Interplay of the Macroeconomy and Real Estate: Systematic Review of Literature

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ABSTRACT

This research systematically reviews and evaluate literature on the interplay of the macroeconomy and house prices in the contemporary. The research recapitulates the findings, data and models between and among the discussants in the extant literature to unearth new research gaps. The study analyzed 64 papers from thousands of scholarly papers from purposively sampled reputable database from 2015 to March, 2020, using a systematic review methodology. Based on the inclusion and exclusion criteria, the selected papers were categorized in relation to the direction of the impact to showing the nexus on the topic. It found that: both the macroeconomy and house prices impact on each other. However, macroeconomic variables were noted to impact on house prices more frequently than the opposite. To the best of the authors knowledge, this review is the first in recent past, to unembellished the dynamic relationship between the macroeconomy and house prices based on the direction in the contemporary. Particularly in the era where there are so much conjectures in the market of another financial crises. The study makes a contribution by identifying new research opportunities for future research and has practical implications to policy makers, researchers and property investors.

Keywords: Macroeconomy, House Prices, Housing Market, Review
JEL Classifications: E, O18

1. INTRODUCTION

Before the year 2007, in spite of the enormous contribution of real estate to the macroeconomy it still received little attention until and after the wake of the great recession in 2007-2009. Since then the study of real estate became newsworthy and an integral part of the macroeconomy and as well of key interest to policy makers, economist, financial experts and other international organizations because of the impact the sector had on many national and the international economy. For example, The OECD currently cautioned that house prices seem overvalued and continue to increase in Canada, Australia, United Kingdom and New Zealand, posing a danger in these countries which needs to be rectified immediately (OECD, 2016). The International Monetary Fund (IMF), highlighted that the annual worldwide real house price reached its ultimate in the year 2007 and later ensued by a recession leading to the global financial crisis. Experts at

the Bank International Settlement (BIS) reinforced this view by adding that a soar in the price properties is expected to occur in an economy with low or stable inflation (IMF, 2014, as cited in Kok et al., 2018). The aftermath of the Great Recession 2007-2009 according to (Gupta et al., 2019) is noted by the IMF as the worst global recession since the II World War. House prices have been realized by economists and policymakers to plays a pivotal role in the economy and that the aggregate economy and the housing sector are codependents and housing is the single most critical part of the business cycle (Leamer, 2015).

The subprime mortgage crisis, which pathways from 2005, was noted to be the most critical factor to instigate the global financial crisis of 2007 leading to adverse consequences on the global economy (Korkmaz, 2019). With this notwithstanding many authors such as Taderera and Akinsomi (2020); Killins (2020); Abildgren et al. (2018); Shukor et al. (2016); Kibunyi et al. (2017); Ernst and Saliba

(2018) and Deng et al. (2019) all advocated that the global financial crises was linked to the downturn of the real estate market through house prices. And its impact integrated and increased real estate research at the macro- economic level. Booms in the sector fueled by excessive credit expansions and overvalued exchange rates were at the core of the many banking and currency crises that both emerging and advanced economies experienced in the 1990s and mid 2000s (Cesa-Bianchi et al., 2015; Killins, 2020; Deng et al., 2019).

For over a century, housing was only seen as a basic necessity of life providing shelter for human habitat. Real estate price variations have significant effects on many households in relation to their consumption and investment decisions as well as the macroeconomy (Korkmaz, 2019). With the swift increase in property prices in the early 2000s, particularly in the US and some European countries, researchers started to pay closer attention to any business cycle that might exhibit this effect. Real estate denotes the biggest share of household wealth, hence variations in the price of a house is possibly a powerful source of business cycle fluctuations. And indeed, both theoretical and empirical studies have established the large effect that housing wealth can have on aggregate consumption as households feel richer and increase their consumption with rising house prices (Ernst and Saliba, 2018).

A continuous increase in house prices are associated with higher consumption for households and firm investment which boosts economic growth. However, an extreme increase in real estate price may thwart capital allocation efficiency, for example by crippling investments in productive sectors, which decreases long-term economic growth (Aizenman et al., 2019).

Yang et al. (2018) postulated that expenditure on real estate wealth plays a twofold role of investment and consumption. The duplex role of real estate serving as both a consumption good and an investment goods have also been asserted by Uluc (2018); Simo-Kengne (2019); Chi-Wei et al. (2018). Rising house prices according to Lin et al. (2019), have negative effect on consumption which contribute to sluggish economic growth.

Property prices like the price of other commodities is influenced by the factors of demand and supply. However, the markets have some intrinsic characteristics that makes it complex and differentiated from the other markets making it difficult to achieve equilibrium between demand and supply. As supply increases with improved economic conditions household income increase there by boosting the demand for housing (Alqaralleh, 2019). Glaeser and Nathanson (2017) posited that in a well-functioning market, the inequalities in demand and supply would ultimately be abridged, and reduced demand should result in downward pressure on real estate prices.

In recent past while some studies argue that, macroeconomic variables such as (GDP, inflation, exchange rate, money supply-M2, inflows, unemployment, interest rate and population) shows a relationship with house prices, others postulate that their relationship have weakened after the great recession. But rather financial variables and or sentiment shows a stronger relationship with house prices compared to the macroeconomic variables. Besides, many macro-housing studies looks at the one-way causality without the inverse with limited macroeconomic variables. Irrespective of the increasing research in the area of macro – housing, finding are still inconclusive as to the direction and the extent of the impact on each other. Though commonalities exist between and among the discussants, disparities in their findings can also not be ruled out and this may be attributed to different research designs or methodologies employed. With the increasing surmises that the real estate market usually trigger financial crises in decades, policy makers through funded and unfunded research have kept an eye on real estate bubbles to enable them make an informed decision (Tang et al., 2020; Aizenman et al., 2019; Kibunyi et al., 2017; Kholodilin et al., 2017).

This study therefore makes contribution by identifying new research gaps for future research as well as categorizing and showing the current dynamic relationship between macroeconomic variables and house prices between and among countries to serve as a guide for policy makers and other interested parties. The quality of referencing materials provided through the methodology may also be beneficial to scholar in the field. It is against this background that this study systematically reviews literature on the interplay of the macroeconomy and house prices in the contemporarily. To give clearer picture of the state and the direction of the market. The rest of this study is organized as follows: Section 2 highlights on the data and the methodology, section 3 reviews the extant literature and discussion, section 4 gives the summary and future research opportunities and section 5 conclude the entire study.

2. DATA AND METHODOLOGY

This study reviews 64 research papers on the macroeconomy and house prices from the year 2015 to March, 2020. The sampled papers were retrieved from reputable research databases.

In this study the systematic review process follow by McLean and Antony (2014) and Saini and Sighania (2019) were adapted. The reputable databases were considered using the purposive sampling technique, after which the inclusion and exclusion criteria set-up.

In the first instance, a search was conducted from the database of Emerald, Taylor and Francis, Elsevier's Science Direct, Springer, Willey Online Library and Google Scholar where necessary using the Boolean search "macroeconomy" AND "house prices" which produced thousands of results on the subject. In the second instance, a systematic search of all articles published from 2015 to March, 2020 including journals, conference papers, working papers and book chapters were given concerted attention in relation to the subject under investigation. In the third phase Scimago Scientific Journal Ranking (SJR) for 2018 based on quartiles (Q1-Q4) were considered in other of importance. This was further cross-checked from the journal citation reports (JCR) for the quality of the article.

To be able to effectively manage and examine the voluminous literature, the inclusion and exclusion criteria was set up:
- Research articles in peer – review academic journals, conference papers, book chapters, working papers and

relevant policy documents were considered while text books, dissertations and other documents were excluded.

- Papers that shows a relationship between real estate and the macroeconomic variable were included, excluding that of only macroeconomic study, real estate study and undeveloped land.
- Preferences were given to journals ranked in quartiles (Q1, Q2 and Q3) based on SJR, 2018 and journals with impact factor in Web of science. However, where necessary based on the model and findings few journals were included ignoring all others.
- Only studies with econometric analysis or models, time series data and or panel data were factored for the review. Studies with only primary data or only descriptive statistics were not accounted for in this study.
- Finally, research article where full – text with most of the needed details available were considered.

Subject to the focus and the relevance of the topic the study was left with 64 research papers for evaluation and discussion. Please, refer to Appendix "A," "B," "C" and "D" for the details (Table 1 and Figures 1-3).

3. LITERATURE REVIEW

The entire literature has been categorized into three based on their direction: The impact of real estate price on the macroeconomy: The effect of macroeconomic variables on real estate price: and the bidirectional causality of the macroeconomy and real estate price.

3.1. The Impact of House Price on the Macroeconomy

This part of the study explores literature on the impact of house price on the macroeconomy. As exemplified that the heart of the decade great recession was due to the pitfall of the real estate market, it is therefore vital to currently assess how the market is impacting on both national and the international economy by bringing out the similarities and dissimilarities in the opinions expressed by scholars through their findings and methodologies. This would help to unwrap any adversaries that may be concealed to take policy makers by surprise both at the local, national and international level. For instance, Ernst and Saliba (2018) using data spanning from 1970 to 2007, studied on how house prices is responsible for unemployment persistence in 14 OECD countries and found that, housing shocks can have long lasting adverse impact on employment even though housing boom can create short - lived spur on growth and employment. Similarly, it was revealed in the study of Irandoust (2019) that there is a unidirectional causality running from house price to unemployment. Their study used the bootstrap panel granger causality for a data period from 1991 to 2016 in 8 European countries.

Hofman and Aalbers (2019) focusing on the interaction between the financial and the real estate sectors from the Fordist regime 1970 to 2010 in the UK, articulated that real estate, construction and the financial sectors combined contributes immensely to the economy after the Fordist period compared to the manufacturing sector. It was also noted in the study of Aizenman et al. (2019), that house price appreciations are positively associated with economic growth but the depreciation in house price may either undermine or serve as a catalyst for economic growth in many countries using the baseline model to study housing bubbles, economic growth and institution

in 19 OECD and non-OECD countries. However, Lin et al. (2019) dissented, using the VAR model for data period from 1998Q1 to 2013Q3 in Taiwan that rising house prices slows down the growth of the economy which adversely impact on consumption.

The causal relationship between private housing investment and economic growth was also investigated by Amidu et al. (2016) in the UK using the VAR and VECM. Their study unveiled that in the short- run there is a unidirectional relationship running from private housing investment to economic growth. However, it was indicated that a long – run equilibrium relationship exist between the them. Wasihun et al. (2019), Jung (2019) and Zhang and Guo (2018), relatedly studied the relationship between real estate and economic growth and established that housing prices have significant impact on economic growth. Delfim and Hoesli (2019) identified a positive linkage between real estate returns with real GDP, expected inflation, and real money supply as the leading economic indicators. But a negative linkage was observed for the inflation surprise, the term and credit spreads, as well as the change in the 10-year real interest rate. The study of Kola and Kodongo (2017) documented a variability in REIT returns and the real economy in the US using the GMM 1, GARCH 1, models but macroeconomic risk could not explain excess returns in their study.

House price was found to cause inflationary pressures in 8 regions in Turkey using the Konya causality for a monthly data spanning from 2010 to 2019. This was chiefly attributed to Syria migrants increasing the population in the respective regions (Korkmaz, 2019). Similarly, the work of Tang et al. (2020), reported that the increasing population concentration leads to the rise in the dispersion of house prices in the metropolitan statistical areas in the United States which tends to affect the economy. Their study incorporated the use of the parsimonious asset pricing island and the calibrated model using a data time frame from 1975 to 2017. However, aging population do not greatly account for rising house prices in the UK since the desire to demand for new house diminishes at that period (Day, 2018). The commentaries in this literature is inconclusive and avers that in spite of the harmonies in opinion real estate could either have positive, negative or both influence on the macroeconomy. To this end the reverse scenario is examined in the next section.

3.2. Effects of Macroeconomic Variables on House Prices

Changes in unemployment, GDP and interest rate according to (Akinsomi et al., 2018) were the paramount indicators in determining long term direct real estate total returns in South Africa. Simo-Kengne (2019), indicated that unemployment played significant role in slowing down the growth rate of house prices across segments in South Africa, but to a lesser extent. Bor and Ochieng (2019) also observed that unemployment rate and balance of payments are statistically significant in the determination of real estate development in Kenya.

Detecting real estate bubbles in the US and the UK real estate markets (Fabozzi et al., 2019) advocated that indeed bubbles exist in these two markets and the leading factors are the macroeconomic fundamentals and speculations.

In investigating whether macro fundamentals and financial variables helps to predicts episodes of exuberance in international real house prices in 23 countries, (Martínez-García and Grossman, 2020) used data from 1975Q1 to 2015Q4 aided by the dynamic panel logit model, probit framework and recursive (right – tailed) unit root test. Their results documented that interest rate spread, real disposable income per capita and inflation are indeed amidst the unsurpassed predictors for international house prices. They further advocated that financial developments in other asset markets can play a significant role in triggering the explosives in the housing market.

Day (2018) and Daud and Marzuki, (2019) documented related findings that, market fundamentals account for the upward and the variations in house prices in the UK and Malaysia respectively. The situation was analogous to the study of (Jiao and Jiao, 2018 and Chi-wei et al., 2018) in China, (Lam, 2016) in Hong Kong, (Elile et al., 2018) in Nigeria, (Aris et al., 2018) in Malaysia and (Tripathi, 2020) in their cross country analysis. These interpretations were completed by work of (Zhu et al., 2018) in an attempt to investigate the impact of income, economic openness and interest rate in China with evidence from the dynamic panel quantile regression model using 35 major cities from the period 2002 to 2012. They observed that the impact of the macro economic variables on house prices were heterogeneous across the quantiles and in addition population had a significant positive effect across the quantiles. Conversely, Milani and Park, (2019) and Deng et al. (2018) opined that house prices are mostly explained by housing specific market attribute but not the fundamental and the role played by the fundamentals are minimal in South Korea and China respectively.

Kok et al. (2018) by means of the SVAR model with focus on the macro - economic determinants of house prices and demand for houses in Malaysia, discovered using data dating from 2002Q1 to 2015Q4 that transaction volume and real house prices respond to most of the macro economic shocks. Nonetheless, GDP appears to be stronger and longer in comparison to other macro - economic shocks. Monetary liquidity and exchange rate were also noticed to have a stronger impact on housing demand. Using the VAR to analyze the impact of monetary policy on house prices in Pakistan for a monthly data period from January, 2011 to December, 2016, monetary policies were found to have a significant impact on house price. It was further discovered that higher inflation leads to soaring house prices (Umar et al., 2019).

Peng and Thibodeau (2019), also in their study on interest rates and investment with evidence from US commercial real estate involving 12,000 properties sampling from 1991 to 2014 with the help of the logit regression model, indicated that decreasing interest rate has a weaker stimulating effects on investment particularly when rates are low and where property prices are high. GDP growth and exchange rate had significant positive influence on commercial real estate, inflation had significant negative whereas interest rate was found to be insignificant in the study by (Keillah and Oluoch, 2018). This postulates that even though extant literature asserts high interest rate soar up house price it is not always the case.

According to Fang et al., (2016) a unidirectional relationship run from inflation to real estate investment trust (REIT) changes in Japan and Singapore, and inflation has significant negative relationship with REIT in all the three countries Japan, Singapore and china. Nevertheless, a long – run equilibrium exist between the macro economic variables and REIT index in Singapore and China but same cannot be applied to China. A negative relationship was also recorded between interest rate and REIT index in Japan and Singapore excluding China. The result of Ngo (2017) portrayed similar characteristics when exchange rate was noted to adversely affect REIT returns. Also, a related study by (Loo et al., 2016) in Asia through the use of the granger causality test and the Johansen cointegration test unraveled that REIT markets are more sensitive towards the changes in the macro economic environment and shows a higher integration with macro - economic variables in the long run.

Using monthly data from March 2008 to July 2018 and applying the ARDL bound test, ECM and the granger non – causality test to establish the relationship between REIT and macro - economic variables, the findings of (Gupta et al., 2019) indicated that although quantitative changes were recorded throughout the whole period, supply, monetary policy, and spread shocks causes distortions in the returns REITs at the early and last parts of the sample period under consideration. The change point VAR model was resorted to in this their study by considering monthly data from December 1972 to December 2016. Cognizant from the above it is evidenced that macro – economic variables impact on REIT in both negative and positive pathways and country specific characteristics plays a major role on the impact.

Cesa-Bianchi et al. (2015) using the panel VAR studied on global liquidity, house prices, and the macro economy with evidence from 57 countries including both advanced and emerging economies with a data sample period from 1990Q1 to 2012Q4. Their study proved that, in developing markets global liquidity shocks have stronger impact on real estate prices and consumption than in the advanced markets and house price movements increase the response to global liquidity shocks in both advanced and emerging economies but both possibly through different channels. House price in emerging economies were also found to be more volatile, less persistent, less synchronized and grow faster than in the advanced economies.

Also Kaulihowa and Kamati (2019) and Owusu-Ansah et al. (2020) reported that macroeconomic variables have significant effect on house prices in both Namibia and Ghana respectively. Using variables such as GDP, unemployment and interest rate. But the study by Adu Jack et al. (2019) established that exchange rate volatility has no influence on house prices in Ghana. Gabauer and Gupta (2020) also attested in their study that macro - economic uncertainties as a whole over shadow real estate uncertainties and the need for macro prudential policies is therefore imperative. However, financial uncertainties were the main transmitter of shocks driving both macro - economic uncertainty and real estate uncertainties. Their study resorted to the use of the Time – varying parameter vector autoregression (TVP – VAR) benchmarking data from July, 1970 to December, 2017. It is fascinating to note among the discussants that macroeconomic variables can jointly and severally impact on house prices in both positive and negative path and GDP, inflation, interest rate, unemployment

and population appears to be the commonly impacting variables on house prices.

3.3. The Bidirectional Causality of the Macroeconomy and House Prices

The empirical study on the relationship between housing prices and the macroeconomy from the perspectives of China's first, second and third tier cities by Zhang et al. (2016) suggested that interest rate had a significant impact on house prices but the impact gradually decreases from tier – one to three. Inflation also impacted positively on house price in the initial period but became negative at the later part while house price positively affected inflation with an increasing effect from tier – one to three. The influence of economic growth on house price was holistically positive in all cities with tier – one cities having the highest magnitude. The study relied on the use of the VAR model for a monthly data period ranging between July 2005 and June 2015. Related evidence was found when (Su et al., 2019) established that a bi-causal link and effect runs from both money supply and house prices. Christou et al. (2018) also examine the inflation hedging ability of house prices in the US, embarking on the quantile cointegration approach and reported that both inflation and house prices impact on each other with cointegration existence in the long run.

Similarly and dissimilarly, Kibunyi et al. (2017) reported in Kenya using the cointegration and the fractional integration method with the help of 41 quarterly data originating from 2004 that, housing prices have positive relationships with GDP, diaspora remittances, lending rates, loans to real estate sector and cost of construction. A negative relationship was however recorded between the house prices and inflation. There was a two-way causality between house prices and each of GDP, building costs and Nairobi Securities Exchange Index: Results of the cointegration test revealed the existence of steady long-run relationship between house prices and each of GDP and Nairobi Securities Exchange Index, while an unbalanced relationship was observed for building costs and diaspora remittances.

Akin relationship was also evidenced in the study (Filotto et al., 2018) in Europe. The study posits that, in the countries studied spillover risk exist and a shock in GDP in the European area impact on real estate prices, residential mortgages and GDP itself in virtually all European countries. For a short-term horizon, shocks to mortgages, GDP and house price index have a positive influence on the GDP, a shock to the number of mortgages has a positive effect on the mortgage supply and a shock to the GDP has a negative effect on house price index. The results for the long-term horizon showed that a GDP shock has a positive and tenacious impact on the amount of mortgages, a shock to real house price index has a negative and persistent effect on mortgages and a shock to the amount of mortgages seems to have no persistent effect on the GDP or the real house price index. Quarterly data from 2007 to 2015 underpinned by the GVAR and the VAR model augmented the revelations in their study. Cuestas (2017), relying on data ranging from 2001Q1 and 2008Q4 in Spain landed on the use of the VAR and the structural Bayesian VAR module, documented that that mutually capital inflows and house price shocks have influence on each other in the run up of the great moderation.

Wang and Ran (2019) and Liu et al. (2019) also complemented that a bi – directional relationship exist between house prices and the macro economy. But the latter averred that economic downturn will continually decrease real estate investment and total investment in fixed assets. Bahmani-Oskooee and Wu (2018) uncovered that there is a bidirectional causality between inflation rate and house prices. Cleanthous et al. (2019) and Alola (2020) conveyed that indeed there exist a bi-directional relationship between house prices and unemployment, interest rate and inflation. And in the long run there exist a cointegration between the said variables and house prices with a duplex effect.

Using the Time varying VAR model Plakandaras et al. (2018) analyzed the role of macro - economic shocks on house prices in the US and UK with over 150 years of data. Among others, monetary policy energies most of the evolution of UK real estate price while transitory housing supply shocks are inconsequential in either country and a dynamic linkage therefore exists between the macro economy and house prices. The revelations from this part postulates that regardless of the variables used a bi-directional relationship exist between the two sectors and the positive or negative impact depends on certain factors. For example house price has a negative relationship with inflation in the study by Kibunyi et al. (2017) whereas that of Zhang et al. (2016) both negative and positive relationship was witnessed.

4. SUMMARY AND FUTURE STUDIES

Given the importance of the real estate sector to the contribution of many national economies and its far – reaching consequences on the international economy, as well as the reverse effect of the macroeconomy on housing prices, interesting but inconclusive evidences were found from the literature. The impact of house prices on the macro economy have was examined by some authors including: Amidu et al. (2016); Korkmaz (2019); Chi-wei et al. (2018); Lin et al. (2019); Zhang and Guo (2018) and Irandoust (2019). The findings of these authors portray that real estate price either positively or negatively affect the macroeconomy. Nevertheless, the effect of the macroeconomy represented have also been given concerted attention (Lee and Chen, 2016; Zhang et al., 2016; Nurazira et al., 2019; Gabauer and Gupta, 2020; Kaulihowa and Kamati, 2019; Umar et al., 2019; Kok et al., 2018; Peng and Thibodeau, 2019; Zhu et al., 2018; Akinsomi et al., 2018; Li et al., 2018; Loo et al., 2016). Enormous revelations on the dual effect of macro – housing were also brought to bear through the study of (Wang and Ran, 2019; Filotto et al., 2018; Owuor, Githii and Mwangi, 2018; Kibunyi et al., 2017; Plakandaras et al., 2018; Bouchouicha et al., 2012; Kola and Kodongo, 2017; Cesa-Bianchi et al., 2015). Please, refer to Table 1: For the details on the summary of the macroeconomy and house prices[1].

From the above, it can be asserted that even after the decade global financial crises the relationship between the macroeconomy and

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[1]   A summary of the detailed extract from the extant literature in relation to authors, year, country, data periods, variables, models and findings are available at: https://drive.google.com/file/d/1FEvYvwkVJhSaMNgaGTdS n6EP6TdS0FaB/view?usp=sharing.

house prices is till glued, debunking the argument that their nexus have weakened after the 2008-2009 financial crises (Leung et al., 2019). The review supports the view that still in the contemporary house prices are chiefly instigated by macroeconomic variables as posited by (Gabauer and Gupta, 2020).

The study identified that indeed there is still a robust relationship between macroeconomic variables and houses in recent times. However, macroeconomic variables were noted to impact more frequently on house prices than the opposite. Macroeconomic variables such as (GDP, inflation, exchange rate, money supply-M2, inflows, unemployment, interest rate and population) were heightened to be the leading macroeconomic variables that shows a stronger relationship with house prices. In the emerging economies, macroeconomic variables observed to affect house prices more frequently than the advanced economies while the contrary holds for the advanced economies. Besides, lack and or limited data availability was observed to be impede most of the empirically reviewed studies (Li et al., 2018; Hofman and Aalbers, 2019; Newell, 2019; Cleanthous et al., 2019; Zhang et al., 2016; Badarinza and Ramadorai, 2018).

From the study the following research opportunities are identified for future studies; the relationship between M3 money supply, producer price index (PPI), net export and house prices: Empirical analysis of some key and same macroeconomic variables to test its relationship with housing prices before and after the crises using equal periods: Comparative analysis of the effect of macroeconomic variables on house prices in the advanced and the emerging economies particularly Africa: Effects of data on macro-housing research in emerging economies.

5. CONCLUSION

This study systematically examines literature on the interplay of the macroeconomy and house prices in the contemporarily from 2015 to March, 2020. Adapting the systematic review process follow by Mclean and Antony (2014) and Saini and Sighania (2019). The enquiry through the extant literature showed that the integration of real estate research into the macroeconomy gained momentum even after the 2008-2009 Global Financial Crises. It was further unearthed that, both the macroeconomy and house prices impact on each other. However, macroeconomic variables were noted to impact on house prices more frequently than the inverse. Nonetheless, the pitfalls in real estate on the macroeconomy cannot be under estimated. In the emerging economies, economic variables affect house prices more than the advanced economies while the contrary holds for the advanced economies. Besides, lack and or limited data availability was observed to be impede most of the empirically reviewed studies.

This study therefore contributes to the extant literature on macro – housing research and provides opportunities for future research. The quality of referencing materials provided in the study may also be helpful to scholar in the field. The study therefore has practical implications to the policy makers, academics and investors. To gauge against any eventualities and the ongoing conjecture of another financial crisis in this era, a review on the interplay of the macroeconomy and housing prices becomes indispensable in the contemporary. The study recommends that policy makers both at the national and international level embark on macro – prudential policies to help avert any awful uncertainties in the market. As it has been made possible in the case of Jang, Song and Ahn (2020) and (Røed Larsen, 2018) in South Korea and Norway respectively.

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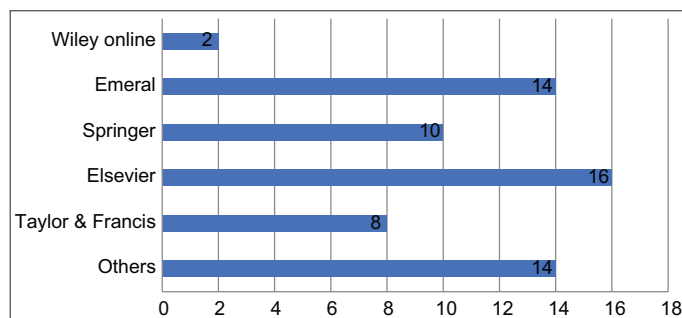
APPENDIX "A"

Table 1: Outline of review journals and database

| S/No	Name of journal	Number of papers	SJR 2018	ISI 2018	Database
1	African Geographical Review	1	Q2	NA	Taylor and Francis
2	Applied economics	3	Q2	0.986	Taylor and Francis
3	China economic review	1	Q1	2.106	Elsevier's Science Direct
4	Economic Analysis and Policy	1	Q1	NA	Elsevier's Science Direct
5	Economic modelling	1	Q2	2.059	Elsevier's Science Direct
6	Economics and finance	1	Q1	NA	Others
7	Emerging markets finance and trade	1	Q2	0.934	Taylor and Francis
8	Empirical economics	1	Q2	1.029	Springer
9	Geoforum	1	Q1	2.926	Elsevier's Science Direct
10	Habitat international	1	Q1	3.846	Elsevier's Science Direct
11	International journal of economics and financial issues	1	Q3	NA	Others
12	International journal of housing market and analysis	9	Q2	NA	Emerald Insight
13	International journal of recent technology and engineering	1	Q3	NA	Others
14	International Review of Economics and Finance	1	Q1	1.432	Elsevier's Science Direct
15	Investment management and financial innovation	1	Q4	NA	Others
16	Journal of Asian finance economics and business	1	Q4	NA	Others
17	Journal of Economic Studies	1	Q1	NA	Emerald
18	Journal of financial economics	1	Q2	4.694	Elsevier's Science Direct
19	Journal of housing and the built environment	2	Q1	1.481	Springer
20	Journal of housing economics	4	Q2	1.640	Elsevier's Science Direct
21	Journal of international money and finance	1	Q1	1.780	Elsevier's Science Direct
22	Journal of macroeconomics	1	Q2	0.910	Elsevier's Science Direct
23	Journal of money credit and banking	1	Q1	1.782	Wiley online library
24	Journal of property investment and finance	4	Q2	NA	Emerald Insight
25	Journal of property research	2	Q2	NA	Taylor and Francis
26	Journal of real estate finance and economics	4	Q1	1.174	Springer
27	Journal of the Asia pacific economy	1	Q3	0.667	Taylor and Francis
28	Open economies review	3	Q2	1.151	Springer
29	Others	7	NA	NA	Others
30	Quarterly review of economics and finance	1	Q2		Elsevier's Science Direct
31	Research in international business and finance	2	Q1	1.467	Elsevier's Science Direct
32	Review of Accounting and Finance	1	Q3	NA	Others
33	Scottish journal of political economy	1	Q3	0.449	Wiley online library
34	Structural change and economic dynamics	1	Q2	1.557	Elsevier's Science Direct

Source: Author's compilation from database

APPENDIX "B"

Figure 1: Distribution of papers in database

APPENDIX "C"

Figure 2: Journal qurtiles
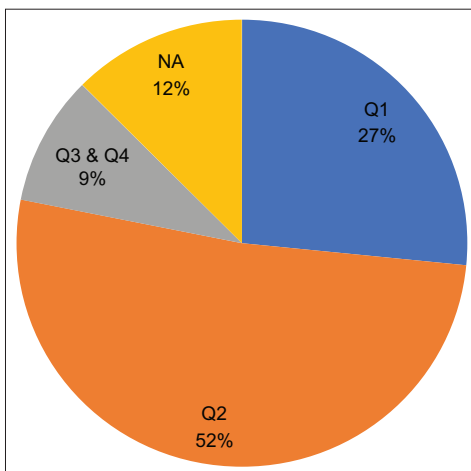
APPENDIX "D"

Figure 3: Quality of papers