Misguided oversupply of dwellings causes housing affordability problem in Sydney

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Abstract— In most cases, an oversupply of dwellings will reduce house prices and therefore will make them more affordable. However, in Sydney, building more new housing supply causes an upward pressure on residential property prices and thus making home unaffordable. Even most parties such as politicians encourage more supply in an oversupply condition as an effort to ease or reduce exuberance house prices. This paper has revealed an evidence-based on series data of statistic that shows this situation. The finding is significant as empty houses or excess supply do exist and being held by investors to inflate house prices further while the government policy is to build more supply that could increase risks beyond financial risk. Understanding the demand for home ownership is therefore important to solve housing affordability problem. (Abstract)

Housing supply; House Prices; Housing affordability; Homeownership; Investors; Owner occupiers; Vacancy rates; Risks of home ownership (keywords)

I.   INTRODUCTION

Housing affordability is a universal issue without a definite solution. Many countries in the world face this concern and will expect to experience this paradox in the future. No literature or science has a capability to explain fully of this phenomenon and therefore a solution. Apart from many known reasons such as population growth, employment growth, macro and microeconomic factors such as interest rates and balance of trade, it is more complicated than anyone can imagine. The improvement of science and technology in finance and political involvement could influence housing condition of a country, or even at a suburb level.

Since 1970, in Australia, Housing affordability has been a continuous concern, despite numerous effort from providing affordable or low-cost homes to the creation of supply to meet the demand for housing. Policies such as providing affordable rental housing are not going to solve the problem because it does not look at underlying causes such as the high cost of strategically located land (Yates, 2016) and numerous risks associated with providing low-cost dwellings (Susilawati & Armitage, 2010).

Some argue that a lack of supply will impact the rise in house prices (Stapledon, 2016). Furthermore, speculative land interests fueled by easy access to mortgage credit have led to an inflated cost of housing (Harvey, 2010; Aalbers & Christophers, 2014). Creating more supply just by itself to ease demand pressure will therefore not be able to solve any housing affordability problem. The calculation must also include a utility,[1] economic growth, business cycle, level of the mortgage interest (Otto, 2007) and a speculative tactic which is used by investors (Ronald & Elsinga, 2012).

The definition of housing affordability itself is very controversial. Many kinds of literature describe it by measuring the capacity to own or rent a home based on income relative to the house prices or rental prices. Or it is often called price to income ratio or median multiple. **Fig. 1** shows that the decline in home ownership led by younger age households between 15-34, is the cause of housing affordability trend in Australia due to their income level (Stapledon, 2016; Yates, 2016).

Figure 1.

Homeownership by age in Australia

Source: ABS Census   (2014)

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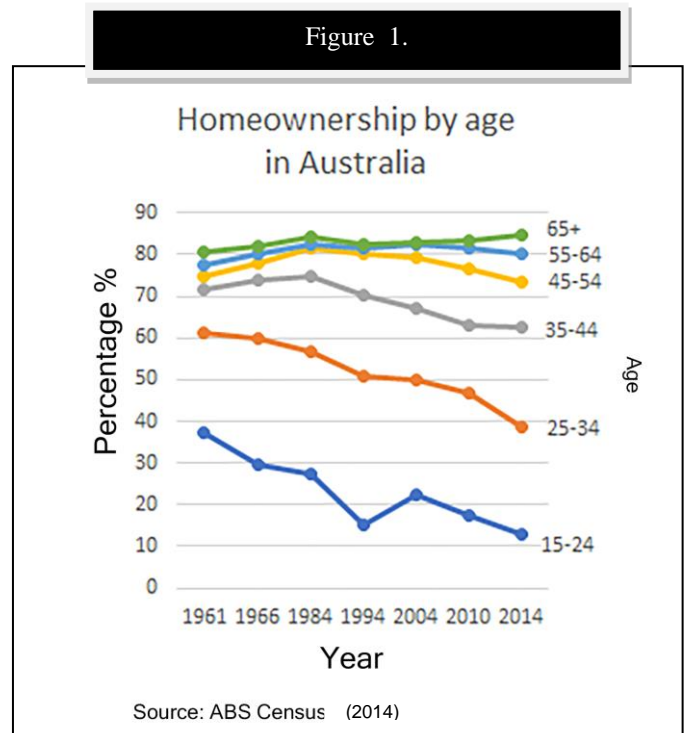
[1] A measurement that shows a satisfaction based on a choice over preferences and risks expectation

Nevertheless, based on median multiple indicating stagnant of income followed by a sharp increase in median house prices, Sydney is the city that has been experiencing a low-interest rate but a high level of housing affordability stress (similarly described by Wood & Ong, 2011; Wood, Ong & Cigdem 2014). With a median multiple of 9.2 in 2011 and 12.2 in 2016, Sydney has the highest median multiple in Australia, and just behind China or Hong Kong with a median multiple of 18.1 in 2016 (Demographia, 2012 and 2017).

II. HOUSING AFFORDABILITY VS AFFORDABLE HOME

There are misconceptions that the solution to housing affordability is the same as providing an affordable home. The concept is comprehensively different. "***Housing affordability** refers to the measure of whether a typical household can afford to purchase or rent a typical home ……*", "*… This is a distinctly different concept from affordable housing…*", whereas "***Affordable housing** is subsidized by the government and available for occupancy by households that meet income thresholds…*" (Marin County Grand Jury, April 12, 2017, p.2). Addressing housing affordability does not necessarily provide affordable homes. And providing affordable home such as low-cost accommodation or creating inclusionary zoning will have no impact to address housing affordability at all as there will be no real supply adjustment to reduce house prices in the market. (Mukhija et al., 2010; Schwartz et al., 2012; Spiller & Oliver, 2015; Visentin, 2016).

The definition of housing affordability is thus the ability of a household to purchase or in some instances to rent a home or a shelter. The dwelling can be considered as affordable if the income that is required to acquire a home by a mortgage is around 30 % of their disposable income (Benchmark of HIA, 2017). Since every single household has a different expenditure, the residual income approach could also indicate the level of housing affordability (Stone, 2006).

In contrast, affordable housing is the dwelling that receives financial support from an institution such as a government or an investor for low-income households. The location is usually within a specific zoning such as inclusionary zone. The dwelling is only intended for poor people such as homeless people, unemployed or low-paid worker below an income threshold. Furthermore, Yates (2016) argues that affordable rental housing is just an artificial solution as their location in higher populated and expensive area and thus their low income will not be able to support their living expenses.

This concept is extremely important. In NSW, the target for affordable home consists of only approximately "*5% renting in social housing* ", whereas the housing affordability problem consists of more than 40% of total population as "*lower-income households are defined as those in the bottom 40% of the income distribution*" (Shelter NSW, November 2016, p.2 and 3). In Sydney, based on 2016 census data, it is estimated that 3.6% of total population or 3.7% of NSW population rent in a social or affordable housing (ABS, 2016). Therefore, the target of 5% affordable home will not be able to solve 40% of population whom experiences housing affordability problem.

In contrast, a country such as Singapore had seen this difference a long ago and thus is capable to adjust a significant number of public or affordable housing requirement. In 1960, the Housing and Development Board (HDB) was formed to provide low-cost apartments which are subsidized public housing for low-income households (Tan & Phang, 1992). Currently, it is the fact that 80% of Singaporean live in HDB estates or public housing, and the rest live in private housing which consists of 14.4% in condominium and other apartments, 5.2% in landed properties (Department of Statistics Singapore, 2016). The price for a condominium is generally more expensive and could be more than S$1.2 million plus higher maintenance cost (Squarefoot research, 2017), while HDB will cost around S$700,000 (Teoalida, 2017) due to some form a subsidy from the government.

III. HOUSE PRICES, HOUSING SUPPLY, AND HOUSING FINANCE.

Australian government claims that supply is a fundamental factor to solve housing affordability (Holman, 2017). After calculating other factors such as interest rates, employment, and population growth, the strategy is to build more housing supply than expected demand so that the house prices could go down. However, the data from **Fig. 2** and **Fig. 3** show that there is a positive correlation between housing supply and prices. An increase in housing supplies (dwellings pipeline or new supplies) as shown in **Fig. 2** will lead to an increase in house prices (**Fig. 3**). While **Fig. 3** also shows that the population growth in NSW has been relatively stagnant from 2011 to 2016. This concludes that the growth of house values is caused by other factors such as historic low-interest rates and the property growth sentiment and not by population growth as can be seen in **Fig. 4**.
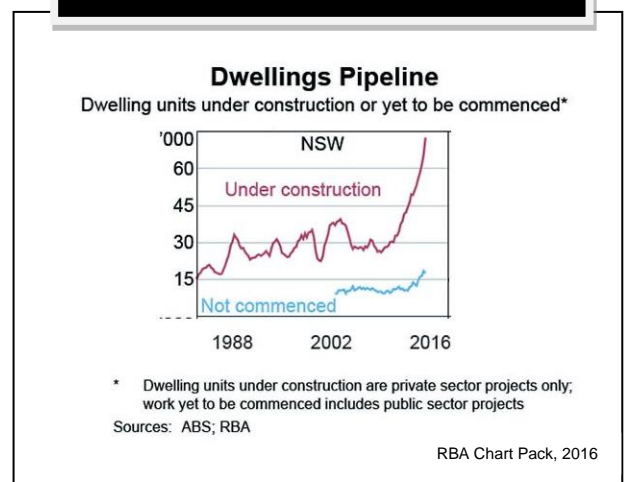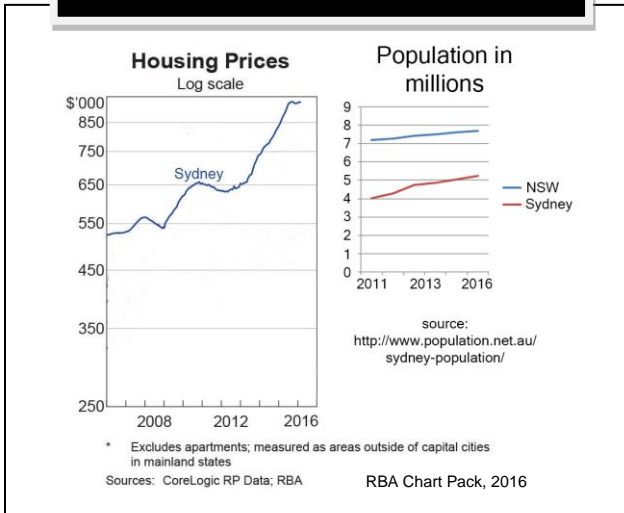

Figure 2. (SUPPLY)

Dwellings Pipeline
Dwelling units under construction or yet to be commenced*

* Dwelling units under construction are private sector projects only; work yet to be commenced includes public sector projects
Sources: ABS; RBA

RBA Chart Pack, 2016

Figure 3.

Housing Prices
Log scale

Sydney

* Excludes apartments; measured as areas outside of capital cities in mainland states
Sources: CoreLogic RP Data; RBA

Population in millions

NSW
Sydney

source:
http://www.population.net.au/
sydney-population/

RBA Chart Pack, 2016

Furthermore, **Fig. 4** shows that tighter lending regulation for investors in NSW by APRA (The Australian Prudential Regulation Authority) in 2015 has made Sydney house prices steady (**Fig. 3**) in early 2016. It is important to note that the step was not part of monetary policy from the federal government, but instead, independent bank or financial institution reduced interest rate discount and higher loan to valuation ratio for investor loans without intervention from Reserve Bank of Australia (RBA).
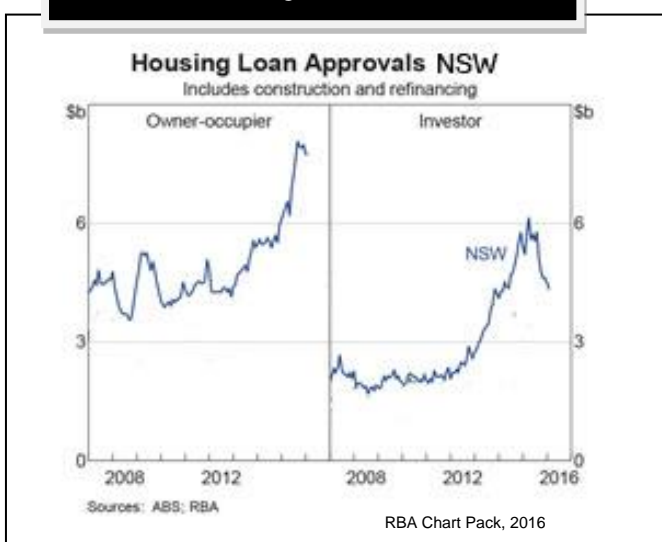
Figure 4.

Housing Loan Approvals NSW
Includes construction and refinancing

Owner-occupier

Investor

NSW

Sources: ABS; RBA

RBA Chart Pack, 2016

Fig. 2, **Fig. 3** and **Fig. 4** indicate that there is a positive correlation between housing supply, housing prices, and housing loan approvals.

IV. OVERSUPPLY OF HOUSING CAUSES AFFORDABILITY CRISIS

While the population in NSW (New South Wales) has been stagnant with the growth of only 0.9 % from 2011 to 2016, but considerably 30% growth in Sydney (**Fig. 3**), the house prices have increased almost double during the same period (**Fig. 3**) although more supplies of new housing have inflated at a record high (**Fig. 2**).

During the period, the report also claims that there was a backlog or undersupply of more than 100,000 homes in NSW despite the accumulation of new homes has reached the highest record (Duke, 2016). However, the data from **Table. 1** shows that there are more than 280,000 empty homes in NSW out of 3,062,000 dwellings. While in contrasts, as described above, others such as government officials claim that by looking at *underlying demand*, there is a shortage in housing supply due to a backlog.

Table 1.

Vacant Homes in Sydney - NSW Australia

	vacant	%	Total dwellings	Total population
Greater Sydney	136,019	7.30%	1,863,273	5,25 million
NSW	284,702	9.29%	3,062,329	7.70 million

Source ABS Census 2016 ; SGS Economics & Planning 26/07/17; population.net.au
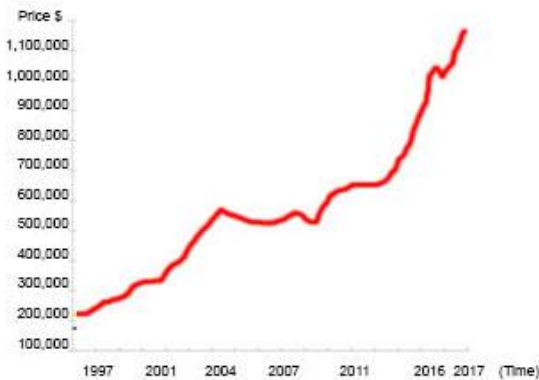* figures are close to real numbers

The *underlying demand* which estimates the average household size than actual size is the most common method to measure a housing shortage. The report shows that in NSW an average of 2.6 people per dwelling in 2016 put pressure on the supply side compared to 4.5 in 1911 due to an increasing number of single, young renters and smaller families structure (ABS, 2016).

Fig. 5 shows that since 2016 housing supply has exceeded *underlying demand*, however, instead of going down due to "oversupply", house prices continue to go up more than 10 percent between 2016 to 2017 in NSW as can be seen in **Fig. 6** (Duke, 2017).

Figure 5.

Housing Supply and Underlying Demand
NSW, annualised

New Dwelling Supply

Underlying Demand Estimates

000s

Source: NAB Bulletin, May 2017, p.7

Figure 6.

House prices in NSW

Source: Duke, 2017 (Domain Group)

Therefore, it can be concluded that the measurement of *underlying demand* is not accurate as it does not recognize the existing housing stock, interest rates, real demand and the capacity of the total number of bedrooms or dwellings that can accommodate population growth (Wilkinson, 2011). Thus, vacancy rates and a positive correlation between house price and supply are better indicators to analyze a shortage or surplus in the housing market and to determine real demand as can be seen in **Table. 2**.

TABLE 2. THE CORRELATION BETWEEN PRICE AND SUPPLY

Correlation	Supply	Price	
Positive	up	up	high market sentiment (e.g : profit)
	down	down	low market sentiment (due to financial crisis, etc)
Negative	up	down	There was a shortage in the market, now, there is a surplus of housing in the market
	down	up	There was a surplus in the market now, there is a deficiency in the housing stock
Zero	no change	no change	equilibrium is achieved

Source: Author

The methodology of price correlation has a weakness of time lag and therefore it can only be used to analyze the market as a complementary tool and is unable to forecast future direction. The Negative correlation could indicate the shortage or a surplus. In other words, the insufficient or excessive of supply can only be confirmed after the negative correlation is visible.

Furthermore, the number of bedrooms, dwellings and the total population of such a city can offer a better calculation. Based on two or three-bedroom units that could accommodate four people for each dwelling, there are 1,8 million of housing supply that could comfortably accommodate seven million of the population in Sydney. The figures show that there is no shortage of bedroom or supply in Sydney as total population in Sydney is just around 5 million.

Moreover, the evidence of vacancy rate from Australia Bureau Statistic census both in 2011 and 2016, shows that Sydney has been experiencing an oversupply of 118,848 dwellings since at least 2011 as shown in **Table. 3**. This number has grown up by 17,207 over the period and mostly concentrated in Greater Sydney compared to only 2,154 to the rest of NSW (ABS Census 2011 & 2016). However, there are numerous reasons that data collection during census for vacant homes are not accurate. For example, the owners might be overseas during the night of the census, and the dwelling is under renovation, under construction, or under offer for sale at that time.

TABLE 3. EMPTY OR VACANT DWELLINGS IN GREATER SYDNEY.

	2011	2016
Greater Sydney	118,848	136,055

Source: ABS Census 2011 & 2016

Nevertheless, the data prove that the fact there are significant numbers of empty homes in Sydney and similarly in other countries such as Vancouver and Toronto. These empty dwellings are used mainly by investors to restrain the supply and therefore sustain a growth price of housing (White, 2017). Furthermore, there are many apartments built and left empty and used as service apartments instead of releasing to the market as housing for the population in a longer term. The report shows that investors are willing to leave home empty in return for higher capital gain rather than smaller rental income (Troy & Randolph, 2016). This area is closer to Sydney CBD and depicts that investors hold and deliberately or naturally leave the homes empty for a profit gain.

Most of the dwellings that were being withheld and left vacant are mostly investment related (77 percent) such as holiday homes, deceased estates, owned by a business, rental and residents that were absent due to traveling or deliberately left empty. (ABS Census data, 2016; SGS economics & planning, 2017).

It is also important to note that the data of rental vacancy rates are not reliable due to the sample is too large and market movement or absorption such as the number of completed new homes within the cycle for a certain number of a renter. Generally, lower vacancy rates will lead to higher rents and vice versa.

Nevertheless, the data from **Table.4** shows that there is a positive correlation between median rent, rental vacancy rate, and all dwellings prices. Higher vacancies rate will lead to higher house prices and higher rents. An increase in rental vacant dwellings of 9,726 in 2009 to 13,215 in 2017 has led to an increase in rent to $540 per week and double the house value over the period.

TABLE 4. VACANT DWELLINGS AVAILABLE FOR RENTS, MEDIAN RENTS & SALES PRICES IN GREATER SYDNEY 2009-2017.

Vacant dwellings Syd available for rents	Dec-09	Dec-10	May-11	Feb-12	Feb-13	Jul-14	Jun-15	Jul-16	Jun-17
	9,726	9,526	7,034	8,008	8,762	10,629	10,753	11,705	13,215
Median Rents / week all dwellings in Syd	Jun-09	Dec-10	Jun-11	Mar-12	Mar-13	Jun-14	Jun-15	Jun-16	Jun-17
	$390	$430	$440	$450	$460	$480	$500	$520	$540
Median sales prices all dwellings in Syd	Mar-09	Sep-10	Dec-11	Dec-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17
	$400,000	$500,000	$479,000	$555,000	$532,000	$605,000	$679,000	$750,000	$810,000

Source: vacant homes in Sydney: sqmresearch.com.au; median rents and sales all dwellings in Sydney: www.housing.nsw.gov.au

Table 4. indicates that the landlords are greedy and prefer higher vacancy rate in return for higher capital gain and higher rental yield.

Suggested solution of taxing 1% capital gain of these empty homes to build affordable homes is unlikely to impact on housing affordability level as the figure is small enough compared to the existing stamp duty and capital gain extracted from the investment property. Furthermore, apart from it is impossible to identify these ghost homes for tax reason, as explained earlier, building affordable accommodation from these taxes is not the solution to housing affordability unless a significant number of low-cost accommodation could be subsidized from those taxes.

The trend shows that there is a mishap of increasing investors' supply or the speculative demand rather than creating housing supply for owner occupiers within median wages. It would make a difference if these empty homes were converted into the intended occupiers dwelling instead of controlled by investors and left empty. Furthermore, policy, such as tighter regulation of home ownership between owner-occupiers and investors, could ease the housing market pressure and adjust the balance of housing affordability to a plausible level between the end user and those who are to monetize for personal wealth.

It could be concluded that a misguided of building more housing supply for investors and high-income earners instead of owner-occupiers or low households income in an oversupplied market condition with a significant vacancy rate of more than 7 percent has fueled the rise of house prices in Sydney.

V. THE HIGHER VACANCY RATE IS A GOOD OR A BAD THING?

It is very common that vacancy rates do exist in property market (Geltner et al., 2007). Rosen and Smith (1983) observe that the equilibrium of real estate cycle can be estimated from occupancy rate. And thus, an equilibrium of vacancy rate that makes a stable rental condition is the point where the supply is equal to demand growth (Parli & Miller, 2014). A study shows that there is a relationship between GINI coefficient (wealth equality measurement) with house price-to-income ratio and vacancy rate. A data test from China shows that higher vacancy rate will result in a wider gap of wealth inequality (Zhang et al., 2016).

Low vacancy rate provides peace of mind for investors as the demand for the tenants could strengthen cash flows and thus landlords will be willing to pay and buy at the premium price. Sometimes, it also is used as a capital growth predictor.

Nevertheless, as can be seen in **Fig. 7**, the higher vacancy rate is also advantageous for the investor as holding the stock that creates a shortage in the market could inflate the price higher due to the pressure on the supply side. On the other hand, it is disadvantageous for low-income or owner occupier households as higher price often leads to higher rents and housing affordability stress. Nevertheless, when the market turns to red, the speculative investor will be worse off than the low-income earners.

Figure 7.

The demand for housing investment and owner occupiers in NSW (2017)
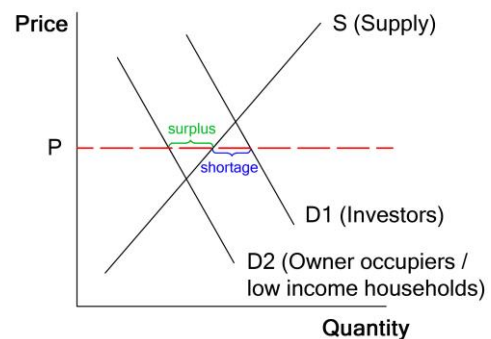
Source: Author

A statistic data from **Fig. 1** shows that the demand for home ownership in NSW has been in a decline, particularly for millennials or low-income households. Hence, **Fig. 7** depicts that there is a shortage of investors market (D1) that has led to a higher price. Nevertheless, the market is a surplus for younger people (D2) who can not afford to buy a house at market price (P). This concludes that Australian government has been trying to supply houses for investors with a hope to reduce the price. However, it turns out that the investor has held the stock as a vacant home to inflate the price higher and to heat up the speculative market as a result of cheap credit and lack of regulation or policy control. This condition as illustrated in **Fig.7** is called a positive externality or market failure.

On contrary, the higher vacancy rate is better for low-income earners in a condition where the supply is released to the market. As the vast availability of choice or competition could reduce the rental price and the property value. However, the current

rental vacancy rate in Sydney is 1.9% in 2016 (REINS, 2017). On contrary, the real vacancy rate in Sydney is 7.3% (ABS Census, 2016) and thus, the wastage of properties that are being held and not released to the market is 5.4%. This "hostage of ghost or empty homes" therefore has caused inflated house prices by creating an artificial shortage in the market.

VI.   AUSTRALIA -SYDNEY & NSW (NEW SOUTH WALES) GOVERNMENT'S POLICY TO ADDRESS HOMEOWNERSHIP

A Current premier of NSW, Berejiklian (2017) has made changes to housing tax break based on home ownership. The package is called a new housing affordability package that will provide an advantage for the first home buyer or owner occupiers against investors. In particular, foreign investor surcharge duty will be double to 8 percent, and the annual land tax surcharge will rise more than double to 2 percent a year, while all stamp duty concession will not be available for all types of investors purchasing off the plan. An additional policy to expand precincts or supply in growth area is also part of the plan. Further information is available at https://www.nsw.gov.au/improving-nsw/projects-and-initiatives/first-home-buyers/. The main policy is to increase first home owner grants and smaller housing supply in the right areas.

VII.   GRANT VS SUBSIDY

First home owner grant is part of the strategy that has been implemented by the Australian government for a very long time. There is no significant result of the grant as it does not ease housing affordability condition. Instead, in some cases, it could inflate the house prices and is in line with a speculative bubble. However, despite trade-offs, the subsidy has been considered as a successful strategy to provide an affordable home for particular people in needs (Collins, 2013). Thus, it is important to understand the differences between grants and subsidies as most of the time these two are used interchangeably.

Grants are funds for a specific purpose and used to offset the cost of a purchase price such as a home. These funds do not need to be repaid back and will be given to the supplier or a producer at the time of an agreed transaction.

Subsidies could cover many forms of funding for the producer to pay operating or management costs including special tax breaks. Although there are many types of subsidies, lowering the initial purchase price is one of the viable options. With this subsidy, a producer such as gasoline or a home builder must then sell the house or petrol at a lower price against the tax offset or funds that have already been given. Hence, lower prices of goods and services such as a house could be recorded during a hedonic model calculation to drive down overall median house prices.

Although the grant theoretically has the same effect as a subsidy. However, the difference in value recorded could have an impact on lower price to income ratio that would be calculated as a measurement of housing affordability. With a subsidy, the price of a home should be transacted and recorded lower than high-income earners such as investors. For example, a subsidy of $15,000 for first home owner buyer will reduce a house price by $15,000 whereas a first home owner grant of $15,000 will not reduce a house price by $15,000.

The price reduction due to a subsidy could influence the psychological level of housing investors as a result of sales comparison approach and thus reduce speculation. On the other hand, the grant would increase the purchasing power of the buyer then the cost of a purchased dwelling could be higher than what it should be. Blight et al. 2012 found that in Australia, the price of a house was increased by $57,321 or 18.8% as the result of the introduction of a first home owner grant between 2000 to 2010. In other words, there is a positive correlation between grants and an increase in house prices due to the supply of housing is inelastic. A surge of demand due to grants in short or medium term has caused an increase in house values. Thus, a policy of NSW governments that is to increase first home owner grants should be replaced by subsidies for the first home buyer to close the gap between D1 (high-income households) and D2 (low-income households) as shown in **Fig. 7**. As subsidies distort prices between these two, if there is a positive externality associated with consumption of the good, the subsidy can correct market failure. Nevertheless, the costs of the subsidies alone will not be able to offset an increasing rate of the property value (Ellen et al., 2003).

VIII.   HOMEOWNERSHIP- PRO AND CONTRA

A creation of a policy that encourages home ownership such as providing houses for low-income households could lead to another crisis (Cizmady et al., 2017) or even lead to housing affordability problems (Eastaway & Martinez, 2017). A condition, where there is no rental housing available, has forced lower-income household to own a home (Hegedus, Horvath & Tosics, 2014) and a post-transition policy that subsidizes the mortgagor of low-income families to own homes has led to many risks (Cizmady et al., 2017). These risks are house price slumps within property cycle and vulnerable to interest rate increases as well as other personal setbacks such as health, divorce, and unemployment (Cizmady et al., 2017). The lack of housing investors, who can provide rental properties, and subsidy or easy access to credit for low-income households have provided serious affordability problems for low-income earners as those households have a higher rate of mortgage arrears as well as other debts to income ratio (Eastaway & Martinez, 2017). In some cases, renting is better for low-income households or younger generation than owning homes due to

mobility and lifestyle preference (Halket and Santhanagopalan, 2014). Nevertheless, investors are reluctant to rent their properties to these low-income households (Susilawati & Armitage, 2010).

Hence, one policy itself such as home ownership policy will not be able to solve housing affordability problem. The argument which was raised by Niemietz (2016) states that encouraging home ownership only as a housing policy, which should be tenure neutral itself, will not lead to a reduction in house prices and rents. Other policy which can be used to improve affordability level must also be incorporated into a system such as encouraging a high level of the new building construction in an area or suburbs with a different local land tax base system.

Notably, the policy that has an aim to create equal wealth distribution of home ownership has a limited impact in controlling house prices. As other factors, such as the scarcity of land and the allocation of geographic location could determine the price level (Yates, 2016). It is arguable that the significant impact of reducing speculative investment activity could ease house prices to a plausible level.

A risky investment which is serviced by easy access to cheap credit has led to a high cost of housing and affordability level (Harvey, 2010; Aalbers & Christophers, 2014). Similarly, speculation and monopoly of land ownership driven by investors and supported by the political and economic system that encourages capitalists to compete with the people who need shelter are the reason that makes housing unaffordable (Meek, 2014; Arundel, 2017). Furthermore, the land value which is created from collective investments in land via property rights over both types of ownership can even create a spike in housing value within a competitive environment (Sayer, 2014).

Dewilde and Ronald (2017) has strongly urged the importance of politics to address uneven property value between income groups, social classes, and age within geographic regions as described by Hamnett (1999). The context of housing policy led by governments is a fundamental and structural integrity within a welfare system for public provision (Malpass, 2008) while at the same time the property values could create an enormous vulnerability and significant indebtedness and inequality within an integrity of social stratification (Rolnik, 2013; Arundel, 2017).

However, the promotion of homeownership such as in Sweden could have made the housing market vulnerable to a future crisis of potential housing bubble due to debt ratio is highest, particularly, for households with high incomes and the favorable tax system for homeowners over the rental sector. This situation could lead to a subsidy crisis phenomenon (Holmqvist and Magnusson, 2014). On the other hand, an expansion policy which is intended to increase owner occupation of housing for lower-income households could create another financial risk. This strategy has led to the housing financial crisis in the United States (Whitehead, 2012). This was also fuelled by the rapid growth of the subprime market and tax incentives which enabled credit unworthy households to increase their borrowing capacity (Shiller, 2008; Wolf, 2009; Whitehead, 2012) and pushed over consumption above efficient market in the United Kingdom (Girourad, et al., 2006; Whitehead and Gaus, 2007).

IX. CONCLUSION

Current Australian government policy that is to create more house supplies at record high where there is no significant population growth cannot be justifiable. The creation of excess housing stocks in a hotter market will just increase investors demand that will even fluctuate higher house prices (Phibbs & Gurrans, 2017). Moreover, this condition of building more homes in an oversupply condition due to "highest vacancy rate" fuelled by the lowest record of interest rate has therefore created higher house prices.

In addition, as can be seen from median multiple, the condition of income rates that has not grown as fast as the home prices have also contributed to housing affordability stress and the risk of house price bubble. However, the growth of wealth as a result of equity gain or profit from a rising house price has been taken advantage by both homeowners, particularly investors. Inequality of homeownership is the reason for housing affordability controversy in Sydney. Those who own homes or several investment properties do not feel the problem of housing affordability. However, the low-income households and the younger generation who are renter experience the gap of wealth due to the decline of homeownership.

Although, there are several policies that have been done to create the balance of homeownership such as first home buyer grants and an additional tax for investors. The relationship between owner-occupiers and investors will need to be investigated further to create the right percentage of equality in a housing market. Affordable homes could be achieved through subsidies and not grants. First home owner grants should be replaced by subsidy for first home owner buyer to lower the house prices. The subsidy will enable the first home owner or low-income households to purchase a home cheaper and win the competition against higher income households or investors.

House prices as the determinant of affordability are dependent on financial or banking sector and not solely reliant on supply. Moreover, the methodology of underlying demand estimate cannot predict the level of housing shortage due to the inability to calculate other factors such as household income, easy access to credit, the age and investor preferences. When an economy is in a recession and interest rate is considerably high, or banking sector is at risk, regardless the supply, residential property prices will tank.

Furthermore, Positive correlation between house prices and supply cannot fully determine whether there is a shortage of owner-occupier demand or a surplus of investor demand or vice versa in the market. The price continues to rise due to the growth of demand for an investor or high-income earners but reduced demand for low-income households.

The current market in Sydney shows that the house supply has risen faster than population growth and underlying demand. Inversely, this causes an increase in home prices rather than a decrease. With the addition of more than 7 percent vacancy rate of dwellings in Sydney, *Pareto inefficiency* is visible as not all resources are allocated without making another party's situation worse.

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