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IMPACT OF POLICY OF INCREASING THE NATIONAL MORTGAGE GUARANTEE ON THE HOUSING PRICES IN THE NETHERLANDS

ABSTRACT

The policy to increase the national mortgage guarantee (NHG) that the Dutch government enacted after the 2007 financial sought to restore housing demand and consumer trust. Combined with the 'Waarborgfonds eigen woningen' or WEW, the government of the Netherlands raised the NHG from € 265.000 to € 350.000. The research question of this paper focuses on whether or not this policy has made an impact on housing demand in The Netherlands. The data is obtained through the 'Centraal Bureau van de Statistiek' or CBS. The data presents a time variable from 2006-2014 and a locational variable for every municipality in the Netherlands. This paper will use a multiple linear regression. When we filter out the market cycle and the control variables: 'income and population' we find that this policy did in fact help with restoring the housing demand in the Netherlands. This can be because of previous successes with similar housing policies. This paper uses a model by the Dutch government to review policies, however other countries are compared on how they evaluate economic policies. In the Dutch context, effectiveness, relevance, impact and expediency are evaluated. The effectiveness can be related to the level on which this policy was enacted, and the benefit that the consumer has had from this policy. Even when we use 'signalling theory' we can determine that this policy may have given off the signal that people must buy a house now. The impact and relevance of the policy also hinge on this fact, as it has been a huge risk for the government to enforce this. However, it was relevant in a sense that it helped combat falling consumer trust. Since this paper is on a relatively small scale, and as such could not include a lot of control variables. future research could focus on larger scale evaluation of multiple post-recession policies.

1.INTRODUCTION

The bankruptcy of Lehman brothers painted a grim picture for the Dutch housing market. This moment on the 15th of September 2008, was a result of the 2007 financial crisis that had swept America (Zingales 2008). The recession had enormous effect on the economic system of multiple developed countries including The Netherlands(Claessens et al. 2012). Because the asset positions of the banks were affected. The collateral of banks was now decreasing, and nobody knew exactly where this would lead or how far it would drop. as a result, banks were now also growing in debt and less eager to give out loans especially in housing (Priemus 2010). This enacted an international policy response in order to negate the uncertainty and help prevent a possible collapse of the housing market. More developed countries such as The United states and the Netherlands, evaluated and assessed these policies in a more econometric way, using models and forecasting to see what could happen.

The United States for example responded with the 'economic stimulus act' of 2008. Since the problem was assessed as a 'liquidity problem' a lot of policies in the United States focussed on increasing this liquidity for banks (Taylor 2010). In hindsight these economic policies from the United States have been evaluated largely on effectiveness in terms of increasing of average household expenditure. This type of policy evaluation is the same for the UK and South Africa.

Most lesser developed countries such as Angola or Chad for example, did not respond in an econometric way to the crisis, as lesser developed countries often don't have a way to assess or evaluate policies, the effect of the 2007 financial crisis have been more devastating as a result (Chor & Manova 2012). In order to put all these evaluation types into perspective the country that is most similar to The Netherlands would be the United Kingdom, so in order to compare policy evaluation regarding post-recession policies this paper will also be drawing a comparison between those two as to how the policy is evaluated. Both countries have high levels of mortgage debt to GDP and well-developed mortgage markets and have also struggled with the somewhat contradictory ambitions of boosting the housing market while also reducing mortgage debt and risk (Scanlon & Elsinga 2013). However, this paper will also look at the lesser developed country of the Philippines, and the more developed country of South Africa, in order to compare how these countries, evaluate policies and the differences between them. This paper will only evaluate the policy based on the Dutch evaluation criteria.

The Dutch government which enacted multiple policies to restore housing demand and consumer trust within the Dutch housing market. Such policies included increase liquidity support for banks, increase of deposit insurance to €100.000, and extra money was made available for the support of financial institutions(Wagner, 2012). the policy this paper would like to focus on has been one of the longest policies in effect and encompasses both the ideals of restoring consumer trust and housing demand. This policy ran from 2009 July until August of 2014 and sought to improve both these characteristics by raising the 'National mortgage guarantee' from € 265.000 to € 350. 000. But just how effective was this policy at improving housing demand and building consumer trust, and how can it be evaluated? As evaluation has been an often-overlooked tool of policy makers, a lot of post-recession policies have yet to be evaluated (Furubo et al. 2002). The contribution this paper makes is the evaluation of a specific post-recession policy in order to find out if they've been effective. The question that ties into this and which this paper will try to answer will be: 'What effect did the raising of the NHG in the period of 2009 until 2014 have on the housing demand in The Netherlands'

The expected effect of this policy would be that the increasing the mortgage guarantee would mean a more secure investment in housing for people looking for a home. The NHG would guarantee that the residual debt of a house sold when the mortgage can't be paid is remitted. Also, they would offer help in the sense that the mortgagor would look together with the NHG committee on how to make sure homeowners would be able to pay their mortgage. The idea at the time was that a more secure feeling to home seekers would help with increasing the demand on the housing market (Ronald & Dol 2011). The sub-questions that can be asked are: 'What factors do we need to filter out in order to get a good idea of what the policy has attributed to this change', 'Was this policy effective' and 'How would effectiveness of a policy be measured? and how does policy evaluation hold up in different countries.

This paper will try to answer these questions by first looking at the relevant theories and concepts and scientific relevance of this topic. Discussing in further detail what the policy entails and how a policy is evaluated, also it will look at the different factors that are important for the statistical analysis. From these theories and concepts an explanation on how and why there has been chosen the specific statistical analysis and why these factors and methods are most appropriate in this case. This includes a model to review the policy. Within the results that come from this analysis the findings will be discussed and why these findings are in line with the general narrative of the policy. After which the results of the policy evaluation will come forth. From these findings the conclusion and recommendation for future research will be discussed.

2.THEORETICAL FRAMEWORK

The relevant theories discussed in this paper all have to do with the policies enacted as a result of the subprime mortgage market crash, that had started in America. However, related to the Dutch context, most of the legislation passed by the Dutch government has consisted of tax cuts and other revenue measures as opposed to direct government investments in the sector itself (OECD, 2010). The goals were also social in nature as they want to increase social security in relation to housing purchases (IOB 2009). This was different in other developed countries as according to Ait-Sahalia et al. (2012) The United States was the only country that employed a diverse set of policies in the financial sector early on, these policies ranged from asset purchases to liability guarantees and recapitalization. The U.K. early response to the crisis concentrated on the provision of liability guarantees and changes in deposit insurance schemes (Claessens et al. 2010). Both the UK and The United States were mainly concerned with the liquidity of their banks rather than the social aspect of the crisis.

Direct investments by the government haven't been the prime focus of the Dutch housing policies because of the resilience of the Dutch housing market (Priemus & Whitehead 2014). An important factor in the resilience of the Dutch housing market is the mortgage interest tax deductible scheme or 'hypotheekrenteatrek' which is an incentive by the Dutch government which allows the deduction of certain costs related to housing. The most notably those from the rent you pay over your mortgage. Because of this policy it has been relatively attractive for starters to buy a house in the Netherlands, even with the increasing cost and debt that first-time home buyers face (Bertram & Helderman 2008).

Adding to this is idea of making it attractive to buy a house is the national mortgage guarantee (nationale hypotheek garantie) which states that for a certain value of a house, one can be sure to keep living in that house even if you are no longer able to fulfil your mortgage duties if you would pay a certain premium (van Ommeren 2006). This act of not being able to pay your mortgage is called 'defaulting.' If the resident defaults on his mortgage, the WEW makes sure that the lender still gets his money. The WEW is a private company which has to guarantee being able to repay debts in case of default. The government makes sure that the WEW will always be able to comply with its expected costs. As this can be seen as a guarantee by the government, the solvability of lenders to the NHG can be lower, so loans can be given at better conditions (Polman 2011).
When a resident is obliged to sell his home as a result of not complying to mortgage payments, the residual debt that arises from selling a defaulting home, is transferred to him. Defaulted homes are usually around 80% of the price one would receive from a home that has fulfilled all its mortgage payments, so there is usually a pretty significant residual debt. However, if according to the WEW the resident is not at fault for the foreclosure of his home (due to e.g. a divorce, unemployment, etc.) the costs can be negated (SEO 2011).

The policy this paper will be focussing on is increasing the national mortgage guarantee from €265.000 to €350.000. This policy is very risky and costly for the government. Not only will they have to generate additional funds for this policy, but they also must absolve any additional costs that the WEW cannot generate themselves. Because of the wide scale problems that the financial crisis had caused, and the amount of money that was being pumped into the housing market as a result of these policies it is important to see whether the policy in question has achieved what it had set out to do. Policy evaluations are used more frequently as they can be a helpful tool to prevent extra spending and help allocate resources more effectively in the future (Bosilevac et al. 2000).

The evaluation of such policies in the Netherlands is checked by the IOB (Internationaal onderzoek en beleidsevaluatie) or international research and policy evaluation. This method of evaluation is primarily used by the Dutch government to evaluate policies (Minister van buitenlandse zaken 2009). The policy is usually reviewed by an outside party in this case the IOB (Heckman & Vytlacil 2007). In other countries such as The Philippines, economic policies are evaluated using NEDA (National economic and development authority). The policies are evaluated using 6 steps: intent, objectives, coverage (how does the policy cover the intent of all departments and agencies), institutional responsibilities (which boil down to the neutrality of the people reviewing the policy) and lastly implementation and ethics of the policy are considered (Pomeroy et al. 2008).This method of policy review is basic in a sense that other more developed countries have expanded upon this model with more econometric basis for evaluations. This ties in to the paper by Summers (2000) that underlines the basic policy evaluation practices in developing nations as opposed to more developed ones. If we take economic policy evaluation in South-Africa for example the policies are evaluated by the public service commission (PSC). Their evaluation focuses on accountability, performance, decision making and knowledge (Baker et al. 2005). We can already see that the format includes a framework for the different department to work together and assigning clear roles to other institutions, this is done for accountability reasons (Agrawal 1999).

The most extensive evaluation should then be conducted by the most developed countries. Since the Netherlands and the UK are one of the most developed countries in the world (Brenton 2003). And including the fact that their housing markets share most similarities (Scanlon & Elsinga 2013). We can assume their policy evaluations to be extensive and comparable. In the Netherlands policies are evaluated using 5 criteria. Most policies have what they call 'sentimental goals', these relate to the achievement of a feeling rather than a numeric value of money. The opposite of these are numeric goals which tend to focus on monetary value (Khedr & Yaseen 2017). The Dutch framework consist of combination of sentimental goals and numeric goals the factors used are Impact, relevance, expediency, effectiveness and sustainability. The UK's policies are geared more towards more numeric goals and only have 3 categories: (BEIS 2017)

- Economy: in this context, whether projects are being delivered at the minimum cost which is practicably achievable
- Efficiency: whether the maximum outputs and impacts are being achieved from the resources involved.
- Effectiveness: how far the overall objectives of the programme have been achieved
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This paper will only be reviewing the policy based on the Dutch model, which tends to favour sentimental effects over numeric effects in the evaluation. Because the policy was enacted for a specific time and we're only interested in the specific frame up until 2016, this paper will not be taking sustainability into account. The impact of a policy relates to all significant effects (both positive and negative) that a certain policy produces for the stakeholders, this paper will focus primarily on the homeowners of The Netherlands and the Dutch government. The impact of a policy asks how much of the total output of the policy has contributed to something greater than itself, in this case this will be 'preventing the further decline of housing demand and consumer trust' (IOB, 2009). In this case, we can look at the impact the policy has had on housing buyers, and how it has helped boost consumer trust and demand for housing in the Netherlands.

The relevance of a policy relates to the outputs of the policy, and whether they're in line with the needs of the target demographic. The relevancy of a policy is thus the way it contributes to the eventual goal of its policy. The impact of a policy is relevant if it has made the eventual larger goal of the policy closer to realisation, In this case, the prevention of further decline in the housing market. The expediency of a policy refers to , the way that the benefits of the policy weigh against the chosen costs. Both the quantity and the quality of measures are being measured. The elements that are taken into consideration are:

- Have the inputs been used at the lowest cost possible?
- Have activities been enacted in a simple manner?
- Has the bureaucracy been enacted at the right level?
- Have conflicts been avoided, or have they been resolved?
- Have outputs been delivered within the given time frame?

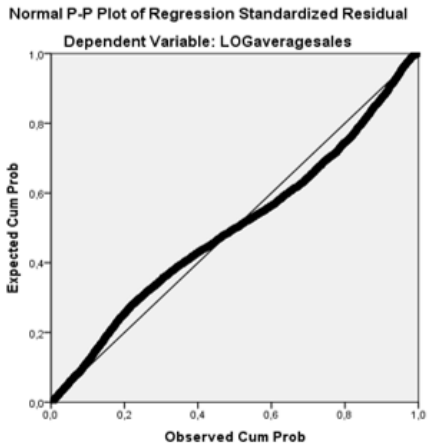
Lastly, the effectiveness of a policy relates to the direct results of the activities which contribute to the goals of that policy. A policy is effective when the results of that policy has made a considerable contribution to the goals set by the policy. The expediency of a policy in this sense is different than the effectiveness of a policy. A policy can be cost effective but not effective in achieving the goals it had set out (IOB 2009).

When testing the effect of the specific policy that sought to improve both the consumer confidence and the demand for housing, it was apparent to filter out effects related to both variables within this research. Therefore, this paper seeks to not only study the effect of the policy but to have certain control variables within this research, that seek to explain demand and consumer trust.

3.METHODOLOGY

Research method

The dataset consists of 718 municipalities with observations ranging from the years 2006 to 2014. When we look at the data, the next step was to assess whether the regression could be done, before using the data it was important to see if the data was normally distributed, this was done by looking at the normal distribution of the data points in graph 2. The following tests tested the Linearity and homoscedasticity of the dataset. The results of these tests can be found in Graph 1. Linearity can be checked as the data points are linearly distributed along the data line within this graph proving its linearity. Also, the data points aren't too far off from this line, there are no significant outliers from this line. This means that the heteroscedasticity is accounted for and the regression could be done. The resulting multiple linear regression formula is specified below.

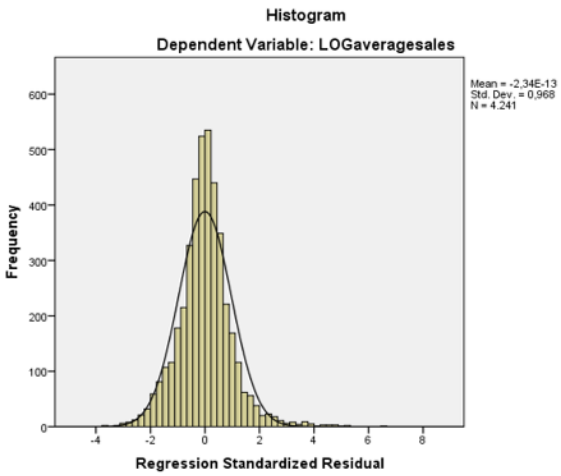


Graph 1
Residual data points
Source: Author's own creation
***All municipalities included**

Y= B + B1* X1+ B2* X2+ B3*X3+ error terms

The dependant variable in this case is: 'average sales price' or 'Y' and with the dependent variables being: policy (X1), income (X2) and population (X3)' respectively.

The variable of 'policy' is a dummy variable, which is coded as a 0 into the regression up to and including 2008, the variable policy is coded as 1 from the years 2009 up to and including 2014. The variable income is measured in euros and the variable population is measured in number of people. All variables have been made into logarithmic versions of their original variables and are coded as such.



Graph 2
Normal distribution of data
Source: Author's own creation
***All municipalities included**

Housing demand can be measured through housing price, the increase of demand results in an increase in price and vice versa (Isaac & Allen 1991). When discussing the other effect of consumer confidence this can also be applied. However, in order to really zoom into these different effects that the policy seeks to improve on, we can use other measurement factors. These can be measured using the factors of: 'population and income' Population doesn't need to be a clear predictor of housing demand. In fact, most people tend to live where there are houses being built (Vermeulen, van Ommeren, & Planbureau, 2006). Meaning that population in itself is not always a clear predictor for housing demand, not even in a national context. However, it is important to filter this effect as demographic changes within a population can change the demand for housing even ever so slightly, as a higher forecasted growth can incentivise the increase in building permits which can be used as a measurement for increased housing demand (Mulder, 2006). The decision eventually fell to filter out the effect of population, as population is often a clearer predictor of housing demand than housing stock, in the sense that population increase more often than not increases housing demand, where housing stock increase doesn't have to have this effect (Mankiw & Weil 1989).

The second variable included is 'income', which can predict the confidence of the consumers and in turn say something about the demand. The higher a person's income, the more willing they are to spend a larger portion of it on improving their living conditions (Mayo, 1981). The positive relationship is also confirmed in a paper by Wheaton, (1977), which states that an increase of $15.000 per year in real average income, shows that the number of housing moves almost doubles.

The last factor that this paper filters out is 'the market cycle'. In order to filter out the natural economic cycle, the data points have been chosen from 2006-2013 and have been put into the regression. Since a comparison has to be made for the times when the policy is in and out of effect. the year '2014' is used as a base year, in order to compare the results that come out of this. This means that the year 2014 has been excluded from the regression. Because the policy was implemented in a period of decreasing demand, one could easily asses from this that the policy was ineffective at stopping the further decrease in demand. This is why it was important to filter out this effect.

This recession also had a second dip on consumer trust and spending. This was called the 'the double dip', this phenomenon is known as a 'balance recession' or 'the European debt crisis'. As countries such as Greece made these problems apparent to the general EU citizen, so, he lost his faith in the Economic system as a whole (Overbeek 2012). This period is also encompassed in the regression as the policy still ran during that time, it needs to be considered (Graph 3).

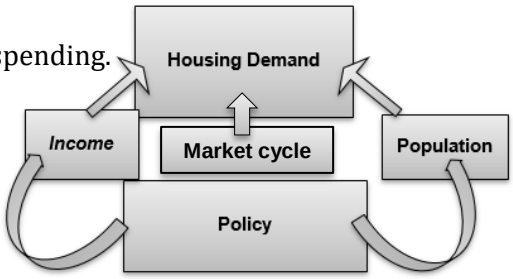


Figure 1
First conceptual model
Source: Author's own construction

Data collection

Because this paper has chosen to primarily focus this research within the country of The Netherlands. The methodology for this research was based on scientific data obtained through CBS (Centraal Bureau voor de Statistiek). CBS is a Dutch agency that collects national data on a range of subjects. The statistical data that was obtained through the electronic databank of the CBS, which was called 'CBS statline'. 1 ratio variable was used as dependent variable and the 'policy' variable has been used as a dummy variable with independent variables: 'population and income' as the 2 other ratio variables. The suitable choice for statistical analysis became the: 'multiple linear regression' In order to more easily interpret its results, the ratio variables have been changed to logarithmic variables. This means that when one of the variables increased by 1% so did the others. The data needed a time dimension as a result of the policy implication. The time dimension resulting from the fact that the policy was enacted for only a couple of years.

Figure 2, *All municipalities in the Netherlands.*
Source: author's own construction

This resulted in a very limited number of observations per variable. In this case a locational dimension has been added.
Meaning that the regression would include the information from every municipality in The Netherlands (Figure 2) and compare them for every year of 2006-2014, using 2014 as a base year. This method provided enough cases for a reliable regression.

Data quality

The data observed was fairly complete but had a fair number of municipalities with no data (Table 1). Because there are at least 4241 observations are included within this regression for each variable, we can assume that this is representative for the population of the Netherlands, as there were now over 10.000 observations to work with.

Table 1.
Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Policy	11360	0	1	0,38	0,484	0,234
LOGaveragesales	6973	11,59	13,64	12,3654	,2474	,061
LOGincome	4241	3,16	4,12	3,5586	,11954	,014
LOGpopulation	6966	6,82	13,65	10,1096	,85083	,724

The data itself consists mostly of factors that can be measured on a ratio scale. However, choosing the right filters to test for housing demand can be difficult as a factor in housing demand also comes down to personal preference. According to Myers & Gearin (2001) the increase in more compact housing demand is a result of personal preference and demographic changes. A paper by Coulter et al. (2011) also suggests that personal preference can stop people from wanting to move, since their house is now adjusted to their liking. What these two papers and a paper by LeRoy & Sonstelie (1983) have found, is that location plays the biggest role in housing demand. People tend to move closer to amenities, based on their income.
Because of the locational aspect of preference, this factor has not been included into the analysis as this factor was too complex to include it was not present at time of writing. The personal preferences of everyone in the Netherlands regarding preferred location and suitable housing accommodation, would be too much data to put into a suitable analysis. This paper does not have the means to examine that factor at this time.

Data limitations

A lot of factors tend to influence housing demand. Personal preference regarding location next to amenities, housing model and amenities of the house itself are all examples of influences (Slacalek 2009). The data used for this research came from CBS statline, which most of the time didn't have the locational aspect of every municipality in the Netherlands and the time aspect from 2006 until 2014. Because the regression had to have as many values as possible in order to be reliable, the other variables couldn't be used as the data simply wasn't there. Also, because the data came from one specific source it may be subjected to bias, (Gray et al. 2005) as there weren't any other sources that could be found in order to check the CBS statline data. Also, the enactment of multiple policies within the given timeframe of 2009-2014 within the country of the Netherlands make it difficult to isolate one specific policy and its effect on the entire housing market of the Netherlands
With these limitations in mind the regression could be performed.

4.EMPIRICAL RESULTS

The regression

The impact of every variable on the variable of housing price is noted for B1 being 0,048 for policy, B2 being 1,881 for income and B3 being 0,012. The B value in this case is the slope of the formula, which is 5,376.

Table 1
Regression analysis of population, income and policy on housing price.

Model	Sum of Squares	DF	Mean square	F	Sig
Regression	211,111	171	1,235	109,117	,000
Residual	46,037	4069	,011		
Total	257,148	4240			

a. Dependent Variable. LOGaveragesales
***All municipalities included**

As we can see from the B values and table 2, there is in fact a positive relation between the independent variables and the dependant variable of housing demand. All variables are contributing positively. From table 1 we can see that the regression in itself in significant meaning there is a relation between these variables and the housing demand in The Netherlands.

Table 2

Factors and their effect on the variable 'housing price'

Model	B	Std. Error	Beta	t	Sig
(Constant)	5,376	0,83		64,814	,000
Policy	,048	,008	,095	6,284	,000
LOGincome	1,881	,026	,913	94,275	,000
LOGpopulation	,012	,003	,041	4,653	,000

a. Dependent variable: LOGaveragesales

*All municipalities included

As we can see in table 2, all variables are in fact significant, with all the variables being significant at >0.005. This thus show that there is a correlation with the dependant variable of housing demand. The B-value for every variable is positive. Since the variables are all logarithmic, the percentage increase of policy with 0.048 for example means that the mean sales price of housing increases with 1%. In this way we can see that this accounts for all variables, and that the policy in itself was effective.

If we look at Table 3, we can also conclude that the R2 of this regression also shows a strong correlation. The R2 shows that 82,1% of the variable: 'average sales price of housing' is explained through the independent variables.

Table 3

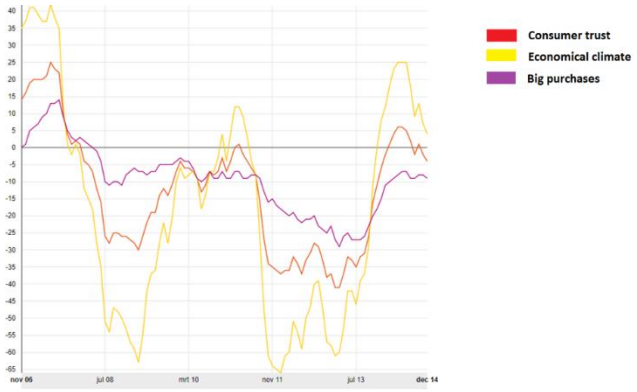
R2 of the regression

Model	R	R Square	AdjustedR square	*Std. Error of the Estimate*
1	,906	,821	,813	,10637

a. Predictors: (constant), LOGpopulation

Discussion

A possible explanation for this effect could be that the trust in housing had been very high for consumers up until the point of the financial crisis in 2007 (Graph 3). The government had full control of the housing market and earlier policies within that specific area all proved successful and in benefit of the consumer (Poppelaars & Scholten 2008). This is seen as important in policy making. A lot of policies have had the adverse effect because of this reason, for example the refugee policies. People began to see that policies enacted by the government were not achieving the initial goals, a lot of illegal migration and vague laws made it, so the problems actually became worse in the eyes of the public. Which made it so that public opinion started shifting against newer migration policies(Castles, 2004).



Graph 3

Consumer trust, economic climate and trust in big purchases

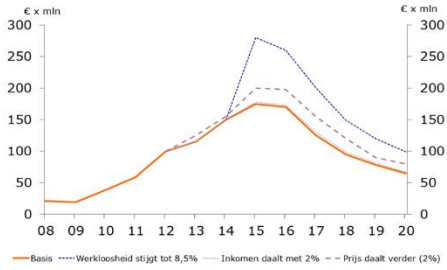
Source: Consumentenvertrouwen, economisch klimaat en koopbereidheid; gecorrigeerd. (2018, 21 December). Retrieved from https://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=83693ned

Another advantage to the housing policy is that it was a policy that directly influenced the consumers. Consumers would immediately be confronted with this new policy if they were looking to buy a new house. According to a paper by Dreijerink & Abrahamse (2006)
policies that are directly involved with the consumers, such as direct energy incentives were more effective than indirect energy directives. These indirect energy directives would favour people out of anything but their direct energy expenditure. Direct energy expenditure took this into account (Steg et al. 2006).
Arkensteijn & Oerlemans (2005), noted that policies are judged to be more accepted when people are made more aware of the problems that the policy wishes to negate, when they feel more responsible for these problems, and when they feel a stronger moral obligation to contribute to the solution of these problems. Policies are evaluated as less acceptable when they are perceived to be unfair, when they seriously threaten people's freedom of choice, and when people believe the policies will not be effective in reducing environmental problems at stake.

This feeling of effectiveness may have contradicts the statistics of that time, where the unemployment rate increased from 5.4% to 6.2% and even to 8,75% in 2010 (van Hoorn & Sent 2010), being fired from a job can be a hard thing to process and a lot of people were now stuck in their house they may have had the intention of selling (Gesthuizen, 2011).

One explanation for this phenomenon can be 'signalling theory'. Signalling theory states that when the market or government gives of a certain signal using a policy, it can send a signal to people which they can interpret either in favour or not in favour of the policy (Bergh & Gibbons, 2011). the Dutch government invested heavily in a lot of industries even if the national debt would rise. It has made almost 6 billion euros available for investments in certain industries it deemed necessary. Most notably the building sector, and with a combined effort of Belgium Luxembourg and France they even managed to bail out the banks Fortis, ABN-amro and Dexia (Claessens et al., 2012).

The signal of unemployment may have had a negative impact, but within the context of signalling theory, where the unemployment in the Netherlands was at the time the second lowest percentage. The actions of the government had created some faith in their interventions. (van Hoorn & Sent 2010). Even During the years of 2012 when the feeling of the average consumer dipped again because of the 'double dip' recession which can be seen in Graph 3. The loss of consumer trust did not stop the average consumer from using the policy. 'Now is the time to buy' was the message set out by the government. At this time the WEW receive many more damage claims than it had before. Meaning the policy, but also the demand for housing was still in full swing. (Graph 4)



Graph 4
Value of WEW damage claims
Source: Van Dalen P. (2014, 19 June) Gevolgen veranderingen NHG in kaart. Retrieved from https://economie.rabobank.com/publicaties/2014/juni/gevolgen-veranderingen-nhg-in-kaart/

Review of the policy

The policy managed to lessen the blow on housing demand within the context of the financial crisis. When we look at the different qualifications for policies and how it should be evaluated in The Netherlands(IOB 2009) we can give our judgement according to the standards set by the enforcer of the policy. The efficiency of this policy is positive, contributions have been made to the overall consumer trust and housing demand in The Netherlands during the financial crisis. We can tell from the results that the policy did have a positive effect on the housing demand as can be seen from SPSS table 2. The point of expediency shows us that the ceiling of €350.000 was determined based on the chance of defaulting of the mortgage and the damage this will cost. The chance of a faulting mortgage was put at 1.83% within 15 years of ownership (CPB 2018). The funds that had been attracted to this fund were 520 million euros which was enough for the country the mitigate the risks of defaulting loans during the 5-year period (COSEMANS & EICHHOLTZ 2009).

The average mortgage price was at that time expected to be growing because of this policy. This allows the WEW to be financially able to guarantee the paying back of loans on defaulters. Which should be about 1 billion in future premiums (Kerste & Rosenboom 2011). From this we can conclude that not only have the inputs been used at the lowest cost possible, but the outputs have been delivered within the given timeframe, looking at the data. The bureaucracy has been made as simple as possible during the first stages of the policy implication, with a lot of flexibility in relation to who falls under this system. Making almost 80% of all housing viable for this new policy. The simplicity of this policy has been made known in the financial aspect of it. A lot of the costs such as closing costs, can be paid back in 1 or 2 years and are fiscally deductible. Even people that are at a higher risk of defaulting can get a loan through this new system. Because the lender is secured by the NHG by a possible residual debt it can't absolve. The lender can use the NHG as a buffer meaning that the lender can provide lower rent as a result. (Visser 2009) Bureaucracy is thus at the level of the consumer, and in his favour.

In relation to impact and relevance, the impact of the policy has been positive up until 2012. The government decided to raise the premiums of the NHG from 0.45% to 1% in order to be more certain to be able to help if a lot of people end up defaulting (Kerste, & Rosenboom 2011). The WEW ended up giving out 10-15% less damage claims. (De Horde, 2014) However the cost of claims has risen considerably. In 2010 this was 38,6 million euros but in 2013 this has become 158.7 million euros (NHG, 2014b). The peak of these damage claims was to be expected around 1.3 billion euros (Francke & Schilder 2013). This made the policy a huge risk for the WEW and the government at that time. The impact of this policy had the effect that the government expanding their debt to eventually be able to guarantee a stable housing market in a time of crisis. Because of this, when the euro crisis came about, the government couldn't afford to put itself in any more debt. This was at the time of the Greek bailout, when a lot of money had to be made available to help Greece not declare bankruptcy. Because of the combination of already being in a relatively large amount of debt and the prospect of more debt on the horizon. The government of the Netherlands had to draw the line in their spending. And this is when the government started to cut down in spending in a time of recession (Kickert, W. (2012). This is also why this policy is relevant in a sense. The relevance is measured by how it has achieved a goal higher than the policy seems to convey, the higher goal here being the increased demand and consumer trust within the Dutch housing market. Since both of these factors were declining, this policy gave exactly what the target demographic of homebuyers needed. Its relevance is further strengthened by the fact that it has set those goals, but it has also achieved them, which is what makes this policy also very relevant within the recession policies.

5. CONCLUSIONS

To conclude, the 2007 financial crisis has left its mark on The Netherlands (Elbourne et al. 2014). In order to zoom in on 1 type of policy, this paper filtered out the effects of the market cycle and used two control variables of income and population in order to try and filter out the effect the policy may have had on the housing price in the Netherlands. The policy ran from 2009-2014 so the regression data contained the periods from 2006-2014, in order to have a before and during effect within the regression. The data was obtained through the CBS and with this data a regression came forth to find out the effect the policy, had on housing demand in The Netherlands, controlling for income and population.

This paper found that the heightening of the national mortgage guarantee has helped the economy get back on the right track. Its overall effect had been positive according to the regression. Even when filtering out the effects of the market cycle, population and income we can still see the favourable effect the policy has on the housing price variable. An explanation for this favourable increase could be that the policy had not only been favourable financially for the consumers, making sure that the loans they'd acquired were at a much better price than other who didn't have the NHG loans. this holds true even when we consider the premium they'd had to pay. But the policy also showed its efficiency through the level on which it was enacted, and the positive signalling that it had on the population during both crises. The policy's effectiveness can also be attributed to previous successes in housing market policy. The signalling of the policy has made it so that people would try to benefit from this policy as it was still in effect. 'Now is the time to buy' had been the message. This can be seen in graph 3 where the consumer trust takes a nosedive, however the 'good time for big purchases' hasn't dipped a third of what the 'trust in economic climate' has done.

According to the evaluation model by the IOB this policy has been successful, on both a sentimental and numeric way. If we would look at other countries such as the UK and The United States for example, the policy may not have been evaluated as positively as in the Dutch model. However, the Dutch model encompasses itself positively to other models that may be lacking in depth or focussing on things such as accountability, which is the case in the Philippines and South Africa.

The policy had been a risk for the government of The Netherlands. The government had to step in if the WEW somehow lacked funds in the case of mass defaults. And the government as a result would have to go through massive losses. However, even if the national debt increased tremendously during that period, also as a result of this policy (Hoorn 2010). It still managed to boost the housing demand in the Netherlands during that period. The further stagnation of the housing market was prevented, and housing prices are at the time of writing in an upward spiral again (Bezemer 2018). However, there are obviously more factors influencing housing demand, in order to truly filter out the policy's effect. For example, you'd have to take into account the exogenous factors such as the euro crisis and international politics (Schwartz & Seabrooke 2009). Even national factors can play a significant role in the changing of housing prices. Examples of this include ageing of the population, other policies enacted by the national government during this timeframe or even personal factors such as proximity to playground and or bars can alter such demand. The scope of this research would be too small to really filter out the effect (Slacalek 2009). Researching this topic has shown that specific policy analysis hasn't been performed on many policies which were enacted after the financial crisis of 2007. It would be interesting to see what effect such policies would have had on the Dutch economy. If we would increase the scale of such researches to truly filter out the effects that could cause a positive relationship between housing demand and the enacted policies. It could give the government or institutions who enable or demand these policies more insight in to what would be effective in which sense, and also what would be ineffective. A bigger scale research into these policies would benefit us all when the next recession comes around.

REFERENCES

Aalbers, M. B. (2008). The financialization of home and the mortgage market crisis. *Competition & change*, *12*(2), 148-166.

Acharya, V., Philippon, T., Richardson, M., & Roubini, N. (2009). The Financial Crisis of 2007-2009: Causes and Remedies. *Financial Markets, Institutions & Instruments*, *18*(2), 89–137.

Agrawal, A. (1999). Accountability in decentralization: A framework with South Asian and West African cases. *The Journal of Developing Areas*, *33*(4), 473-502.

Ait-Sahalia, Y., Andritzky, J., Jobst, A., Nowak, S., & Tamirisa, N. (2012). Market response to policy initiatives during the global financial crisis. *Journal of International Economics*, *87*(1), 162-177.

Arkesteijn, K., & Oerlemans, L. (2005). The early adoption of green power by Dutch households: An empirical exploration of factors influencing the early adoption of green electricity for domestic purposes. *Energy Policy*, *33*(2), 183-196.

Baker, M., Wood, C., Carter, J., Short, M., & Jay, S. (2005). *Strategic environmental assessment and land use planning: an international evaluation*. Routledge.

BEIS (EVALUATION OF POLICIES FOR LOCAL ECONOMIC GROWTH: SCOPING STUDY) (2017). *Research Paper Number 5.*

Bergh, D. D., & Gibbons, P. (2011). The stock market reaction to the hiring of management consultants: A signalling theory approach. *Journal of Management Studies*, *48*(3), 544-567.

Bertram, A., & Helderman, J. K. (2008). Wat gaan we doen met de woningcorporatie?.)

Brunner, K., & Meltzer, A. (1983). Econometric policy evaluation. A critique. In *Theory, Policy, Institutions: Papers from the Carnegie-Rochester Conferences on Public Policy* (Vol. 1, p. 257). North Holland.

Castles, S. (2004). Why migration policies fail. *Ethnic and Racial Studies*, *27*(2), 205–227.

Chesney, M., Stromberg, J., & Wagner, A. F. (2012). Risk-taking incentives and losses in the financial crisis. *Research Paper*, 10-18.

Chor, D., & Manova, K. (2012). Off the cliff and back? Credit conditions and international trade during the global financial crisis. *Journal of international economics*, *87*(1), 117-133.

Claessens, S., Dell'Ariccia, G., Igan, D., & Laeven, L. (2012). Cross-Country Experiences and Policy Implications from the Global Financial Crisis. In *Economic Policy 62* (pp. 267–293).

COSEMANS, M., & EICHHOLTZ, E. P. (2009). De Nederlandse woningmarkt in crisis. *Economisch-Statistische Berichten*, *94*(4563s), 44-49.)

Coulter, R., Van Ham, M., & Feijten, P. (2011). A longitudinal analysis of moving desires, expectations and actual moving behaviour. *Environment and Planning A*, *43*(11), 2742-2760.

CPB 2018. (n.d.). Retrieved December 11, 2018, from https://www.cpb.nl/sites/default/files/publicaties/download/verhoging-nationale-hypotheekgarantie.pdf

Francke, M., & Schilder, F. (2013). Schade en schuld op de hypotheekmarkt. *Economisch-Statistische Berichten*, *98*.)

Furubo, J. E., Rist, R. C., & Sandahl, R. (2002). *International atlas of evaluation*. Transaction Publishers.

Gelauff, G., Lanser, D., van der Horst, A., & Elbourne, A. (2014). Roads to recovery. *CPB Netherlands Bureau for Economic Policy Analysis, The Hague*.

Gesthuizen, M. (2011). De gevolgen van de economische crisis voor "gemiddeld Nederland." *Mens En Maatschappij*, *86*(1), 2–4.

Glaeser, E. L., Gyourko, J., & Saks, R. E. (2005). Urban growth and housing supply. *Journal of Economic Geography*, *6*(1), 71–89.

Gray, J., Liu, D. T., Nieto-Santisteban, M., Szalay, A., DeWitt, D. J., & Heber, G. (2005). Scientific data management in the coming decade. *Acm Sigmod Record*, *34*(4), 34-41.

Heckman, J. J., & Vytlacil, E. J. (2007). Econometric evaluation of social programs, part I: Causal models, structural models and econometric policy evaluation. *Handbook of econometrics*, *6*, 4779-4874.

IOB [Inspectie ontwikkelingssamenwerking en beleidsevaluatie] (Den Haag). (2009). *Evaluatiebeleid en richtlijnen voor evaluaties*.

Isaac, M., & Allen, M. (1991). The economic theory of housing demand: a critical review. *Journal of Real Estate Research*, *6*(3), 381-393.

Kanavos, P., Trueman, P., & Bosilevac, A. (2000). CAN ECONOMIC EVALUATION GUIDELINES IMPROVE EFFICIENCY IN RESOURCE ALLOCATION?: The Cases of Portugal, the Netherlands, Finland, and the United Kingdom. *International journal of technology assessment in health care*, *16*(04), 1179-1192.

Khedr, A. E., & Yaseen, N. (2017). Predicting stock market behavior using data mining technique and news sentiment analysis. *International Journal of Intelligent Systems and Applications*, *9*(7), 22.

Kempen, R., & Priemus, H. (2002). Revolution in social housing in the Netherlands: possible effects of new housing policies. *Urban Studies*, *39*(2), 237-253.

Kerste, M., & Rosenboom, N. (2011). Verhoogd plafond Nationale Hypotheek Garantie risicovol. *Me Judice: Economen in Debat*, *2011*(17 okt).

Kickert, W. (2012). State responses to the fiscal crisis in Britain, Germany and the Netherlands. *Public Management Review*, *14*(3), 299-309.

LeRoy, S. F., & Sonstelie, J. (1983). Paradise lost and regained: Transportation innovation, income, and residential location. *Journal of Urban Economics*, *13*(1), 67-89.

Mankiw, N. G., & Weil, D. N. (1989). The baby boom, the baby bust, and the housing market. *Regional science and urban economics*, *19*(2), 235-258.

Mayo, S. K. (1981). Theory and estimation in the economics of housing demand. *Journal of Urban Economics*, *10*(1), 95–116.

Mulder, C. H. (2006). Population and housing. *Demographic Research*, *15*, 401–412.

Myers, D., & Gearin, E. (2001). Current preferences and future demand for denser residential environments. *Housing Policy Debate*, *12*(4), 633–659.

OECD. (2010). Policy Responses to the Economic Crisis. In *OECD Trade Policy Studies* (pp. 37–64).

Overbeek, H. (2012). Sovereign debt crisis in Euroland: root causes and implications for European integration. *The International Spectator*, *47*(1), 30-48.

Polman, A. M. (2011). *Inferenties in een hypotheekofferte: Een onderzoek naar het bevorderen van de begrijpelijkheid*(Bachelor's thesis).

Poppelaars, C., & Scholten, P. (2008). Two worlds apart: The divergence of national and local immigrant integration policies in the Netherlands. *Administration & Society*, *40*(4), 335-357.

Pomeroy, R. S., Pido, M. D., Pontillas, J. F. A., Francisco, B. S., White, A. T., De Leon, E. M. C. P., & Silvestre, G. T. (2008). Evaluation of policy options for the live reef food fish trade in the province of Palawan, Western Philippines. *Marine Policy*, *32*(1), 55-65.

Priemus, H. (2005). How to Make Housing Sustainable? The Dutch Experience. *Environment and Planning. B, Planning & Design*, *32*(1), 5–19.

Priemus, H. (2010). The credit crunch: Impacts on the housing market and policy responses in the Netherlands. *Journal of Housing and the Built Environment*, *25*(1), 95-116.

Priemus, H., & Whitehead, C. (2014). Interactions between the financial crisis and national housing markets.

Publieke belangen en hypotheekregulering. SEO-rapport, 2011-19. Amsterdam: SEO Economisch Onderzoek.)

Ronald, R., & Dol, K. (2011). Housing in the Netherlands before and after the global financial crisis. *Housing markets and the global financial crisis: The uneven impact on households*, 93-112.

Scanlon, K., & Elsinga, M. (2013). Policy changes affecting housing and mortgage markets: how governments in the UK and the Netherlands responded to the GFC. *Journal of Housing and the Built Environment*, *29*(2), 335–360.

Schwartz, H. M., & Seabrooke, L. (2009). Varieties of residential capitalism in the international political economy: Old welfare states and the new politics of housing. In *The politics of housing booms and busts* (pp. 1-27). Palgrave Macmillan, London.

Slacalek, J. (2009). What drives personal consumption? The role of housing and financial wealth. *The BE Journal of Macroeconomics*, *9*(1).

Steg, L., Dreijerink, L., & Abrahamse, W. (2006). Why are Energy Policies Acceptable and Effective? *Environment and Behavior*, *38*(1), 92–111.

Summers, L. H. (2000). International financial crises: causes, prevention, and cures. *American Economic Review*, *90*(2), 1-16.

Taylor, J. B. (2010). Getting back on track: macroeconomic policy lessons from the financial crisis. *Federal Reserve Bank of St. Louis Review*, *92*(3), 165-176.

van Buitenlandse Zaken, M. (2009). Evaluatiebeleid en richtlijnen voor evaluaties.

van Hoorn, A. A. J., & Sent, E. M. (2010). Kramp over krimp.
van Ommeren, J. N. (2006). Verhuismobiliteit: een literatuurstudie naar belemmeringen tot verhuizen.

van Tilburg, R., Benink, H., & Bezemer, D. (2018). DE LESSEN VAN DE CRISIS VAN 2008: ZIJN ZE GELEERD EN IN DE PRAKTIJK GEBRACHT?.

Vermeulen, W., van Ommeren, J., & Planbureau, N. C. (2006). *Housing supply and the interaction of regional population and employment*.

Visser, M. I. (2009) Uitstel van executie.

Wagner, K. (2012). A Review of: "Housing Markets and the Global Financial Crisis: The Uneven Impact on Households." *International Journal of Housing Policy*, *12*(1), 105–107.

Wheaton, W. C. (1977). Income and urban residence: An analysis of consumer demand for location. *The American Economic Review*, *67*(4), 620-631.

Zingales, L. (2008). Causes and effects of the Lehman Brothers bankruptcy. *Committee on Oversight and Government Reform US House of Representatives*.)