

The Housing Affordability Crisis and Government Policy Actions in Taiwan

Chien-Hsun Chen*

Summary

Following the 2008 global financial crisis, the so-called easy monetary policy or Quantitative Easing (QE) was adopted by the United States, Europe and Japan. Due to the free movement of capital around the world, an increase in the monetary base (QE) policy has tended to push up housing prices in Taiwan. Since Taiwan had experienced rising income inequality aggravated by higher housing prices and stagnant wages since the late 1980s, income distribution and housing affordability rather than political issues became salient for Taiwan's presidential election in January 2016.

As the effective demand for housing depends mainly on household income, the housing price and household income are two salient determinants of the affordability for home ownership. Taiwanese hold fast to the traditional Chinese value whereby 'whoever owns property owns wealth.' Housing has also been treated as an investment target for accumulating wealth. Indeed, the housing affordability problem is not on the supply side, but rather has to do with the excess demand for speculative investment.

To discourage speculation and increase land utilization, the vacant-land tax was suspended in 1985 and was reimposed in

2011. This tax scheme would increase the cost of land hoarding by 2% to 27.5%. Taiwan's Central Bank has implemented selective credit control measures in certain administrative regions since June 2010.

Taiwan's sluggishness in setting up high value-added industries resulted in worsening unemployment at 3.92% and low economic growth at 1.41% in 2016. If the Taiwan economy persistently lapses into a low-growth trap, the demand for housing purchases will accordingly decline. Due to the capital gains imposed on housing sales and the weak economic recovery, Taiwan's real estate market registered its lowest growth in 26 years in 2016, with a record of 244,000 real estate transactions.

Keywords: Housing Affordability, Government Policy Actions, Taiwan

JEL Classification: H12, H20, E52, R20

1. Introduction

According to a report prepared by Sinyi Realty Inc, average housing prices from 1995 to 2014 soared by 196.5% from NT\$229,000 per ping (3.3058 m²) to NT\$679,000 per ping in Taipei city and by 145.3% from NT\$150,000 per ping to NT\$368,000 per ping in New Taipei city. Home prices also increased by 89.3% in Taichung city and 80.3% in Taoyuan city (*Taipei Times*, 14 June 2015).

Meanwhile, as shown in Table 1, the housing price index (2013=100) in Taiwan started to soar from 90.26 in 2012Q3 and

* PhD in Economics, Visiting Senior Research Fellow, East Asian Institute, National University of Singapore and Research Fellow, Chung-Hua Institution for Economic Research, Taipei, Taiwan.

reached its peak of 115.19 in 2015Q4. The index increased from 91.39 in 2012Q3 to 108.87 in 2014Q3 in Taipei city. Moreover, the figure rose from 89.26 in 2012Q3 to 110.13 in 2015Q2 in New Taipei city (Construction and Planning Agency, 2017). Skyrocketing housing prices have become increasingly unaffordable for residents particularly in the metropolitan areas such as Taipei, New Taipei, Taoyuan, Taichung, Tainan and Kaohsiung. Consequently, members of the younger generation are increasingly unable to own a house in metropolitan areas. Furthermore, skyrocketing housing prices also triggered

a social movement (the Shell-less Snail Movement) that clamored for housing justice in 1989 (Chen, 2011).

Despite the fluctuations in housing prices, the percentage of housing self-ownership in Taiwan increased from 80.47% in 1990 to 88.14% in 2007, but subsequently declined to 84.23% in 2015. Furthermore, the average dwelling space per household increased from 33.9 pings (3.3058 m²) in 1990 to 44 pings in 2015, and the average per person dwelling space also rose from 8.1 pings to 14.19 pings over the same period (see Table 2).

Table 1. *Housing price index in Taiwan, 2012Q3–2016Q2*

Year/quarter	Taiwan	New Taipei	Taipei	Taoyuan	Taichung	Tainan	Kaohsiung
2012Q3	90.26	89.26	91.39	85.47	90.46	91.35	88.02
2012Q4	91.16	91.1	92.47	86.36	91.11	90.97	90.17
2013Q1	94.67	94.67	94.47	92.15	96.46	93.6	92.1
2013Q2	99.12	99.35	99.12	99.17	98.61	98.68	98.75
2013Q3	101.66	101.69	101.89	104.77	103.54	102.42	102.6
2013Q4	103.76	105.33	104.12	104.93	104.98	104.14	107.29
2014Q1	107.48	108.19	107.36	110.16	112.12	109.17	110.55
2014Q2	109.34	110.59	108.23	111.04	116.63	112.02	112.33
2014Q3	111.65	109.97	108.87	113.93	116.8	115	113.35
2014Q4	113.25	110.82	107.06	118.59	119.97	116.53	119.51
2015Q1	115.19	109.98	106	116.34	126.89	122.51	121.17
2015Q2	114.48	110.13	106.56	117.73	126.67	120.97	122.19
2015Q3	114.4	109.83	105.23	116.74	123.08	119.95	122.04
2015Q4	113.85	107.79	101.54	115.68	121.14	119.29	120.73
2016Q1	113.68	107.6	100.21	114.74	120.65	119.24	119.2
2016Q2	115.01	107.04	100.41	112.26	123.07	121.19	121.34

Source: Construction and Planning Agency, Taiwan.

Table 2. Taiwan's dwelling space and saving rate

Year	Average dwelling space per household (ping)	Average dwelling space per person (ping)	Self-owned housing (%)	Household saving rate (%)
1990	33.9	8.10	80.47	28.8
1991	34.4	8.27	80.40	29.88
1992	35.5	8.67	82.80	30.4
1993	36.0	8.77	81.88	30.74
1994	36.8	9.15	82.52	29.07
1995	37.2	9.43	83.56	27.15
1996	38.1	9.71	84.45	25.65
1997	39.2	10.21	84.57	26.52
1998	39.8	10.55	84.61	25.98
1999	39.6	10.91	84.91	26.29
2000	40.4	11.17	85.35	25.66
2001	41.0	11.45	85.64	24.27
2002	41.7	11.42	85.40	23.21
2003	41.9	11.86	85.11	24.42
2004	42.4	12.12	86.80	22.28
2005	42.2	12.34	87.33	21.63
2006	42.8	12.56	87.83	21.91
2007	43.3	12.82	88.14	22.49
2008	43.2	12.90	87.36	22.79
2009	44.0	13.16	87.89	20.5
2010	43.1	13.25	84.89	21.03
2011	44.0	13.38	84.58	19.71
2012	43.6	13.49	85.77	21.21
2013	43.5	13.54	85.34	20.62
2014	44.1	14.01	84.01	21.08
2015	44.0	14.19	84.23	21.27

Note: 1 ping=3.3058 m².

Source: Directorate-General of Budget, Accounting and Statistics (DGBAS), Taiwan.

In spite of the high percentage of housing self-ownership, housing prices continued to soar. The main reasons for this phenomenon have been identified and interpreted as follows. *First*, financial liberalization together with the

appreciation of the New Taiwan dollar (the official currency) in the late 1980s triggered a wave of foreign capital inflows (Chen, 2015). *Second*, Taiwan has a special tax system for real estate, in that its housing and land

are taxed separately, with a land tax being levied on the basis of the assessed value determined by the local authorities rather than the real market value. The declared land value is often undervalued, resulting in lower land taxes (Chang, Wu and Hsiung, 2014). Therefore, the costs associated with holding housing for speculative purposes are relatively low. *Third*, following the 2008 global financial crisis, the so-called easy monetary policy Quantitative Easing was adopted by the United States, Europe and Japan. Due to the free movement of capital around the world, an increase in the monetary base (QE) policy tended to raise housing prices in Taiwan. *Fourth*, on 12 January 2009, the Taiwanese government revised Articles 13, 18, 19, and 22 of the Estate and Gift Tax Act. According to the amendment, the ceiling of the estate tax rate was lowered to 10% from 50%, while the tax-free allowance was further raised to NT\$12 million (*China Post*, 13 January 2009). The reduced inheritance tax and the US Federal Reserve's quantitative easing facilitated an ample flow of speculative capital into the real estate sector. *Fifth*, low interest rates have also led to property speculation. Therefore, as a result of low interest rates, housing prices remained high and money has tended to stay away from the real sector of the economy.

Since Taiwan experienced rising income inequality aggravated by higher housing prices and stagnant wages since the late 1980s, income distribution and housing affordability rather than political issues became salient for Taiwan's presidential election in January 2016. For example, Kuomintang (KMT) presidential candidate Eric Chu proposed increasing the basic wage from NT\$20,008 to NT\$30,000 during his four-year term as president.

The presidential candidate of the Democratic Progressive Party (DPP) Tsai Ing-wen (incumbent President) presented a New Model for Economic Development together with job creation and an equitable income distribution. To solve the problem of

soaring housing prices, both candidates were competing based on the supply of public housing units. For example, Tsai proposed building 200,000 public housing units within eight years (Taipei Times, 1 October 2015), while Chu sought to create 200,000 social housing units in four years by turning existing unused properties into social housing units (Taipei Times, 22 November 2015).

Numerous empirical studies have been devoted to the housing market in Taiwan.¹ For example, the empirical results of Tsai and Peng (2012) suggested that housing affordability in Taiwan is stable. Kang and Liu (2014) have found that the housing prices are more affected by the 2008 financial crisis because of the high prices of real estate. Lai (2015) showed that the success of the Taiwan's housing refurbishment projects are heavily impacted by economic benefit and policy deliverables. The recent findings of Yang (2016) pointed out that there are 127,000 house owners who own more than four houses in Taiwan.

One very important issue of housing affordability crisis is how the government responds to the crisis. To date, surprisingly little attention has been paid to this critical issue. Therefore, this study uses policy-oriented approach to examine Taiwan's housing affordability crisis and attempts to provide a detailed assessment of the current economic policies in Taiwan. The present study explores how skyrocketing housing prices have become increasingly unaffordable for residents particularly in metropolitan. It further scrutinizes how the government tax and monetary policies affect skyrocketing housing prices. Indeed, this piece of research contributes to the existing literature on housing affordability crisis in several areas. First, the paper represents the first attempt to provide a comprehensive analysis of tax and monetary policy aimed at curbing the skyrocketing

¹ For a detailed analysis of Taiwan's housing market, see Global Property Guide (2017).

housing prices in Taiwan. Second, the paper finds that the rise in housing prices has certainly increased homeowners' wealth, which has accordingly deepened income inequality between the rich and the poor. Third, the paper documents that due to the capital gains imposed on housing sales and the weak economic recovery, Taiwan's real estate market registered its lowest growth in 26 years in 2016. The remainder of this paper is organized as follows. The next section presents the crisis of housing affordability in Taiwan. The third section describes the adverse impact of rising housing prices. The fourth section presents tax policy for curbing housing problem. The penultimate section explains monetary policy actions, and the final section presents the conclusions drawn from this study.

2. Housing affordability in jeopardy

According to the Directorate-General of Budget, Accounting and Statistics (DGBAS), in 2016, average monthly real wages decreased by -0.05% to NT\$37,334 which was lower than the NT\$37,801 in 2000 (DGBAS, 2016). In real terms, the wages of most Taiwanese have stagnated and have fallen back to the same level that they were 16 years ago.

Since the effective demand for housing mainly depends on household income, the housing price and household income are two salient determinants of the affordability

for home ownership (Hu, 2015). Speculative demand can affect the fluctuations in housing prices as well. Housing prices have risen far more rapidly than household income, which has been characterized by stagnant wage income, and this in turn has led to an affordability problem for home ownership in Taiwan.

There are two indices used to measure affordability in relation to home ownership, namely, the price-to-income ratio, for example, the median price of a house divided by median household income and the ratio of mortgage payments to household income.

According to the survey compiled by the Ministry of the Interior's Construction and Planning Agency, the housing price to income ratio in Taiwan increased to 9.35 in 2016Q3 from 6.13 in 2008Q1, representing an increase of 3.22. The increase was sharper in Taipei city where the ratio rose from 8.33 to 15.47, which is an increase of 7.14 over the same period (see Table 3). The ratio indicates that Taipei residents need to save all of their income for more than 15 years (in the absence of expenses) in order to buy a house.

Moreover, the ratio increased from 7.71 to 12.7, or by 4.99, in New Taipei city over the same period. With the exception of Taipei, New Taipei and Taichung, the ratios in other cities and counties are below the national average of 9.35, for example, 8.5 for Taoyuan, 8.61 for Kaohsiung and 7.44 for Tainan in 2016Q3.

Table 3. Ratio of housing price to incomes in Taiwan, 2008Q1–2016Q3

Year/quarter	Taiwan	New Taipei	Taipei	Taoyuan	Taichung	Tainan	Kaohsiung
2008Q1	6.13	7.71	8.33	5.98	6.14	5.44	5.64
2008Q2	6.25	7.77	8.5	5.93	6.29	5.4	5.88
2008Q3	6.09	7.81	8.65	5.49	6.23	5.35	5.55
2008Q4	5.87	7.4	8.79	5.22	6.01	5.27	5.13
2009Q1	6.19	7.99	9.74	5.74	6.97	5.69	5.91
2009Q2	6.45	8.08	10.3	5.86	6.82	5.57	6.22
2009Q3	6.55	8.48	10.87	5.86	6.59	5.48	6.14
2009Q4	6.67	8.72	11.57	5.87	6.76	5.42	6.15
2010Q1	6.8	8.61	11.97	5.88	6.43	5.5	6.13
2010Q2	6.99	9.02	12.82	5.83	6.7	5.73	5.84
2010Q3	7.01	9.29	12.96	5.99	6.94	5.75	5.94
2010Q4	7.11	9.04	12.89	6.16	7.58	6.06	6.13
2011Q1	7.31	9.34	12.94	5.87	7.29	6.09	6.35
2011Q2	7.3	9.96	13.63	5.97	7.27	6.13	6.14
2011Q3	7.29	10.14	14.22	6.12	7.33	6.14	6.39
2011Q4	7.29	10.16	13.72	6.15	7.34	6.32	6.33
2012Q1	7.44	10.33	14.47	6.48	7.55	6.19	6.46
2012Q2	8.05	11.17	15.47	7.29	7.82	6.61	7.23
2012Q3	7.46	11.41	15.47	6.51	7.62	6.62	6.78
2012Q4	7.79	11.37	14.8	6.86	8.04	6.53	6.84
2013Q1	8.35	12.22	15.52	7.34	8.37	6.45	7.47
2013Q2	8.95	12.79	15.21	7.14	8.21	6.17	7.64
2013Q3	8.95	12.9	14.88	6.93	8.02	6.22	7.62
2013Q4	8.37	12.67	15.01	6.95	8.14	6.35	7.34
2014Q1	7.51	12.4	14.6	6.66	7.47	5.86	7.51
2014Q2	8.34	12.8	14.25	7.09	8.15	6.18	7.64
2014Q3	8.39	12.81	15.19	7.24	8.3	6.49	7.64
2014Q4	8.41	12.78	15.73	7.11	8.35	6.54	7.72
2015Q1	8.46	13.02	16.16	7.17	8.53	6.69	7.88
2015Q2	8.69	12.95	16.1	7.9	8.83	6.8	7.91
2015Q3	8.52	12.54	15.63	7.69	8.65	6.8	7.9
2015Q4	8.51	12.66	15.75	7.5	8.9	6.74	7.87
2016Q1	8.46	12.43	14.9	7.62	8.87	6.96	7.67
2016Q2	8.97	12.51	15.07	8.21	9.34	7.33	8.11
2016Q3	9.35	12.7	15.47	8.5	9.42	7.44	8.61

Source: Construction and Planning Agency, Taiwan.

Articles

As housing prices have increased, those who are willing to buy a house will face the need to pay higher mortgage as well. Nationwide, the mortgage payment to income ratio jumped from 27.97% in 2008Q1 to 38.49% in 2016Q3, up 10.52% (see Table 4). The Construction and Planning Agency has suggested that a ratio of 30% is a healthy threshold. Ratios of between 30% and 50% are regarded as imposing a relatively high financial burden on households. Ratios higher than 50% impose an extremely high financial burden.

In Taipei city, the mortgage payment to income ratio rose from 37.94% in 2008Q1 to 63.71% in 2016Q3, up by 25.77%. In New

Taipei city, the figure increased from 35.15% to 52.33%, up by 17.18% for the same period. The ratios of 63.71% and 52.33% in 2016Q3 are far higher than the national average of 38.49% and are seen as an extremely heavy financial burden for households. Therefore, owning a home is more difficult for residents in the two cities. With the exception of Taipei and New Taipei, most of the cities and counties had mortgage payment to income ratios around the 30% threshold, for example, 38.79% for Taichung, 35% for Taoyuan, 35.48% for Kaohsiung and 30.64% for Tainan. As a result, Taipei city turned out to be the most unaffordable place for owning a house.

Table 4. Loan burden rate in Taiwan, 2008Q1–2016Q3

Unit: %

Year/quarter	Taiwan	New Taipei	Taipei	Taoyuan	Taichung	Tainan	Kaohsiung
2008Q1	27.94	35.15	37.94	27.26	28.01	24.82	25.72
2008Q2	28.59	35.53	38.87	27.13	28.76	24.72	26.88
2008Q3	28	35.93	39.79	25.23	28.64	24.6	25.53
2008Q4	26.72	33.64	39.99	23.72	27.33	23.95	23.31
2009Q1	25.94	33.47	40.83	24.06	29.22	23.83	24.77
2009Q2	26.86	33.65	42.9	24.43	28.43	23.23	25.93
2009Q3	27.27	35.33	45.26	24.39	27.47	22.82	25.59
2009Q4	27.73	36.25	48.09	24.42	28.12	22.54	25.55
2010Q1	27.92	35.36	49.16	24.14	26.43	22.58	25.17
2010Q2	28.75	37.08	52.7	23.97	27.54	23.54	24.01
2010Q3	29.1	38.55	53.75	24.85	28.79	23.87	24.66
2010Q4	29.34	37.33	53.22	25.43	31.28	25.03	25.33
2011Q1	30.37	38.83	53.78	24.39	30.31	25.31	26.42
2011Q2	30.51	41.66	56.98	24.98	30.39	25.63	25.67
2011Q3	30.62	42.59	59.76	25.69	30.81	25.78	26.84
2011Q4	30.52	42.53	57.43	25.75	30.73	26.46	26.5
2012Q1	31.31	43.48	60.88	27.25	31.76	26.03	27.19
2012Q2	33.82	46.95	65.01	30.64	32.84	27.78	30.39
2012Q3	31.41	48.01	65.1	27.39	32.07	27.86	28.52
2012Q4	32.78	47.85	62.26	28.86	33.85	27.48	28.76
2013Q1	35.29	51.69	65.64	31.03	35.41	27.27	31.61
2013Q2	37.85	54.11	64.33	30.19	34.73	26.08	32.3
2013Q3	37.85	54.53	62.88	29.29	33.9	26.28	32.2
2013Q4	35.36	53.51	63.37	29.37	34.37	26.81	31.02

Year/quarter	Taiwan	New Taipei	Taipei	Taoyuan	Taichung	Tainan	Kaohsiung
2014Q1	31.81	52.53	61.87	28.21	31.65	24.84	31.81
2014Q2	35.35	54.24	60.37	30.06	34.53	26.16	32.38
2014Q3	35.56	54.3	64.36	30.69	35.16	27.49	32.4
2014Q4	35.61	54.1	66.59	30.09	35.37	27.7	32.69
2015Q1	35.94	55.27	68.63	30.44	36.22	28.42	33.46
2015Q2	36.36	54.16	67.34	33.03	36.92	28.45	33.58
2015Q3	36.1	53.11	66.18	32.55	36.63	28.82	33.47
2015Q4	35.81	53.27	66.26	31.57	37.43	28.37	33.11
2016Q1	35.35	51.92	62.24	31.81	37.04	29.06	32.03
2016Q2	37.14	51.81	62.39	33.99	38.68	30.37	33.57
2016Q3	38.49	52.33	63.71	35	38.79	30.64	35.48

Source: Construction and Planning Agency, Taiwan.

3. Adverse impact of rising housing prices on savings and income distribution

Although the homeownership rate reached a record high of 88.14% in 2007, housing prices have continued to increase dramatically since the 2008 global financial crisis. Taiwanese hold fast to the traditional Chinese value whereby 'he who owns property owns wealth,' and housing has also been regarded as an investment target for accumulating wealth. Indeed, the housing affordability problem is not on the supply side, but lies rather in the excess demand for speculative investment.

Taiwan has experienced rising income inequality since the late 1980s, while higher

housing prices and stagnant wages have aggravated the problem. The rise in housing prices has certainly increased the wealth of homeowners, which has led to greater income inequality between the rich and poor (Lee, 2016). Based on a survey conducted by the Directorate-General Budget, Accounting and Statistics (DGBAS), the average disposable income of the top 20% of households was 5.55 times that of the lowest 20% in 2000. This increased to 6.19 times in 2010 and then fell to 6.06 times in 2015 (see Table 5). The increased income inequality in Taiwan society has become the main driving force behind recent social movements.

Table 5. Percentage share of disposable income by quintile group of households and income inequality indices

Year	Percentage distribution of disposable income by quintile of households					Ratio of income share of highest 20% to that of lowest 20%
	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%	
1990	7.45	13.22	17.51	23.22	38.60	5.18
1991	7.76	13.26	17.42	22.97	38.60	4.97
1992	7.37	13.24	17.52	23.21	38.66	5.24
1993	7.13	13.12	17.65	23.44	38.66	5.43
1994	7.28	12.97	17.41	23.18	39.17	5.38
1995	7.30	12.96	17.37	23.38	38.99	5.34
1996	7.22	13.00	17.50	23.38	38.89	5.38
1997	7.24	12.91	17.46	23.25	39.14	5.41

Year	Percentage distribution of disposable income by quintile of households					Ratio of income share of highest 20% to that of lowest 20%
	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%	
1998	7.12	12.84	17.53	23.24	39.26	5.51
1999	7.13	12.91	17.51	23.21	39.24	5.50
2000	7.07	12.82	17.47	23.41	39.23	5.55
2001	6.43	12.08	17.04	23.33	41.11	6.39
2002	6.67	12.30	16.99	22.95	41.09	6.16
2003	6.72	12.37	16.91	23.17	40.83	6.07
2004	6.67	12.46	17.41	23.25	40.21	6.03
2005	6.66	12.43	17.42	23.32	40.17	6.04
2006	6.66	12.37	17.42	23.51	40.03	6.01
2007	6.76	12.36	17.31	23.16	40.41	5.98
2008	6.64	12.37	17.43	23.40	40.17	6.05
2009	6.36	12.27	17.39	23.64	40.34	6.34
2010	6.49	12.21	17.39	23.72	40.19	6.19
2011	6.53	12.05	17.32	23.86	40.25	6.17
2012	6.53	12.27	17.54	23.68	39.98	6.13
2013	6.57	12.38	17.49	23.60	39.96	6.08
2014	6.63	12.28	17.36	23.59	40.13	6.05
2015	6.64	12.18	17.35	23.63	40.21	6.06

Source: Directorate-General of Budget, Accounting and Statistics (DGBAS), Taiwan.

Indeed, real estate accounts for a significant portion of household wealth. Based on a survey conducted by the Directorate-General of Budget, Accounting and Statistics (DGBAS, 2015), real estate accounted for 36.96% of household wealth in 2010, and this figure rose to 39.31% in 2014. In terms of household income, the share of property income reached a record high of 16.16% in 2000, declined to 14.24% in 2013 and then climbed back to 14.92% in 2015 (see Table 6). Therefore, surging housing prices are expected to play a significant role in the process of income distribution.

Higher asset prices or asset inflation mostly benefit the high-income and high-wealth class through capital gains, since they hold more housing than the poor and middle classes. Consequently, the degree of income inequality tends to rise (Coibion

et al., 2012). As housing prices change, a household's saving and consumption decisions will vary as well (Hsueh, 2000).

As Table 2 shows, household saving rate peaked at 30.74% in 1993, before going downtrend to 25.98% in 1998 and further plummeting to 19.71% in 2011. In 2015, average savings per household was NT\$205,248, with savings only accounting for 21.27% of disposable household income. The sharply decreasing household saving ratios could be attributed to changes in housing prices. Since capital formation is an important factor for long-run economic growth. The fall in household savings is indicative of less capital formation, which in turn slows down long-run economic growth (Barro, 1991; Barro and Sala-i-Martin, 1992; Mankiw, Romer and Weil, 1992).

Table 6. *Sources of current receipts for households in Taiwan*

Year	Current receipts (NT\$100 million)	Compensation of employees	Percentage distribution (%)		
			Entrepreneurial income	Property income	Transfer receipts
1990	31,542	60.46	20.32	13.27	5.95
1991	36,705	60.32	19.61	13.91	6.16
1992	41,356	61.24	18.79	14.14	5.83
1993	47,929	59.31	18.17	14.56	7.96
1994	52,831	58.30	18.07	15.25	8.38
1995	58,977	55.44	17.77	15.04	11.75
1996	62,095	55.14	17.78	15.55	11.53
1997	66,986	55.57	17.28	15.71	11.43
1998	70,027	55.74	16.07	16.19	12.00
1999	73,046	55.30	15.83	15.90	12.97
2000	75,067	55.45	15.33	16.16	13.06
2001	74,609	54.32	15.92	15.99	13.77
2002	76,023	54.40	15.93	14.80	14.87
2003	77,429	55.32	15.37	14.28	15.03
2004	79,545	55.32	15.14	14.31	15.23
2005	81,700	55.44	14.46	14.27	15.83
2006	84,140	55.23	14.58	14.75	15.44
2007	86,181	55.12	13.80	14.97	16.11
2008	86,832	54.16	13.01	14.74	18.09
2009	86,736	53.97	12.87	15.17	17.99
2010	88,113	55.09	12.94	14.78	17.19
2011	92,166	55.86	12.70	14.69	16.75
2012	95,060	55.01	12.60	14.39	18.00
2013	97,936	54.84	12.54	14.24	18.37
2014	100,616	55.00	12.49	14.55	17.96

Source: Directorate-General of Budget, Accounting and Statistics (DGBAS), Taiwan.

Since Taiwan has a high homeownership rate (which stood at 84.23% in 2015, for instance), rising housing prices will allow homeowners to enjoy windfall housing capital gains, giving them incentives to consume more and save less. Hence there is a negative wealth effect of rising property prices on savings. For those entering the property market, the rise in housing prices will lead to higher down payments and mortgage payments, enhancing

their tendency to save before buying a house. The higher mortgage payments will be a drag on households' savings (Lin and Lai, 2003).

4. Taxation for curbing speculative investment

Owning a home is still an unattainable luxury for most ordinary people, particularly in Taipei and New Taipei cities. The aim of Taiwan's tax reform policy is to narrow

the income gap between rich and poor. Tax policies could also be adjusted to raise more revenue from the wealthy to help support social welfare programs for poorer families. To discourage speculation and increase land utilization, the vacant-land tax was suspended in 1985 and was subsequently imposed again in 2011. The tax scheme increases the cost of hoarding land by 2% to 27.5% (*China Post*, 18 January 2011).

Furthermore, to curb rising housing prices, a luxury tax was supposed to take effect in 2011. The tax scheme had been intended to keep housing prices in check, with a 15% sales tax being levied on second homes sold within one year of purchase and the tax rate falling to 10% for such properties after the second year of ownership. The Ministry of Finance expected to collect NT\$10 billion in luxury tax revenues annually (*China Post*, 26 December 2015). It is worth noting that such a luxury tax is an indirect tax, and has a limited effect in terms of improving income distribution.

To overhaul the property tax system, in June 2015 Taiwan's Legislative Yuan passed amendments to the Income Tax Act that would combine the separate taxes on house and land sales into a single composite. Property capital gains taxes were to take effect in 2016 (*Taipei Times*, 6 June 2015).

The capital gains tax for the property market is designed to curb speculation in the property market and rein in high-flying property prices in Taiwan, particular in the metropolitan areas. Under the new tax scheme, a tax with a maximum 45% rate is to be levied on people who sell their properties less than a year after purchase. The tax rate will fall to 35% if the property has been held for more than a year, but less than two years, and then to 20% if held for more than two years, but less

than ten years, and to 15% if it has been held for more than ten years (*China Post*, 7 June 2015). With the imposition of the new property tax, a luxury tax that was introduced in June 2011 will be abolished.

5. Low interest rates and selective credit control measures

Taiwan's Central Bank has to carry out a mixed strategy for formulating monetary policy. Since the Central Bank of Taiwan gauges its current monetary policy to be appropriate in terms of maintaining price and financial stability and promoting economic growth, the Central Bank has implemented selective credit control measures in certain administrative regions since June 2010 (Central Bank of the Republic of China (Taiwan), 2010). However, housing prices remain stubbornly high and speculative property transactions have spilled over into nearby regions.

Since March 2013, the Central Bank has asked commercial banks to exercise self-discipline to enhance the risk management of housing loans in specific areas such as Taipei city and 13 districts in New Taipei city. However, some house buyers are using bank credit for investment purposes.

In June 2013, the Central Bank announced new macro-prudential measures to regulate home mortgages and property loans. The new measures include an expansion in the scope of administrative areas in New Taipei city and Taoyuan county, a new cap on the loan-to-value ratio on third home purchases and a revised definition of high-priced housing (Central Bank of the Republic of China (Taiwan), 2014).

The new administrative areas are four more districts in New Taipei city, including Wugu, Taishan, Bali and Yingge, and four districts in Taoyuan county, including Taoyuan city, Luchu, Zhongli and Guishan. The Central Bank has further lowered the cap on the loan-to-value ratio on third home purchases from 60% to 50%, and has reduced the appraised

value or purchase price from NT\$80 million to NT\$70 million for high-priced housing in Taipei city.

As Taiwan's real estate market lapsed into a downward turn in 2014, housing transactions slumped by 65.31% in Bali, 7.36% in Yingge and 30% in Taoyuan. In 2015, property transactions including those for homes, commercial space and land deals shrank by 32.43% to NT\$2.5 trillion (*Taipei Times*, 19 October 2015).

To avoid a hard landing in the real estate market, on 13 August 2015, Taiwan's Central Bank removed 4 districts in Taoyuan city (Taoyuan, Luzhu, Zhongli and Guishan) and 2 districts in New Taipei city (Yingge and Bali) from the restriction list that limits mortgage loans to 60% for second homes without a grace period. Meanwhile, the loan-to-value ratio is also to be raised from 50% to 60% for luxury homes and corporate buyers. Mortgage restrictions still apply to Taipei city and 15 districts in New Taipei city (Central Bank of the Republic of China (Taiwan), 2015).

Due to deteriorating economic growth and falling housing transactions, on 24 March 2016 the Central Bank cut interest rates by 0.125% and removed all credit controls on housing transactions in order to boost the real estate market (*China Post*, 25 March 2016). The Central Bank lowered the rediscount rate to 1.5%, the rate on accommodations with collateral to 1.875% and the rate on accommodations without collateral to 3.75% for the third consecutive quarter to help boost Taiwan's export-reliant economy in the face of weak domestic and foreign demand.

However, the mortgage restrictions for high-value homes remain intact, namely, the 60% cap for houses valued at NT\$70 million or more in Taipei city, at NT\$60 million in New Taipei city and NT\$40 million elsewhere (Central Bank of the Republic of China (Taiwan), 2016a).

To boost the fragile economy, on 30 June 2016 the Central Bank cut policy interest rates by 0.125% for the second time in three months.

The discount rate fell to 1.375%, while the rate on accommodations with collateral dropped to 1.75% and the rate on accommodations without collateral declined to 3.625% (Central Bank of the Republic of China (Taiwan), 2016b).

Indeed, imposing a property capital gains tax or increasing interest rates could effectively restrain the speculative demand for housing (Chu, 2016). Nevertheless, a cut in interest rates would lessen the financial burden of home mortgages and property loans. The price correction in the real estate market will, however, always take a longer time to complete, unless house sellers make greater price concessions, otherwise potential buyers will not enter the market.

6. Conclusions

Taiwan's economic growth has remained low since the global financial crisis of 2008. Taiwan's sluggishness in setting up high value-added industries resulted in a worsening unemployment rate of 3.92%, bringing about low economic growth of 1.41% in 2016. If Taiwan's economy persistently falls into a low-growth trap, the demand for housing will decline as well.²

Based on data published by Chinatrust Real Estate Company, impacted by the capital gains tax imposed on housing sales and the weak economic recovery, Taiwan's real estate market suffered a 26-year low growth rate in 2016, registering a record low of 244,000 real estate transactions. The downward trend is expected to continue in 2017, dragging down housing prices (*China Post*, 30 December 2016). The immediate task ahead for the Tsai administration is to overhaul the housing policy and overcome the pressing challenge of housing unaffordability.

² Meanwhile, many Taiwanese businessmen have channeled the money they earned overseas into the real estate market, which in turn has led to skyrocketing housing prices in the big cities such as Taipei and New Taipei.

References

- Barro, Robert J., 1991. Economic growth in a cross section of countries. *Quarterly Journal of Economics*, 106(2), pp. 407–443.
- Barro, Robert J. and Sala-i-Martin, Xavier., 1992. Convergence. *Journal of Political Economy*, 100(2), pp. 223–251.
- Central Bank of the Republic of China (Taiwan), 2010. Monetary policy decisions of the board meeting, June 2010. [Online]. Available: <www.cbc.gov.tw> (Accessed 14 March 2017).
- Central Bank of the Republic of China (Taiwan), 2014. Monetary policy decisions of the board meeting-June 2014. [Online]. Available: <www.cbc.gov.tw> (Accessed 14 March 2017).
- Central Bank of the Republic of China (Taiwan), 2015. Revision to targeted prudential measures on real estate lending 2015. [Online]. Available: <www.cbc.gov.tw> (Accessed 14 March 2017).
- Central Bank of the Republic of China (Taiwan), 2016a. Monetary policy decision of the board meeting, 24 March 2016. [Online]. Available: <www.cbc.gov.tw> (accessed 14 March 2017).
- Central Bank of the Republic of China (Taiwan), 2016b. Monetary policy decision of the board meeting, 30 June 2016. [Online]. Available: <www.cbc.gov.tw> (accessed 15 March 2017).
- Chang, Hsiang-Yi, Wu, Ting-Feng and Hsiung, Jimmy., 2014. Taiwan's vast wealth gap. *CommonWealth Magazine*, 12 (549). [Online]. Available: <<http://english.cw.com.tw/article/article.action?id=391>> (accessed 15 March 2017).
- Chen, Yi-Ling., 2011. New prospects for social rental housing in Taiwan: the role of housing affordability crises and the housing movement. *International Journal of Housing Policy*, 11(3), pp. 305–318.
- Chen, Yi-Ling., 2015. The factors and implications of rising housing prices in Taiwan. *Taiwan-U.S. Quarterly Analysis*, Number 18 of 20, July 2015.
- China Post, 13 January 2009. Legislature cuts inheritance, gift tax rate to 10%.
- China Post, 18 January 2011. Gov't brings back vacant-land tax to dampen hoarding.
- China Post, 7 June 2015. Property capital gains tax bill approved by Legislative Yuan.
- China Post, 26 December 2015. Gov't collects less luxury tax than expected.
- China Post, 25 March 2016. Central bank shaves discount rate to 1.5%.
- China Post, 30 December 2016. Property market hits record low: real estate firm.
- Chu, Shiou-Yen., 2016. Macroeconomic policies and housing market in Taiwan. *Working Paper*, Department of Economics, National Chung Cheng University, Taiwan.
- Coibion, Oliver, Gorodnichenko, Yuriy, Kueng, Lorenz and Silvia, John., 2012. Innocent bystanders? monetary policy and inequality in the U.S. *Working Paper No. 12/199*, IMF.
- Construction and Planning Agency, Taiwan, 2017. Information platform for real estate. [Online]. Available: <<http://pip.moi.gov.tw/V2/E/SCRE0201.aspx>> (accessed 10 March 2017).
- Directorate-General of Budget, Accounting and Statistics (DGBAS), Taiwan, 2015. The survey of family income and expenditure, 2015. [Online]. Available: <<http://win.gov.tw/fies/doc/result/104.pdf>> (accessed 10 March 2017).
- Directorate-General of Budget, Accounting and Statistics (DGBAS), Taiwan, 2016. Statistical data for wages and productivity, 2016. [Online]. Available: <<http://www.gov.tw/public/Attachment/722489178VPAUQ8D.pdf>> (Accessed 6 March 2017).
- Global Property Guide. 2017 [Online]. Taiwan's housing market is gaining momentum. Available: <<https://www.globalpropertyguide>>.

- com/Asia/Taiwan/Price-History> [Accessed 4 October 2017].
- Hsueh, Li-Min., 2000. The relationship between housing price, tenure choice, and saving behavior in Taiwan. *International Real Estate Review*, 3(1), pp. 11–33.
- Hu, Sheng-Cheng., 2015. Housing affordability and social justice. *Taiwan Economic Forecast and Policy*, 45(2), pp. 23–43.
- Kang, Hsin-Hong and Liu, Shu-Bing., 2014. The impact of the 2008 financial crisis on housing prices in China and Taiwan: a quantile regression analysis. *Economic Modelling*, 42, pp. 356–362.
- Lai, Peddy Pi-Ying., 2015. Using fussy analytic network process to explore the factors of performance housing refurbishment in Taiwan. *Acta Oeconomica*, 65, pp. 223–237.
- Lee, Ming-Hsuan., 2016. The impact of housing prices on economic opportunities in Taiwan. *Taiwan Economic Forecast and Policy*, 47(1), pp. 37–65.
- Lin, Chu-Chia and Lai, Yi-Fang., 2003. Housing prices, mortgage payments and savings behavior in Taiwan: a time series analysis. *Asian Economic Journal*, 17(4), pp. 407–425.
- Mankiew, N. Gregory, Romer, David and Weil, David N., 1992. A contribution to the empirics of economic growth. *Quarterly Journal of Economics*, 46(1), pp. 407–437.
- Taipei Times, 6 June 2015. Tax reforms passed by lawmakers.
- Taipei Times, 14 June 2015. Taipei house prices nearly triple in 20 years: realtor.
- Taipei Times, 1 October 2015. Tsai details social housing policy.
- Taipei Times, 19 October 2015. Property transactions stall.
- Taipei Times, 22 November 2015. Tsai slams Eric Chu over public housing policy talk.
- Tsai, I-Chun and Peng, Chien-Wen., 2012. A panel data analysis for housing affordability in Taiwan. *Journal of Economics and Finance*, 36(2), pp. 335–350.
- Yang, Tzu Chinag., 2016. A brief analysis of owner and trader of residential housing market in Taiwan. *Journal of the Chinese Statistical Association*, 54(3), pp. 129–153.