Abstract

The central question in this paper is: What impact might taxation have on the volatility of house prices? Measures of house price volatility for Denmark, Germany, the Netherlands, UK and USA will be compared. The principal forms of housing taxation will be summarised. A series of tentative propositions about the potential impacts on price volatility of the different forms of housing taxation will then be compared. This discussion will be set in the context of the overall principles and purposes of housing taxation. The scope of the taxation measures considered will include taxes on income, property values, land values, capital gains and transactions. An agenda for further research to investigate the interaction between taxation and other factors contributing to housing market volatility will be set out.

Keywords: House price volatility. Housing. Owner-occupation. Taxation. Tax breaks.
House price volatility and taxation

1 Introduction

The central question in this paper is: What impact might taxation have on the volatility of house prices? It draws on work by the authors for the Joseph Rowntree Foundation (Oxley & Haffner, 2010). Measures of house price volatility for the UK, the USA, the Netherlands, Denmark and Germany will be compared and it will be shown that some housing markets are much more volatile than others. Especially, in times of falling prices, it is necessary to know about factors influencing house prices.

This paper examines volatility of house prices in the owner-occupied market but the place of home ownership in the overall housing system of a country is important to an understanding of the operation of that market. National tenure distributions are thus of some significance. In Table 1 the tenure distribution for the five countries is set out. The variation in the relative importance of the tenures between the countries, coupled with variations in volatility and the mix of policy instruments, makes for a useful combination of circumstances and a varied evidence base. It is the combination of these factors that makes the choice of countries appropriate for this investigation.

The reasons in principle for differences in housing market volatility between countries will be summarised and theoretical propositions about the role of housing taxation in moderating house price volatility will be explored. The scope of the taxation measures considered will include taxes on imputed rents, property values, land values, capital gains and transactions. The potential impacts on price volatility of the different forms of housing taxation will be compared by presenting a series of tentative propositions about the scope for changes in taxation to bring about changes in volatility. The argument and evidence for these propositions will be presented. An agenda for further research to investigate the interaction between taxation and other factors contributing to housing market volatility will be set out.

Table 1 Tenure, five countries, various years

<table>
<thead>
<tr>
<th>Tenure</th>
<th>UK(i) 2007</th>
<th>USA(ii) 2002</th>
<th>Netherlands (iii) 2006</th>
<th>Denmark(iv) 2004</th>
<th>Germany(iii) 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner-occupation</td>
<td>69</td>
<td>68</td>
<td>56</td>
<td>52</td>
<td>39</td>
</tr>
<tr>
<td>Private rented</td>
<td>12</td>
<td>30</td>
<td>11</td>
<td>17</td>
<td>54</td>
</tr>
<tr>
<td>Social rented</td>
<td>18</td>
<td>3</td>
<td>33</td>
<td>21</td>
<td>7*</td>
</tr>
</tbody>
</table>

* Social letting: an estimated 15 per cent of dwellings are let with a social purpose (including dwellings of municipal housing companies and rented cooperatives). Approximately 5-7 per cent of all rented dwellings are subsidised.

Sources:
(iii) Haffner et al. (2009).
2 Volatility: definitions and evidence

Housing market volatility can be examined by looking at changes in prices or changes in output. The most commonly used measures are related to prices and here we consider only changes in house prices and we confine the arguments explicitly to volatility in the prices of owner-occupied dwellings, although in some cases the statistics will include the sale of rental dwellings to new owners.

We present evidence on house price volatility for five countries using national measures of house price inflation (Figure 1) and differences between actual and trend measures of both house prices and house price inflation (Figure 2). The use of these national indicators means that we are not considering differences in volatility from one location to another within a country or from one house type to another. The evidence that we present suggests that national house price volatility varies a good deal from country to country.

The information in Figure 2 suggests that countries with high long-term rates of house price inflation also tend to have high rates of volatility. This proposition is confirmed by an IMF study for a wider group of countries:\(^1\):

‘(C)ountries that have experienced the greatest increase in property prices over and above their long-term average are those that have historically been prone to the sharpest swings in real property prices (as measured by the standard deviation). --- Countries with low net variation over the entire period 1970–2007 also have a low annual variation’ (Hilbers et al., 2008, p12).

The UK and the Netherlands stand out as high house price inflation and high house price volatility countries. At the other end of the scale, the lower level of long-term house price growth and the more stable markets in Germany and the USA are particularly apparent from the data.

The variations in house price volatility between countries are potentially subject to a set of measurement problems. Firstly we need to be sure that data on house prices is measuring the same phenomenon in different countries. If data included only certain types of dwellings in some countries (say only new houses in one case and all houses in another or owner occupied dwellings in one case and all dwellings in another) then we might question the comparability of the basic data. International data is typically complied from national sources that collect information in different ways and the nature and the size of the samples vary. Whilst the variety of sources is usually acknowledged, problems of comparability are usually ignored. Here we take the usual approach of assuming that these data issues do not create an unreasonably false picture (this follows most international comparisons of house prices, see for example, Hilbers et al., 2008, OECD, 2011).

Secondly, there are several statistical techniques for establishing a trend in house prices and measuring the deviation around that trend. In Figure 2 results that are dependent on two trend measures are shown. One applies the common ordinary least squares approach and the other applies a Hodrick-Prescott (HP) filter. The HP technique essentially smoothes the raw data and removes very short-term fluctuations. It results in a smoothed non-linear representation of a time series that is more sensitive to long-term than to short-term fluctuations. There are a range of arguments amongst statisticians about the exact specification of the HP and the consequences (see

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1 Spain, Ireland, Belgium, Netherlands, UK, France, Sweden, Denmark, Italy, Finland, Greece, Portugal, Switzerland, Germany, Austria, United States
for example, Maravell and del Rio, 2007). Whilst we acknowledge that differences in volatility rates can occur as a result of the exact measure used we are not engaging with the pros and cons of alternative measures. Rather, in Figure 2 we replicate from Erlandsen et al. (2006) the results of three measures. In each case the variation in house prices around a long-term trend is the key indicator of house price volatility within an economy and specifically the standard deviations around the trend in average national house prices. Whilst the evidence suggests that the extent of volatility in national house prices depends on the exact indicator that is being used, in Figure 2 the rank order of the countries changes little.

The reference to national house prices is important. We do not not enter into considerations of regional or local variations in house prices. However, it must be acknowledged that demand and supply factors will be important on a local level, as a European Central Bank Study (ECB, 2003) argues: national aggregations may cancel out important local and regional factors in explaining international variations in house price volatility. It states specifically

‘Differences between house price volatility in Germany and in the United Kingdom may be partly due to factors such as the distribution of the population and of economic activity in the national territories. Little is known of how such regional questions affect national house price dynamics.’ (ECB, 2003, p20)

On the national measures of volatility shown in Figure 2 the UK has experienced a comparatively high level of long-run volatility in house prices. On all three measures shown, UK volatility is significantly greater than in Germany and the USA. Depending on which measures shown in the table are chosen, UK volatility is also greater than in both Denmark and the Netherlands or at least greater than in Denmark.

On one indicator volatility is greater in the Netherlands. Figure 1 shows that the Netherlands is the only country where house prices have been pushed up for the total period. That would explain why the measure of volatility based on the difference between actual and OLS trend house price is largest of all countries under consideration. The relatively long period of price rises was brought about by a favourable economic situation combining rising household incomes and falling interest rates. Also, mortgage requirements eased. As a result house prices had every opportunity to rise without liquidity problems being generated for the households. Furthermore, in this century the increase in the stock of dwellings was relatively small.

Germany is the only country where house prices more or less are continuously declining. That explains why it scores lowest on all volatility measures. One of the explanations is the fact that nationally there is an oversupply of dwellings (Haffner et al., 2009).

In the other countries house prices truly are volatile in the non-statistical sense of the word, the increase and they decrease. The effect of the credit crisis of this century is clearly visible. The steepest fall in prices took place in the USA.
Figure 1. Real house prices changes 1991–2008


Figure 2 Volatility in real house prices, five countries, 1970 – 2004

Source: Erlandsen et al. (2006, p10, Table 1)
Notes: Annual change in house price inflation: Annual data for 1970–2004 if not stated otherwise – UK is 1969 to 2004. Volatility is measured by the standard deviation. The countries are ranked in descending order of volatility based on a simple average of the standard deviations of the three series.
Difference between actual and OLS trend house price: Ordinary least squares.
Difference between actual and HP trend house price inflation: Hodrick-Prescott filter (lambda = 100).
3 The causes of volatility: the arguments

A question that is of importance to understanding both housing markets and national economies is why does house price volatility vary markedly from one country to another. If we take the elementary proposition that owner-occupier house prices are essentially determined by the forces of demand and supply it follows that house price fluctuations are tied to the determinants of housing demand and housing supply. The key determinants of housing demand have been shown in many empirically verified models to be disposable household income, the cost and availability of mortgage finance and expectations about future price rises together with levels of employment and consumer confidence. Some studies also point to the importance of house prices and the relative costs of owning and renting. All of these items are linked to a greater or lesser extent to changes in the macroeconomy and the policy levers that governments use to influence macroeconomic variables such as inflation, growth and employment. These factors, which may change markedly in the short term, combine over the long term with demographic factors to determine the number of households seeking housing and their financial ability to purchase that housing (Tsatsaronis and Zhu, 2004; Hilbers et al., 2008). International variations in macroeconomic and demographic factors thus offer one set of potential explanations for volatility. Within the macroeconomic factors one could identify the importance of mortgage markets and seek explanations that depend mainly on the structure and operation of these markets. Institutional arrangements that influence the supply of mortgage credit and the terms on which this is available to households vary considerably from country to country (Renaud and Kim, 2007). Thus the size of deposits and interest rates, and the variability in each of these, offer within the broad context of the institutional arrangements relating to mortgage markets, another set of potential explanations. There may also be important links between inflation, mortgage markets and real house prices (Tsatsaronis and Zhu, 2004).

Supply side explanations for price fluctuations typically concentrate on factors that may contribute to inelasticity. Thus demand increases will arguably result in steeper price rises in countries where there are the most severe constraints on consequent increases in supply. Improving the responsiveness of housing supply to changes in demand is arguably a necessary condition for reducing house price fluctuations (White and Allmendinger, 2003; Meen, 2008; Hilbers et al., 2008). These constraints can be apparent in land, labour and capital markets or more generally take the form of production capacity limitations. Many studies emphasise land supply constraints resulting from restrictive planning systems that limit the ability of residential developers to expand output when housing demand rises. However supply from the existing stock is important and factors that influence investment in the existing stock, the quality of that stock and its availability may be of significance (Tsatsaronis and Zhu, 2004; Mullbauer and Murphy, 2008).

4 Housing taxation and house price volatility: propositions

Taking a broad approach to the taxation of owner-occupation, it is possible to include taxes on the production and acquisition of dwellings as well as taxes on the ownership, financing and occupation of dwellings (Oxley & Haffner, 2010). Most of the taxes that can be considered are paid directly by the owners but some may be in formal terms levied on other parties (such as house builders) and passed on to buyers. It is also appropriate to consider the tax concessions on homeownership in some countries. With all the taxation measures (including concessions) that can be considered between countries it is the existence or absence of the measure, the threshold at which it is applied and the percentage (typically) rate of tax (or concession) that should ideally be compared.
Taxes on production include taxes on new construction and repair and maintenance expenditures (such as Value Added Tax in European countries) that are paid by builders and house owners. These may add to the costs of investment in new dwellings and the costs of purchasing new dwellings. If taxes on land apply to residential building land these also may be regarded as taxes that raise production costs.

Transactions in all dwellings, including those that are part of the stock as well as new dwellings, are in most countries subject to a tax on the transfer of the ownership of the accommodation from one party to another. These real estate transfer taxes are called Stamp Duty Land Tax in the UK and there are equivalents in most developed countries.

Governments can levy taxes on the benefits of occupying a dwelling. Capital appreciation or gains (or losses) can be considered a benefit (or a loss) of occupying a dwelling. In theory these gains/losses will be taxed on accrual as income, but usually they are taxed on realisation. And if so, usually the taxation of these gains is part of taxable income in income tax of the vender. Such taxes on capital gains usually have generous exemptions attached, especially for long term residents (OECD, 2006).

Another non-monetary return that owner-occupiers receive from their dwelling is the rent that they do not have to pay to a landlord. Looking at this another way, the owner-occupier is both landlord and tenant. The imputed rental income that owner-occupiers receive in their role as landlords has in the past been, and in some countries sill is, subject to taxation. Continuing the notion of the owner-occupier as a landlord or investor, a significant cost of investing, for most owners, is the interest paid on borrowed money. If this is treated as a business expense then the costs can be eligible for a deduction from income before income tax is applied. Such mortgage interest tax relief is applied in some countries but not others. In several countries there have been changes over recent decades in the existence and the extent of such tax reliefs (Haffner, 2002).

In many countries there are taxes that are applied to the capital value of owner-occupied dwellings. The taxation base might be the current market value and be updated regularly or it might be an assumed value that is revised irregularly. Such property taxation is typically a source of revenue for local authorities. Thus whilst there are national guidelines on the valuation of the property, the rate of tax paid often varies with location within a country. In principle it is possible for the value of the land on which a dwelling stands to be separated from the value of the building and the tax can be levied on just the building or more likely just on the value of the land. One can thus conceptualise both residential property or real estate taxes which apply to the total value of the real estate and land taxes paid by owner-occupiers that relate just to the value of the land.

We distinguish the following groups of taxes and propositions that the literature offers on the relationship between house price volatility and taxation.

**Taxes on acquisition**

1. Transaction taxes help to prevent speculative bubbles (ECB, 2003, p40)
2. Transaction taxes have only a minor impact on preventing asset prices bubbles (ECB, 2003, p40, based on Upper, 2001)
**Taxes on use**

3. Real estate taxes (on building plus land value) related to current house prices act as automatic stabilizers through demand and anti-speculation effects (Erlandsen et al., 2006; Muellbauer, 2004)

4. Real estate taxes (on building plus land value) related to current house prices increase utilization of the stock, thereby increasing supply and stabilizing prices (Muellbauer, 2004; OECD, 2011)

5. Taxes on the annual value of land (real estate minus the building value) reduce volatility (Erlandsen et al., 2006)

6. ‘Tax breaks’ for owner-occupiers increase volatility and reducing them will reduce volatility (Erlandsen et al., 2006; Listokin, 2009; van den Noord, 2005)

**Taxes on disposal**

7. Capital gains tax on a par with financial investment reduces speculation and reduces volatility (OECD, 1999)

8. Capital gains tax increases volatility (Fuest et al., 2004)

**Taxes on land value appreciation**

9. Taxes on increases in land values reduce volatility (Blowers, 1992; Brown, 1997)

**Other supply side taxes**

10. Taxes that improve supply elasticity reduce volatility (implicit in Meen, 2008; Barker 2004; OECD, 2011)

**5 Housing taxation and house price volatility: arguments and evidence**

The influences of macroeconomic, demographic, mortgage market and planning system effects on housing market dynamics may be exacerbated or moderated by taxation systems and in particular housing taxation. One of the terms that is important here is the term automatic stabiliser. It means that taxes, but also other government instruments, function to smooth the economic cycle (Van den Noord, 2000). In a downturn for example, when household incomes decline, less taxes are collected which dampens the cycle or the downturn in demand. It also works the other way around. Listokin (2009, p9) explains based on Baumol and Blinder (1993) that income taxation absorbs shocks in the sense that it makes income changes less sensitive to fluctuations in the economy: “both government spending and income taxes reduce the marginal propensity to consume [the rate at which consumption responds to income] out of pretax income.” If GDP falls, disposable income falls less because part of the loss comes in the form of lost taxes to the fiscal authorities. Consumption does not have to fall as much as it would be the case in the situation without income tax. If GDP rises, disposable income rises less because part of the rise will go to the fiscal authorities. The stabilising effect will be stronger the higher the rate of taxation or rate of government spending or the more progressive the rate is.

Similar arguments to the one on automatic stabilising the business cycle can be found for stabilising house price cycles in the case of real estate or property taxes (Erlandsen et al., 2006), transaction taxes (ECB, 2003) and capital gains taxation (OECD, 1999 from Fuest et al., 2004).
The basic idea is that if house prices or values rise, taxation will rise. Demand for housing will then be dampened which will allow for house prices to rise less quickly than otherwise would be the case. The logic runs the other way around, when house prices or values decline.

After this general introduction on how the logic of stabilizing taxes work, we now turn to the arguments and evidence that can be found in the literature on the propositions that we presented in the previous section. The first two propositions take two opposing views on the effect of transaction taxes. The arguments will be discussed together.

1. Transaction taxes help to prevent speculative bubbles
2. Transaction taxes have only a minor impact on preventing asset prices bubbles (ECB, 2003, p40, based on Upper, 2001)

The argument that the impact of transaction taxes might be to reduce speculative behaviour and in turn dampen house price cycles is based on the idea that the amount of taxation will move with house prices. This suggests that the assumption must be that the buyer is responsible for paying the transaction costs, and not the seller. As house prices increase the amount of taxation increases putting a brake on short-term behaviour and vice versa. Thus transaction taxes are claimed to function as automatic stabilizer in preventing slowdowns and bubbles in house prices (ECB, 2003, p40).

However, it is also claimed that ‘transaction costs may have only a minor impact in preventing asset price bubbles’. ECB (2003, p40) who is making this point is referring to a paper by Harald Hau which is being summarized by Upper (2001). He explains that the research question of the paper is whether a Tobin tax (a transaction tax on financial transactions) would reduce exchange rate volatility. To test this question, the Tobin tax was simulated in a model by an increase in trading costs on the Paris stock exchange by increasing the minimum tick size. The model resulted in a statistically significant reduction in price volatility.

In a 2002 publication on exchange market instability and Tobin tax, Hau concludes, however, that conclusions are not clear-cut, as a Tobin tax will limit the liquidity (the number of transactions) in the short run, but not necessarily the volatility. And in a later publication Hau concludes that higher transaction costs in the case of security transaction taxes should be considered to increase significantly volatility. He concludes:

‘On the larger issue of short-term speculation and financial price stability, our evidence supports Friedman’s (1953) general defense of financial speculation. High transaction costs discourage short-term speculation, and this can explain why volatility increases whenever transactions costs increase.’ (Hau, 2006, p888).

Based on these results, the question is not answered whether the automatic stabiliser argument is loosing out to the argument that volatility will increase when transaction costs increase in the case of speculation.
3. Real estate taxes (on building plus land value) related to current house prices act as automatic stabilizers through demand and anti-speculation effects (Erlandsen et al., 2006; Muellbauer, 2004)

It has been argued that some taxation measures have automatic stabilising principles and are thus inherently anti-cyclical:

‘Letting real estate taxes move in tandem with each house’s value creates an automatic stabiliser for house prices, because movements in housing demand are dampened by high taxes when house prices increase and lower taxes when demand and prices decline. As expectations of future house price increases would also be affected, the extent of speculative housing investments would also possibly be reduced’ (Erlandsen et al., 2006, p9).

If the emphasis in a reform package is on property taxation, one should heed the caution suggested by those who point out that the overall tax revenues on property should not become too high (see Boadway et al., 2009). This suggests changes to property tax that make them more anti-cyclical rather than an increase in the overall take from property taxation. The anti-cyclical nature of real estate taxation is crucially dependent on the relationship between market values and the taxation base. If taxation is levied on outdated property values and does not vary in line with changes in property values the automatic stabilisation effect is lost.

Muellbauer (2004) argues that real estate taxation in Denmark has been effective in preventing property market booms and busts because if its effects on demand and expectations. Such taxation may well have had an effect and Muellbauer suggests that “Denmark has the most effective automatic stabilisers in Europe” (p11) but the evidence in Table 2 shows that for, the time period covered, Denmark experienced lower housing market volatility than the Netherlands and the UK but higher volatility than the US and Germany.

4. Real estate taxes (on building plus land value) related to current house prices increase utilization of the stock, thereby increasing supply and stabilizing prices (Muellbauer, 2004. OECD, 2011)

Taxation that improves the utilisation of the housing stock can be viewed as a measure that can increase the responsiveness of supply in the case of increased in demand. It can be argued that a strong link between the tax levied and current market values is essential to the promotion of this increased rate of usage of the existing stock (OECD, 2011)

Muellbauer (2004, p 12) suggests that

‘A property tax reform, which improves utilisation, is likely to have a gradual but one-off impact on prices, since, for many owners and occupiers, altered incentives will affect behaviour only with some delay. However, any permanent effect in increasing the responsiveness of effective supply will reduce house price volatility in the long run’.

The argument is that with higher taxes induced by higher house prices, households with spare rooms will be more inclined to rent out the space, increasing the effective supply of housing in response to higher prices. This is the argument. Whether or not behaviour will actually respond according to this proposition is unknown.
5. **Taxes on the annual value of land (real estate minus the building value) reduce volatility (Erlandsen et al., 2006)**

It has also been suggested that land taxes are better than real estate taxes (that tax the value of a building plus the land) because they do not provide disincentives for individuals to add value to their property through extensions and improvements (Boadway et al., 2009). The only example of land taxation of this sort in the countries investigated is in Denmark. The difficult issue of separating land value from the value of the property as a whole is tackled in Denmark through hedonic pricing using a public database. The tax is not, however, used as effectively as it might be as an anti-cyclical measure as values have effectively been subject to politically imposed restraint since 2001.

The problems for this sort of land tax are both practical and conceptual. Given the difficulties of separating land value from the value of the real estate as a whole it is not surprising that this is yet another proposition for which the evidence is very limited. However, given the conceptual difficulty of separating land value from the property value as a whole, it is doubtful as to whether any of the lack of disincentive for improvements would materialise from a properly applied tax. This is simply because land value should be derived from property values according to the simple derived demand principle (Prest, 1981) and thus any improvements that enhance the value of the bricks and mortar should also raise the value of the land. In short, it will in the case of both developed land, and land for which development is proposed, be irrational to try to establish a land value that is independent of the worth of the parcel of real estate as a whole.

6. **‘Tax breaks’ for owner-occupiers increase volatility and reducing them will reduce volatility (Erlandsen et al., 2006; Listokin, 2009; van den Noord, 2005)**

Volatility has been blamed directly on tax breaks in income tax for owner-occupied housing. The ‘tax wedge’ is the concept by which the size of tax breaks are measured. It is the difference between the after-tax and pre-tax real interest rate on mortgage loans.

‘Price variability of owner-occupied houses is likely to be largest in countries where the tax breaks are largest. In cross-country analysis, almost half of the variation in house price volatility could be explained by the tax wedge on housing.’ (Erlandsen et al., 2006, p11).

‘About three-quarters of the cross-country price variability is explained by the tax wedge on housing.’ (Van den Noord, 2005, p41).

‘taxes which favour home ownership may encourage speculative behaviour by lowering the cost of borrowing to finance housing investment. In turn, this can raise house price volatility’(OECD, 2011, p17).

In these calculations the Netherlands always shows up with the largest tax break, and indeed house prices appear to be very volatile. It is the country in Figure 1 where volatility is achieved by the longest period of continuous price rises over the period shown.

Van den Noord (2005, p41) cautions that “causality between house price volatility and tax breaks may go in both directions”. Countries that cause volatile house prices due to supply constraints because of regulation or limited land availability as well as slow urban planning may try to compensate with tax breaks in order to stimulate demand. Although the Netherlands never
introduced the mortgage interest deduction for reasons of stimulating homeownership (Haffner, 2002), it indeed provides an example of strict supply constraints (Oxley et al., 2009).

If the term of tax expenditures is introduced, the relationship between lower income taxes because of owner-occupied housing than otherwise would be the case will not be as clear-cut as it seems. In taxation the term tax expenditures is often used to denote subsidies via the tax system. Tax expenditures are generally defined as “a departure from the generally accepted or benchmark tax structure which produces a favourable tax treatment of particular types of activities or taxpayers” (OECD, 1984; p7). In this view a tax deduction is only a tax subsidy, if it is a departure from the tax system; e.g. if there is imputed rent taxation (and capital gains taxation) for homeownership in income tax, a cost deduction (mortgage interest, maintenance) would be allowed. In this case the mortgage interest deduction would be a deduction, but not a subsidy.

This type of reasoning suggests that first the types of fiscal treatment in the different countries need to be classified to whether they are considered a tax expenditure or not or to what extent they are considered a tax expenditure, and thus can be considered a tax break (Haffner, 2002). The question of the benchmark is not an easy one. Is the benchmark about tax neutral treatment of all investments, neutrality in treatment of different tenures or neutrality according to the existing tax system? Once that is decided on, a calculation can be made of the tax wedge.

If in all cases the tax wedge as calculated by Van den Noord (2005), Erlandsen et al. (2006) and OECD (2011) is equal to the one that would be calculated based on the tax expenditure definition, only then the outcome will be the same between both approaches, as “tax expenditures are procyclical, exacerbating the business cycle.” when using the Keynesian Model of the Economy (Listokin, 2009, p1). In other words “tax expenditure act as automatic destabilizers [relative to alternative direct spending programs with similar goals]; they amplify rather than dull the impact of an economic shock.” (p2/10). For tax expenditures to function as automatic destabilisers, movements in real house prices should be closely correlated with the business cycle, which is not always the case, however (Claessens et al., 2009; Girourard et al., 2006; Reinhart and Rogoff, 2008).

‘The destabilizing effect … depends upon the marginal propensity to consume deductible consumption goods out of income and on the degree to which a deductible element of consumption is subject to sudden shocks. …When elements of consumption have high marginal propensities to consume and are particularly prone to shocks, they become poorer candidates for … tax expenditures.’ (Listokin, p16).

Thus the more sensitive the tax expenditure related to owner-occupied housing will be to changes in income, implying a high propensity to consume out of additional income, the more destabilizing the tax expenditure will act. The more volatile house prices will be.

7. **Capital gains tax on a par with financial investment reduces speculation and reduces volatility** *(OECD, 1999)*

If a significant part of the demand for housing is based on the prospects of capital gain, taxation that reduced this prospect is likely to reduce such speculative demand, if other financial investment is taxed with capital gains tax. Taking this approach, it has been argued that a lack of capital gains taxation promotes house price fluctuations (for example OECD, 1999).
This line of reasoning follows the automatic stabiliser argument for tax expenditures explained above (Listokin, 2009). That suggests that the introduction of capital gains taxation in the case where there is a tax expenditure in comparison to other financial investments will indeed reduce house price volatility—if there is a link between income and house prices and if the propensity to consume is high.

8. **Capital gains tax increases volatility (Fuest et al., 2004)**

There remains a lack of consensus as to the consequences on capital gains taxation, as the argument has also been made the other way around. Fuest et al., (2004) argue that capital gains taxation can increase house price fluctuations. Using a stylised model of the housing market they suggest that

‘households who buy their real estate in boom phases will typically benefit from the boom as far as their overall income is concerned but they also buy their real estate at high prices. As a result, they are likely to suffer a capital loss when selling their houses later. Households who buy their real estate in times of economic crisis, in contrast, have lower general income but are likely to make a capital gain on their real estate investment. Introducing a capital gains tax reduces the losses of the high income earners and reduces the capital gains of low income earners. As a consequence, high (low) income earners will be able to pay more (less), so that prices increase even further in booms and fall deeper in recessions’ (Fuest et al., 2004, p22).

Fuest et al. (2004, p2) acknowledge however that “Surprisingly, there is very little literature on the economic effects of capital gains taxation on housing.”

9. **Taxes on increases in land values reduce volatility (Bowers, 1992; Brown, 1997)**

Taxation of increases in land values that are due to the efforts of society rather than individual owners have long been promoted on the grounds that these “unearned increments” constitute economic rent that can be taxed away without adverse allocation effects (Bowers, 1992; Brown, 1997). When these increases are the consequence of planning permission or infrastructure provision, the case for special taxation is argued in terms of redistributive equity or capturing for the public purse the costs of items such as new roads or drainage. However, the levying of taxation on land value increases, that is sometime referred to as “betterment taxation” (Prest, 1981) may dampen demand for housing if market circumstances allow at least part of the tax to be passed on to house buyers. However, the usual assumption by proponents of such taxation is that market circumstances will ensure that the incidence is principally on the land owner.

A further problem is that if in practice such taxation captures more than economic rent it will have an adverse impact on land supply. If this is the case, the tax may act as a constraint on increases in housing supply and possibly make supply more inelastic. In this scenario the outcome is more rather than less volatility given the need for improved supply elasticity to combat booms and busts in housing market. This is a feature of the next set of arguments.
10. Taxes that improve supply elasticity reduce volatility (implicit in Meen, 2008; Barker, 2004; OECD, 2011)

If volatility is mainly prompted by demand side pressures then the balance of demand and supply side support through tax and subsidy measures may have an impact. As stated by Meen (2008, p 2760-2761) in the context of the UK, ‘Arguably, improving the responsiveness of housing supply to changes in housing market conditions is a pre-requisite to dampening price fluctuations’. Meen’s analysis suggests that there is a lack of evidence for speculative housing market bubbles in the UK. He argues that volatility since the late sixties can be explained largely by weak housing supply, which increases the responsiveness of house prices to changes in incomes and interest rates. This has been reinforced, it is suggested, by movements in incomes and interest rates and deregulation of mortgage markets in the eighties plus labour market changes, which had their main effect in the nineties. He emphasises the importance of housing supply for explanations of both volatility and the sustainability of home-ownership. While this improved supply responsiveness can be expected to come mainly from planning changes, taxes and subsidies may also have a part to play (Barker, 2004).

On the basis of evidence from several countries an OECD (2011) study suggests that there are important links between volatility and the long run price responsiveness of new housing supply. Responsiveness is seen to be particularly weak in the UK and the Netherlands and this is linked to higher volatility in these countries whereas more elastic supply in the USA is linked to lower volatility. Land use planning policies are seen to be important in easing supply side constraints but taxation is also seen to have the potential to improve supply elasticity and reduce volatility:

‘well-designed taxes on vacant properties and undeveloped land can encourage the appropriate use of land for residential and business property in urban areas. For instance, linking the assessment of property value for tax purposes to the market value may increase incentives for developing vacant land’ (OECD, 2011, p9).

6 Housing taxation and house price volatility: a research agenda

Whist there are good theoretical reasons for postulating that house price volatility is influenced by macroeconomic, demographic, mortgage market, planning system and housing taxation factors, empirical evidence about the relative importance of these factors is weak. There is a lack of comparative evidence about the effects on volatility of each of these sets of factors. With respect to housing taxation, despite the information in the previous section, little is known in detail about the impact of transaction taxes, capital gains taxation and real estate and land taxes or the effects on price volatility of the tax treatment of imputed rents and mortgage interest payments. Ideally one would have empirical evidence about the combined effects within different economies of these different sets of factors. An international comparison is further complicated by the suggestion noted in Section 2 that differences in house price volatility between countries may be due to differences in the geographical distributions of population and economic activity (ECB, 2003).

An internationally comparative research programme that seeks to unravel the comparative impact of housing taxation would need to put such taxation in the context of the many other explanations that there might be for housing market volatility. It would need to consider volatility over the long-term and thus data for several decades might be ideal. One could imagine that such a
programme could include several methodological approaches related variously to econometric modelling and testing, institutional analysis and behavioural analysis.

The following elements would be prerequisites, whatever the methodology adopted, although their exact specification, input and relevance would vary with the methodology applied.

(1) Assembly of verified national house price data on a common basis for all countries included in the analysis
(2) A similar assembly of macroeconomic and demographic data
(3) Mortgage market information arranged in a consistent fashion to show variations in the cost and availability of credit and the terms on which it has been and is available in each country
(4) Preparation of a systematic set of information on land use planning systems and the availability of residential development land
(5) Preparation of a systematic set of information on housing taxation including the types of taxes in use, the exemptions and the rates applied.

For items one and two there are sets of internationally recognised data (e.g. from the European Central Bank and OECD) that can form the starting point, although Murphy (2010, p216) argues that “From a user’s perspective, the major issue hindering research is the lack of long runs of consistent time series data.”, also for house prices. The data for items three, four and five are even more problematic. Quantifying variations in mortgage markets, land supply systems and housing taxation regimes will pose major conceptual problems. For example, the information on housing taxation would ideally go much further than we have been able to provide in this paper and include the amounts paid relative to property values. It would also need to address the implications of the geographical variations in property taxes. The local nature of such taxation means that the applicable rates and the significance for housing markets can vary from place to place within a country.

If data sets for volatility and the possible explanatory variables can be assembled then quantitative analysis based around econometric modelling and testing clearly has the potential to throw new light on the impact of housing taxation on volatility. Methodologies that relied more on an institutional approach or on a behavioural analysis might proceed without such rigorous data requirements. For example an institutional approach that focussed on differences in mortgage systems and the processes of applying housing taxes might well suggest some associations between countries that indicate that high volatility countries are more likely to have one set of arrangements and low volatility countries another. A behavioural approach would seek to unravel how taxes influence the buying and selling decision of households by a direct questionnaire approach that resulted in a large volume of new primary data. It might, for example, show that certain types of taxes are more likely than other to influence offer prices and dampen speculation. One could of course also envisage a research programmes that combined elements of quantitative, institutional and behavioural approaches.

7 Conclusions

We have shown that house price volatility varies a good deal from country to country. We have also shown that the taxation of housing varies and there are several propositions that have been advanced about the relationship between taxation and volatility. However, despite the assertions in the literature, to which we have referred, about the impact of taxation on housing market volatility, there is a lack of strong empirical evidence to support any of the prepositions that have
been advanced. The probability that real estate taxation that is closely related to current market values can act in a counter-cyclical fashion is high and is strongly supported by arguments promulgated by OECD (2011). A key conclusion is however that more evidence is needed about the impacts of a range of taxes.

We have described the elements a possible research programme that would help policy makers to decide whether taxes should be used to reduce volatility. Comparative international research would clearly have the potential to explain the causes of differences in housing market volatility between countries. Housing taxation may be but one element in an explanation and it is important that such research examines the broad macroeconomic context in each country and the impacts of differences in housing finance systems. Furthermore, any comparative analysis of volatility should also take account of variations in the elasticity of housing supply and the causes of these variations. This suggests attention to land use planning systems and the responsiveness, capacity and adaptability of construction industries. In short, taxation needs to be examined in the context of the overall causes of volatility and the ability of taxation to counter swings in housing demand and supply.

However, policy makers may have more objectives than simply reducing volatility. An ideal package of housing taxation reforms might have the following objectives: (i) less volatile housing markets; (ii) less distortion of choices between owning and renting; (iii) additional support for low-income and vulnerable households; and (iv) additional housing investment incentives. It will be difficult to formulate a package that addresses all four objectives in a way that does not compromise at least one objective. Thus some trade-offs will most probably be needed.

References


