

The Preliminary Evaluation Study of the Indonesian Housing Subsidy Program in 2010-2019

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Abstract

This preliminary study aims to evaluate the contribution of the FLPP program to cope with the accelerating housing backlog, as one of the prominent subsidized housing programs. It also attempts to identify one of the key factors to its contribution level. Although many subsidized housing programs have been launched by the Government of Indonesia, the number of homeownerships is still outpaced by the surmounting housing backlog. However, their evaluation remains to receive a little attention to refine the similar programs in the future. By employing a descriptive analysis on the FLPP data series from 2010-2019, this study finds a heartbreaking level of contribution of the FLPP program to the housing backlog alleviation, due to increasing housing price which implicates the ratio of housing affordability and the deviation of the designated beneficiaries. Innovation in affordable housing construction and design are urgently required to maintain the ratio of housing affordability from the housing stress for the low incomes as the designated beneficiaries.

Keywords

housing affordability; housing stress; housing prices; FLPP; Indonesia



I. Introduction

Many studies conclude the lack of housing affordability is one of the pivotal factors in the housing backlog, which proliferates the deprived neighborhoods throughout the world (Gilbert, 2004; Duncan, 2008; Bah et al., 2018; Obioha, 2020). The rise of the informal housing market assists the low incomes, especially in the metropolitan cities, to meet their housing needs (Linggi, 2005). Due to the unaffordable housing price, the low-incomes cannot obtain homeownership and tend to live in crowded housing with farther distances to commute (Taylor, 2015). It is plausible to accumulate wealth from their limited monthly income (Lerman & Zhang, 2014). This condition widens income inequality (Rognlie, 2015).

According to the Ministry of Public Works and Housing (2020), the number of deprived neighborhoods and their dwellers has been increasing, whereas many housing provision and improvement programs are delivered throughout the past decade. In 2017, Indonesia experienced a housing backlog of more than 11 million (Sunarti et al., 2018; Prabantarikso et al., 2018). According to the BPS report for 2009-2020, the amount of the Indonesian housing backlog is approximately 13.787 million, as shown in Table-1. It depicts the growing number of households outpacing the homeownership, which on average increased the housing backlog in the past decade.

Table 1. Indonesian housing backlog

YEA R	Household (in millions)		Homeowners (in millions)		Homeowners: Household		Housing backlog (in millions)	
	(n)	Δ (%)	(n)	Δ (%)	(%)	Δ (%)	(n)	Δ (%)
2009	58.421		46.363		79,36		12.058	
2010	61.390	5,08	47.884	3,28	78,00	-1,71	13.505	12,00
2011	62.004	1,00	49.119	2,58	79,22	1,56	12.884	-4,60
2012	64.041	3,29	51.802	5,46	80,89	2,11	12.238	-5,02
2013	64.041	0,00	51.284	-1,00	80,08	-1,00	12.757	4,24
2014	64.771	1,14	51.668	0,75	79,77	-0,39	13.103	2,71
2015	65.588	1,26	54.195	4,89	82,63	3,59	11.392	-13,05
2016	66.385	1,22	54.821	1,15	82,58	-0,06	11.564	1,51
2017	67.173	1,19	53.476	-2,45	79,61	-3,60	13.696	18,44
2018	67.945	1,15	54.369	1,67	80,02	0,52	13.575	-0,88
2019	68.700	1,11	55.008	1,17	80,07	0,06	13.692	0,86
2020	69.283	0,85	55.495	0,89	80,10	0,04	13.787	0,70

Source: BPS (2020)

The scarcity of affordable housing, especially for low incomes, has been a growing issue in worldwide urban development (Chen et al., 2010; Collier & Venables, 2013; Wetzstein, 2017; Rohe, 2017; King et al., 2017; Muhammad & Johar, 2018; Theodos et al., 2019). Studies highlight that soaring housing prices outpacing the improvement of monthly income is the ultimate challenge of the affordable housing provision (Chang & Moretti, 2015). Consequently, the proliferation of deprived neighborhoods becomes a plausible housing solution, especially for those who cannot afford adequate housing in the city (Marx et al., 2013). Therefore, affordable housing policies are pivotal in the city, especially in the ever-growing metropolitan cities.

Several studies assert a significantly positive correlation between the soaring housing prices and massive population growth, due to the unresponsive housing supply to the rising housing demand (Arestis & González, 2013; Bleakley & Lin, 2012; Baum-Snow & Pavan, 2012). Subsidized housing for the low incomes becomes one of the major housing policies to increase the affordability rate and homeownership (Aigbavboa & Thwala, 2014; Arland & Reid, 2018; Reid, 2019).

Affordable housing, according to Atfield (2013), is a program to diminish the housing shortage, especially for low incomes. Affordable housing provisions in metropolitan cities in a form of subsidized apartments provide myriad positive contributions to the city, such as decreasing air pollution (Ewing & Cervero, 2010), energy consumption, and increasing the open space (Estiri, 2015; Ewing & Rong, 2008; Resch et al., 2016).

II. Review of Literature

2.1 Housing Stress and Its Consequences

The unemployed and low incomes at a young age are the population groups that mostly suffer from the stress of housing affordability (Wood & Ong, 2011; Baker et al., 2015). A study by Borrowman et al (2017) shows more than half of these population groups move out of affordable housing due to the surmounting financial burden.

Gabriel et al (2005) postulate housing stress as the experienced unfortunate implications of a household due to insufficient income to obtain adequate housing, such as tenure insecurity or insufficient physical attributes to promote better well-being. Several authors expand the term housing stress as the unsatisfactory housing condition which does not meet the ability to pay and housing satisfaction of the residents (Lamont, 2008; Marks & Sedgwick, 2008).

2.2 Housing Affordability

The universal rule of housing affordability sets 30% of the low-income households' monthly income as the limit for meeting the installment fee of homeownership or rent payment (Yates & Gabriel, 2006; Yates, 2007; Wong & Ong, 2011; Baker et al., 2015; Leopold et al., 2015; Borrowman et al., 2017). Housing affordability corresponds to the ability of an individual or household to meet the housing price without a reasonable burden on their incomes (Maclennan & Williams, 1990). Hulchanski (1995) formulates 30% of the household's monthly income as the threshold to measure housing affordability but admits 25-50% is still acceptable.

Many studies emphasize that housing affordability cannot be generalized into a universal ratio because each population groups possess its peculiar socio-demographic characteristics, including ability and willingness to pay, according to their life cycle stage and preferences (Quigley & Raphael, 2004; Stone, 2006; Pivo, 2013). This argument is supported by Kutty (2005) who asserts that higher incomes tend to spend a higher proportion of monthly income to obtain a higher housing quality according to the changing housing preferences. A study in Australia by Wulff et al (2011) finds less than 40% of the designated beneficiaries manage to obtain affordable housing by expending less than 30% of their incomes, while the rest of the affordable housing stock is purchased by the higher-incomes.

III. Research Method

Many attempts have been delivered by the Government of Indonesia (GoI), through the Ministry of Public Works and Housing (MPWH) to solve the Indonesian housing problems, and the subsidized housing program is one of the prominent programs. One of the most prominent programs is the FLPP program (Fasilitas Likuiditas Pembiayaan Perumahan- Housing Financing Liquidity Facility in Indonesian language) to assist the low incomes in accessing the affordable housing with adequate quality, the low and fixed interest rates. The minimum house size is 36 m² as mandated in Housing and Settlement Act 1/2011.

IV. Result and Discussion

4.1 Subsidized housing price and backlog in Indonesia 2010-2019

Table-2 shows the Indonesian housing backlog increases by 1.38% from 2010 to 2019, which indicates it outpaces the homeownership rate in the same period. In the first 5 years (2010-2014), the housing backlog decreased by only approximately 400,000 and reached its lowest number in 2015. However, in the second 5 years (2015-2019), the housing backlog constantly increased from around 11.5 million to 13.6 million, or 20.18%.

Table 2. Housing price and the ratio of housing price with the backlog

YEA R	Housing backlog		Homeownership		House price (IDR)		Homeownership: backlog	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
2010	13,505,866		7,958		58,967,285.48		0.06%	
2011	12,884,473	-4.60%	109,593	1277.14%	68,178,135.48	15.62%	0.85%	1,343.56%
2012	12,238,273	-5.02%	64,785	-40.89%	75,062,591.84	10.10%	0.53%	-37.76%
2013	12,757,007	4.24%	102,714	58.55%	86,029,182.70	14.61%	0.81%	52.10%
2014	13,103,295	2.71%	76,063	-25.95%	94,334,070.53	9.65%	0.58%	-27.90%
2015	11,392,705	-13.05%	89,679	17.90%	110,833,463.58	17.49%	0.79%	35.60%
2016	11,564,337	1.51%	58,469	-34.80%	118,492,774.08	6.91%	0.51%	-35.77%
2017	13,696,656	18.44%	21,780	-62.75%	135,849,035.98	14.65%	0.16%	-68.55%
2018	13,575,491	-0.88%	57,939	166.02%	136,933,046.13	0.80%	0.43%	168.39%
2019	13,692,050	0.86%	77,835	34.34%	137,058,039.99	0.09%	0.57%	33.20%
2010-4	12,884,473	-2.98%	76,063	855.81%	75,062,592	59.98%	0.58%	885.17%
2015-9	13,575,491	20.18%	58,469	-13.21%	135,849,035.98	23.66%	0.51%	-27.78%
2010-9	12,993,884	1.38%	70,424	878.07%	102,583,767.06	132.43%	0.55%	864.77%

Source: BPS (2020) and PPDPP (2020)

This finding shares a similar trend with the homeownership from the FLPP program, as shown in the same table. In the past ten years (2010-2019), the rate of homeownership from this program increases tremendously to 878.07%. In the first five years (2010-2014), the homeownership from this program increased to 855.81% but decreased to -13.21% in the next five years (-13.21%).

4.2 The Rising Ratio of Housing Affordability in 2010-2019

Generally, in 2010, most homeowners spend 15.01-30% of their monthly income to meet the monthly installment fee (70.61%), followed by 30.01-45% (26.79%), 45.01-60% (1.58%), more than 60% (0.52%), and less than 15% (0.50%). In 2011, mostly spent 15.01-30% of their monthly income on monthly installment fees (59.76%), followed by 30.01-45% (35.92%), 45.01-60% (2.87%), more than 60% (1.05%), and less than 15% (0.40%). In 2012, mostly spent 15.01-30% (64.54%), followed by less than 15% (31.11%), 30.0-45% (3.56%), 45.01-60% (0.54%), and more than 60% (0.26%). In 2013, mostly spent 15.01-30% of their monthly income on the installment fees (54.95%), 30.01-45% (37.54%), 45.01-60% (4.97%), more than 60% (2.21%), and less than 15% (0.33%). While in 2014, mostly spent 15.01-30% of their monthly income to meet their monthly installment fees (52.89%), followed by 30.01-45% (38.82%), 45.01-60% (5.70%), more than 60% (2.41%), and less than 0.17%).

This finding shows most homeowners spend 15.01-30% and 30.01-45% of their monthly income to meet their monthly installment fee from this housing subsidy program, which fits with the universal affordability ratio to avoid housing stress, as mentioned by several authors (Wood & Ong, 2011; Baker et al., 2015). However, the composition of these ratios has been decreasing from 2010 to 2014, while the bigger ratios (45.01-60% and more than 60%) have been gradually increasing, which indicates this program experiences housing unaffordability and potentially increasing housing stress.

Table 3. The housing affordability ratio according to the monthly income of the homeowners in 2010-2014

Monthly income (IDR million)*	AFFORDABILITY RATIO	2010		2011		2012		2013		2014	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
<2.2	<15%	13	0.25	197	0.30	3,341	10.95	14	0.04	5	0.03
	15.01-30%	3,091	60.50	31,675	48.72	24,508	80.34	5,082	16.33	1,046	6.23
	30.01-45%	1,851	36.23	28,928	44.50	2,162	7.09	19,021	61.12	10,192	60.67
	45.01-60%	113	2.21	3,072	4.73	329	1.08	4,787	15.38	3,801	22.63
	>60%	41	0.80	1,142	1.76	167	0.55	2,215	7.12	1,755	10.45
	(n)	5,109	64.20	65,014	59.32	30,507	47.09	31,119	30.30	16,799	22.09
2.21-3.40	<15%	25	0.88	237	0.53	15,792	47.76	237	0.36	74	0.15
	15.01-30%	2,527	88.79	33,774	75.92	17,120	51.77	46,213	69.83	31,438	62.06
	30.01-45%	281	9.87	10,392	23.36	136	0.41	19,375	29.28	18,561	36.64
	45.01-60%	13	0.46	74	0.17	18	0.05	300	0.45	510	1.01
	>60%	-	0.00	10	0.02	1	0.00	57	0.09	76	0.15
	(n)	2,846	35.76	44,487	40.59	33,067	51.04	66,182	64.43	50,659	66.60
3.41-5.00	<15%	2	66.67	2	2.17	985	83.69	91	1.68	50	0.58
	15.01-30%	1	33.33	41	44.57	184	15.63	5,143	95.10	7,742	90.07
	30.01-45%	-	0.00	48	52.17	8	0.68	159	2.94	776	9.03
	45.01-60%	-	0.00	1	1.09	-	0.00	15	0.28	26	0.30
	>60%	-	0.00	-	0.00	-	0.00	-	0.00	2	0.02
	(n)	3	0.04	92	0.08	1,177	1.82	5,408	5.27	8,596	11.30
>5.00	<15%	-	0.00	-	0.00	34	100.00	-	0.00	-	0.00
	15.01-30%	-	0.00	-	0.00	-	0.00	5	100.00	7	77.78
	30.01-45%	-	0.00	-	0.00	-	0.00	-	0.00	2	22.22
	45.01-60%	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
	(n)	-	0.00	-	0.00	34	0.05	5	0.00	9	0.01
	Total	(n)	7,958		109,593		64,785		102,714		76,063
Affordability ratio	<15%	40	0.50	436	0.40	20,152	31.11	342	0.33	129	0.17
	15.01-30%	5,619	70.61	65,490	59.76	41,812	64.54	56,443	54.95	40,233	52.89
	30.01-45%	2,132	26.79	39,368	35.92	2,306	3.56	38,555	37.54	29,531	38.82
	45.01-60%	126	1.58	3,147	2.87	347	0.54	5,102	4.97	4,337	5.70
	>60%	41	0.52	1,152	1.05	168	0.26	2,272	2.21	1,833	2.41

Sources: BPS (2020) and PPDPP (2020)

The number of homeowners who earn a monthly income of less than IDR 2.20 million has gradually decreased, as it is approximately 64.20% (2010), 59.32% (2011), 47.09% (2012), 30.30% (2013), and 22.09% (2014). While the other monthly income groups experience an uplift through the period. The number of homeowners with a monthly income of IDR 2.21-3.40 million increased from 35.76% (2010), 40.59% (2011), 51.04% (2012), 64.43% (2013), and 66.60% (2014). Those with a monthly income of IDR 3.41-5.00 million experience an increment from 0.04% (2010), 0.08% (2011), 1.82% (2012), 5.27% (2013), and 11.30% (2014). Even the number of homeowners who earn a monthly income of more than IDR 5.00 million increases insignificantly from 0.00% (2010-2011, 2013), 0.05% (2012), and 0.01% (2014). This finding, as shown in Table-3, implies the monthly income of homeowners in this program needs to increase to obtain homeownership, which also indicates the increasing housing prices and amount of obligatory monthly installment fee.

In 2015, 15.01-30% is the dominant ratio of housing affordability (53.65%), followed by 30.01-45% (36.92%), 45.01-60% (6.30%), more than 60% (2.95%), and less than 15% (0.19%). A similar composition is occurred in the following year (2016), as 15.01-30% is still the dominant ratio of housing affordability (52.23%), followed by 30.01-45% (37.12%), 45.01-60% (7.22%), more than 60% (3.29%), and less than 15% (0.13%). However, this composition changes in 2017, as 30.01-45% emerges as the dominant housing ratio of affordability (45.34%), followed by 15.01-30% (31.99%), 45.01-60% (14.34%), more than 60% (8.20%), and less than 15% (0.14%). This inclination continues in 2018, as 30.01-45% becomes the dominant ratio of housing affordability (43.56%), followed by 15.01-30% (39.98%), 45.01-60% (11.37%), more than 60% (4.97%), and less than 15% (0.13%). In 2019, 30.01-45% remains the dominant ratio of housing affordability (46.74%), followed by 15.01-30% (36.25%), 45.01-60% (11.84%), more than 60% (5.00%), and less than 15% (0.18%).

Table 4. The housing affordability ratio according to the monthly income of the homeowners in 2015-2019

Monthly income (IDR million)*	AFFORDABILITY RATIO	2015		2016		2017		2018		2019	
		(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
<2.2	<15%	1	0.01	1	0.01	-	0.00	1	0.01	-	0.00
	15.01-30%	492	3.47	180	1.92	6	0.19	28	0.40	62	0.60
	30.01-45%	7,198	50.75	5,046	53.89	998	31.04	1,670	24.03	2,139	20.80
	45.01-60%	4,347	30.65	2,628	28.06	1,216	37.82	3,195	45.96	4,807	46.74
	>60%	2,144	15.12	1,509	16.11	995	30.95	2,057	29.59	3,276	31.86
	(n)	14,182	15.81	9,364	16.02	3,215	14.76	6,951	12.00	10,284	13.21
2.21-3.40	<15%	40	0.08	17	0.05	13	0.11	12	0.04	29	0.08
	15.01-30%	28,115	53.08	16,681	50.77	2,618	22.54	5,216	19.07	6,485	17.15
	30.01-45%	23,265	43.92	14,466	44.03	6,683	57.54	18,476	67.54	26,766	70.80
	45.01-60%	1,072	2.02	1,332	4.05	1,574	13.55	2,930	10.71	4,019	10.63
	>60%	474	0.89	361	1.10	726	6.25	721	2.64	504	1.33

	(n)	52,966	59.06	32,857	56.20	11,614	53.32	27,355	47.21	37,803	48.57
	<15%	129	0.57	59	0.36	17	0.25	61	0.26	110	0.37
	15.01-30%	19,503	86.56	13,671	84.21	4,330	62.56	17,917	75.82	21,630	72.83
3.41-5.00	30.01-45%	2,644	11.74	2,184	13.45	2,179	31.48	5,090	21.54	7,466	25.14
	45.01-60%	230	1.02	264	1.63	331	4.78	460	1.95	386	1.30
	>60%	24	0.11	56	0.34	64	0.92	103	0.44	109	0.37
	(n)	22,530	25.12	16,234	27.77	6,921	31.78	23,631	40.79	29,701	38.16
	<15%	-	0.00	-	0.00	-	0.00	1	50.00	-	0.00
	15.01-30%	1	100.00	4	28.57	13	43.33	1	50.00	38	80.85
>5.00	30.01-45%	-	0.00	10	71.43	15	50.00	-	0.00	9	19.15
	45.01-60%	-	0.00	-	0.00	2	6.67	-	0.00	-	0.00
	(n)	1	0.00	14	0.02	30	0.14	2	0.00	47	0.06
Total	(n)	89,679		58,469		21,780		57,939		77,835	
	<15%	170	0.19	77	0.13	30	0.14	75	0.13	139	0.18
	15.01-30%	48,111	53.65	30,536	52.23	6,967	31.99	23,162	39.98	28,215	36.25
Affordability ratio	30.01-45%	33,107	36.92	21,706	37.12	9,875	45.34	25,236	43.56	36,380	46.74
	45.01-60%	5,649	6.30	4,224	7.22	3,123	14.34	6,585	11.37	9,212	11.84
	>60%	2,642	2.95	1,926	3.29	1,785	8.20	2,881	4.97	3,889	5.00

Sources: BPS (2020) and PPDPP (2020)

While in the same period (2015-2019), there is an increase in the affordability ratio. In 2015, most homeowners spent 15.01-30% of their monthly income on monthly installment fees (53.65%), but continually decline to 52.23% (2016), 31.99% (2017), 39.98% (2018), and finally 36.25% (2019). This declination, however, is not followed by other ratios. The number of homeowners, who spent 30.01-45% of their monthly income to meet the monthly installment fees, increased from 36.92% (2015) to 37.12% (2016), 45.34% (2017), 43.56% (2018), and 46.74% (2019). The number of homeowners, who spent 45.01-60% of their monthly income to pay the monthly installment fees, also increased from 6.30% (2015) to 7.22% (2016), 14.34% (2017), 11.37% (2018), and 11.84% (2019). While the number of homeowners, who spent more than 60% of their monthly income on the monthly installment fee, increased from 2.95% (2015) to 3.29% (2016), 8.20% (2017), 4.97% (2018), and 5.00% (2019).

4.3 The Rising Housing Prices

Table 5 depicts the house size for a decade (2010-2019) does not significantly experience change with the median equaling 33.59 m² with a median of the land size of 85.80 m². In the first five years (2010-2014), the median house size is 34.00 m² with a median land size of 84.96 m². While in the next five years (2015-2019), the median house size is 33.54 m² with a median land size of 88.88 m². This finding describes the insignificant changes in the house and land size.

Table 5. Monthly installment fees, house, and land size

YEAR	House size (m ²)		Land size (m ²)		Monthly installment (IDR)	
	(n)	Δ(%)	(n)	Δ(%)	(n)	Δ(%)
2010	31.46		86.62		532,775.70	
2011	29.82	-5.23	82.73	-4.48	583,653.77	9.55
2012	33.70	13.04	84.96	2.69	260,033.40	-55.45
2013	35.19	4.41	83.63	-1.56	723,296.22	178.16
2014	34.25	-2.67	84.98	1.60	795,838.93	10.03
2015	33.54	-2.08	84.86	-0.13	867,899.72	9.05
2016	33.65	0.32	91.29	7.57	889,480.63	2.49
2017	34.29	1.91	95.33	4.42	1,090,666.65	22.62
2018	33.30	-2.88	88.88	-6.77	1,033,135.33	-5.27
2019	32.92	-1.14	86.65	-2.51	1,037,688.31	0.44
2010-4	34.00	8.87	84.96	-1.89	583,653.77	49.38
2015-9	33.54	-1.84	88.88	2.10	1,033,135.33	19.56
2010-9	33.59	4.64	85.80	0.03	831,869.33	94.77

Sources: PPDPP (2020)

The same table shows the growth of house size reaches 4.64% with the growth of land size reaching approximately 0.03%. In the first five years (2010-2014), the growth of house size reaches 8.87% and the land size reduces by approximately -1.89%. This inclination is inversed in the next five years (2015-2019), as the house size decreases by -1.84% and the land size increases by 2.10%. Nonetheless, this fluctuation still indicates the insignificant house and land size differences throughout 2010-2019.

Despite the insignificant changes in the house and land size, the growth of the obligatory monthly installment fees is significantly increasing. In a decade (2010-2019), the monthly installment fees increase by 94.77%, which is significantly different between the first and the next period. In the first period (2010-2014) the monthly installment fees increase by 49.38% and by 19.56% in the next period (2015-2019), which indicates the increasing demand for a better monthly income for the homeowners to meet the increasing monthly installment fees. This finding explains the increasing monthly income of the homeowners throughout 2010-2019 because of the significantly increased amount of monthly installment fees for the relatively similar houses and land sizes.

The increasing amount of monthly installment fee is determined by the house price/m². In 2010, most of the house price/m² is IDR 1.51-3.00 million (86.87%), followed by less than IDR 1.50 million (9.44%), IDR 3.01-4.50 million (3.63%), and IDR 4.51-6.00 million (0.06%). A similar composition occurred in 2011, as IDR 1.51-3.00 million is the dominant house price/m² (83.74%), IDR 3.01-4.50 million (13.38%), less than IDR 1.50 million (2.18%), IDR 4.51-6.00 million (0.62%), and more than IDR 6 million (0.08%). In 2012, IDR 1.51-3.00 million remains the dominant house price/m² (91.58%), IDR 3.01-4.50 million (6.98%), less than IDR 1.5 million (1.32%), IDR 4.51-6.00 million (0.10%), and more than IDR 6 million (0.02%). In 2013, the same ratio still dominant (92.10%), followed by IDR 3.01-4,50 million (7.38%), less than IDR 1.50 million (0.49%), and IDR 4.51-6.00 million (0.03%). While in 2014, IDR 1.51-3.00 million is still the most popular ratio of housing affordability (74.58%), followed by IDR 3.01-4.50 million (23.73%), IDR 4.51-6.00 million (1.55%), less than IDR 1.50 million (0.11%), and more than IDR 6 million (0.03%).

Table 6. House price/m² and housing affordability ratio in 2010-2014

YEAR	AFFORDABILITY RATIO	HOUSE PRICE/m ²					Total	
		<1.50	1.51-3.00	3.01-4.50	4.51-6.00	>6.00	(n)	(%)
2010	<15%	4	36	-	-	-	40	0.50
	15.01-30%	628	4,885	105	1	-	5,619	70.61
	30.01-45%	111	1,867	150	4	-	2,132	26.79
	45.01-60%	7	96	23	-	-	126	1.58
	>60%	1	29	11	-	-	41	0.52
	(n)	751	6,913	289	5	-	7,958	
	(%)	9.44	86.87	3.63	0.06	0.00		
2011	<15%	132	296	8	-	-	436	0.40
	15.01-30%	1,795	56,957	6,608	102	28	65,490	59.76
	30.01-45%	426	31,199	7,234	457	52	39,368	35.92
	45.01-60%	29	2,432	595	83	8	3,147	2.87
	>60%	7	890	214	40	1	1,152	1.05
	(n)	2,389	91,774	14,659	682	89	109,593	
	(%)	2.18	83.74	13.38	0.62	0.08		
2012	<15%	462	18,716	970	2	2	20,152	31.11
	15.01-30%	369	38,002	3,372	58	11	41,812	64.54
	30.01-45%	22	2,129	148	6	1	2,306	3.56
	45.01-60%	-	327	19	1	-	347	0.54
	>60%	1	154	12	-	1	168	0.26
	(n)	854	59,328	4,521	67	15	64,785	
	(%)	1.32	91.58	6.98	0.10	0.02		
2013	<15%	15	308	19	-	-	342	0.33
	15.01-30%	292	52,294	3,836	19	2	56,443	54.95
	30.01-45%	162	35,169	3,213	11	-	38,555	37.54
	45.01-60%	30	4,735	334	3	-	5,102	4.97
	>60%	6	2,090	176	-	-	2,272	2.21
	(n)	505	94,596	7,578	33	2	102,714	
	(%)	0.49	92.10	7.38	0.03	0.00		
2014	<15%	7	110	12	-	-	129	0.17
	15.01-30%	53	30,972	8,851	351	6	40,233	52.89
	30.01-45%	16	20,990	7,843	665	17	29,531	38.82
	45.01-60%	5	3,318	915	98	1	4,337	5.70
	>60%	2	1,337	426	67	1	1,833	2.41
	(n)	83	56,727	18,047	1,181	25	76,063	
	(%)	0.11	74.58	23.73	1.55	0.03		

Source: PPDPP (2020)

In the next period (2015-2019), the dominant house price/m² increases from IDR 1.51-3.00 million to IDR 3.01-4.50 million, as occurred in 2015 (55.98%). It is followed by IDR 1.51-3.00 million (34.29%), IDR 4.51-6.00 million (9.52%), more than IDR 6 million (0.18%), and less than IDR 1.50 million (0.03%). In 2016, IDR 3.01-4.50 million is the dominant housing prices/m² (72.71%), followed by IDR 4.51-6.00 million (13.45%), IDR 1.51-3.00 million (12.52%), more than IDR 6.00 million (1.31%), and less than IDR 1.50 million (0.01%).

Table 7. House price/m² and housing affordability ratio in 2015-2019

YE AR	AFFORDABI LITY RATIO	HOUSE PRICE/m ²					Total	
		<1.50	1.51- 3.00	3.01- 4.50	4.51- 6.00	>6.00	(n)	(%)
2015	<15%	10	121	39	-	-	170	0.19
	15.01-30%	17	17,588	26,413	4,065	28	48,111	53.65
	30.01-45%	2	10,300	18,963	3,775	67	33,107	36.92
	45.01-60%	-	1,927	3,219	465	38	5,649	6.30
	>60%	-	812	1,570	231	29	2,642	2.95
		(n)	29	30,748	50,204	8,536	162	89,679
	(%)	0.03	34.29	55.98	9.52	0.18		
2016	<15%	1	41	35	-	-	77	0.13
	15.01-30%	2	4,473	22,388	3,424	249	30,536	52.23
	30.01-45%	1	2,374	16,374	2,614	343	21,706	37.12
	45.01-60%	-	326	2,725	1,064	109	4,224	7.22
	>60%	-	104	993	765	64	1,926	3.29
		(n)	4	7,318	42,515	7,867	765	58,469
	(%)	0.01	12.52	72.71	13.45	1.31		
2017	<15%	-	11	19	-	-	30	0.14
	15.01-30%	-	77	6,134	636	120	6,967	31.99
	30.01-45%	-	34	7,695	1,866	280	9,875	45.34
	45.01-60%	-	8	1,749	1,282	84	3,123	14.34
	>60%	-	2	669	1,063	51	1,785	8.20
		(n)	-	132	16,266	4,847	535	21,780
	(%)	0.00	0.61	74.68	22.25	2.46		
2018	<15%	-	-	73	2	-	75	0.13
	15.01-30%	-	47	14,910	7,257	948	23,162	39.98
	30.01-45%	-	12	20,290	4,205	729	25,236	43.56
	45.01-60%	-	-	4,922	1,558	105	6,585	11.37
	>60%	-	-	1,765	1,062	54	2,881	4.97
		(n)	-	59	41,960	14,084	1,836	57,939
	(%)	0.00	0.10	72.42	24.31	3.17		
2019	<15%	-	1	133	5	-	139	0.18
	15.01-30%	-	50	19,565	7,685	915	28,215	36.25
	30.01-45%	-	31	29,617	5,646	1,086	36,380	46.74
	45.01-60%	-	6	7,419	1,422	365	9,212	11.84
	>60%	-	8	2,908	779	194	3,889	5.00
		(n)	-	96	59,642	15,537	2,560	77,835
	(%)	0.00	0.13	76.63	19.96	3.29		

Source: PPDPP (2020)

In 2017, IDR 3.01-4.50 million is the most popular ratio of housing affordability (74.68%), followed by IDR 4.51-6.00 million (22.25%), more than IDR 6 million (2.46%), and IDR 1.51-3.00 million (0.61%). In 2018, IDR 3.01-4.50 million is the dominant housing prices/m² (72.42%), followed by IDR 4.51-6.00 million (24.31%), more than IDR 6 million (3.17%), and IDR 1.51-3.00 million (0.10%). While in 2019, IDR 3.01-4.50 million is the dominant housing price/m² (19.96%), more than IDR 6.00 million (3.29%), and IDR 1.51-3.00 million (0.13%).

IV. Conclusion

These findings describe the increasing housing prices consequently increase the ratio of housing affordability from 2010 to 2019. At first of this delivered program, most homeowners earn a monthly income of less than IDR 2.20 million and IDR 2.21-4.50 million, which is suitable for the targeted beneficiaries according to the enacted regulations. However, most beneficiaries of this program gradually earn more than the established maximum monthly income, which does not fit with the applied regulations.

This deviation occurs because of the increasing housing prices/m² which increases the obligatory monthly installment fees and demands a higher monthly income for the homeowners. In the first period (2010-2015), IDR 1.51-3.00 million is the housing price/m² is the dominant construction cost, which enables most homeowners to spend less than 30% of their monthly income to meet the monthly installment fees and avoid housing stress. However, most of the construction costs gradually and continuously increase to IDR 3.01-4.50 million even higher in the following years. Consequently, it catapults the growth of the housing affordability ratio from mostly 15.01-30% to 30.01-45% even higher, especially in 2015-2019. Although it is still within the suitable range, some homeowners spend more than 60% of their monthly income to meet the obligatory installment fees, which potentially brings housing stress.

This finding also indicates the low contribution of this program to alleviate the housing backlog for the targeted beneficiaries, as mandated in the applied regulations, despite its ten-year operation. The increasing housing prices and construction costs implicate the increasing amount of the obligatory monthly installment fees, and a higher monthly income for the homeowners to pay. Consequently, it decreases the ability to pay for the targeted beneficiaries and the homeownership from this program.

The aim of this study is limited to evaluating the result of the FLPP program with the secondary data from the PPDPP (2020) and BPS (2020), which demands various further complementary studies to formulate plausible solutions to overcome the saddening result. Innovations in the affordable housing construction should be encouraged to meet a suitable amount of the monthly installment fee and the ratio of housing affordability for the low incomes as the designated beneficiaries of this program. Thorough studies on other pivotal factors in determining the housing prices, such as the hedonic land price, financing model, cost of building permit, construction labour and material etc are necessary to formulate the comprehensive affordable housing program. While studies of a suitable housing design for affordable housing that meets the preferences are important to accommodate the real needs of the low incomes. Therefore, studies on housing preferences, ability, and willingness to pay for low incomes are pivotal to refining the program and obtaining the expected result. Additionally, peculiar household income-expenditure management systems are noteworthy investigated, due to the growing numbers of homeowners spend more than a half of their monthly income for the monthly installment fees.

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