic industries, characterized by the use of high technology, higher value added and low energy consumption. With the establishment of the Hsin-chu Industrial Park, it facilitated the development of hi-tech industries as enterprises were encouraged to step up further in R&D activities and to enhance their international competitiveness. While

the importance of SMEs to the economy as a whole remained, a structural transformation was taking place.

In the ensuing two decades from 1978 to 1998, Taiwan's per-capital GNP enjoyed nearly a nine-fold increase, reaching US\$12,040 by 1998. That was another eightfold increase. By then, Taiwan was included as one of the fast-growing “four dragons” in the East Asian area. Although the Taiwanese currency appreciated significantly, a major restructuring in the economy has facilitated in the emergence of an worldly information related production island. A new breed of SMEs in technology-intensive industries began to emerge. Most Taiwanese enterprises began to transform themselves through upgrading technology domestically and investing overseas. In particular, most SMEs in labor-intensive industries emigrated.

Taiwan has always managed to allow the economic prosperity to be shared by a wide spectrum of population. Despite the improvement in the distribution of income in the early decades, the trend was partially reversed in the late 90's. A growing number of Taiwanese businessmen found mainland China provide better business environment and moved their business across the Taiwan Strait. The Delta of Pearl River in GuangDong province and downstream of the YangTz River attracted most of the investment.

From Table 1, we see the average economic growth rates are lower in the 1980s and 1990s, 6.67% and 6.84% respectively, compared to 9.89% in the 1970s. Critical underlying problems would affect Taiwan's economy in the years ahead as the average growth rate of 2000s drop to 4.56%. The 1997 Asian financial crisis did not affect Taiwan as harshly due to greater restrictions on invested flow of foreign capital. As major countries hurt by rapid capital flight, economic growth has become more modest since the late 90's. The rate of non-performing loan for the financial sector went up to 8.78% in 2012 and reached almost 18% for local credit unions in Taiwan.

However, some underlying problems will continue to affect Taiwan's economy in the years to come. These include shortages in unskilled labor and competition from lower cost producers, mounting environmental problems, energy efficiency and dependence, growing protectionism in the leading markets and imbalances among economic sectors (especially between agriculture and manufacturing). To keep growing up, the Taiwanese economy cannot compete with China, Vietnam or other sub-developed countries directly in terms of labor cost. Industries of high value added, especially the electronic business and financial sector: banking, security, and insurance, should play an important role to active the economy.

III. Cross Strait Trade and Investment

Since mainland China started the so-called "open-door" policy formally in 1984, bilateral trade across the Taiwan Strait has increased at a speedy rate. Few years later, the Nationalist government also ended the 38-year-long Martial Law era in 1987. Since then, Taiwanese companies have invested in China continuously and created a great amount of bilateral trade across the Taiwan Strait.

Table 2 shows the structure of trade and export from 1989 to 2013. Dated back in 1989, the export from Taiwan to mainland China was recorded 0, but that to Hong Kong already reached \$7.04 billion, accountable about 11 % of the total export. At that period, Taiwan's export to US was higher at \$24 billion, which chunked a 36 % of the total export.

Over the course, of a relatively short period, there has been a dramatic shift in Taiwan's trade and investment destination. In 2000, total trade with China (including Hong Kong) was \$18.5 billion. By the year of 2013, total trade with China had grown to over \$165 billion (\$121 billion in exports to China and \$44 billion in imports from China). Over this same period, Taiwan's trade with the United States dwindled significantly in the opposite direction. Export to US drops to account for only 11%.

Table 2. Trade and Export Structure of Taiwan, 1989 to 2013.

	Total Trade	Export to China	Export to H.K.	Share of Export to China and H.K.	Export to USA	Share of Export to USA
1989	118,567,787,222	0	7,042,27	11%	24,036,214	36%
1990	121,929,180,127	0	8,556,243	13%	21,745,853	32%
1991	139,037,626,044	0	12,430,520	16%	22,320,844	29%
1992	153,471,129,436	1,051	15,414,978	19%	23,571,604	29%
1993	162,150,753,782	16,227	18,452,603	22%	23,587,325	28%
1994	178,383,464,497	131,634	21,262,326	23%	24,336,757	26%
1995	215,203,771,718	376,614	26,105,855	24%	26,407,389	24%
1996	218,307,063,978	623,379	26,787,641	24%	26,866,357	23%
1997	236,499,793,289	626,480	28,688,053	24%	29,551,755	24%
1998	215,241,158,169	914,872	25,398,248	23%	29,959,134	27%
1999	232,272,734,338	2,602,091	26,825,264	24%	31,339,373	25%
2000	288,321,181,753	4,391,494	32,741,718	24%	35,588,452	23%
2001	234,279,376,023	4,895,371	28,712,715	27%	28,135,593	22%
2002	248,550,493,475	10,526,873	32,959,608	32%	27,365,143	20%
2003	278,602,202,715	22,890,761	30,868,284	36%	26,553,693	18%

2004	351,114,338,847	36,349,368	32,896,214	38%	28,750,997	16%
2005	381,034,544,003	43,643,661	34,035,551	39%	29,113,853	15%
2006	426,707,794,911	51,808,557	37,381,238	40%	32,360,688	14%
2007	465,921,799,289	62,416,765	37,979,705	41%	32,077,102	13%
2008	496,069,221,607	66,883,516	32,689,899	39%	30,790,956	12%
2009	378,038,242,624	54,248,679	29,445,233	41%	23,552,856	12%
2010	525,829,376,825	76,935,146	37,807,122	42%	31,466,029	11%
2011	589,687,272,874	83,959,956	40,084,464	40%	36,364,294	12%
2012	571,645,967,108	80,714,249	37,932,192	39%	32,976,155	11%
2013	575,330,472,707	81,788,154	39,433,377	40%	32,564,305	11%

Unit: million US dollars.

Source: DGBAS.

China is Taiwan's biggest trading partner for now, accounting for 40 percent of Taiwan's exports and 16 percent of Taiwan's imports in 2013. We then examine the two-way trade and track changes by comparing trade shares relative to each other's total external trade. The relationship has become ever asymmetrical. While China becomes increasingly important in Taiwan's external trade, Taiwan's significance to China becomes smaller.

According to World Trade Atlas, from 1996 to 2013, China's exports to Taiwan remained fairly steady at around 2 percent of total Chinese export but the ranking goes lower and lower. Taiwan was ranked as the 15th spot of China's export destination in 2013 though it was stably ranked in the 8th or 9th position from 1996 to 2006. As market opportunity to China worldwide expands over time, the lack of growth strength in Chinese export to Taiwan indicates that Taiwan's small market is currently providing limited potential for China's products. On the contrary, China has become critical for Taiwan's exports, with its export share rising from 11% in 1989 to 42% at peak and has leveled off to 40% now.

In the same period, China's imports from Taiwan as a percentage of its total imports have declined from 12% (ranked as the 2nd) to 8 percent (ranked as the 4th), while Taiwan's import share from China rose from 3% in 1996 to 15% in 2012 and 14% in 2013. Taiwan's import from China ranked 13 in 1996 and has climbed up to the 2nd spot in 2013. For the first 7 months this year, it has surpassed Japan and become the new champion at this time.

Because of differences in size and role in world market, Taiwan has earned large trade surpluses with China. The bilateral trade surplus reached all time high at \$78.8 billion in 2011, but leveled off a bit and remained sizable in \$76.97 billion in 2013 as shown in Table 3. In this table it reveals origin of trade surplus for Taiwan from 1989 to 2013. The \$76.97 billion bilateral surplus with China in 2013 was much

larger than the \$35.54 billion of total surplus in the same year. A simple calculation would show that Taiwan now runs a trade deficit with the rest of the world.

In 2002, only 15 percent of mainland-based Taiwanese companies procured capital equipment and intermediate goods from local firms in China but this ratio has increased to over 60 percent in 2010. Several reasons would answer to why Taiwan is experiencing a falling import share in Chinese market. Firstly, a rising trend on the prices of labor and land in China makes the cost of doing business much larger than before. Many Taiwanese companies in China are under cost pressure to source locally and replace intermediate goods imported from Taiwan. Secondly, many Multinationals now have preferences for using intermediate goods purchased from China instead of importing them from outside. Thirdly, Taiwan's falling share in accounting for China's total imports may be a result of changes in overall import structure.

For instance, China's import share of mineral products increased from 8 percent in 2002 to 25 percent in 2011. This phenomenon is important as China cares more for the environmental protection than before. Thus its import share of machinery (down from 43 percent to 32 percent) and electrical equipment (down from 25 percent to 20 percent) both decreased relatively. The changes on import structure from industrial goods to mineral products implies that if China's economy continues to move up the value chain, the share of demand for intermediate goods, but not the growth rate and the absolute value from Taiwan, will continue to drop.

Table 3. Structure of trade surplus in Taiwan, 1989 to 2013.

	Surplus from the World	Surplus from China	Surplus from H.K.	Surplus from China and H.K.
1981	1,411,646		0	1,588,047
1982	3,315,895		0	1,257,950
1983	4,835,669		0	1,344,736
1984	8,497,304		0	1,716,773
1985	10,623,613		0	2,220,041
1986	15,680,044		0	2,542,650
1987	18,695,368		0	3,369,530
1988	10,994,562		0	3,664,984
1989	14,038,626		0	4,837,072
1990	12,498,442		0	7,110,376
1991	13,317,764		0	10,483,767
1992	9,463,456	-746,022	13,633,590	12,887,568
1993	8,030,255	-999,277	16,723,846	15,724,569
1994	7,699,589	-1,727,079	19,729,368	18,002,289
1995	8,108,756	-2,714,692	24,262,982	21,548,290

1996	13,572,043	-2,436,473	25,082,978	22,646,505
1997	7,656,008	-3,288,832	26,691,919	23,403,087
1998	7,365,628	-3,199,010	23,322,155	20,123,145
1999	12,537,259	-1,926,800	24,601,664	22,674,864
2000	11,217,766	-1,837,840	30,377,536	28,539,696
2001	18,343,718	-1,007,588	26,661,124	25,653,536
2002	22,071,623	2,558,289	31,044,710	33,602,999
2003	22,590,324	11,872,874	28,951,088	40,823,962
2004	13,612,786	19,557,116	30,587,050	50,144,166
2005	15,817,258	23,549,965	31,925,822	55,475,787
2006	21,319,136	27,025,471	35,500,594	62,526,065
2007	27,425,364	34,401,786	36,154,803	70,556,589
2008	15,180,901	35,492,201	31,197,128	66,689,329
2009	29,304,117	29,825,207	28,322,677	58,147,884
2010	23,364,129	40,989,195	36,179,499	77,168,694
2011	26,819,761	40,363,411	38,409,012	78,772,423
2012	30,708,304	39,806,017	35,273,367	75,079,384
2013	35,544,412	39,198,837	37,774,514	76,973,351

Unit: million New Taiwan dollars.

Source: DGBAS

As we mentioned in the introduction, the pact of ECFA can help Taiwan to avoid marginalization of local industries and attract new foreign investment to boost employment. Unfortunately, ECFA also has the potential, impact over time, to make Taiwan even more dependent on the Chinese market. Taiwan needs to start diversifying its exports by signing FTAs with other nations. But the progress is slow. Till now, Taiwan only signed the economic cooperation agreements with New Zealand and Singapore after ECFA. This is far behind the achievement South Korea has done.

Critics of ECFA and CSSTA mostly concerned of China's growing power over Taiwan and her impact on small and medium-sized Taiwanese enterprises. Their worrisome of the structural shift in two-way trade obviously relates to political and economic repercussions. If Taiwan cannot open up alternative economic activities, China will certainly have increasing leverage over Taiwan.

Ma's administration does have a high hope in Taiwan's chance to Joint Trans-Pacific Partnership (TPP) and Regional Comprehensive Economic Partnership (RCEP). Taiwan needs to come back the international stage as soon as possible. While TPP is dominated by the USA, China is also a key player behind RCEP. As there is fast track for Taiwan to take, the possibility to start the chance of application is only after the finalized deal in 2015.

Therefore Taiwan has nothing to do now but to prepare herself for the possible opening for negotiation in the future. The increased economic dependence between

China and Taiwan is not limited to two-way trade only. After the Martial Law ended, Taiwanese companies has been permitted to invest in China under certain conditions. The capital flow from Taiwan to Mainland China overtime is huge. The accumulated amount from 1991 to 2013 reaches 133.7 billion. Please see Table 4 for more details.

This table is compiled from records reported to the government. It is believed that the real amount is much bigger and could reach 300 billion dollars including all investment through underground and overseas tunnels. In the government's statistics book, Taiwan's FDI to the rest of the world and FDI to China are separately kept. The former is called Approved Outward Investment and the later Approved Mainland Investment, both maintained by the Investment Commission of the Ministry of Economic Affairs.

From 1952 through the end of 1998 the Investment Commission approved 4,652 cases of outward investment with a total investment value of more than US\$18.609 billion. The foremost destination for this investment was the United States, followed by Malaysia in second place and Hong Kong in third. In terms of invested industry, banking and insurance was in first place, followed by electronic and electrical appliance manufacturing in second and international trade in third.

Table 4. Taiwan's FDI to China and the Rest of the World, 1991 to 2013..

Year	FDI to Mainland China		FDI to the rest of the world		Ratio of the FDI in China to the rest of world
	Case	Amount	Case	Amount	
1991	237	174,158	365	1,656,231	9.51%
1992	264	246,992	300	887,259	21.78%
1993	9,329	3,168,411	326	1,661,046	65.61%
1994	934	962,209	324	1,616,844	37.31%
1995	490	1,092,713	339	1,356,878	44.61%
1996	383	1,229,241	470	2,165,404	36.21%
1997	8,725	4,334,313	759	2,893,826	59.96%
1998	1,284	2,034,621	896	3,296,302	38.17%
1999	488	1,252,780	774	3,269,013	27.71%
2000	840	2,607,142	1,391	5,077,062	33.93%
2001	1,186	2,784,147	1,387	4,391,654	38.80%
2002	3,116	6,723,058	925	3,370,046	66.61%
2003	3,875	7,698,784	714	3,968,588	65.99%
2004	2,004	6,940,663	658	3,382,022	67.24%
2005	1,297	6,006,953	521	2,447,449	71.05%

2006	1,090	7,642,335	478	4,315,426	63.91%
2007	996	9,970,545	464	6,469,978	60.65%
2008	643	10,691,390	387	4,466,491	70.53%
2009	590	7,142,593	251	3,005,554	70.38%
2010	914	14,617,872	247	2,823,451	83.81%
2011	887	14,376,624	306	3,696,827	79.55%
2012	636	12,792,077	321	8,098,641	61.23%
2013	554	9,190,090	373	5,232,266	63.72%
1991~2013	40,762	133,679,713	12976	79548258	62.69%

Unit: million US dollars.

Source: MOEIC

Despite the close economic ties, Taiwan is not getting much from Mainland by way of inward direct investment. The trifling inflow of Chinese investments so far is largely because Taiwan's small market holds no interest for China's giant state-owned enterprises. Moreover, the Taiwanese high-technology sector, which would be of great interest for Chinese investors, is still regulated and closed off.

These investments have made China central to the supply chains of Taiwanese manufacturers. They have also generated a high volume of trade between Taiwanese businesses located in China and Taiwan. As a consequence, the lion's share of share of Taiwan-China trade falls within the same sectors as Taiwanese outbound investment in China. In sum here, since the ECFA came into effect, approved Chinese investment in Taiwan has increased from \$94 million in 2010 to \$331 million in 2012. See Table 5 for details. Supporters of the ECFA hope that the trade agreement will serve as a gateway for investment from China. But comparing the other direction that Taiwan's capital invest in China, this part is small.

Table 5. Permit for Companies in Mainland China, 2009 to 2013.

Item Year	Investment from China	
	Case	Amount
2009	23	37,486
2010	79	94,345
2011	105	51,625
2012	138	331,583
2013	138	349,479
2009~2013.12	483	864,518
2013 01-08	93	319,307
2014 01-08	86	238,996

Unit: million US dollars.

Source: MOEIC.

Before ECFA was signed in June 2010, The Chung-Hua Institution for Economic Research (CIER) has projected that ECFA would serve to increase Taiwan's gross domestic product (GDP) growth by 1.65 to 1.72 percentage points, to raise its export growth by 5 percent, and to create approximately 263,000 new jobs. Taiwan's GDP growth rate reached 10.8 % in 2010, but declined in 2011 to 4.2%. The sharp increase in 2010 was partly due to the heightened expectation of ECFA's effect during negotiation, as well as the low GDP base figure from the preceding year due to the global financial crisis.

As the Early Harvest program was put in place in 2011, Taiwan's exports to mainland China grew 9.1 % in that year. This figure then dropped to a negative growth of 3.9 % in 2012, the year of Taiwan's highly contested Presidential election, and bounced back to 1.3% in 2013. In contrast, the annual growth rate of those Early Harvest exports in particular peaked in its first year of implementation at 18 percent, dipped to 3.3 percent in 2012, then rose close to 11 percent in 2013. These confirmed the anticipating effect out of the Early Harvest program.

There are three main industry categories highlighted in the Early Harvest product list - petrochemical, steel, electronic and optical-related items. Other items such as agricultural and textile products comprise less than 3 percent of the Early Harvest program. Many analysts would consider the sectors covered under the Early Harvest list to be the main beneficiaries from ECFA to date. For instance, Taiwan's core petrochemical export to mainland China is diethylhexyl phthalate (DEHP), a key plasticizer in polyvinyl chloride (PVC) manufacturing.

After the Early Harvest program, the market share of Taiwan's DEHP exports to China increased to 73.8 percent and was valued at US\$132 million in 2013 from 43.4 percent and US\$121 million in 2010, according to Taiwan's Bureau of Foreign Trade (BOFT). Taiwan's main competitor, South Korea, saw its market share in the same product decline to 22.9 percent from 42.6 percent and its export value dropping to US\$41 million from US\$119 million.

China also became the largest exporting market for Taiwanese agricultural products in 2013, according to Taiwan's BOFT. Taiwan's agricultural products enjoy a trade surplus valued at US\$20 million in 2013 with its Chinese counterparts, a change from a trade deficit of US\$190 million in 2009. Farmed food and fish products such as groupers make up 70 percent of the overall agricultural exports to China. Over 14,234 tons of Taiwanese groupers were exported to China in 2013, from 4,159 tons in 2010.

In 2013, exports to mainland China stood at US\$81.8 billion, a year-on-year increase of 1.33 %. However, exported goods covered by ECFA, namely those listed in the Early Harvest Program, saw a 10.62% increase. This means that the difference in growth between goods covered by ECFA and those not covered by ECFA is approximately a factor of eight, attributing the difference in growth to the difference in customs duties.

To sum up, the Early Harvest Program in ECFA has been able to help Taiwanese companies to save NT\$42 billion in customs duties since it signed. Once the two sides of the strait link themselves in a trade in goods agreement, Taiwanese exporters will be able to save even more. This provides evidence to President Ma's argument that in terms of cross-strait developments, the government's fundamental principle is to uphold the interests of the people, and the agreements that we've signed with mainland China are more advantageous than disadvantageous for Taiwan.

So far, the two sides have signed 21 agreements, but disputes have risen between the ruling party and the opposition over the question of trade in services. Finally, we should discuss the topic of financial industry and its supervision. Early Harvest benefits Taiwan's finance and insurance sectors with market access opportunities in China to establish a foothold before their potential competitors. There are eleven Taiwanese banking firms that currently have operations in the PRC as of the first quarter of 2014, as shown in Taiwan's BOFT data.

Moreover, China has approved FDI from thirteen Taiwanese securities firms whose funding total is valued at US\$1.8 billion to date. Ten Taiwanese insurance companies are granted Qualified Foreign Institutional Investors (QFII) status with total investment limit up to US\$170 million. In 2012, Taiwan's Central Bank signed a memorandum of understanding (MOU) on cross-Strait currency settlement with its Chinese counterpart.

The MOU allows the direct settlement of the Chinese Renminbi (RMB) and the Taiwan dollar across the Taiwan Strait, which could help develop Taiwan into a local RMB hub. By the end of August, 2014, the statistics indicated that total RMB deposits have reached 295.24 billion, among them, designated foreign exchange banks (DBU) deposit balance of RMB 243.363 billion and offshore Banking unit (OBU) deposit balance of RMB 51.881 billion.

Since domestic RMB deposits hit the threshold of 290 billion, a net increase of RMB 5.2 billion was only seen over the past three month and failed to surpass 300 billion. Now that RMB deposits have entered a phase of stable growth, rapid growth or decline will be unlikely to take place in the near future.

IV. Income and wealth inequality in Taiwan.

Before the Asian economic recession occurred in 1997, Taiwan was praised by many not only in its high economic growth but also in its low inequality and modest income disparities when compared to the developed countries (Gottschalk and Smeeding, 1997). However, the economic gap was widened a bit as slower growth hit unevenly after the financial crisis in 1997. Things became much worse after the ruling party was rotated by DPP in 2000.

To measure the extent of inequality, we use the Gini coefficient and the income share ratio. One of the most commonly used measures to reflect income inequality is the Gini coefficient, in which “0” stands for a perfect equity and “1” is absolute inequity. The income share ratio is also measured by comparing the rich group (the highest 20%) and the poor group (the lowest 20%). In Table 6, we can see that the income inequality is low in the late 70’s and early 80’s. The best year among them is in 1980. In that very year, the Gini coefficient is 0.278 and the income share ratio is 4.17.

Table 6. Indices of Household Income Inequality.

Year	Gini coefficients	Income share Ratio (highest 20% to lowest 20%)	Consumption share ratio (highest 20% to lowest 20%)	Saving share ratio (highest 20% to lowest 20%)
1976	0.28	4.19	3.34	16.54
1977	0.284	4.21	3.37	11.69
1978	0.287	4.18	3.25	12.61
1979	0.285	4.34	3.25	16.89
1980	0.278	4.17	3.08	14.69
1981	0.281	4.21	3.01	14.60
1982	0.283	4.29	3.05	17.61
1983	0.287	4.36	3.04	21.17
1984	0.287	4.40	3.09	27.87
1985	0.291	4.50	3.12	27.77
1986	0.296	4.60	3.15	25.51
1987	0.299	4.69	3.33	18.24
1988	0.303	4.85	3.29	22.51
1989	0.303	4.94	3.30	22.29
1990	0.312	5.18	3.38	25.58
1991	0.308	4.97	3.28	18.34

1992	0.312	5.24	3.37	21.71
1993	0.315	5.43	3.38	29.15
1994	0.318	5.38	3.56	23.78
1995	0.317	5.34	3.62	23.79
1996	0.317	5.38	3.54	45.12
1997	0.32	5.41	3.53	32.87
1998	0.324	5.51	3.63	30.23
1999	0.325	5.50	3.70	25.12
2000	0.326	5.55	3.64	44.38
2001	0.35	6.39	3.88	-
2002	0.345	6.16	3.67	-
2003	0.343	6.07	3.71	428.18
2004	0.338	6.03	3.87	353.70
2005	0.34	6.04	3.80	-
2006	0.339	6.01	3.86	3575.34
2007	0.34	5.98	3.73	-
2008	0.341	6.05	3.74	-
2009	0.345	6.34	3.72	-
2010	0.342	6.19	3.77	-
2011	0.342	6.17	3.77	-
2012	0.338	6.13	3.66	-
2013	0.336	6.08	3.76	-

“-“ indicated an mathematical error for a negative savings for the lowest 20% of household savings share.

Since 1980, the inequality so as measured increases gradually. In 2001, the Gini coefficient and the income share ratio reached 0.35 and 6.39 respectively. It is the worst year indeed. Consumption share ratio, which is the ratio of consumption by the highest 20% to that of the lowest 20%, shows a similar pattern. Saving share ratio reveals as an earlier signal since it is significant higher in that year and keeps the momentum. It turned out as a mathematical error with negative savings.

After looking into the changing pattern of the historical data, let us check for the pattern of recent years. Several interesting points are worth to be mentioned. In terms of global comparison, Taiwan still ranks as a fairly equitable society. The Gini coefficient for Taiwan is .336 in 2013. It is the lowest level since 2001. While Taiwan comes in higher measure of inequality than Sweden’s Gini coefficient of .27, as so calculated by the OECD in 2011, it fares better compared to the figure for the United States of .39 and far better than China score, the equivalent of .47 in the CIA

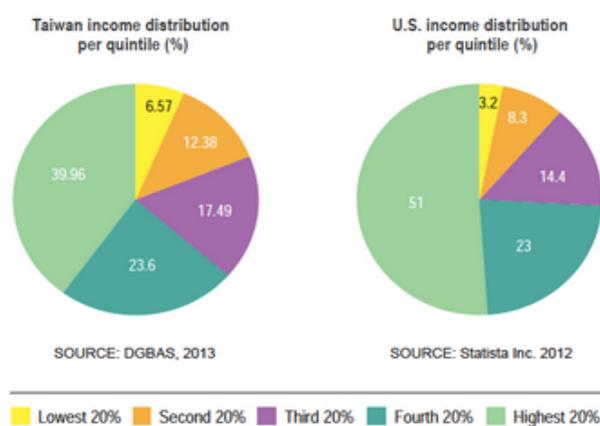
World Factbook.

From another perspective, the gap in disposable income between Taiwan's highest and lowest income earning households fell for the fourth consecutive year in 2013. Total household disposable income in Taiwan was NT\$9.79 trillion in 2013, up 3 percent from the previous year. Average disposable income was NT\$942,000 per household and NT\$294,000 per person. The disposable income of the bottom 20 percent income-earning households averaged NT\$309,459 (US\$10,337) in 2013, up 2.7 percent from the previous year, while that of the highest 20 percent averaged NT\$1.88 million, up 2 percent from a year earlier.

The average disposable income of the top 20 percent income-earning households was 6.08 times the average disposable income of the bottom 20 percent, down from 6.13 times the previous year and 6.34 times in 2009, when the ratio hit an all-time high. Following Ferry (2014)², we use pie chart to compare income distribution per quintile between Taiwan and USA. Please See Chart 2 for more details. In 2013 the top 20% of income-earners in Taiwan accounted for 39.96% of total earnings, while the bottom fifth earned 6.57%, according to the DGBAS. In the United States, by contrast, the top 20% earned 51% of total income, versus just 3.2% for the bottom 20%, as calculated by online statistics provider Statista Inc. Actually, Taiwan is better.

We can attribute the narrowing gap to the government's efforts to promote social welfare policies for the disadvantaged and elimination of some tax loopholes as well as increasing taxation for high income households, which has lifted the incomes of low-income families somewhat.

Chart 2. Annual Household Income Distribution by Quintiles (20%), Taiwan and the USA

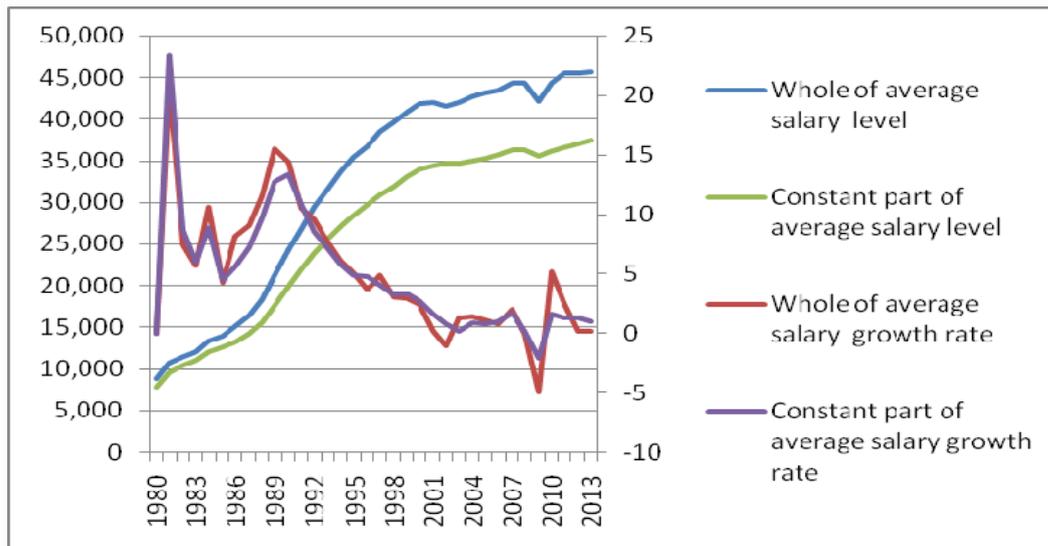


Source: DGBAS and Statista Inc.

Ferry, T. (2014), "In Search of Economic Equality", *Taiwan Business TOPICS magazine*, Vol. 44-No.9, 30-33.

However, wage incomes in Taiwan have been nearly flat for a decade or more, even as housing prices skyrocketed and luxury cars crowded the streets. Mounting inequality is now a common theme for daily discussion. People can strongly assert that “the trend is clearly worsening.” See Chart 3 for the comparison over time.

Chart 3. Whole and Constant part of average salary in Manufacturing and Service Industry.



Source: DGBAS

The generation gap of future outlooks can be seen from the real estate prices. Statistics released by the Construction and Planning Agency (CPAMI) showed Taipei City's home price to income ratio (PIR) stood atop the globe at 15.01 in late 2013, branding itself as the most unaffordable city to buy property. The PIR equals to 15.01, meaning that the average cost of the purchase is equal to more than 15 years of income for a typical homebuyer. The PIR results of 20 Taiwanese cities/counties based on data collected from the actual housing transaction price registry system. It is a compulsory registry system, which records actual selling prices and was launched in August 2010.

PIR is designed as an effort to curb speculation in the housing market. Until then, accurate information on sale prices in the housing market was hard to come by, enabling the land developers and real estate brokers to manipulate housing prices. From the calculation released in April by the Ministry of Interior's Construction and Planning Agency, the average housing price-to-income ratio in Taipei at the end of last year was 15.01, meaning that the average cost of the purchase is equal to more than 15 years of income for the typical homebuyer.

CPAMI's compilation indicated that Taiwan's average PIR was 8.37 in late 2013, with Taipei, New Taipei and Penghu County above the average at 15.01, 12.67 and 8.65 times respectively. Pingtung County, Keelung City and Miaoli County were cities with relatively affordable housing in Taiwan. Their PIR stand at 4.51, 4.84 and 5.91, respectively. Please refer to Chart 4 and Table 7.

According to the Demographic International's 2014 Housing Affordability Survey published in January this year, Hong Kong was branded the most unaffordable, followed by Vancouver and San Francisco. The survey said that Hong Kong's average home price rose to 14.9 times gross annual median household income from 13.5 times in 2013, the highest level ever recorded by the survey in its 10-year history. With the PIR at 15.01 and 12.67, Taipei City and New Taipei City have edged out Hong Kong and San Francisco for the top and third spots among the world's most unaffordable cities to buy property.

Younger Taipei residents are fed up—and as the response in other countries in this region, at least some of that rancor is directed at China. There was a series of rioting protests in March and April over a proposed trade pact with the mainland China. Young people feared that Chinese investors would flood the housing market even more. (The protest also stymied the trade deal in service industry.)

In short, it was the sharp inequality occurred in purchase of housing assets that really divided the rich from the poor, other than increasing income disparity. The social policy aimed to bridge the gap between the rich and the poor, if any, should focus more on availability of housing assets for the young and the poor.

Chart 4. Home Price to Income Ratio in Taiwan.



Source: the Construction and Planning Agency (CPAMI)

Table 7. Home Price to Income Ratio (PIR) in Taiwan

Year	Whole Country 全國	New Taipei 新北市	Taipei 台北市	Taichung 台中市	Tainan 台南市	Kaoshiung 高雄市
2014Q1	7.51	12.40	14.60	7.47	5.86	7.51
2013Q4	8.37	12.67	15.01	8.14	6.35	7.34
2013Q3	8.95	12.90	14.88	8.02	6.22	7.62
2013Q2	8.95	12.79	15.21	8.21	6.17	7.64
2013Q1	8.35	12.22	15.52	8.37	6.45	7.47
2012Q4	7.79	11.37	14.80	8.04	6.53	6.84
2012Q3	7.46	11.41	15.47	7.62	6.62	6.78
2012Q2	8.05	11.17	15.47	7.82	6.61	7.23
2012Q1	7.44	10.33	14.47	7.55	6.19	6.46
2011Q4	7.29	10.16	13.72	7.34	6.32	6.33
2011Q3	7.29	10.14	14.22	7.33	6.14	6.39
2011Q2	7.30	9.96	13.63	7.27	6.13	6.14
2011Q1	7.31	9.34	12.94	7.29	6.09	6.35
2010Q4	7.11	9.04	12.89	7.58	6.06	6.13
2010Q3	7.01	9.29	12.96	6.94	5.75	5.94
2010Q2	6.99	9.02	12.82	6.70	5.73	5.84
2010Q1	6.80	8.61	11.97	6.43	5.50	6.13
2009Q4	6.67	8.72	11.57	6.76	5.42	6.15
2009Q3	6.55	8.48	10.87	6.59	5.48	6.14
2009Q2	6.45	8.08	10.30	6.82	5.57	6.22
2009Q1	6.19	7.99	9.74	6.97	5.69	5.91
2008Q4	5.87	7.40	8.79	6.01	5.27	5.13
2008Q3	6.09	7.81	8.65	6.23	5.35	5.55
2008Q2	6.25	7.77	8.50	6.29	5.40	5.88
2008Q1	6.13	7.71	8.33	6.14	5.44	5.64
2007Q4	5.76	7.77	8.28	6.34	5.55	5.88
2007Q3	5.33	7.74	8.21	6.48	5.61	6.07
2007Q2	5.46	7.70	8.14	6.03	5.65	6.35
2007Q1	5.15	7.68	8.09	5.77	5.73	6.08
2006Q4	4.97	7.83	8.25	5.41	6.12	6.67
2006Q3	5.30	7.78	8.16	5.60	6.14	7.05
2006Q2	5.17	7.73	8.08	5.56	6.17	6.80
2006Q1	5.19	7.69	8.00	5.43	6.20	7.01
2005Q4	4.97	7.68	7.10	5.27	6.26	6.45

2005Q3	5.25	7.37	6.58	5.56	6.29	6.59
2005Q2	5.25	7.25	6.54	5.36	6.29	6.34
2005Q1	5.01	7.34	6.22	5.49	6.18	6.11
2004Q4	4.84	7.27	6.22	5.36	6.20	6.39
2004Q3	4.63	7.09	6.19	4.94	6.10	6.25
2004Q2	4.70	6.83	6.17	4.77	5.99	6.10
2004Q1	4.70	6.60	6.14	4.80	5.86	5.77
2003Q4	4.59	6.62	6.40	4.86	5.83	5.54
2003Q3	4.50	6.57	6.25	4.77	5.70	5.39
2003Q2	4.43	6.51	6.39	4.88	5.41	5.16
2003Q1	4.41	6.46	6.16	4.89	5.33	5.13
2002Q4	4.26	5.98	5.89	4.85	5.15	5.06
2002Q3	4.15	6.01	6.16	5.02	5.26	4.69
2002Q2	4.43	6.24	5.96	4.84	5.53	4.78
2002Q1	4.47	6.36	6.06	4.94	5.70	5.20

Source: the Construction and Planning Agency (CPAMI)

On the Chart 5, we show the trend of income growth over a span of several years, which cover three separate administrations. Household disposable income of the third, sixth and ninth deciles are contrasted. The base year of 1999 came with no major election and was already more than a year after the Asian financial crisis. Plots above the level curve of 1 would indicate positive income growth relative to the base year income and vice versa.

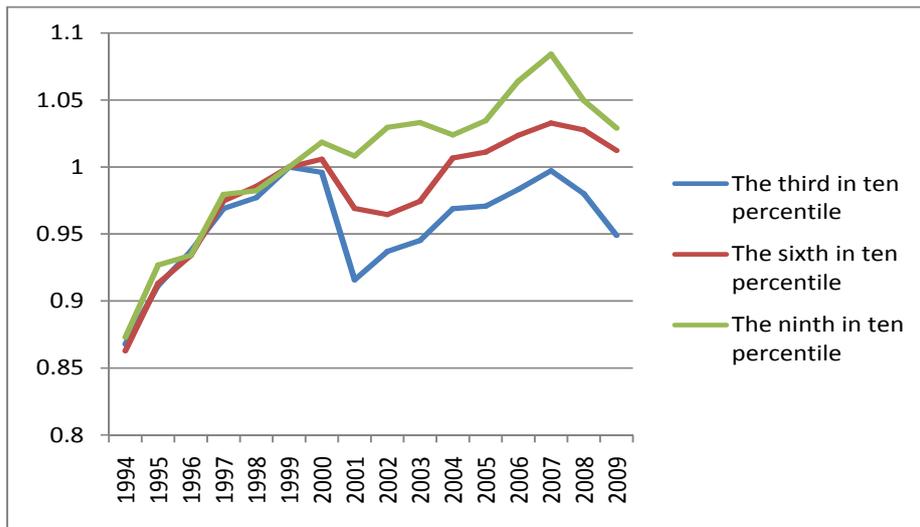
The deflated series indicate that income growth before 1999 could be correctly anticipated and were quite similar to households of different income levels. When there was an economic downturn, such as the one early of this century, lower income household got hurt more by a drop from 4 to 8% for the third and sixth deciles. Another feature observed is that the representative household at the third percentile does not recover fully from their income loss. Interestingly, household income at the ninth percentile does not show much fluctuation in downturn but gain much more than other groups during an upshot over time³.

Since year of 1999, we observe some pressure for overall income growth. We plot wage profiles over age groups in Chart 6. There was wage growth for most age groups between 1994 and 1999, from fifteen to twenty percents. Thereafter, the wage profiles stagnate quite sometime for more than a decade. Thus young people

³ We also examine trend of income changes and contrast the combination of various deciles. The messages derived out are quite close to this chart. Namely there are unrecovered income loss for the bottom three deciles and increasing income gap for the higher deciles.

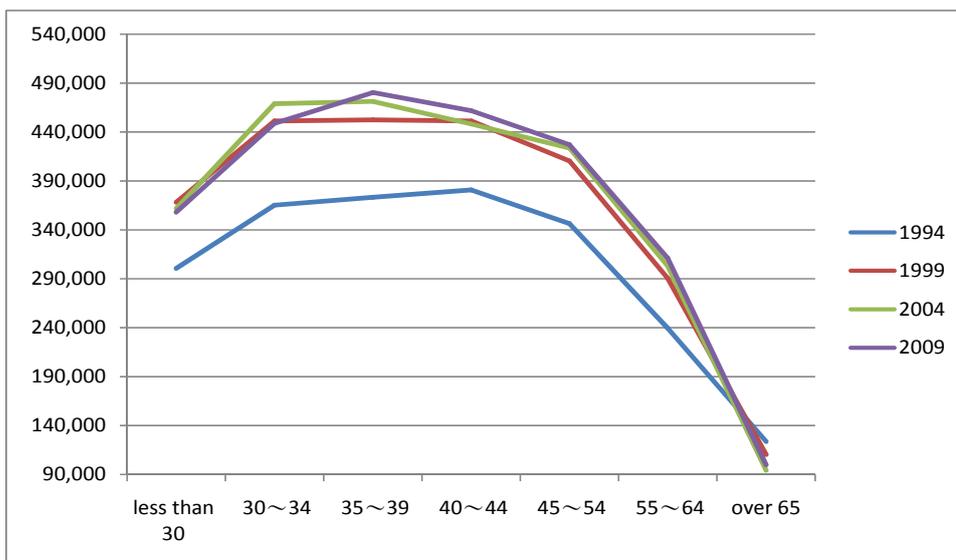
of less than thirty years old in 1994 could experience wage increase both from overall increase of wage profiles as well as the gain of age premium. It amounted to an increase of 50 percents in five years for the 1994 cohort while latter cohorts can gain only by being aged, i.e., through working experience. By the age of 35, their earnings would be over a third less than the cohort of 1994.

Chart 5. Growth of household Disposable Income by the Third, Sixth and the Ninth Deciles, Taiwan, 1994 to 2010



Source: National Statistics

Chart 6. Age Profiles for Employees, Taiwan 1994~2009



Source: DGBAS

V. Reasons of the Widening Gap

How can these contradictory views regarding phenomena of Taiwan's inequality and observed equality out of data analysis be reconciled? In retrospect of the ever changing effort made by Taiwan society, the China factor affects in all dimensions. Notice that the rise of Chinese economy into an industrial centre was mainly powered by cheap labour, which posed an extreme challenge to Taiwan's manufacturing sector starting in the early 90's.

Most companies responded at the outset by shifting the manufacturing load to China while some chose to automate production lines at factories retained in Taiwan. For instance, some 40% of Taiwan's export to China is from ICT production, which is readily automated. In addition, the contract-manufacturing model prevailed in most Taiwan industries have evolved strongly in the absence of global branding.

Unfortunately, this survival strategy leads to a focus on cost-cutting continuously that also presses for lower wage level. Under the pro-growth belief kept in the government, Taiwan's policy makers always seek ways to drive exports up in order to strengthen GDP growth. In doing so, they have ignored the hard evidence that "the linkage between GDP growth and wages has broken." These efforts simply worsen the problem of inequality. As such, the overall impact out of public policies needs to be studied carefully.

Firstly, there are problems out of inequality measurement in the index designed. The Gini coefficient and the ratio of disposable income of the highest 20% to that of the lowest 20% both measure the distribution of household disposable income. Normally the household is thought as a representative family. But modern nuclear family composes of various people. Thus the index adopted above can look quite different across income levels. We are not sure if it measures per capita income closely or income of atypical household across income level.

Secondly, what matters more to the actual living standard and plays an important key for social stability is the income after transfer payment. Behind the calculation of disposable income, it measures income after taxation and redistribution through social-welfare and benefits, both referred as transfers by economists. However, taxes and transfers can have a strong impact on the calculation of Gini coefficient. For example, the OECD gave Japan a reasonably equitable Gini coefficient of .34 in 2009 while by using market-income, the calculation would be rated as highly unequal, at .49. As Taiwan government spend a lion share of annual budget to social welfare and the marginal tax rate for income observed by the Tax bureau can be as high as 42

%. It is calculated as the highest level of tax rate at 40% plus the 2% of health insurance, subsidy fee introduced recently.

Table 8 shows the effects of transfer both from the government and to the government on the ratio of disposable income of highest 20% to that of lowest 20% and the transfer effects. We can see that the effect of transfer on this ratio is quite large. Transfers do influence on the ratio calculated. The largest effect is at 1.876 in 2009 and remains around 1.5 in recent years. The income disparity between the top 20% of the population and the bottom 20% stands at 7.53 times before taxes and transfers, but falls to 6.08 times when taxes and transfers are factored in. We can see the effect on the ratio is big. The government currently provides up to NT\$14,000 per month as a cash subsidy for low-income people, as well as allowances for the elderly, handicapped, and farmers. In addition, the government waives school fees and provides free meals for underprivileged children. In 2011, amendments to the Social Assistance Act raised the poverty line to enable more needy families to receive help, almost doubling the number of people eligible for assistance. All of this social spending has caused social welfare to rise from about 8% of the central government budget 20 years ago to 20% today. The transfers do have influence on the ratio. The largest effect is 1.876 in 2009 and remains around 1.5 in recent years.

Furthermore, the above indices are calculated with market income only. Many rich people in Taiwan hold the income stream which cannot be observed, not to say to be put into the category of taxable income. Part of the reason is that the tax system is invalid for capital gain in the capital market and property exchange. Even more important, Taiwanese businessmen tend to have huge investment through overseas channels. They might set up companies in tax haven, for example, at Bermuda, British Virgin Islands, Cayman Islands, etc. They may park money in overseas accounts, often found in Singapore or in Hong Kong.

The billions of dollar outflow made as Taiwanese investments in China have generated high returns indeed. Through time, a great deal of untraceable and undeclared money returns to Taiwan and contributes to the maintenance of affluent lifestyles for one segment of the population. More and more supercars like Ferrari, Lamborghini, Porsche, etc roar on the streets other than luxurious sedans like Merced Benz, BMW. All too often, these dream cars are driven by young people, second generation out of the rich family. They seem quite arrogant and aggressive, which make walkers-by despicable. Thus, people do feel the inequality is getting higher than before while the use of Gini figure does not catch much of the phenomena.

Other factor responsible for the under-measurement of inequity as well is the operation of domestic underground economy. Street vendors are so emblematic of local culture and do not declare their full earnings. Of course, unofficial market

transactions are common in many countries. As yet, the size of Taiwan's underground economy remains unclear.

Table 8. Ratio of Disposable Income of Highest 20% to that of Lowest 20% and the Transfer- effects, 1980 to 2013

	Ratio before all the transfers	Ratio-after plus gov't transfers	Report Ratio- after all transfers	Effect from plus gov't transfers	Effect from transfers to gov't	Transfer-effect
1980	4.305	4.265	4.173	0.04	0.091	0.132
1981	4.327	4.302	4.209	0.024	0.093	0.118
1982	4.408	4.383	4.288	0.025	0.095	0.121
1983	4.512	4.471	4.358	0.041	0.112	0.154
1984	4.535	4.49	4.399	0.046	0.091	0.136
1985	4.635	4.593	4.498	0.042	0.095	0.137
1986	4.784	4.707	4.6	0.077	0.108	0.185
1987	4.882	4.803	4.692	0.079	0.11	0.19
1988	5.053	4.947	4.85	0.106	0.097	0.203
1989	5.176	5.03	4.937	0.146	0.094	0.24
1990	5.525	5.299	5.183	0.226	0.116	0.342
1991	5.315	5.072	4.975	0.243	0.098	0.34
1992	5.565	5.339	5.245	0.226	0.095	0.321
1993	5.764	5.505	5.425	0.259	0.08	0.339
1994	5.792	5.486	5.379	0.307	0.107	0.414
1995	5.934	5.434	5.34	0.5	0.094	0.594
1996	6.174	5.491	5.385	0.683	0.107	0.79
1997	6.249	5.532	5.407	0.718	0.124	0.842
1998	6.494	5.655	5.514	0.839	0.141	0.98
1999	6.468	5.651	5.502	0.818	0.148	0.966
2000	6.568	5.688	5.548	0.88	0.14	1.02
2001	7.667	6.536	6.391	1.132	0.145	1.277
2002	7.469	6.293	6.161	1.176	0.132	1.308
2003	7.319	6.198	6.075	1.12	0.123	1.244
2004	7.413	6.173	6.027	1.24	0.15	1.39
2005	7.447	6.183	6.036	1.26	0.15	1.411
2006	7.454	6.16	6.006	1.294	0.154	1.448

2007	7.523	6.119	5.981	1.404	0.138	1.542
2008	7.732	6.203	6.046	1.529	0.158	1.687
2009	8.219	6.473	6.343	1.746	0.13	1.876
2010	7.719	6.301	6.194	1.417	0.107	1.525
2011	7.753	6.321	6.166	1.432	0.155	1.587
2012	7.703	6.285	6.126	1.418	0.159	1.577
2013	7.529	6.22	6.084	1.309	0.136	1.445

Source: DGBAS.

Besides, the distinction between wealth and income is also important. The Gini index is an equation that can be used to measure inequality in a number of situations. However, as it is used in global comparison, Gini gauges inequality in income only. For economists, “income” is defined as the flow of payments received over a specified period of time. In Taiwan, income is calculated per year and includes payroll, wages, subsidies, property income from rent as well as transfers from government or enterprises. Wealth, on the other hand, is the accumulated store of possessions, including assets, property, land, equities and pensions, among others. In many countries, relative equality in income belies relative inequality in wealth, with property values a crucial difference.

Although we cannot have a measure of wealth inequality directly, we can use the housing price as a proxy to study the inequality of wealth in this society. From Chart 5 and Table 8, we can see the rocketing real estate prices in recent years. What factors producing high housing prices can attribute to different reasons. Among them, the hidden force is mostly related to the financial crisis in 2008.

The homeowners in Taiwan in fact own 2.66 properties on average. Suffering in the giant economic storm, Taiwan export reduced 40% in the Q4 of 2008. During the 2008 downturn, a number of poorer families lost their homes as the wealthier people bought them up. Furthermore, to reduce the impact of financial crisis, Taiwan government lowers inheritance and gifting taxes. The highest marginal rate was at 50% and was modified to a flat rate at 10%.

This change in tax codes attracts a lot of overseas wealth owned by Taiwanese business. However, there were few investment opportunities and full of gloomy market prospects. These tax cuts have encouraged the return to capital and back to Taiwan for investment in property, further pushing up real estate demand. Thus, further concentration of wealth resulted. The concentration of wealth is not registered in Gini coefficients or other metrics of inequality although it may have serious consequences for this society.

As to the quantitative easing, monetary policy made by Federal Reserve Bank in US has a big impact in Taiwan as well. Although there was no major sub-prime crisis

in Taiwan, the interest rate movement is linked through no arbitrage condition for a small open economy. Therefore, the interest rate in Taiwan is lowered to near zero level. People in the market can use leverage to borrow money from banks and buy a lot of real estate and land with cheaper cost. This is only magnified by the inadequacy of Taiwan tax law system on the real estate.

The real estate law was designed by Sun, Yat-Sen when he founded the country. The idea is that benefits from the land price increasing should return to the public. Therefore, Taiwan government taxes the real estate by separating land and building, using the official announced prices instead of market prices. The problem is that the official announced prices are often far below the market prices. This make the holding cost of housing exceptionally low, about .1%, instead of 1 or 2% in most of the western countries. With low interest payments, property tax bills and there is little penalty for land hoarding, many speculators buy more than one property and wait for the real estate market to rise. The rapid change of the aging effect is driving up prices too; seniors tend to have the means to demand fancier—more expensive—properties, discouraging the development of apartments that might be in the reach of younger people.

Therefore, changes in tax policies do have a considerable impact on Taiwan's property market. Following the lead of Singapore and Hong Kong, Taiwan also lowered its capital gains tax from land during Chen Shui-Bian's administration. This built in a substantially important force in the real estate market. Taiwan's regulators made things worse in 2011 by levying a special transaction tax on luxury goods, including the real estate that are sold on within a short period. Under its terms, the owner of a property suffers a 15 percent tax on its sale price if it is sold within one year of its purchase, falling to 10 percent if it is instead sold during the second year. This mimics the stamp tax imposed in Hong Kong and Singapore.

This luxury tax policy does cool down the market temporarily but that's done little to contain prices. People buying the property can wait for two years to sell as the tax is heavy and can illuminate all the profit later on. In the mean while, speculators have no pressure to sell properties since the interest rate and user tax is so low. Even under any emergency in the capital mismatch, they can still use the property as the collateral to borrow money from banks, with low cost and little legal burden. Apparently, The tax's current structure does not catch those wealthier investors who "hoard" several properties and can afford to wait for longer than two years before realizing their gains. It is not known if the new tax reform about the capital gains tax system would supplement or replace the luxury tax.

Finally adding to the complexity of the subject is the China factor. Most economists agree that money from China – either from Taiwanese who have earned

their money on the mainland, or directly by the Chinese purchasers – has had a big impact on the property market. Paltry returns on business investments in the wake of the financial crisis and lingering weakness in export destinations make investing in industry less attractive. Besides, stock market gains are now subject to capital gains taxes, pushing investors to seek returns from elsewhere. Low property tax rates, low interest rates and fairly easy access to mortgages only fuel strong demand for property. To pursue after higher return yields, most hot money goes to the property market.

All factors above have driven up housing prices to the point where Taiwan has the highest property prices in the world relative to average incomes. The situation has important implications for Taiwan's wealth gap and inequality. According to social scientists, higher economic inequity leads to greater social unrest. Some scholars do see the Sunflower Movement as such an example. The need to address inequity thus becomes a matter of national security. However, to actually ameliorating the situation requires deep changes in this country's economic health and perhaps its cultural linkage to wealth hoarding.

VI. Proposals for Remedial Policy

Certainly Taiwan is not unique in facing a gloomier economy of limited opportunities and increasing inequity. Although there are difficult issues out of domestic matters, most troubles are similar to experience occurred in other countries globally. In the following, we propose several suggestions as possible prescription to lessen the current hardship.

Expanding the economy wisely

To expand the domestic economy is perhaps the best way to reduce inequality along the economic reasoning. As the whole economy grows, people in the lower level of the society should have better opportunities to be lifted up. Since the year of 2000, Taiwan suffered from low growth rate, compared both to her past performance as well as to the neighbour counties. With the year of 2010 came as an exception at the growth rate of 10.77%, partly due to a lower base year right after the financial crisis.

Folk wisdom is to maintain a good relationship with China and to further deregulate service sectors. These are the most important objects to pursue in order to accelerate the economy. However, the policymakers should also propose ways to drive up wages. Although the service-trade agreement is currently taken as fraught with some risk, the perception that service trade may compete head to head in people,

steal valuable information, chunk away capital and do harm to the national security amounts to nothing other than fear and cowardice. This service pack actually provides best opportunity for Taiwan to be recharged.

All the risk can be assessed fully and controlled if prepared in advance. No attempt with serious deed will be rewarded with any gain. Then the stagnation in this island economy will continue. With about seven tenth of GDP generated by the service sector, chance for winning competition in service trade should come at no surprise. Besides, one easy way to expand demand for services is to attract foreign consumers – that is to promote tourism. Under a specific agreement in tourism, Taiwan has done remarkably well in this regard in the past few years.

Another approach is to expand service demand in overseas markets, which is the main theme of the Cross-Strait Agreement on Trade in Services to be accomplished. As an export-oriented economy, Taiwan needs a full expression to its economic strength and industrial advantage even more so under the ongoing European debt crisis. The global economic slump and obstacles imposed by the rise of regional economic integration will cause obstacles for Taiwan and must be dealt with smartly.

Thus, the most urgent policy for development is to carry out the economic stimulus plan and establish the free economic pilot zones. These policies have well planned for some time and yet the necessary bill related has been sitting passively in the legislative Yuan. Legislative efficiency and determination in the policy making should be critical to lift up the situation of a stagnant economy.

Effective communication

The Sunflower Movement protested the above winning strategies and attracted support not only from people opposing to the trade pact firmly, but also from forces of other consideration with fear – they are backers of Taiwan independence, those with anti-China sentiments, etc. Certainly opponents of myths and secret (black box) dealing by the government and critics of President Ma would join with those affected by the current economic/political situation. This wide mix of opposition force is perhaps indicative as income inequality and a lagging economy stirred social unrest. Unfortunately, this administration failed to communicate the benefits of the service pact to the public effectively. Mistrust and bad communication means that the government policy will be misunderstood and suffers further from minor deficiencies. For example, the government plan does call for compensation to industries harmed by the pact, such as printing and hose knitting, but budget for necessary aid is not ready and will be assembled only after proof of harm.

Assistance in the printing industry needs upgrading its technology and finding out ways to become competitive. However, most reliefs need better communication.

The issue of inequality remains highly contentious while experts also diverge in interpreting the analysis of data. How does inequality have impact on crime rates, accessibility to good nutrition and educational opportunities? As to the overall quality of life, how should we assess of cheap consumer goods, readiness of healthcare, and availability of rental housing in measuring inequality? Pundits and politicians will weigh these factors with varying standards. The only certainty is that this issue is not likely to disappear anytime soon. Therefore, better communication with open debate and support of opinion leaders are important steps to move forward.

Assist to young generation

Low starting incomes for newly graduates is not easily solved according to Principal Economics. Not to say that Taiwan has one of the highest proportions of college-educated people in the world. Most of them also expect a white-collar job upon graduation. Over the past decade, the number of students earning bachelor's degrees doubled, master's-degree earners tripled, and doctoral degrees quadrupled. Unfortunately, that leads to a surplus of highly educated labour force – and by the immutable law of supply and demand, a lowering value of each.

Although college graduates do complain often about the shortage of suitable employment opportunities, many job vacancies in Taiwan for skilled labour and technicians go unfilled. Some jobs pay better than office jobs, such as in the manufacturing sector or in mechanics. However, these jobs demand overtime work regularly, offer one-day off weekly, and force young people to lower their “reservation wage” as well as expectation of “social position”

Young people need to adjust their mindset and open full arms for various job opportunities. The serious mismatch shows that students' degrees and talent cannot meet with the needs of industry. Therefore the education system needs to establish new programs aimed at steering students toward practical degrees. Under the Economic Power-Up Plan initiated in 2012, for example, it is to foster coordination between industry and academia to cultivate talent with needed skills so and so that students are prepared to earn more than the starting salary of NT\$22,000.

The number of universities has expanded dramatically in the 1990s with policy designed to provide young people with more schooling opportunities. Schools of higher learning now have difficulty recruiting enough students. In the end, to reduce the number of universities such as to make entrance more competitive and requirement for graduation harder may train students better. When students are more prepared for job performance, they may get better opportunity in return.

Great step toward tax reform

Taiwan needs a reform of capital gains tax on property, based upon actual market transaction prices, rather than locally assessed values by bureaucracy. The measure should also suppress speculative activity in real estate market and improve the affordability of housing in the Taipei area by reducing the current price to income ratio (PIR), to 10:1, from 15:1 currently. Profits out of property transactions should be calculated on the basis of actual land and buildings market prices.

Currently, the values used to calculate land value increment tax liability is far below their actual value. Land tax is levied on the basis of the assessed value determined by local authorities. Also, capital gains out of housing transaction will be consolidated into a taxpayer's income, rather than taxed separately.

This focus on combating speculation alone ignores some problems of deeper roots. For instance, Taipei needs to replace old buildings with new ones, but the pace of this urban renewal is quite slow. More effort is needed indeed. To reduce the chance for struggle, there should be exclusions available for primary individual residencies and for sincere farmers. Special rates should also be introduced, dependent on the length a property held.

Currently, many of Taiwan's business tax incentives go to the ICT sector, which tends to be capital-intensive and light on employment, exacerbating wealth disparity. The government should adopt an industrial policy that encourages industries other than ICT, with a particular emphasis on SMEs, which are responsible for half of the employment in Taiwan. Tax policies could also be adjusted to raise more revenue from the wealthy to help support social welfare programs for poorer families. The existent policy is essential to ensuring the well-being of Taiwan's citizens and to reduce inequality.

Global and regional cooperation

Thomas Piketty, the French economist and author of the current bestselling book *Capital in the 21st Century*, observes that economic inequity in developed countries is at levels last seen in the Gilded Age in the late nineteenth century. Member states throughout the OECD are all experiencing a rise in inequity. The causes are numerous and perhaps inevitable. Globalization may play a significant role. As labour cost now competes globally, businesses are free to roam the planet in search of the cheapest workers.

While inequality is growing within countries, on a global scale inequality is actually diminishing, as more jobs move away from high-cost markets to cheaper frontier markets. Many economists regard technology as an even bigger factor in spawning inequality. Automation – mostly in blue-collar jobs but also increasingly in white-collar positions – has enabled manufacturing operations to expand without

increasing employment, transforming many industries from labour-intensive to capital-intensive activities.

Piketty's analysis shows that integral to capitalism is a higher return on capital and investments than on incomes. Factory owners and other investors therefore accumulate more of the benefits while incomes stagnate. The cure remains elusive. Given the inevitability of capital besting income growth, Piketty recommends redistribution measures such as global taxes on income and wealth. To prevent the rich from simply moving from high tax regions to low tax regions, that solution would require some sort of global agreement that no one regards as realistic.

VII. Conclusion and looking forward

From the outset, we already find similarities of income inequality in trend across countries worldwide. The young generations in East Asia bear most of the pressure from China speedy rise, which does cause some unease and anger. Although the increasing competition in world market as well as accumulation of capital will do well to many, the worrisome not to be able to own a housing asset at fair price seems so real to the young.

We identify that slow economic growth and housing bubble may force people to be antisocial and thus as the cause of social turmoil. However, matters become ever complicated in the case of Taiwan due to the long political standoff across the Strait. Other than the necessary adjustment and remedial solution to high price of real estate, the operation of housing market, the structure of mortgage loan and increasing supply of rental units may be redefined in more meaningful way. This is necessary to lessen the anger and resentment in the youth cohort.

One does not need to go too far as Singaporean government has tried a different approach to supply of public housing and subsidy through compulsory saving. It seems working well and can help the youth concentrate on learning and developing themselves rather than to become riots on streets. We do sympathize of the protesters from occupy wall-street movement all the way to the umbrella activities. Yet the political struggle, if lasting for too long, may lead to nonproductive learning and destructive action.