Overcoming the crisis: the influence of, and the effects on land prices

Dr. Ir. D.A. Groetelaers
OTB Research Institute for the Built Environment, Delft University of Technology
P.O. Box 5030, 2600 GA Delft, The Netherlands
E-mail: d.a.groetelaers@tudelft.nl

Abstract

Land prices can be seen as a residue in urban land development projects, which means the costs of development and the profits of house sales determine the land price. However, in a period of recession there are various opinions about this. Some experts claim that land prices caused the problems on the housing markets; they claim that the dynamics of land prices drive overall real estate prices. Others claim that housing market dynamics have put a huge pressure on land markets. Also government actions can be included in the land price debate.

This paper focusses both on the influence of land prices on the on-going debate about the housing market and land development projects, and on the effects of the crisis on land prices.

Keywords: Land prices, house prices, residual calculation
From self-supporting to self-destructive land development: A self-fulfilling prophecy?

Introduction

Land prices can be seen as a residue in urban land development projects, which means that the costs of development and the profits of house sales determine the land price. However, in a period of recession there are various opinions about this. Some experts claim that land prices caused the problems on the housing markets; they claim that the dynamics of land prices drive overall real estate prices (Rietdijk, 2010). Others claim that housing market dynamics have put a huge pressure on land markets (Eggens, 2013). Also government actions can be included in the land price debate. A very important aspect is that ‘land’ is crucial to any kind of spatial development, including housing. “Yet, of all the raw materials required for house building, land is the most problematic to source. It is used extensively, its quality is heterogeneous and its supply is fraught with uncertainty. It cannot simply be ordered ‘off the peg’ like bricks or other raw materials” (Adams, Leishman, & Watkins, 2012). Even though in The Netherlands land has been ‘made’ over the decades – like the province of Flevoland, the new housing development IJburg, or the harbour area Maasvlakte – land is a scarce product that cannot be made. Each bit of land has a unique position and quality. These characteristics of land make it a very valuable trade object (De Greef, 2001).

In the 1990s changing economic and social circumstances in The Netherlands brought about a shift towards greater involvement of private market parties on the land market. There was a growing demand for owner-occupied property, the share of newly built houses in the private sector was increasing and interests on mortgages were decreasing. Because of this purchase prices of new houses increased faster than the construction costs. That is part of the reason why market parties set about acquiring significant areas of land in and around the potential urban expansion locations (Groetelaers, 2004). But it is also the reason why municipalities were taking greater risks to cash in on the land supply profits.

The land market is almost inseparable from the real estate market. The value of land for housing depends on the house prices and functioning of the housing market. Due to the global financial crisis and the collapsing of the housing market, the land market has also collapsed. In fact we can argue that the housing market has blown up the land market (Groetelaers, 2012).

This paper focusses on the influence of land prices on the on-going debate about the housing market and land development projects, and on the effects of the crisis.

First the concept of ‘land value’ is clarified, since this is an important market force in urban land development. Second the Dutch system of housing and land development is described from a financial perspective. Characterising turning point in policy and practice is the transformation from subsidised housing and land development to a self-supporting system. Third the strengths and weaknesses of a self-supporting system of land supply are discussed. This paper concludes with a reflection on the effects of a crisis on a self-supporting system of land supply.

The value of land

Classical theories

Theories on ‘value’ have been developed over centuries. The economic value of goods has been an important study object for economists since the beginning of the discipline. Karl Marx describes the wealth of society under the capitalist system as an ‘immense accumulation of commodities’. But in his perspective these commodities have a twofold aspect: that of use value and exchange value. The use-value of a commodity is indifference to the nature of its economic destination. The exchange-value can be seen as a quantitative relation: the proportion in which use-values are exchanged for one other. According to Marx “the analysis of commodities
according to their two fold aspect of use-value and exchange value (...) is the result of a century and a half of critical study by the classical school of political economy which dates from William Petty in England and Boisguillebert in France and closes with Ricardo in the former country and Sismondi in the latter” (Marx, 1857).

Adam Smith noticed that “the word value has two different meanings, and sometimes expresses the utility of some particular object, and sometimes the power of purchasing other goods which the possession of that object conveys. The one may be called the value in use; the other value in exchange” (Ricardo, 1817). According to Smith things which have the greatest value in use have frequently little or no value in exchanges; and those which have greatest value in exchange have little or no value in use. Based on Smith’s observation Ricardo concludes that “utility then is not the measure of exchangeable value, although it is absolutely essential to it” (Ricardo, 1817).

Nowadays we tend to relate value to the amount of money someone is willing to pay for the exchange of a good. This amount depends on the future use of a good. This meaning of value is related to the theories developed by the classical school of political economy, of which David Ricardo contributed an important theory to how we see the value of land. At the beginning of the nineteenth century Ricardo already came up with a theory that the value of land exists through the use of it. In a reaction to the Corn Laws he argued “the price of corn is not high because rent is paid, but the rent is paid because the price of corn is high”. According to Ricardo rent plays no part in determining prices. This is the reverse of the classical cost theory of prices. In Ricardo’s theory rent is not a cost but a residual.

Social function
According to De Greef the economic value of land has played an important role in the development of economic theories, “especially as land has not just an economic but also a social function” (2001, p. 2). This is why the land market cannot be fully compared with (free) markets for commercial products like electrical equipment. National housing policy influences the housing market and therefore also the land market. Also national planning policy influences the land market.

Harvey and Jowsey also relate land value to the social function. They explain why land development may not be socially optimal. “In a pure market economy, resource allocation is the result of the decisions of consumers and producers who seek to maximise the difference between benefits and incurred costs.” Briefly said: it is a matter of supply and demand. Harvey and Jowsey also say that the price of land is determined by “the interaction of supply and demand in the market” (p.234). “But there may be benefits and costs – externalities – additional to those which are the immediate concern of the parties to a transaction and which are not provided for directly in the market price.” These externalities specifically apply to a system of land development, because of the characteristics of the product ‘land’. “The full social benefits (costs) are, therefore: private benefits (costs) + external benefits (costs). Thus if an economically efficient allocation of resources is to be achieved, externalities, provided they are not too trivial, must be allowed for.” (p.182, 183)

As long as we feel it is a responsibility of the government to provide housing for its civilians, the government will influence the land market. This is characteristic for the Dutch situation.

Option value
Geltner and Miller (2001) use the Nobel Prize winning call option theory of Black and Scholes to explain the value of land. This theory was developed about 40 years ago and it explains the valuation of call options (Black & Scholes, 1973).

According to Geltner and Miller the value of building land is not fixed through the actual transaction, but through the potential use and the expected ‘value’ of that use. In their model land is viewed as obtaining its value through the option it gives its owner to develop a structure on the land, or to demolish and/or redevelop existing structures (Geltner, Miller, Clayton, & Eichholtz, 2007). These options are provided for by planning instruments, which Harvey and Jowsey say are necessary to deal with externalities in land development (Harvey & Jowsey, 2004). In their view “passively leaving the price system to deal with externalities may produce
an inferior net social product”. Therefore, in land development planning control is necessary to secure a better environment in which to live, to assure the most appropriate use of land resources and to reconcile competing land use claims.

However, planning control also means the ability to control ‘options’ and therefore, the ability to influence land markets. An on-going debate in the Netherlands that started in the 1990s is about the double role of municipalities. On one hand they are controlling land markets through planning control, on the other hand they are acting like private parties on land markets. They can influence the ‘exercise price’ of their own options. Furthermore, when selling the serviced land they can maximize their profits using a residual calculation to set the land price.


An option is a security giving the right to buy or sell an asset, subject to certain conditions, within a specified period of time. An "American option" is one that can be exercised at any time up to the date the option expires. A "European option" is one that can be exercised only on a specified future date. The price that is paid for the asset when the option is exercised is called the "exercise price" or "strik ing price." The last day on which the option may be exercised is called the "expiration date" or "maturity date."

In general, it seems clear that the higher the price of the stock, the greater the value of the option. When the stock price is much greater than the exercise price, the option is almost sure to be exercised. The current value of the option will thus be approximately equal to the price of the stock minus the price of a pure discount bond that matures on the same date as the option, with a face value equal to the striking price of the option. On the other hand, if the price of the stock is much less than the exercise price, the option is almost sure to expire without being exercised, so its value will be nearly zero. If the expiration date of the option is very far in the future, then the price of a bond that pays the exercise price on the maturity date will be very low, and the value of the option will be approximately equal to the price of the stock. On the other hand, if the expiration date is very near, the value of the option will be approximately equal to the stock price minus the exercise price, or zero, if the stock price is less than the exercise price. Normally, the value of an option declines as its maturity date approaches, if the value of the stock does not change.

Residual valuation

In 1993, VNG (Association of Dutch Municipalities) issued a new method of calculating land prices for serviced land. The proposed method is in line with the theory of Ricardo, which is that the value of land is determined by value of the final product. In fact, Ricardo introduced the residual calculation.

The residue can be allocated to the land supply. The VNG officially introduced residual calculation as a method that better fits the demand for market prices. According to De Greef “it is common practice nowadays to determine the economic value of land by the residual value-method. The residual value of land is the value of the final product (e.g. house, office) diminished by the production costs. The amount that is left is the “maximum price” that a developer should pay for the (serviced) land. The starting point of this method is that the land possesses residual value; without the land, no houses or offices can be built. Thus in the process of establishing a price, the production factor ‘land’ appropriates the residual value” (De Greef, 2001). An important aspect in De Greef’s theory is that land possesses residual value, since there should be a driving force to realise land development.

The residual land value is calculated by distracting the construction cost and associated costs from the VON price (catalogue price), see figure 1. Assuming that the VON price of the house also reflects the actual market value of the property, the residual land value can be seen as in line with the prevailing market. In a blooming housing market there will be a positive residue, which can be object to municipal value capturing strategies, but it can also be object to a ‘battle for the residue’ (De Greef, 1997). "Empirical analysis suggests that the residual value should be divided among a number of different production factors. Just as “land”, “capital” or “labour” are also indispensable in the development process. This analysis of (neo)classical thought leads to an
intellectual cul-de-sac: the scarcity of the different production factors modifies the distribution of the residual value” (De Greef, 2001).

In the Dutch system of land development, in which municipalities are often supplying land, the residual valuation method has led to a new system of ‘Self-supporting land development’, which will be discussed later in this paper.

Figure 1: The system of residual valuation for serviced land

From subsidised housing and land development to a self-supporting system

Transformation of the Dutch Welfare State

From the end of the Second World War until the mid-1980s, house building in The Netherlands was primarily a central government responsibility. House building between 1945 and the end of the 1980s was largely subsidised (Priemus, 1996). From 1952 to 1985, all financial plans for servicing building land were carefully checked by national officials to prevent social housing subsidies from being used to cross-subsidise more expensive, non-subsidised housing (Keers, 1989). From an international point of view the Dutch system of urban land development is special in its government influence (Lefcoe, 1979; Needham, 1995). “Urban development processes can be described as policy processes that take place in a market environment, or the other way round as market processes that are largely influenced by public policy” (Verhage, 2003). Since the Second World War national and local government are controlling the development process in the Netherlands.

Compared to other European countries The Netherlands has always had a huge social housing stock. At the beginning of the 1990s 41 per cent of the total housing stock of the Netherlands was in the social housing sector, where other countries hardly made it to 20 per cent. The fact that the share of social housing was this high in the Netherlands “can only be explained by the unique coincidence of several conditions. These are the build-up of the welfare state, the large role of the public rented sector, the lack of concern for quality and a substantial population growth” (Boelhouwer, 2002).

“The strong position of Dutch social housing has its roots in the long period during which housing was influenced by national government. Of course, public intervention had been common practice throughout the region for decades. However, the Netherlands eventually came
to steer its own course. Whereas most other west European countries veered toward privatisation in the early 1970s, the Netherlands did not start to move in that direction until the 1990s” (Boelhouwer, 2002).

Boelhouwer argues that the position of the social rented sector in the Netherlands is intimately connected to developments in the social institutions in general and to the role of the welfare state in particular. “When the welfare state was in its prime, public intervention in housing was at its peak. During this period—which lasted several years—there was a high level of new construction, predominantly in the social rented sector. (...) The current position of the social rented sector in the Netherlands is determined not only by the structure of the Dutch welfare state and the country’s distinct housing policy. It is also the result of the shifting balance of supply and demand in the national housing market” (Boelhouwer, 2002).

A shift in supply and demand, combined with a changing economy and a changing (national) policy in the early 1990s brought about a shift to a market oriented land development policy. Housing subsidies were abolished and also land development subsidies were limited. However, local authorities still were pulling the strings, now acting as a market party on the land market (Groetelaers & Korthals Altes, 2004).

**The self-supporting system in The Netherlands**

Since the 1990s many Dutch municipalities have been relying on profits from urban land development as an important financial resource. State allowances and local taxes have always been an important source of income for municipalities, but during the 1990s urban land development profits have become increasingly important. Research on municipal land development showed that an active land acquisition policy was implemented by municipalities for more than 85 per cent of the newly built houses (Groetelaers, 2004). The main reason for municipalities to do this was the ability to ‘control’ the development. However, there were different opinions on what ‘control’ should be. In general it can be said that it has to do with achieving certain objectives, which are not always limited to the public tasks of the municipality. Among these are financial objectives, which may include the recovery of the costs incurred or to minimize the cost recovery and maximize revenue. The latter was perhaps not explicitly stated as a goal, but many municipalities were depending on extra income through active land policy.

**The intermediary model of land development**

The Dutch system of land development is characterised by intermediary purchase of land, mainly by municipalities. This seems to continue to be the tradition that started after the Second World War (Groetelaers, 2004). With the intermediary model of land supply the land is supplied by a temporary landowner: a third party, which may be a municipality or a project development company, acquires the land in the project area, thus excluding the original landowners from the rest of the process. After servicing the land, the temporary land owner disposes of building parcels and thus tries to cover the costs of servicing the land (van Dijk, Muñoz-Gielen, & Groetelaers, 2007).

Dutch municipalities are the key players in supplying housing land, compared to for instance the UK where private developers are responsible for acquiring and providing land for house building (Golland & Boelhouwer, 2002). “Dutch municipalities act as both planning authority and the supplier of building land at the local level” (Badcock, 1994). According to Voss Dutch practice followed a golden rule of development, that is, supplying the right amount of serviced land at the right location, at the right moment and for reasonable prices (Voß, 1997). Mori specified Dutch land supply as ‘superbly efficient’ (Mori, 1998).

Until today the majority of the Dutch municipalities is highly involved in land supply. Between 2005 and 2010 about 8 billion Euros of costs and about the same amount of profits were made per year by Dutch Municipalities, which is 10 to 15% of the total annual municipal accounts. However, the economic situation has changed and many municipalities are now facing the difficulties of acting as a private developer. They also bear the risks of market failure. Some municipalities have invested a lot in land development, mainly through early land acquisitions. Now that property prices are decreasing and plans are delayed or even cancelled, they are not
only lacking the incomes from land development, but they also have the costs of large-scale landownership.

The highs and lows of self-supporting land development

Self-supporting land development relies highly on market forces, which is a result of neoliberalisation and market-friendly policies. According to Eraydin neoliberal principles cause serious problems in the governance of cities. Eraydin is talking about a system of ‘sensitive balances’, which is the result of neoliberalisation and market-friendly policies. In this system entrepreneurialism, consumerism and property-led development have flourished, "turning actors in the urban land and property market into key players in urban development" (Eraydin, 2013).

The sensitivity of a self-supporting land development system is strongly related to the value of land, since actors on land markets act and rely on the future value of land, which is a value in use and a value in exchange.

The Dutch national government has played a very important role in financing of the Dutch spatial development, particularly housing, in the post war period. They not only issued object grants for a significant portion of the newly built houses, but they also funded home improvements, urban renewal and land development. These subsidies were phased out during the nineties. Partly because the national government also relied on the positive results of land development projects. Thanks to the strong economic growth in this period and the widespread availability of 'cheap' financing (low interest rates) the demand for homes, offices and commercial property increased, resulting in increasing property prices and land prices. Part of this increase could be used to finance the quality of development project, but it could also be used for investment elsewhere (Value Capturing). You could say that – due to the increase in real estate prices – 'land supply' could take over as a major source of funding for the quality of the built environment. Experts were talking about ‘the money machine’ the municipal land development companies had become.

Figure 2 Realised cost, profits and results of municipal land development (servicing land) in The Netherlands (Korthals Altes, 2010) (CBS, 2013)
But nowadays we can see the results of the ‘money-machine-policies’. Municipalities have invested a lot in land development, relying on future profits from a blooming housing market. But costs were also increasing, since greenfield development is slowly being replaced by much more complex and expensive urban renewal. Also, municipalities are taking risks they were not used to take when they were acting purely as a public organ. By nature government organisations have to act in the public interest and they have to justify the decisions and investments they make. Now that the housing bubble has deflated, the money machine is almost empty (see figure 2). House prices have decreased, projects are delayed, redeveloped or even cancelled. These effects are growing worse due to the shift in development areas.

Nevertheless research has shown that many municipalities still rely on incomes and reserves from land development (Boumeester, Dol, Groetelaers, Van der Heijden, & Korthals Altes, 2013). Financial reports show that they use land development incomes as a structural source of income, although it has always been an ‘incidental’ source of income, which is also highly economic dependent. Municipalities have taken great risks in that respect and some still don’t see the consequences. Around the turn of the century the demand for office space was weakening, which put pressure on the value of offices and the value of land for offices. Nevertheless, office development was still increasing. This resulted in a vacancy rate to above 14 per cent and the first financial setback. In addition, the financial and economic crisis in 2009 resulted in decreasing house prices and a diminishing demand for new houses. This led to the second important pillar of financing falling away. The effect on land development and land value is twofold: because the price of real estate decreases, also the price of land decreases. And because demand is less, less land is being built on. Besides, it is not just a problem of decreasing profits, but also a problem of costs of land ownership. Municipalities have taken out loans to acquire land, and although the interest rates of municipal loans are low, they are certainly not neglectable. Besides that, they are now highly self-supporting since there are no housing subsidies and land development subsidies. Major incomes for municipalities are state allowances (Algemene uitkering Gemeentefonds) and property taxes (see figure 3). Financing in general, and financing housing production specifically, will be the problem of the future. This is also an important result from research project in The Netherlands, funded by the Ministry of the Interior and Kingdom Relations (Boumeester et al., 2013).
Financing problems in land development and housing

According to Boumeester et. al. (2013) a return to the pre-crisis financing system is not obvious. The reasons for this are both the expected returns and the expected cost. Although there is a need for expansion of the house production, house prices are expected to no longer reach the price level from before the crisis. Households will have difficulties financing their dwelling, since mortgage rules have changed and also tax benefits have become less. Also their incomes are under pressure because of budget cuts and increasing (healthcare) costs.

As a result they have less to spend on housing and house prices will stay at a lower level. Consequently the residual land value will also be less, which results in lower land prices (and profits). A return to the pre-crisis self-supporting system of land development will be difficult from a financial point of view. Also a return to the social system of the 70s is not obvious. The investment capacity of housing associations is decreasing and ISV-budgets (land development subsidies) will expire in 2014.

From a cost perspective we see that house-building is shifting from greenfield development to the more complex inner-city building and restructuring, which is much more expensive. In addition, in the future restructuring will also include withdrawal from the housing stock (demolition) without the option to rebuild. Especially in shrinking regions such as Parkstad (province of Limburg), expanding the housing stock is no longer an issue. In those regions policies are focussing on the quality of the housing stock, and on new financing strategies. Land development profits will evaporate quickly and land development will no longer be a self-supplying financial system. It will therefore be necessary to find alternative funding models.

Concluding remarks

The problems on we see now in The Netherlands – due to the crisis – are closely related to the shift in the 1990s to a more market oriented land policy:

- Municipalities were relying on profits from land development and they took risks to maximize these profits. They failed to foresee the possible negative outcomes of their strategies and even now that the crisis is there, some still are not convinced with the necessity of handling their finances differently.
- The housing market will not hand the solution for municipalities with land in stock. House prices will stay at a lower level and land development costs are increasing. Any residue in the land development process will soon evaporate.

How do we overcome this crisis? Saving the system from self-destruction is not an easy task. Solving these issues by returning to a pre-crisis financing model is not very obvious. Not only land and housing markets have changed too much, but also politics in The Netherlands have taken a turn to self-support at a local level. Nevertheless we will reach a point where some amount of national government control becomes necessary. In areas with shrinking population this has already led to some financial support. However, financial resources at the national level are also diminishing. Therefore, in the near future, research and strategies will probably focus on strategic/creative approaches of land development and on how to involve private actors in improving the quality of urban areas. Financial arrangements will be part of that, but a fully self-supporting system is almost unattainable and national government will not decide to introduce new subsidies.

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