

protect and conserve our natural environment, it helps to secure the delivery of affordable housing and other public goods which would not be provided by the market alone.

New housing development can be highly controversial, with the release of residential land for new housing supply through the planning system an extremely political matter. Planning systems in the UK therefore provide a space in which competing political demands on land use are articulated and mediated. Planning is not simply a technical process.

It is easy to simply 'blame planning' for the current shortfall in residential land and, therefore, housing supply. No doubt, planning has played a part. However, land development needs to be planned for a variety of reasons. New housing developments require proper support with new infrastructure and should be integrated into communities in ways where potential negative externalities are appropriately managed. The benefits of extra housing have to be demonstrated with rational arguments and the options laid out, so that people can understand the trade-offs required and overall advantages of change. For the reasons stated above, all that takes time.

6 Conclusion

The housing market and the residential land market are two distinct but related markets. Landowners and housebuilders operate in the residential land market; housebuilders compete with one another to purchase land from landowners. Housebuilders compete with each other in order to secure buyers for new-build houses, and they are also in competition with sellers of second-hand homes.

The relevant housing market comprises the whole stock; existing homes and new homes. The demand for houses is affected by income, wealth, cost of houses, availability of finance and expectations about the future. It varies from place to place because attractiveness and accessibility are key drivers. The supply of houses comes from existing owners and from housebuilders. The amount of new homes supplied, including their type and location, depends on profitability which is determined by costs and selling prices. Selling prices are determined by the current relationship between supply and demand, including buyers' and sellers' views of future market conditions. The supply of new housing in to the housing market is dependent on the supply of land in the residential land market.

Residential land is therefore a key input in to the supply of new housing. Housebuilders compete with each other to secure sites from landowners, each of whom has a degree of monopoly control over the supply of land because of the importance of location. The supply of land is also controlled by the planning system. In order to secure a development site, a housebuilder has to outbid

competitors which could include other land uses. Housebuilders use the residual method for determining the bid for land; this is dependent on assumptions about the future cost and value of the proposed development and so the bids may differ depending on the bidder's expectations. However, there can only be one successful bid.

A house is a single asset comprising the land and structure and it is valued, priced and transacted as such. However, it is useful to segment hypothetically the price of a house into its land component and the structure itself in order to look at the relative importance of land. Thinking about house prices in this way helps when considering the relationship between the supply of residential land and house prices. If the land component is gaining in value as a result of house price increases, then this suggests that residential land is supplied less easily (i.e. more inelastically) than structures.

In the context of high (or unaffordable) house prices, it is therefore the supply of residential land which is the key factor and, indeed, the binding constraint. An increase in the supply of housing development land will result in an increase in the supply of housing which results, other things being equal, in a decline in the price of housing. Due to the fact that the development process takes a long time, any such impact is slow. Furthermore, economists' models suggest that a very significant increase in the supply of development land would be required to have a noticeable impact on house prices.

To conclude, there is not a single or one-way direction of causation between land prices and house prices (or vice versa). This is because demand and supply factors influence price and output outcomes *simultaneously*.

Nevertheless, the following statements can be made:

1. *The housing market affects the land market rapidly.* Changes in the demand for houses alter house prices as housing market activity picks up or slows down. Housing development land prices adjust swiftly, encouraging or dampening the incentive to supply development land.
2. *The land market affects house prices more slowly.* Changes in the supply of housing development land alter land prices quickly, but influence house prices more slowly due to building lags.

This indicates that a policy that reduces housing development land prices by increasing land supply in a competitive environment would reduce house prices over the long-term. However, to do so, the increase in land supply would have to be sufficient to absorb both the long-term increases in housing demand caused by rising living standards and the stimulus to demand generated by the more

plentiful housing supply itself. This would alter the present distribution of the housing stock and relative house prices across the Scottish landscape

The interaction of supply and demand forces and their effect on the price of residential land and housing do not, in themselves, conflict with a desire to increase land and property taxation or land value capture. Such policy interventions are jointly aimed at taxation of the wealth held in land and property and directing part of land value increases (betterment) to the provision of local infrastructure. Their viability within broad limits is, in principle, a political issue.

Appendix A

The evolution of the economic theory of land rent

The evolution of the economic theory of land rent is important context for the topic of this paper, because it is in the evolution of this theory that we can trace the evolution of the theory of the relationship between residential land prices and house prices, which still influences thinking today. The two main historical economic theories which seek to explain this relationship are Ricardian rent theory and Neoclassical rent theory.

Ricardian rent theory came first and was based on some very simplified assumptions; it is from Ricardian theory that we get the 'residual model' for the valuation of housing development land discussed in section 4.2. Neoclassical rent theory transformed Ricardian theory by introducing greater complexity to the Ricardian model.

Ricardian rent theory

The influential British political economist David Ricardo (1772 – 1823) wanted to understand the impact of the protectionist 19th century Corn Laws (i.e. tariffs on imported food and grain), with a key question being whether or not the price of corn was being inflated by the high land rents (or prices) charged by landowners. Ricardo concluded that it was not and that, in fact, it was high corn prices which were inflating land prices.

Ricardo based his model on two simplifying assumptions: a) that there is only one use to which land could be put (e.g. corn growing), and b) that the supply of land is absolutely fixed. Within the confines of this simplified model, Ricardo argued that the demand for land is derived from the demand for corn and that because the supply of land is absolutely fixed it could not therefore change in response to changes in demand for corn. Therefore, for Ricardo, the price of land could not be affected by changes in the supply of land and, therefore, the price of land was purely determined by the demand for corn. From this he concluded that the price of land was high because the price of corn was high.

In this model, if we transpose 'corn' for 'housing', then it implies that the price of housing development land is high because the price of housing is high, and not vice versa. In other words, according to the Ricardian model, in the context of a single land use and total inelasticity of supply, house prices determine housing land values and not the other way around. However, as we shall see, this is a 'short term' calculation which takes a snapshot of the current price of the land and does not take in to account the longer-term dynamics of the relationship between land supply and house prices, and takes no account of the fact there can be more than one land use.

Neoclassical rent theory

Neoclassical land rent theory transformed Ricardian rent theory by replacing its two main simplifying assumptions. As Evans (2004: 14) explains, the neoclassical approach assumes that there are at least two uses to which land can be put, e.g. growing corn or growing potatoes. Furthermore, land currently used for growing corn can be switched to potato growing and vice versa. Therefore, the supply of land for each of these uses is not fixed but can shift in response to changes in demand for either product. There is equilibrium in the market as long as the rent (or price) payable for each land use is the same.

If there is an increase in the demand for potatoes with no change in the demand for corn, then some land would change use from corn growing to potato growing to meet the increased demand. This would reduce the amount of land available for growing corn and, therefore, would reduce the amount of corn available to the market, thereby pushing up corn prices. Furthermore, the increased demand for 'potato land' and the reduced supply of 'corn land' would act to inflate land prices for both uses, so that the market would reach a new equilibrium at a higher level of overall land price.

However, in this model the increased price of corn is not solely due to the reduction in its supply derived from the reduction in the amount of land available to grow corn. The neoclassical model suggests that a reduction in the supply of corn land pushes up the price for this land, thus increasing the costs of corn production, and this increased production cost further inflates corn prices. Therefore, according to the neoclassical model, increased land prices that result from reduced land supply can inflate corn prices. The direction of causation described by Ricardian rent theory (that high corn prices cause high corn land prices) can be reversed when the supply of land is not fixed and not in single use.

If we transpose 'corn' for 'housing' and 'potatoes' for any other land use, then under the neoclassical model it is possible for the price of housing to be high because the price of housing development land is high. This is because the supply of housing development land can change between uses and also within use.

Therefore, according to the Neoclassical model, the price of housing development land is not *solely* determined by the demand for housing but can also be influenced by changes in the relative supply of and demand for housing development land.

In the UK, changes in the relative supply of development land are regulated by the planning system. As argued by Cheshire and Sheppard (1989: 471), the restriction of development has inflationary effects on both housing land prices and house prices:

“If development control [planning] effectively restricts the supply of new residential development then it raises the prices of houses. Since builders as a result can get higher prices for houses, they will pay more for land. While, therefore, the high land prices do not cause high house prices, both are caused by the restriction of development.”

Theoretical implications of rent theory

The land rent theories described above have the following theoretical implications for the relationship between housing development land prices and house prices:

- a) An increase in the demand for housing relative to static supply of housing development land would result in an increase in house prices, which would increase the price of housing development land. The same relationships apply in the context of a decrease in the demand for housing i.e. house prices and the price of development land would also decrease.
- b) An increase in the supply of housing development land relative to static demand for housing would result in a decline in housing development land prices (and thus the production cost of new homes), and this would decrease the price of housing. The same relationships apply in the context of a decrease in the supply of housing development land i.e. the price of development land and the price of housing would increase.

Although the absolute supply of land in Scotland may be fixed, it is possible to use this land for different uses and thus alter the quantity supplied for each use. That said, planning controls mean that shifts in supply are not rapid. Furthermore, landowners may behave in ways that slow shifts in supply too. They might for example, decide not to release farmland for development today because they believe that it might be more profitable to do so at a later date.

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