Cardiff University Press
Gwasg Prifysgol Caerdydd

Welsh Economic Review

Land transactions tax variation in Wales

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Doi: https://doi.org/10.18573/wer.256 Accepted: 06/01/20

Introduction

Public spending in Wales is largely funded through a block grant from UK Treasury, and with changes in public funding determined by the Barnett formula. This adjusts the amounts of public spending given to Wales to link to changes in expenditure given to public services in England. This means there have been limited links between tax revenues gathered in Wales and monies available for the Welsh Government to spend on public services. However, following a series of Commissions (For example, see Holtham Commission (2010) and Silk Commission (2012)) in Wales, there has been more pressure for economic powers to be devolved to the region. For example, from 2015 business rates were fully devolved. Moreover, 2018 witnessed an end to centrally-set Stamp Duty Land Tax (SDLT) and its evolution to a devolved Land Transaction Tax (LTT).

With devolved tax raising powers there comes a need for more economic data and the development of new economic models through which to understand the effects of tax changes. These needs were recognised by the Silk and Holtham Commissions that preceded the devolution of more tax powers to Wales.

During 2015-17 the Welsh Government sponsored a research programme to develop more complex economic models of the Welsh economy through which to understand the potential effects of changes in taxation rates at regional level. This policy briefing note derives from the research programme and focuses on LTT in Wales. It is important to note that the findings reported here are very much research in progress and with work ongoing in terms of model development and refinement.

The context for the research programme was that while there has been some history of developing economic models through which to understand changes in regional economic activity, few models developed were suitable for examining tax variations (but see Foreman Peck and Zhou, 2020, in this volume of the Welsh Economic Review). For example, the region has benefited from a series of Input-Output tables. Input-Output tables have been produced and published at irregular intervals since 1966. These tables have been used to assess the significance of different industrial activities (see for example, Pinto and Jones, 2012), public sector activity (see for example, Morgan, et al. 2017), and to examine issues of infrastructure improvement in Wales (see for example, Munday, et al. 2020). They have also been used to support policy development in the region. While Input-Output tables are useful, they are limited in some applications because of assumptions underlying any economic modelling undertaken through the framework.

Then a key element of the research programme was to develop a detailed Computable General Equilibrium model for Wales which would allow the investigation the effects of a number of potential tax changes outside the limits of simpler economic models.

Land transaction in Wales

The Richard Commission (2004) considered the financing of devolution in Wales and options for tax varying powers. It concluded that it would be "desirable, though not

essential, to confer tax varying powers" on a legislative National Assembly for Wales. In the Holtham Commission (2010) potential alternative funding mechanisms were considered, including the scope for the Welsh Government to have tax varying powers as well as greater powers to borrow. This Commission and the later Silk Commission (2012) favoured a Tax Devolution Model and proposed taxes that could potentially be devolved, and included here was Stamp Duty Land Tax.

LTT is the devolved tax replacing SDLT from April 2018. Unlike Council Tax and Non Domestic Rates that are levied on the stock of properties, LTT, as well as the SDLT before devolution, is paid on the purchase, lease or transfer of properties including land with values over a certain threshold. In 2018/19, the tax revenue from LTT was around £225 million, with £152 million collected from 55,670 residential property transactions, and around £73 million generated from 6,120 non-residential transactions.[1]

The Welsh Government is able to determine its own bands, thresholds and rates. Table 1 presents the prevailing main residential rates and bands of LTT in Wales and SDLT in England and Northern Ireland. There is also a system of higher residential rates in Wales for cases where owners of more than one property are involved. Moreover there are different rates for non-residential properties with the portion up to £150,000 attracting a 0% rate, the portion £150,000-£250,000 having a 1% rate, the portion £250,000 to £1m a 5% rates and with portions over £1m attracting a 6% rate.

Modelling the regional economy

A Computable General Equilibrium (CGE) model is a large-scale numerical model that simulates the core economy-wide activities and interactions between economic agents (households, private, public, and government sectors). CGE models capture the inter-dependencies between sectors and markets, enabling analysis of how a policy change or shock targeted in one part of the economy will affect the rest of the economy. The CGE model functions through a set of equations that describe how the economy evolves over time in response to a policy change. These behavioural equations usually describe the economic behaviour of the agents based on the economic theory of general equilibrium. They ensure supply and demand for goods, services and factors of production in the economy are balanced and determine how firms and households respond to change.

CGE models can focus on a single area which can be a small sub-national region or a large country. The key advantage of single-region CGE models (such as that developed in the research programme) is their ability to

Table 1: Current (2018-19) residential main rates and bands: LTT versus SDLT

<table>
<tr><th>Price Threshold</th><th>LTT (%)</th><th>SDLT (%)</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>Up to £125,000</td><td rowspan="2">0</td><td>0</td></tr>
<tr><td>£125,001 ~ £180,000</td><td rowspan="2">2</td></tr>
<tr><td>£180,001 ~ £250,000</td><td>3.5</td></tr>
<tr><td>£250,001 ~ £400,000</td><td>5</td><td rowspan="3">5</td></tr>
<tr><td>£400,001 ~ £750,000</td><td>7.5</td></tr>
<tr><td>£750,001 ~ £925,000</td><td rowspan="2">10</td></tr>
<tr><td>£925,001 ~ £1,500,000</td><td>10</td></tr>
<tr><td>Over £1,500,000</td><td>12</td><td>12</td></tr>
</table>

simulate the impacts of policies and events, both regional and national, at the regional level. This type of assessment is valuable to authorities at all levels of government in terms of policy formulation and evaluation. The main constraint in construction is data availability.

CGE models have had a wide application in the field of tax analysis, but with rather fewer studies examining land taxes and land sales taxes, which was the topic of the research programme. For example, Lecca et al. (2014) use CGE models to examine the regional impact of varying the rate of income tax, or so called “tartan tax” in Scotland.

The CGE model developed for the project in this briefing was a single-region model. It is aggregated to 21 industry sectors and 3 production factors: labour, capital and land. The CGE model development used National Accounts data organized in the form of a Social Accounting Matrix (SAM). The SAM gives a snapshot of the Welsh economy in the calendar year 2013. The model is developed in terms of two time perspectives: short run and long run, characterized by the different states of production factors. In the short run, the model is marked by a sectorally fixed stock of factors. In this time perspective, factors cannot move freely across sectors. Hence, they are also fixed in total within the regional economy, and the factor price changes in each sector will vary in response to a policy shock.

The long run allows for free mobility of capital and labour factors across sectors and regions, with the land factor fixed within its property types i.e. residential and non-residential. A consequence of this assumption is the economy-wide factor price formed for capital and labour. Free mobility of factors enables factor-price adjustment between sectors and regions. What this means is that Wales is assumed to be a factor-price taker in the UK economy. For example, a factor price change from an initial benchmark level will cause a migration in labour and capital into or out of Wales until any regional/national price differential is eliminated.

In the long run the land factor is slightly different from capital and labour as it is categorized by residential use and non-residential use. In the long term time frame it is assumed that there is free mobility of land use across sectors but only within its own category i.e. non-residential land cannot be transferred to residential uses.

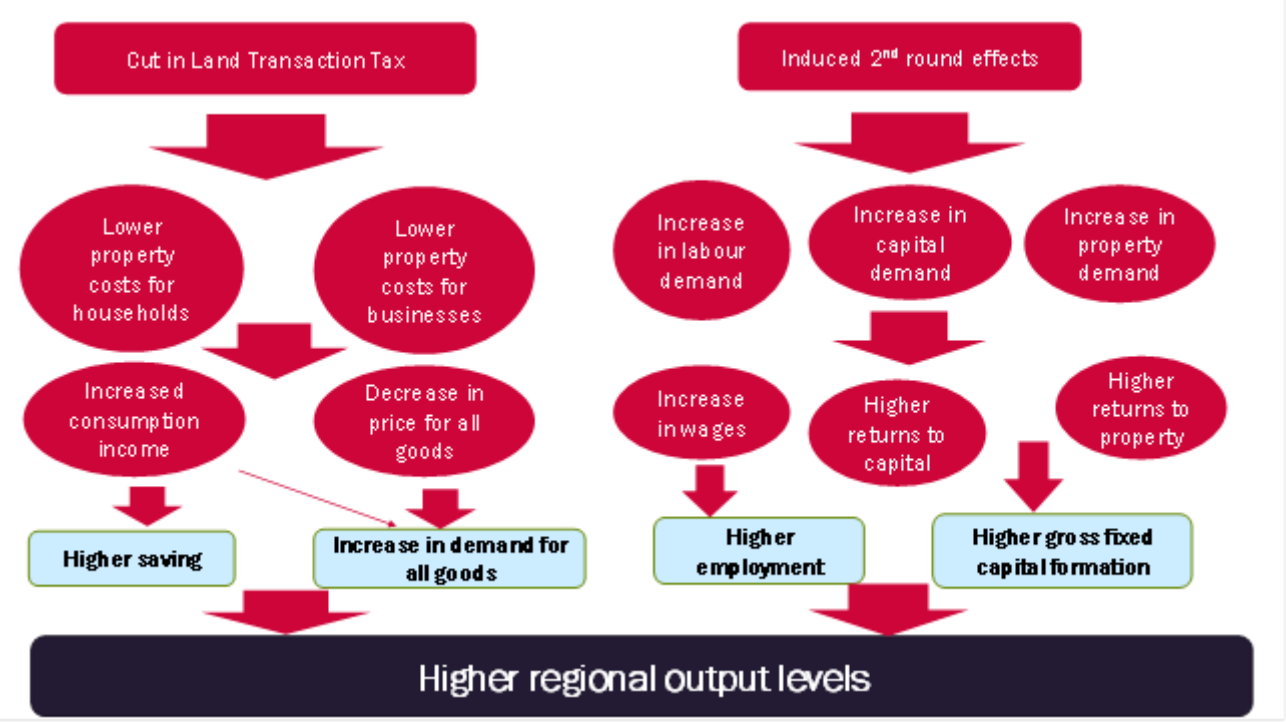
How might variation in land taxes affect the economy?

Figure 1 below shows an example of the alternative channels through which a LTT reduction could affect regional output levels. The linked boxes identify the effects that are captured by the CGE model such as price, income, consumption and investment changes. All these mechanisms happen simultaneously in the economy.

For example, the cheaper cost for acquiring properties benefits the budgets of households and businesses as the same property can be purchased for less money immediately after the tax cut. Households may decide to spend additional money on other goods and services in the economy. Businesses may also demand other goods and services in order to increase production to take advantage of the lower acquisition cost for properties.

Moreover after a reduction in LTT, sectors that make significant use of buildings and land, will experience a decrease in their production costs. If firms pass on some of these savings, then lower costs will cascade through the economy resulting in cheaper prices for goods and services, for both consumers and firms, which in turn will stimulate output. This is a key mechanism through which such tax cuts could reduce the distortions across the supply chain and consumer choices. As businesses make use of properties as part of their inputs in different proportions, then some sectors will benefit disproportionally from a tax change, altering the structure of the economy perhaps towards a more efficient allocation of resources.

Figure 1: Impacts of a reduction in Land Transactions Tax



Following LTT cuts, aggregate demand in the economy could increase, through all the channels described above that increase real income. To meet this additional demand firms will need to hire more workers, rent more capital and acquire more land as inputs. To do so firms may have to increase wages and payments to capital and land owners to induce higher labour supply, investment, and gross fixed capital formation (GFCF) in the economy. There is also an increase of demand in residential properties which raises their market value and stimulates relevant real estate business activities.

Higher factor demand from firms will stimulate investment in capital goods to meet additional consumer demand. Increased investment affects gross domestic product (GDP) through its short-run effect on the level of demand in the economy and through its long-run effect on how much output the economy can supply. A larger capital stock enables the economy to produce more output in the future, although it may take time for the effects of this larger capital stock to fully feed into a higher level of regional growth.

The macroeconomic effects set out above may have a positive effect on government receipts. Stronger growth will eventually generate tax revenues that recoup a proportion of the revenue lost directly from a tax cut. However, the opposite case may also occur, where the stimulation mechanisms through the private sector does not generate sufficient growth of the tax base to offset the tax cut.

Clearly any tax cut can also deliver contractionary effects through the public sector. As the government faces a balanced budget constraint, the government spending and transfer will reduce given a fall of tax revenue. This implies a decrease of public sector demand and resource, which lowers regional output. The contractionary effect originated from the public sector could spread into the private sector further to induce second-round effects. Firms reduce production and cut factor demand to cope with lower demand.

In conclusion, the final macroeconomic effect will always be a net effect that combines positive and negative impacts.

Simulation with Land Transaction Tax

This section provides some basic simulations. In Tables 2 and 3 below, the results of simulations are reported for the short run (SR) and long run (LR) under two alternative assumptions concerning the substitutability between capital, labour and land (non-residential). Specifically a relatively low degree of factor substitutability (elasticity of 0.5) is contrasted with a higher elasticity (1.5). The elasticity of substitution value measures the percentage change in the ratio of any pair of factor inputs used in response to a percentage change in their relative factor price ratio. It measures here the assumed substitutability between inputs, i.e. how easy it is to substitute one input for the other, for example how easy it is for firms to substitute capital for labour in response to an increase in wages. There could also be substitution between capital and land, and land and labour, as a result of a change in their relative price in response to a policy shock.

For illustrative purposes, it is noted that the LTT has two tax rate lines regarding residential and non-residential properties. The simulation scenario employed here explores the tax cut effects (10% reduction to the tax applied to both residential and non-residential properties. Results are presented and summarized below.

Table 2 shows results across all time frames under an elasticity value of 0.5. The model suggests that both residential and non-residential property prices are stimulated to rise in the short and long term perspectives. While the non-residential property value represents the land factor input in production, its stock is fixed at the regional level. Note that non-residential property is treated as a factor input in the model so its stock is regionally fixed, and then the value change is fully linked to its price change. Therefore the property value change is linked fully to the price change. However the residential property is treated as a normal good produced by a normal sector and with no limit on its volume. Generally, both residential and non-residential price changes are small. Such small price changes would not bring significant changes to the property market. As a result, the model suggests a 10% tax cut does not have enough of a stimulation effect to make up for the correspondent tax revenue recouped.

In the long run, the labour and capital stocks are completely relaxed. This may cause their factor prices to return to the initial equilibrium level. In the long run GVA and consumption

Table 2: Land Transaction Tax simulation results, tax reduction (10%) with an elasticity of 0.5 (% changes)

Major variables	SR	LR
Devolved revenue (all devolved tax)	-1.080	-1.011
Government spending	-0.079	-0.074
Economic activity (GVA)	0.007	0.0004
Household consumption	0.007	0.002
Non-residential property value	0.063	0.225
Non-residential Price	0.063	0.225
Non-residential transactions volume	0.000	0.000
Residential property value	0.041	0.002
Residential Price	0.023	6.309
Residential transactions volume	0.018	-5.933

Table 3: SDLT simulation results, tax reduction (10p in £), with an elasticity of 1.5 (% changes)

Major variables	SR	LR
Devolved revenue	-1.013	-1.012
Government spending	-0.074	-0.074
Economic activity (GVA)	-0.013	-0.001
Household consumption	-0.009	0.0004
Non-residential property value	0.088	0.145
Non-residential Price	0.088	0.145
Non-residential transactions volume	0.000	0.000
Residential property value	-0.009	0.0004
Residential Price	-0.009	6.034
Residential transactions volume	0.00	-5.690

effects are trivial. This is because the need for capital and labour resulting from the stimulation raises the factor prices and hence GVA initially, but these effects dissipate in the long run being mitigated by free factor mobility.

The price changes of residential and non-residential properties in the long run are of interest. The residential price change is about a 6.3% rise in the long run. As these are responses of a 10% cut of residential LTT, the elasticity of price change per 1% is then calculated as the percentage figures divided by ten, i.e. -0.631, in the long run. The non-residential price change is relatively much smaller, which is only a rise of 0.225% in the long run.

Table 3 shows the results under the elasticity of substitution of 1.5. Compared to the results under the elasticity of 0.5 as a whole, the changes in many of the major economic variables become negative. Table 3 reveals GVA and consumption either slightly fall or reveal trivial change given a 10% cut in both residential and non-residential LTT. This could result from over-substitution between factors with a higher degree of substitution assumed.

The land factor in land-intensive sectors may be over-substituted and affect GVA in these sectors. While there are more labour inputs because of the factor substitution and hence more labour income for consumption, the consumption in the long run is still not strong enough to feed into regional output. While the non-residential price presents the expected direction of change across the short and long term time frames, the residential price does not rise but slightly falls in the short run. In the long run, the residential price elasticity is basically the same scale as of the case shown in Table 2. Again, as there are generally no significant effects on all the major macroeconomic variables, there is basically no recoupment to the tax cut.

It should be noted that in the simulation framework adopted here, were taxes to increase rather than reduce, the results would be symmetrical (i.e. the same magnitude but with the opposite effect).

Conclusions

In the context of regional tax devolution in Wales, the development of new regional economic models is a necessity. From a policy perspective, the findings reported here show that the impacts of a variation in LTT may not last over a long term time horizon. However, presented here are simulation results from a single shock, with the assumption that there is no other shock emerging across all time frames. The results suggest that a relatively lower elasticity of substitution tends to deliver slightly larger economy-wide effects than a high elasticity.

Given current data and theoretical constraints, the model operates under a number of assumptions and uncertainties. This should be borne in mind when examining the findings and deriving inference for policy purposes. However, the purpose of this policy briefing note is to highlight the nature of the model development with an example application.

The CGE modelling is shown to be a useful tool in the sense that it bridges the limitations of Input-Output analysis by activating the role of price changes. This provides valuable insights when it is applied for tax policy analysis, as a tax change affects prices in most cases. Yet for the CGE modelling in a regional context, there are always practical difficulties given data constraints, meaning the accuracy of simulation results and dynamics can be questioned.

This research however marks progress in regional CGE modelling of the Welsh economy regarding tax variation issues, and sheds some light on tax policy development in the devolved tax regime. There are a series of avenues for further research, not least in terms of the role of expectations in respect of prices and incomes, building more economic dynamics into the modelling framework, and more research into appropriate assumptions on the elasticity of substitution between factors.

Endnote

1. See Welsh Revenue Authority, Land Transaction Tax returns at Stats Wales https://statswales.gov.wales/Catalogue/Taxes-devolved-to-Wales/Land-Transaction-Tax/landtransactiontaxstatistics-by-transactionvalue-measure-latestyear

References

Foreman Peck, J. and Zhou, P. (2020). Welsh taxes, *Welsh Economic Review*, 27, pp. 18-24. https://doi.org/10.18573/wer.254

Holtham Commission (2010). *Independent commission on funding and finance for Wales. Final report: Fairness and accountability: A new funding settlement for Wales*. https://gov.wales/sites/default/files/publications/2018-10/fairness-and-accountability.pdf

Lecca, P., McGregor, P.G., Swales, J.K., and Yin, Y.P. (2014). Balanced budget multipliers for small open regions within a federal system: evidence from the Scottish variable rate of income tax, *Journal of Regional Science*, Vol. 54 (3): 402-421. https://doi.org/10.1111/jors.12113

Morgan, K., Munday, M. and Roberts, A. (2017). Local economic development opportunities from NHS spending: evidence from Wales, *Urban Studies* 2017, Vol. 54(13) 3138–3156. https://doi.org/10.1177/0042098016658248

Munday, M., Reynolds, L. and Roberts, A. (2020). A road for regional recovery? The socio-economic impacts of local spending on the A465 road improvement scheme in South Wales, *Welsh Economic Review*, 27, pp. 25-32. https://doi.org/10.18573/wer.255

Pinto, V. and Jones, C., (2012). The economic impact of Tata Steel in Wales, *Welsh Economic Review*, 23, pp.30–32. http://doi.org/10.18573/j.2012.10440

Richard Commission (2004). *Commission on the Powers and Electoral Arrangements of the National Assembly for Wales.* https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN03018

Silk Commission in Wales (2012). *Empowerment and responsibility: Legislative powers to strengthen Wales*. https://webarchive.nationalarchives.gov.uk/20140605075122/http://commissionondevolutioninwales.independent.gov.uk/