

Agenda – Finance Committee

Meeting Venue:	For further information contact:
Committee Room 2 – Senedd	Bethan Davies
Meeting date: Thursday, 12 March 2020	Committee Clerk
Meeting time: 09.00	0300 200 6565
	SeneddFinance@assembly.wales

1 Introductions, apologies, substitutions and declarations of interest

(09.00)

2 Paper(s) to note

(09.00)

(Pages 1 – 6)

2.1 PTN1 – Letter from the Minister for Finance and Trefnydd – Vacant Land Tax – 3 March 2020

(Page 7)

2.2 PTN2 – Letter from the Minister for Health and Social Services – Health and Social Care (Quality and Engagement) (Wales) Bill – 4 March 2020

(Pages 8 – 9)

3 Impact of variations in national and sub-national income tax: Evidence session 4

(09.00–10.00)

(Pages 10 – 25)

Professor Kent Matthews, Sir Julian Hodge Professor of Banking and Finance,
Cardiff Business School

Dr Long Zhou, Research student, Cardiff Business School

Paper 1 – Written evidence: Cardiff Business School

Research Brief



**4 Impact of variations in national and sub-national income tax:
Evidence session 5**

(10.00–11.15)

(Pages 26 – 45)

Rebecca Evans AM, Minister for Finance and Trefnydd

Anna Adams, Deputy Director, Head of Tax Strategy Policy and Engagement,
Welsh Government

Tom Nicholls, Economic Adviser, Welsh Government

Paper 2 – Written evidence: Welsh Government

Research Brief

**5 Motion under Standing Order 17.42 to resolve to exclude the
public from the remainder of the meeting**

(11.15)

**6 Impact of variations in national and sub-national income tax:
Consideration of evidence**

(11.15–11.30)

Concise Minutes – Finance Committee

Meeting Venue:

Committee Room 5 – Tŷ Hywel

Meeting date: Thursday, 27 February
2020

Meeting time: 09.01 – 11.24

This meeting can be viewed
on [Senedd TV](#) at:

<http://senedd.tv/en/5982>

Attendance

Category	Names
Assembly Members:	Llyr Gruffydd AM (Chair) Mike Hedges AM Rhianon Passmore AM Nick Ramsay AM Mark Reckless AM
Witnesses:	David Phillips, Institute for Fiscal Studies Ed Poole, Wales Governance Centre Guto Ifan, Wales Governance Centre David Bradbury, OECD Sean Dougherty, OECD Bert Brys, OECD
Committee Staff:	Bethan Davies (Clerk) Georgina Owen (Second Clerk) Gemma Gifford (Deputy Clerk) Martin Jennings (Researcher)



1 Introductions, apologies, substitutions and declarations of interest

- 1.1 The Chair welcomed Members and witnesses to the meeting.
- 1.2 Apologies were received from Siân Gwenllian AM and Alun Davies AM.

2 Papers to note

- 2.1 The papers were noted.
- 2.1 **Letter from the Deputy Minister for Health and Social Services – Children (Abolition of Defence of Reasonable Punishment) (Wales) Bill – 11 February 2020**

3 Impact of variations in national and sub-national income tax: Evidence session 1

- 3.1 The Committee took evidence from David Phillips, Associate Director, Institute for Fiscal Studies on the impact of variations in national and sub-national income tax.

4 Impact of variations in national and sub-national income tax: Evidence session 2

- 4.1 The Committee took evidence from Dr Ed Poole, Senior Lecturer in Politics and International Relations, Cardiff University; Guto Ifan, Research Associate, Wales Governance Centre, Cardiff University; David Bradbury, Head of the Tax Policy and Statistics Division, OECD (via Skype); Bert Brys, Head of the Country Tax Policy and Personal and Property Taxes Units, OECD (via Skype); and Sean Dougherty, Senior Advisor, OECD (via Skype) on the impact of variations in national and sub-national income tax.

5 Motion under Standing Order 17.42 to resolve to exclude the public from the remainder of the meeting

- 5.1 The motion was agreed.

6 Impact of variations in national and sub-national income tax: Consideration of evidence

- 6.1 The Committee considered the evidence received.

7 Scrutiny of the Welsh Government Second Supplementary Budget 2019–20: Consideration of draft report

7.1 The Committee agreed its report with minor changes.

8 Welsh Government Draft Budget 2020–21: Consideration of pre-final Budget

8.1 The Committee noted the reports of other committees' scrutiny of the draft Budget 2020–21, ahead of the debate on 3 March 2020.

Concise Minutes – Finance Committee

Meeting Venue:

Committee Room 3 – Senedd

Meeting date: Wednesday, 4 March 2020

Meeting time: 09.32 – 11.09

This meeting can be viewed
on [Senedd TV](#) at:

<http://senedd.tv/en/5988>

Attendance

Category	Names
Assembly Members:	Llyr Gruffydd AM (Chair) Siân Gwenllïan AM Mike Hedges AM Rhianon Passmore AM Nick Ramsay AM Mark Reckless AM
Witnesses:	James Foreman–Peck, Cardiff University
Committee Staff:	Leanne Hatcher (Second Clerk) Georgina Owen (Second Clerk) Martin Jennings (Researcher) Owen Holzinger (Researcher) Christian Tipples (Researcher) Gemma Gifford (Deputy Clerk)

1 Introductions, apologies, substitutions and declarations of interest

1.1 The Chair welcomed Members and the witness to the meeting.



1.2 Apologies were received from Alun Davies AM.

2 Paper(s) to note

2.1 The papers were noted.

2.1 **PTN1 – Response from the Wales Audit Office to the Finance Committee's Annual Scrutiny of the Wales Audit Office and the Auditor General for Wales Report – 20 February 2020**

2.2 **PTN2 – Welsh Government Draft Budget 2020–21 – Response from the Minister for Finance and Trefnydd to the Finance Committee's recommendations – 28 February 2020**

3 Impact of variations in national and sub-national income tax: Evidence session 3

3.1 The Committee took evidence from Professor James Foreman-Peck, Professor in Economics, Cardiff University on the impact of variations in national and sub-national income tax.

4 Motion under Standing Order 17.42 to resolve to exclude the public from the remainder of the meeting

4.1 The motion was agreed.

5 Impact of variations in national and sub-national income tax: Consideration of evidence

5.1 The Committee considered the evidence received.

6 Consideration of statement of principles for directly funded bodies

6.1 The Committee considered the Statement of Principles that it expects Directly Funded Bodies to have regard to when making budget proposals, which the Committee published in May 2019. The Committee agreed to write to the directly funded bodies to reiterate these principles, ahead of the next round of budget proposals.

7 Retention payments in the construction sector: Consideration of draft letter

7.1 The Committee agreed a joint letter with the Economy, Infrastructure and Skills Committee to the Minister for Economy, Transport and North Wales on its inquiry into Retention Payments in the Construction Sector.

8 Local Government and Elections (Wales) Bill: Consideration of draft report

8.1 The Committee agreed the report with changes.

Rebecca Evans AC/AM
Y Gweinidog Cyllid a'r Trefnydd
Minister for Finance and Trefnydd



Llywodraeth Cymru
Welsh Government

Eich cyf/Your ref
Ein cyf/Our ref

Llyr Gruffydd AM
Chair, Finance Committee
National Assembly for Wales
Cardiff Bay
CF99 1NA

03 March 2020

Dear Llyr,

I am writing to update you on the Welsh Government's progress with securing competence for a vacant land tax in Wales. Official level discussions have now concluded, and it was agreed at a recent Joint Exchequer Committee that Welsh Government proposals are sufficiently developed to move to the next stage of the agreed process – a formal request to the UK Government for devolution of the legislative competence in this area.

I have now submitted this request. If agreed by the UK Government, the next step will be for the UK Government to consult on the constitutional implications of devolving this competence to Wales. I will provide a further update on plans for a UK consultation in due course.

Any policy proposals for the introduction of a new tax will be developed once the necessary competence has been devolved, and will be driven by further evidence-gathering and extensive stakeholder engagement. In addition, before any legislation is prepared in this area, a full Welsh Government public consultation and Regulatory Impact Assessment would be carried out

Yours sincerely,

Rebecca Evans AC/AM
Y Gweinidog Cyllid a'r Trefnydd
Minister for Finance and Trefnydd

Canolfan Cyswllt Cyntaf / First Point of Contact Centre:
0300 0604400

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Correspondence.Rebecca.Evans@gov.wales
Gohebiaeth.Rebecca.Evans@llyw.cymru

Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi.

We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

Vaughan Gething AC/AM
Y Gweinidog Iechyd a Gwasanaethau Cymdeithasol
Minister for Health and Social Services



Llywodraeth Cymru
Welsh Government

Ein cyf/Our ref: MA/VG/0758/20

Llyr Gruffydd AM
Chair, Finance Committee
National Assembly for Wales
Cardiff Bay
Cardiff
CF99 1NA

4 March 2020

Dear Llyr,

The purpose of this letter is to inform the Committee that I have laid a revised Explanatory Memorandum to the Health and Social Care (Quality and Engagement) (Wales) Bill before the National Assembly. The Memorandum reflects the changes I agreed to make as a result of the Finance Committee's Stage 1 report.

In particular, as a result of the Committee's recommendations, the Regulatory Impact Assessment (RIA) now illustrates a potential range of costs associated with the impact of changes in the number of incidents on the ongoing cost arising from the introduction of the duty of candour, as well as the resulting potential legal costs arising from the Bill. It also includes information around how fluctuations in the assumptions about the volume of additional complaints impacts on the number of staff required for the new Citizen Voice Body and its expected running costs, and sets out the potential range of ICT costs rather than the low cost estimate.

The Committee also requested that in revising the Regulatory Impact Assessment, information is included about the methodologies and specific content of the post implementation review. This has been added to section 9 of the RIA.

As well as the changes summarised above, a number of non-financial changes have been made to reflect commitments that I gave during stage 2 scrutiny. These include:

- Further information about the guidance supporting the duty of quality including what it will cover and how it links back to the Health Care Standards
- How the Citizen Voice Body links into existing arrangements in relation to social care
- Support for volunteer members and indemnity

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Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi.

We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

- How the public appointments process can be used to support diversity of board membership and address potential conflicts of interest

I hope this information is helpful.

Yours sincerely,

A handwritten signature in black ink that reads "Vaughan Gething". The signature is written in a cursive, flowing style.

Vaughan Gething AC/AM
Y Gweinidog Iechyd a Gwasanaethau Cymdeithasol
Minister for Health and Social Services

Cardiff Business School

Response to Consultation Inquiry into the Impact of variations in national and sub-national income tax

From Dr Long Zhou; Professor Kent Matthews & Professor Max Munday

4th December 2019

Introduction

We understand that the Finance Committee is undertaking an Inquiry into the effect of variations in national and sub-national income tax. In this response we seek to make the Finance Committee aware of new economic modelling frameworks being developed in Wales which can help us better understand the effects of regional tax variation. We take the view that additional research is required to examine effects across different levels of income earner. In this response we seek to summarise model development and offer some basic simulations of the Welsh effects of varying regional income tax.

The Welsh Government during 2014 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 response derives from the research programme. It is important to note that the findings reported here are very much research in progress and with work ongoing in terms of economic model development and refinement. Moreover the material in this response is the responsibility of the authors, rather than the original research sponsor.

Context for our research programme was that while there has been some history of developing economic models through which to understand changes in regional economic activity, the models developed were not suitable for examining tax variations. For example, the region has benefited from a series of Input-Output tables. 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 Computable General Equilibrium model for Wales which would allow one to investigate the effects of tax changes outside the limits of more simple economic models.

Building models to understand effects of regional tax variation

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 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. For example, Lecca et al. (2014)¹ 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 our project 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. The model is developed in terms of different time perspectives: for example, 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. 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.

How might variation in income taxes affect the economy?

We take here an example of a tax cut. While a cut in Income Tax tends to deliver positive effects through the private sector (Figure 1), it could have contractionary effects through the public sector as the government faces a balanced budget constraint (Figure 2). The linked boxes identify the effects that are captured by the Welsh CGE model such as price, income, consumption and investment changes. All these mechanisms happen simultaneously in the economy.

In Figure 1, a cut in Income Tax mainly affects the economy through the labour market first. On the labour supply side (households), workers face a choice between how much time to work and how much time to devote to leisure. Clearly these effects could actually be very different according to whether people are low, medium or high income earners and more model development is needed to pick up on this complexity.

As the tax cut raises the disposable post-tax wages, work becomes relatively more profitable and workers might tend to work more instead of leisure, this resulting from a substitution effect between labour and leisure. Under an income effect, however, with higher post-tax wages, the workers can maintain their standard of living through working less hours. Hence, if leisure time is treated as a normal good, higher disposable income could result in reduced working time and more leisure time.

¹ See Patrizio Lecca, Peter G. McGregor, J. Kim Swales, and Ya Ping Yin, ‘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, June 2014.

Figure 1: Impacts of a reduction in Income Tax

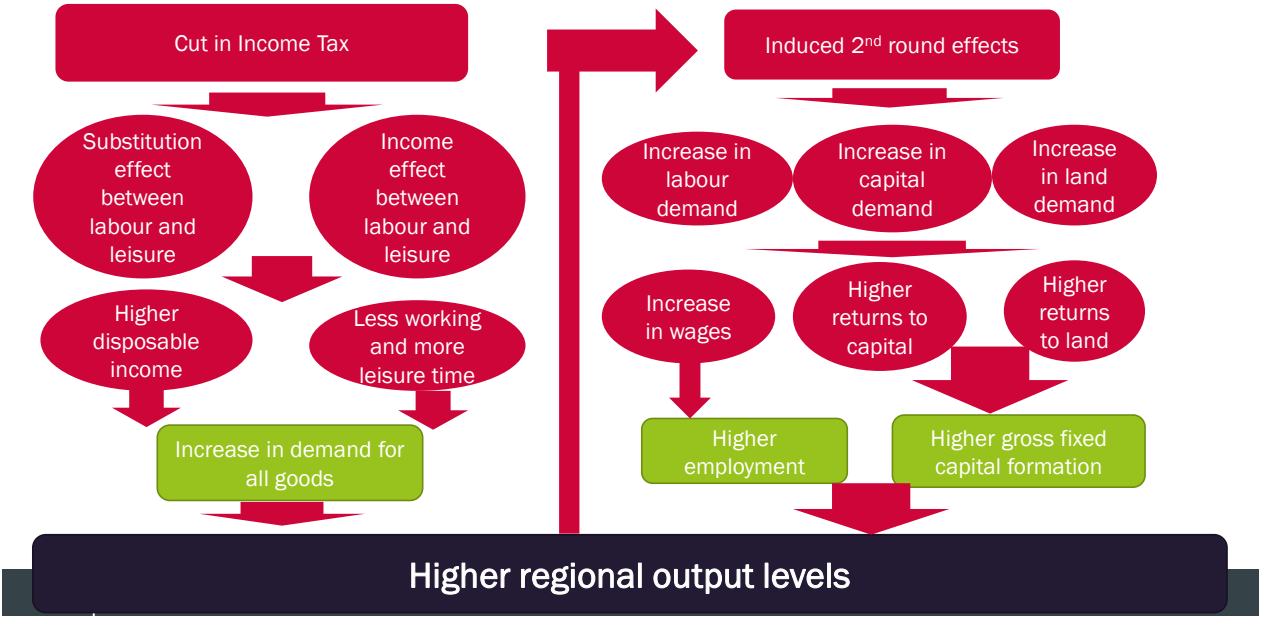
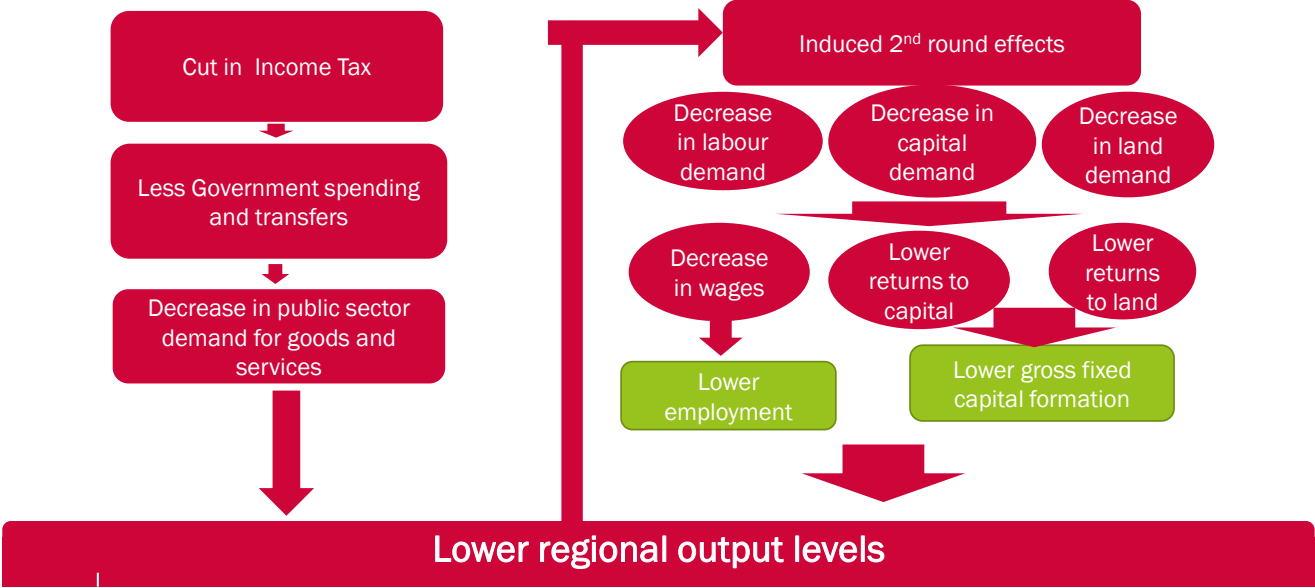


Figure 2: Impacts of a reduction in Income tax through the Public Sector



The net effect is determined by the balance between the two effects. However, both effects have positive impacts on the economy: higher disposable income brings higher consumption, and so does more leisure time which increases demand for entertainment, leisure, cultural and travel goods. Once again these effects could vary markedly according to whether people are low or high earners.

Moreover, on the demand side of the labour market, a cut in Income Tax may reduce the labour cost of firms, and firms substitute labour for other factors to take advantage of relatively cheaper labour. This is the substitution effect between production factors which will raise employment as well as regional output. Cheaper labour only results if wage costs to the employer decrease because of a supply effect. This works only if the income tax effect increases the labour supply of hours (a substitution effect) which in aggregate shifts the supply of labour schedule down and reduces the real wage to the employer. This would be a long run outcome. In the short run workers will take on extra hours because the tax cut makes it worthwhile. In the long run labour migrates to Wales, real wage costs decline, increasing employment and output.

Therefore, aggregate demand in the economy will increase through all the channels described above. To meet this additional demand firms will need to hire more workers, rent more capital and acquire more land. To do so firms may have to increase wages and payments to capital and landowners to induce higher labour supply, investment, and gross fixed capital formation (GFCF) in the economy.

Higher factor demand from firms will stimulate investment in capital goods and higher employment to meet additional consumer demand. Increased investment and employment affects gross value added (GVA) 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 utilized capital and labour 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 GVA.

The tax cut can, however, also deliver contractionary effects through the public sector as shown in Figure 2. 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 originating from the public sector could spread into the private sector further to induce second-round effects. Firms shrink production and cut factor demand to cope with lower demand.

The final macroeconomic effects are determined by the net of the positive effects shown in Figure 1 and the negative effects shown in Figure 2. If the positive effects derived from the private sector dominate the negative effects from the public sector, the tax base will be enlarged and the tax receipts can be partially or even fully recouped. However, the opposite case may also occur, where the stimulation mechanism through the private sector does not generate sufficient growth of the tax base to offset the contractionary effects from tax cut.

A Simple Simulation Using the Welsh CGE Framework

In what follows we provide some basic simulations. In the Table below, we report the results of simulations for the short run (SR) medium run (MR) and long run (LR) under assumptions concerning the substitutability between capital, labour and land. Specifically, we use in the example a relatively low degree of factor substitutability (elasticity of 0.5). 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 labour for capital in response to lower labour cost.

From April 2019, the UK government reduced the 3 rates of Income Tax paid by Welsh taxpayers: basic rate from 20% to 10%, higher rate from 40% to 30% and additional rate from 45% to 35%. The Welsh government can then decide how much to collect on top of the reduced rates and bear the fiscal consequence, which may directly affect their budgets.

While the model is developed with only one representative household due to regional data constraints regarding income allocation and the consumption pattern of different income bands, the tax rate in the simulation is always an effective rate which is defined as the total tax receipts divided by the underlying total tax base. Therefore, any differentiation by the three tax bands is not currently available in the model. However, the simulation is developed in the example to ensure that the variation of the Income Tax will exclusively account for the Welsh government spending change as a result of a balanced budget. The Income Tax simulation is set as a 5% tax cut i.e. a 5% cut on the effective rate, or a 5p-per-Pound cut of the tax revenue. Alternatively, the 5% cut can therefore be seen as a 5% tax refund for what each taxpayer pays in Wales, no matter which band this taxpayer belongs to. We note that the ability to reduce tax by 5% evenly across each tax payer is beyond the Welsh Government’s powers, as it only has power over the Welsh rates of income tax (i.e. 10 percentage points of each rate) which are in addition to the non-devolved rates. Then any potential Welsh Government change would not reduce tax evenly across tax payers. For these reasons the example taken here is only illustrative of how our model works.

Table: Income Tax Simulation: Effects of a 5% Cut (% changes)

Major variables: Income tax (-5%)	SR	MR	LR
Devolved Government Revenue	-3.90	-3.87	-3.79
Income Tax revenue	-5.07	-5.05	-4.94
Welsh Government spending	-1.24	-1.23	-1.20
Gross value added (GVA)	-0.09	0.03	0.13
Household consumption	0.47	0.49	0.61
Gross fixed capital formation	0.56	0.89	0.95
Total labour factor income	0.37	0.33	0.35
Employment	0.00	0.00	0.35

The 5p per Pound reduction of Income Tax causes devolved government revenue to decrease by around 4% in the short, medium and long run. This is mainly because of the weak recoupment of the Income Tax revenue (note this all income tax contributed from Wales). The Income tax revenue initially falls by slightly more than the scale of the tax cut, 5%, but recovers a little in the long run falling by 4.94%. The small scale of the recoupment implies that the tax cut does not boost the private sector enough to substantially offset the contractionary effect from the public spending cut.

The Welsh Government spending decreases by 1.24% in the short run and 1.20% in the long run. The reason that the scale of the government spending cut is less than that of the devolved government tax revenue, lies in the existence of fiscal transfers from central government. While the devolved government revenue is insufficient to sustain the spending on Wales, the gap is fulfilled by the fiscal support from the UK government. Hence, while the cut of government spending solely results from the cut in devolved tax revenue, the spending decreases by a relatively smaller percentage because this spending itself is more than the devolved revenue.

Major macroeconomic variables, including GVA, consumption and gross fixed capital formation, have generally weak positive responses to the tax change. GVA reduces slightly in the short run but recovers and rises in the medium and long run. The initial fall of GVA is a result of the contractionary effect from the government spending cut. In the medium to the long run, however, the stimulation to the private sector starts to emerge and covers the negative effects from the spending cut.

While the GVA is basically an aggregation of factor incomes, the driving component for GVA here is labour income. The Income Tax cut raises the disposable post-tax income and stimulates labour to work more because the tax cut makes it worthwhile. In the long run, this will in aggregate increase the labour supply and hence lower the labour cost for firms. However, the total labour stock is assumed to be fixed in the short and medium run. Therefore, the increases of labour income in this two time perspective are fully linked with the rise of wage, and the total employment fixed at the regional level. In the long run, the regional labour stock is fully flexible, making the real wage level decline and converge gradually back to the initial equilibrium level. Hence, the increase of labour income in the long run is fully linked with the rise of employment which may come from inactive labour in Wales or migration from outside of Wales. If it was assumed that total full time equivalent in Wales was around 1.2m people, then the tax cut might be connected with around 4,000 more FTE jobs in the long run

Conclusions

In the context of regional tax devolution in Wales the development of new regional economic models is critical, and with national UK models unlikely to pick up adequately on specific characteristics of the Welsh economy. We accept that our model, as presented here, operates under a number of relative assumptions and uncertainties. This should be borne in mind when examining the findings and deriving inference for policy purposes. However, the purpose of our response to the consultation is to highlight the nature of the model development and as an example application.

However, this research 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 avenues for further research not least in terms of better understanding how tax changes made in Wales work to affect different income groups, and with the current iteration of our model having just one household sector at present.



Cardiff Business School
Ysgol Busnes Caerdydd

Welsh Economy Research Unit

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Written evidence paper to the Finance Committee inquiry on the impact of variations in national and sub-national income tax

Summary

1. The Finance Committee has invited the Minister for Finance and Trefnydd to provide oral evidence as part of its inquiry into the impact of variations in national and sub-national income tax. Ahead of this, this paper provides a written response to the inquiry. In summary, it says:
 - ahead of the introduction of the Welsh Rates of Income Tax, the Welsh Government undertook research looking at existing studies on this issue. A summary of its findings were published in the Tax Policy Report 2018;
 - there is no evidence on migratory responses from income tax changes within the UK. However, the recent changes to income tax in Scotland will provide a UK evidence base once the relevant data becomes available;
 - looking further afield, migratory responses are found to occur in international studies as a result of income tax rate changes within countries;
 - these response are generally quite small, but tend to be larger for higher income tax payers;
 - international studies based on relatively small but integrated regions, which might be most relevant to Wales, tend to show a higher migration response for high income tax payers. This effect might be sufficiently large to have a significant impact on the revenue effects from a potential tax rate change affecting the top income tax payers in Wales;
 - the way that income tax is devolved to Wales and its geographical circumstances mean that very few international studies are likely to be directly applicable to the situation in Wales. Even the evidence base arising from income tax changes in Scotland will need careful consideration before any lessons can be learnt for Wales.

Introduction

2. The Welsh Government has undertaken extensive research into the potential migration effects arising from different income tax rates in Wales and England. A summary of this work was published as part of the Tax Policy Report October 2018¹. Much of the content in this paper is taken from that document, updated where possible with findings from more recent studies.
3. As income tax devolution is a recent phenomenon in the UK, data is not yet available to enable the estimation of migration effects within the UK. Variations in the income tax regime within the UK first occurred in 2017-18 when the Scottish Government applied a lower threshold for the higher rate of income tax than elsewhere in the UK. In 2018-19, the Scottish Government introduced two new tax bands – one reduces tax for the lowest income taxpayers and the other is an intermediate band between the basic and the higher rate. There were also

¹ See Welsh Government Tax Policy report 2018 available from;
<https://gov.wales/sites/default/files/publications/2018-10/welsh-tax-policy-report-2018.pdf>

increases to the tax rates for the top two tax bands². These rates and bands were maintained in 2019-20. However the higher rate threshold was frozen at the same level as in 2018-19, while it was increased elsewhere in the UK.

4. Intra-UK migration effects may be measurable from 2017-18, but they are likely to be more evident from 2018-19 following the more recent changes in Scotland. There is a long lag between the year in question and the availability of data required to analyse intra-UK migration behaviour from devolved income tax changes. The 2017-18 dataset will only be published in 2020.

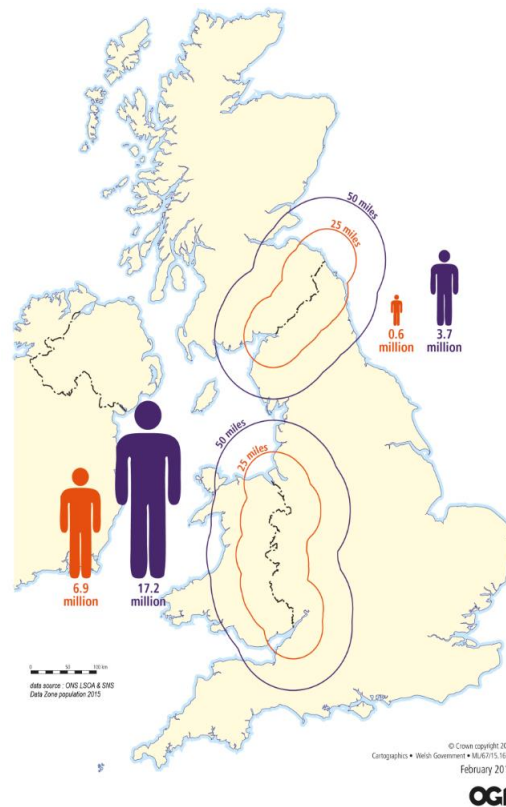
Wales-England border circumstances

5. Even once income tax data is available which covers the recent changes in Scotland, careful consideration will need to be given to how applicable any lessons learned are to Wales. The Wales-England border is much longer than the Scotland-England border and the border area is much more heavily populated. As devolved income tax in the UK is residence-based, people would be able to move relatively short distances and change their country of residence for income tax purposes, whilst remaining in their existing jobs and social networks.
6. Figure one shows that nearly 7 million people live within 25 miles of the Wales-England border, while only 0.6 million live within 25 miles of the Scotland-England border. Therefore migration between Scotland and England is more likely to require a change of job and social networks than migration between Wales and England.

² For full details see:

<https://www.gov.scot/Topics/Government/Finance/scottishapproach/Scottishincometax2018-2019>

Figure one – Populations of Wales and England within 25 and 50 miles buffer of National Boundaries



Source: Welsh Government (2017)

7. Further complications arise from the relative size of the tax bases in Wales and England. It is likely that the migration impact of a tax increase in Wales would be different from the impact of a decrease. A tax increase in Wales is mainly likely to affect the migration behaviour of Welsh residents. In contrast, a tax reduction in Wales could generate a migration effect in England which, while small in the context of the English tax base, could be substantial relative to the Welsh tax base.
8. An additional consideration relates to people with homes in both Wales and England. It might be possible for them to alter residency for tax purposes with few other changes in their lives. This would be captured as a migratory response although, aside from the impact on devolved / non-devolved revenues, there would be no real economic effect. For that reason this type of effect is sometimes referred to as an unreal response. It is an important feature for studies from countries with residence-based income tax systems, such as Italy³, but not workplace-based systems, like the US⁴.

³ See Rubolino (2019) *The Efficiency and distributive effects of local taxes: Evidence from the Italian Municipalities* ISER Working paper series no. 2019-02.

⁴ With workplace-based systems, firms might be attracted to lower income tax jurisdictions in order to appeal to potential workers. With residence-based taxes, this activity is assumed to be weakened somewhat due to the ability for workers to commute between different tax jurisdictions, another feature of the Wales-England economic relationship.

9. The ability for a tax payer to switch tax residency between homes is expected to be concentrated amongst relatively high income tax payers, as they are more likely to have multiple homes.
10. Switching residency between homes may be a legal and legitimate response for some. However, income tax devolution does raise a potential additional aspect of avoidance which was not previously a feature in the UK tax system. As HMRC continues to administer income tax in Wales, this will be a potential issue for HMRC to monitor should income tax rates differ between Wales and England.
11. As explained above, there is a lack of evidence and data which can be used to look at migration within the UK from income tax changes. The next section therefore looks at what can be learned from international studies. It is worth noting that there is a UK study which infers income tax migration effects using the impact of different council tax rates in different areas. This indicates larger migration responses amongst higher and additional rate tax payers, with limited or no response amongst basic rate payers⁵. However, as it uses a very different tax base, the inferences from this study are somewhat indirect.

International evidence

12. Sub-national variations in income tax rates exist in a number of countries. For example, states in the US, autonomous communities of Spain, provinces in Canada, regions of Italy and the cantons of Switzerland have had some recent experiences of varying income tax rates. These experiences have provided opportunities for researchers to observe and estimate the resulting behavioural effects, including intra-country migration.
13. The Welsh Government's review focused on studies which were more likely to demonstrate a causal relationship between income tax changes and migration, and isolate this impact from other influences on migration. This is important when considering the relevance of international studies to Wales, as those other influences on migration behaviour are likely to be vary considerably between countries.
14. A review of the literature finds that there is no study, the results from which can be readily applied to estimate intra-UK migration as a result of changes to the devolved rates of income tax. It is also difficult to generalise across studies to generate an average or consolidated estimate.
15. However, the literature generally confirms that there is a relationship between tax rate changes and migration. This relationship shows that when tax rates increase, the probability or level of out-migration increases, and vice versa.

⁵ Foreman-Peck and Zhou (2019) *Devolving fiscal policy: migration and tax yields* Regional Studies. 1-10. 10.1080/00343404.2019.1602256

16. The size of the effect is generally found to be small, especially for the average taxpayer or household (for example see Liebig, Puhani, and Sousa-Poza (2007)⁶, and Cebula and Nair-Reichert (2012)⁷).
17. It seems likely that this result will also apply in the UK. In 2019-20, the basic rate of tax applies to income between £12,501 and £50,000. Therefore a one pence or one percentage point change in the basic rate of tax will alter a person's tax bill by a maximum of £375 per year. Average (median) full-time earnings in Wales are around £28,000 per year (ASHE 2019). It seems likely that only with substantial changes to the basic rate would there be a significant migration response amongst average income tax payers.
18. A growing body of literature has focused on high income individuals (see for example Agrawal and Foremny (2018)⁸, Cohen, Lai and Steindel (2014)⁹, Kleven, Landais and Saez (2013)¹⁰, Kleven, Landais, Saez and Schultz (2014)¹¹, Lai, Cohen and Steindel (2011)¹², Rauh and Shyu (2019)¹³ and Young and Verner (2011)¹⁴).
19. These studies generally find a relationship between migration and income tax rates, with some showing a bigger effect on relatively high income individuals. Some US studies show that, while higher income individuals migrate between states less frequently than those in lower income groups, they are more likely to migrate in response to income tax changes¹⁵. Given the relative importance of high income earners for tax revenues overall, relatively small responses amongst the highest earners can have fairly large revenue effects. However, there are considerable differences in the literature on the scale of these effects.
20. In the UK, a one pence or one percentage point change in the higher rate of tax would generate a maximum change in tax of £1,000 for the taxpayer. This is a bigger potential impact than a one pence change in the basic rate, but there

⁶ Liebig, Puhani, and Sousa-Poza (2007) *Taxation and internal migration - evidence from the Swiss census using community-level variation in income tax rates* Journal of Regional Science 47, no. 4 (2007): 807-836.

⁷ Cebula and Nair-Reichert (2012) *Migration and Public Policies: A Further Empirical Analysis* Journal of Economics and Finance Vol. 36, Iss. 1, (January 2012): 238-248.

⁸ Agrawal and Foremny (2018) *Relocation of the Rich: Migration in Response to Top Tax Rate Changes from Spanish Reforms* (April 1, 2018). Available at SSRN: <https://ssrn.com/abstract=2796472>

⁹ Cohen, Lai and Steindel (2014) *Comment on Millionaire Migration and State Taxation of Top Incomes: Evidence from a Natural Experiment* Public Finance Review 2014 1-20.

¹⁰ Kleven, Landais and Saez (2013) *Taxation and international migration of superstars: Evidence from the European football market* The American Economic Review 103, no. 5 (2013): 1892-1924.

¹¹ Kleven, Landais, Saez and Schultz (2014) *Migration and wage effects of taxing top earners: evidence from the foreigners' tax scheme in Denmark* The Quarterly Journal of Economics, 333–378.

¹² Lai, Cohen and Steindel (2011) *The Effects of Marginal Tax Rates on Interstate Migration in the US* New Jersey Department of Treasury, October 2011.

¹³ Rauh and Shyu (2019) *Behavioural Responses to State Income Taxation of High Earners: Evidence from California* NBER Working Paper No. 26349

¹⁴ Young and Varner (2011) *Millionaire migration and state taxation of top incomes: Evidence from a natural experiment* National Tax Journal 64, no. 2: 255.

¹⁵ Young, Varner, Lurie and Prisinzano (2016) *Millionaire Migration and Taxation of the Elite: Evidence from Administrative Data* American Sociological Review 2016, Vol. 81(3) 421– 446

may still need to be a substantial change to the higher rate to illicit a noticeable migratory effect with significant revenue implications.

21. Existing international evidence tends to concentrate on very high earners. These earners are found to be most sensitive to tax rate changes. This suggests that changes in the additional rate of tax in Wales are most likely to generate a migration response.
22. The current size of the tax-base subject to the additional tax rate in Wales, although important for revenue, is relatively small. Studies which analyse the revenue impact in areas with relatively large high income tax-bases, such as those looking at millionaires in New Jersey (for example Cohen, Lai and Steindel (2014)¹⁶, Young and Varner (2011)¹⁷ Lai, Cohen and Steindel (2011)¹⁸), may be less relevant to Wales.
23. Studies which look at relatively small but integrated regions are likely to be more relevant to Wales. These include those looking at the cantons in Switzerland (Liebig (2007)¹⁹ and Martinez (2017)²⁰, municipalities in Italy (Rubolino (2019))²¹ or the autonomous regions of Spain (Agrawal and Foremny (2018))²². These generally find relatively large migration responses, although comparisons across studies are difficult as they report their estimates using different metrics.

Assessing the monetary impact on WRIT revenue with varying levels of tax rate divergence

24. One way of demonstrating the potential size of the migration effect on revenues is by assessing the relative impact of migration behavioural effects from the relevant literature and comparing these estimates to the revenue change due to the change to tax rates in Wales before taking account of behavioural effects.
25. There are two main elements for costing potential policy changes. These are commonly referred to as the static effect and the behavioural effect. The static effect is the impact on revenues from a change in tax rates assuming there is

¹⁶ Cohen, Lai and Steindel (2014) *Comment on Millionaire Migration and State Taxation of Top Incomes: Evidence from a Natural Experiment* Public Finance Review 2014 1-20

¹⁷ Young and Varner (2011) *Millionaire migration and state taxation of top incomes: Evidence from a natural experiment* National Tax Journal 64, no. 2: 255

¹⁸ Lai, Cohen and Steindel (2011) *The Effects of Marginal Tax Rates on Interstate Migration in the US* New Jersey Department of Treasury, October 2011

¹⁹ Liebig, Puhani, and Sousa-Poza (2007) *Taxation and internal migration—evidence from the Swiss census using community-level variation in income tax rates* Journal of Regional Science 47, no. 4 (2007): 807-836

²⁰ Martinez (2017) *Beggar-Thy-Neighbour Tax Cuts: Mobility after a Local Income and Wealth Tax Reform in Switzerland* Economics Working Paper Series from University of St. Gallen, School of Economics and Political Science No 1608 2017

²¹ Rubolino (2019) *The Efficiency and distributive effects of local taxes: Evidence from the Italian Municipalities* ISER Working paper series no. 2019-02

²² Agrawal and Foremny (2018) *Relocation of the Rich: Migration in Response to Top Tax Rate Changes from Spanish Reforms* (April 1, 2018). Available at SSRN: <https://ssrn.com/abstract=2796472>

- no change to the tax base. The old and new tax rates are applied to the current tax base and the difference between them is the static cost of the policy.
26. The greater uncertainty applies to the second element, the behavioural effect. This effect includes many potential factors which may alter the tax-base as a result of a change in tax policy, including migration.
 27. While it is not possible to produce a precise estimate of the migration behavioural effect, it is possible to look at whether the effects inferred from the relevant literature are larger than the static effect.
 28. One of the significant features of the way income tax is devolved in Wales is that the tax base is shared with the UK Government. Revenues from just 10p of tax in each band fund the Welsh Government. The Welsh Government would incur the full static effect from a change in the Welsh rates, but only part of the behavioural effect, which would apply to the whole shared tax base. Therefore the behavioural effect, including migration, would need to be relatively large to offset the static effect. The partial devolution of income tax in Wales dampens the budgetary effect on the Welsh Government from tax-induced migration.
 29. The discussion here focuses on changes to the additional tax rate, as estimates from relevant international studies suggests these tax payers are likely to be the most responsive.
 30. To analyse the possible migration effect in Wales, a report published by the Wales Centre for Public Policy (2018), *The Welsh Tax Base: Risks and Opportunities after Fiscal Devolution*²³ is used. The revenue implications of a range of changes to the Welsh rates of income tax are provided in the report, including estimates of the non-migration behavioural effects. It then shows the number of taxpayers who would need to migrate within the UK to reverse the revenue effect, thereby making the policy cost neutral overall.
 31. Looking at a range of policies which alter the additional tax rate by plus or minus one pence or five pence, a range of behavioural estimates can be derived from tables 4.1 and 4.2 in the report to estimate the size of migration response which would offset the static effect. The effects are estimated in different ways to ensure they are comparable with the range of ways estimates have been measured and reported in the literature.
 32. The behavioural effects required to offset the static costings are estimated to be large compared to the estimates in the literature found in studies looking at high-income taxpayers (see Cohen, Lai and Steindel (2014)²⁴, Young and

²³ For more details see: <https://www.wcpp.org.uk/publication/the-welsh-tax-base-risks-and-opportunities-after-fiscal-devolution/>

²⁴ Cohen, Lai and Steindel (2014) *Comment on Millionaire Migration and State Taxation of Top Incomes: Evidence from a Natural Experiment* Public Finance Review 2014 1-20

Verner (2011)²⁵, Young Varner, Lurie and Prisinzano (2016)²⁶, Kleven, Landais and Saez (2013)²⁷, Kleven, Landais, Saez and Schultz (2014)²⁸, Martinez (2017)²⁹, Rauh and Shyu (2019)³⁰ and Agrawal and Foremny (2018)³¹.

33. This implies that, based on studies looking at the intra-national effect of tax-induced migration, the migration effects in Wales are unlikely to be larger than the static effect. However, as most of the literature about this issue focuses on income tax in the US, these relatively small behavioural estimates may not be typical for Wales.
34. One study, which does find a much larger behavioural effect, is based on a policy in a Swiss canton (Martinez 2017)³². This study may be more relevant to Wales than most others due to the geography and size of the tax-base analysed. The estimates in this study would generate a sufficiently large behavioural effect to reverse the static effect of a change in the additional rate in Wales. This study looks at the effects of a tax decrease. It is uncertain whether such a large effect would apply to a tax increase.
35. This study also includes all forms of income. Whereas only non-savings and non-dividend income is subject to the devolved rate of tax in Wales. This is expected to reduce the migration behavioural effect in Wales, as savings and dividend income can be declared more independently of location than employment income. This is confirmed in the international evidence, where the migration effect is found to be larger with investment income than other forms of income (Young and Varner (2011)³³).
36. Another issue with regards to the potential revenue impact is the timing of any migration response. Some studies look at responses over a number of years, for example Rubolino (2019)³⁴, while others focus on more instantaneous

²⁵ Young and Varner (2011) *Millionaire migration and state taxation of top incomes: Evidence from a natural experiment* National Tax Journal 64, no. 2: 255

²⁶ Young, Varner, Lurie and Prisinzano (2016) *Millionaire Migration and Taxation of the Elite: Evidence from Administrative Data* American Sociological Review 2016, Vol. 81(3) 421– 446

²⁷ Kleven, Landais and Saez (2013) *Taxation and international migration of superstars: Evidence from the European football market* The American Economic Review 103, no. 5 2013: 1892-1924

²⁸ Kleven, Landais, Saez and Schultz (2014) *Migration and wage effects of taxing top earners: evidence from the foreigners' tax scheme in Denmark* The Quarterly Journal of Economics, 333–378.

²⁹ Martinez (2017) *Beggar-Thy-Neighbour Tax Cuts: Mobility after a Local Income and Wealth Tax Reform in Switzerland* Economics Working Paper Series from University of St. Gallen, School of Economics and Political Science No 1608 2017

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³² Martinez (2017) *Beggar-Thy-Neighbour Tax Cuts: Mobility after a Local Income and Wealth Tax Reform in Switzerland* Economics Working Paper Series from University of St. Gallen, School of Economics and Political Science No 1608 2017

³³ Young and Varner (2011) *Millionaire migration and state taxation of top incomes: Evidence from a natural experiment* National Tax Journal 64, no. 2: 255

³⁴ Rubolino (2019) *The Efficiency and distributive effects of local taxes: Evidence from the Italian Municipalities* ISER Working paper series no. 2019-02

effects on revenues and budgets, consistent with the findings in Rauh and Shyu (2019)³⁵.

37. The speed of responses to tax changes is likely to depend on the type of migration (real or unreal responses) and the flexibility of labour and housing markets. These are also factors which are likely to vary by location – and certainly across countries. This will cause further uncertainty over how estimates from international studies might be applicable to Wales.

Next steps

38. The Welsh Government will continue to review the international literature regarding migration behavioural effects.
39. The Welsh Government will also look to learn from any UK-based evidence following income tax devolution and changes to income tax in Scotland. The Welsh Government will continue to work with HMRC, OBR, the Scottish Fiscal Commission, Scottish Government and academia to further the understanding of tax-induced migratory effects so that any decisions on tax income rates and their forecasts can be based on the best and most-to-date evidence available.

³⁵ Rauh and Shyu (2019) *Behavioural Responses to State Income Taxation of High Earners: Evidence from California* NBER Working Paper No. 26349

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