The Opportunities and Costs of Cutting VAT: The effects of selected reductions in the rate of VAT on the labour element of housing repair, maintenance and improvement

A Report for the Cut the VAT coalition

Experian™

CUT THE VAT ON MAINTENANCE & HOME IMPROVEMENT WORK

Foreword

The 'Cut the VAT' coalition, comprising 21 organisations, has been campaigning to reduce the rate of VAT on repair, maintenance and improvement work for over two years. The coalition has succeeded in raising the issue within Parliament and in the national media but has failed to persuade the Government of the benefits of such a reduction in economic, environmental and social terms. That is why we have commissioned Experian to produce this report; *The effects of selected reductions in the rate of VAT on the labour element of housing repair, maintenance and improvement.'* The report is a comprehensive review of the effect of a cut in the rate of VAT on Treasury income, as well its impact on environmental and employment policy. We believe it helps move the debate forward and we look forward to an on-going dialogue, which we anticipate this research document will provoke.

Cut the VAT Coalition

February 2010

VAT reductions in the housing repair, maintenance and improvement market

Contents

Executive summary ..... **i**

Introduction **1**

1 Background **2**

1.1 Economic Overview 2

1.2 Construction Overview 3

1.3 VAT overview 4

2 Assumptions **9**

2.1 GB Home Improvement Market 9

2.2 Labour 9

2.3 Output data 10

2.4 DIY work 10

2.5 Demand 10

2.6 Informal economy 11

2.7 Employment 11

2.8 Devolved nations 11

2.9 Growth 12

2.10 Tax and National Insurance 12

3 The effects of a reduction in the VAT rate on Housing RM&I **13**

3.1 Introduction 14

3.2 Reduction in the rate of VAT to 5% 14

3.3 Reduction in the rate of VAT to 10% 18

3.4 Reduction in the rate of VAT to 15% 21

4 Environmental benefits **25**

4.1 Energy efficiency measures 26

4.2 Microgeneration 29

4.3 The heritage environment 30

Appendix A: Glossary

Appendix B: The UK and devolved nation revenue matrices

Appendix C: Sources

Executive summary

The headline findings

The Cut the VAT Coalition believes that reducing VAT from 17.5% to five per cent for all maintenance and home improvement works would benefit the UK by creating tens of thousands of jobs at a time of high unemployment and that it would enable the Government to achieve its target of cutting carbon emissions by 80% by 2050 . This report finds that such a cut would also have considerable social and financial benefits for the public sector in terms of reducing the VAT bills of housing associations and local authorities, enabling more of the spend to be used for improving the UK's 4.8 million units of social housing stock, thus supporting the Government's Decent Homes programme. Furthermore it would benefit millions of UK homeowners by reducing bills for those who cannot afford vital repairs to their homes; help bring empty properties back into use thereby assisting with the alleviation of the housing supply crisis; remove the perverse incentive to demolish existing buildings to avoid the VAT bill; and help protect consumers by cutting the competitive advantage of the £6.4bn a year informal economy.

On 10th March 2009 the European Council of Finance Ministers (ECOFIN) announced that it would allow EU Member States, by amending the recast 6th VAT Directive 2006/112/EC, to permanently reduce VAT to five per cent on the repairs, maintenance and improvement (RM&I) of private dwellings, excluding materials which account for a significant part of the value of the service supplied. Since then the campaign has focused on lobbying the UK Government to implement the cut. As part of this campaign the Cut the VAT coalition has commissioned Experian to conduct a rigorous analysis of the effects of selected reductions of 12.5%, 7.5%, and 2.5%, in the rate of VAT on the labour element of housing repair, maintenance and improvement works in the UK.

The research reached the following conclusions:

A reduction in the rate of VAT on the labour element of domestic RM&I works of 12.5% to five per cent, would have the following key effects:

- A net revenue loss to the Government of between £102m and £508m once the returning benefits of reduced social security claims, and increased income tax, national insurance and employers national insurance contributions are taken into account.
- The total stimulus effect of this £102-£508m to the UK economy as a whole would be in the region of £1.4bn in 2010 alone once the £373m in additional construction output and its concomitant £1.06bn multiplier effect are combined.
- If taken to 2019, the potential treasury net loss of between £1.3bn and £6.2bn could generate a combined total of over £17bn in the UK economy as a whole.
- The creation of up to 24,200 extra full time equivalent jobs in 2010 alone with total jobs created in the construction sector rising to 34,500 by the end of 2019.
- The knock on effect of this extra job creation could create an additional 31,000 jobs in the wider economy as demand for related materials, products and services increased and as construction pay packets are spent on goods and services in other sectors in 2010, and up to 47,000 over the next decade.
- This means that a cut to five per cent could result in a total of 81,500 extra jobs in the UK by the end of 2019.

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- The public sector contains approximately 4.8 million social housing units which required a total expenditure of £9.6bn in current prices in 2008: a reduction in the rate of VAT to five per cent could potentially release in the region of an extra £450m a year for the improvement of the UK's social housing stock.
- This would be enough to renovate or bring back into use approximately 19,000 homes per year; by 2019 this could see up to 190,000 extra social homes brought back up to the Government's Decent Homes standards.
- The cut would reduce the competitive advantage of the informal economy over legitimate traders.
- The cut could result in up to 2,235 new construction jobs in Scotland, 1,040 in Wales and 240 in Northern Ireland with figures in subsequent years suggesting totals of 3,170, 1,500 and 360 new jobs respectively created in the period to 2019.
- The reduction to five per cent would remove the perverse incentive to demolish and replace existing buildings rather than renovate them.
- There has been increasing realisation that new house building, even in a good year, only equates to around 0.75% of the total housing stock and by that reckoning, even if all new building was a straight replacement for the existing stock, it would take over 130 years to completely replace it with new carbon-zero homes. Realistically, the task would probably take nearer 250 years and thus its contribution to carbon emission reduction by 2050 can only be limited. As such the government must focus its attention on retrofitting the existing stock.
- The VAT treatment of energy efficiency and micro generation measures is inconsistent, with £4.5bn of energy efficiency works attracting the full rate of VAT despite some less efficient measures attracting a reduced rate of five per cent. A flat rate of five per cent on all energy efficiency measures would produce a more coherent and more readily implementable treatment of energy efficient retrofitting.
- Reducing the VAT rate on the £1.3bn per year labour element of double glazing and boiler only replacements would only cost £195m. However, the potential share that energy efficiency measures could take of a five per cent rise in overall demand for housing Repair, Maintenance and Improvement (RM&I) could lead to an extra 174,000 homes being retrofitted with loft and wall insulation, double glazing and energy efficient boilers over the next decade, leading to a saving of up to 337,000 tonnes of CO_2.

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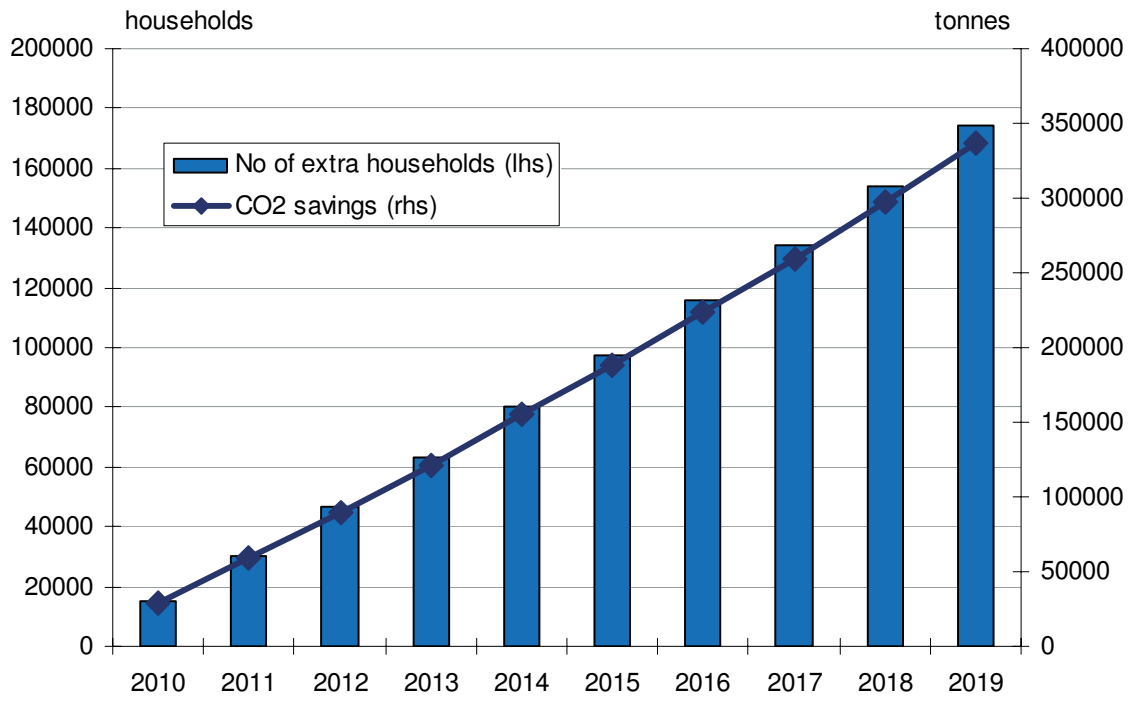
Figure 1: Estimated cumulative effects of 5% demand increase on CO2 emissions



Source: Experian.

- The current VAT regime, the relationship between new build and RM&I, and the many and varied reductions in the rate for specific types of work, has created a very complicated and difficult to understand system for many, with the following likely consequences:
    - High compliance costs for contractors;
    - Overcharging of VAT due to the difficulties in separating out work that attracts a lower rate when it is part of a large package;
    - It may be slowing up the adoption of some energy efficient measures, such as boiler replacement.

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Introduction

The 'Cut the VAT' coalition, through the Federation of Master Builders (FMB) commissioned Experian to look at the effects of a reduction in the rate of VAT from 17.5% to 5%, 10% and 15% on labour relating to repair, maintenance and improvement (RM&I) works on domestic properties. The assumptions laid out by the coalition are that a reduction in the rate of VAT will provide economic stimulus and employment, will be revenue neutral or positive to HM Treasury tax income, and will facilitate a wide range of Government policy objectives.

This report examines the effect of a reduction in the rate of VAT – to 5%, 10% and 15% - on labour relating to RM&I works on domestic properties in the UK on Treasury income, employment and the informal economy over the period to 2019. The report also examines the impact of a reduction in VAT on the environment, in terms of retrofitting properties, and more specifically an assessment of the CO_2 reductions that could be achieved.

As far as has been possible, the calculations around activity and employment creation have been based on empirical evidence available from a number of sources, including our own. However, any up-to-date primary research into the price elasticity of demand for housing RM&I services, or the relationship between the formal and informal economy, is outside of the scope of this research.

What is the housing repair, maintenance and improvement market?

- The housing repair, maintenance and improvement (RM&I) is a huge market, worth around £28bn in current prices in 2008, according to the Office for National Statistics (ONS). It covers everything from small painting and decorating jobs to major refurbishment and improvements, such as extensions and room conversions. In fact everything that can be done in the residential market short of building a completely new dwelling.
- In addition to the £28bn of work undertaken legitimately, a further £6.4bn of work is estimated to been undertaken in the 'informal' economy in that year.
- Also, some £6.9bn of building materials were purchased for do-it-yourself (DIY) improvements to domestic property, which would generate a 'notional' labour element of £4.2bn.
- Thus the total market for housing repair, maintenance and improvement in 2008 was in the region of £45.5bn in current prices.

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1 Background

1.1 Economic Overview

The first estimate of Gross Domestic Product (GDP) for the fourth quarter of 2009 showed marginal growth of 0.1%, quarter-on-quarter, following six consecutive quarters of decline. This was the longest recession since quarterly figures were first recorded in 1955. The marginal quarterly increase in the three months to December 2009 took the provisional annual rate of decline to 4.8%, the strongest annual fall on record. The figure for the final quarter of 2009 may yet be revised, and it is worth noting that the GDP figures have been more prone to revisions over the past year.

The recovery may be underway but it is likely to be mild and could even lose momentum in the first quarter of 2010 due to the displacement effect of spending being brought forward ahead of the return of the VAT rate to 17.5% on January 1st. Lending constraints and a sluggish labour market will limit any upswing in consumer spending and investment. Government policy has been a key prop to the economy over the past year, and the inevitable tightening in the fiscal and monetary stance will also limit the pace of recovery.

Rising unemployment will weigh on consumer spending in the shorter term, and investment is set to remain subdued in the face of ongoing lending constraints and concern over the economic outlook. The upturn will continue over the coming year, but at a gradual pace, before gathering momentum in 2011. However, in the medium term the annual average growth rate will be just 2%, well below the long-term average (2.5%). Medium-term prospects are constrained by weak household finances, less support from employment income and housing wealth than in the past decade, the need to restore viability to government finances and a troubled financial sector. The key factor in the slower growth outlook is a smaller contribution from consumers, whose debt-fuelled boom underpinned the UK's strong growth rate over the past decade. Heavy indebtedness, higher savings, more modest job creation and a greater tax burden limit future expansion. Consumer spending will rise in line with GDP, after seeing much stronger growth over most of the last two decades.

Spending growth may weaken in early 2010, as the VAT deadline is expected to have encouraged some consumers to bring forward expenditure and the car scrappage scheme ends. Beyond this, a gradual recovery in consumer spending is expected, underpinned by a combination of low interest rates, a normalisation of financial conditions and a more stable housing market. However, the pick up will only gather momentum once unemployment has peaked in mid-2010. Income growth will be restrained by weak wage growth, the gradual normalisation of interest rates and a rise in inflation. At the same time, savings ratios will edge back above 5% as consumers attempt to rebuild wealth. Spending growth is projected to slow to around 2.3% per annum over the next decade (compared to 3.3% over the past 15 years) as a result of more subdued income and employment growth, a weaker housing market, the heavy servicing burden of existing debt, and the growing need for retirement savings.

Growth prospects will also be constrained by the need for draconian measures to reduce public sector borrowing, continuation of balance sheet adjustment in the banking system, our expectation that growth in business services will not be as vigorous as in the last cycle and no boost to job creation from a hard-pressed public sector, as was seen in the past decade.

Long term jobs growth is expected to be subdued. Workforce expansion will slow, given weak demographics and falling immigration. Demand will also be less robust than in the past 10 years as the potential for economic growth is significantly less than in the recent past.

The fiscal position has deteriorated rapidly. The severe economic downturn has caused revenues to fall sharply. Meanwhile, benefits payments have risen steeply in line with mounting unemployment. In addition, financial sector bailouts, the fiscal stimulus package and the cost of quantitative easing have

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seriously worsened the already fragile position. Despite announcing fresh revenue-raising (National Insurance increase) and cost-cutting measures (public sector pay cap) in the Pre-Budget Report (PBR), the Government has chosen to spend the additional funds raised, rather than reduce borrowing. The PBR projects borrowing to peak around 12% in 09/10 before falling back to 5.5% of GDP by 2013/14. However, we believe this is based upon overly optimistic expectations on the economy and tax revenues. Thus, we anticipate that there will need to be further measures to increase the tax burden and cut spending in order for these borrowing targets to be hit. This will inevitably constrain the UK's medium-term growth prospects.

1.2 Construction Overview

The outlook for construction activity in the UK over the 2010-19 period is fairly modest, with annual average output growth of 1.7%, compared with 2.5% over the decade to 2007. The industry is expected to return to growth in 2011, ending three consecutive years of decline. However, the rate of growth is only expected to be a weak 1% in that year, and is not expected to be stronger than 3% in any year to 2019.

After two very bad years, which have reduced private housing output to below the level seen in the early 1990s, house building activity is expected to return to growth in 2010. Levels of both mortgage approvals and loans rose from their 2008 nadirs during 2009, but still remain below what would be considered 'normal' levels. There is concern, however, that the recent house price rises will not be sustained, and reflect restricted supply more than any substantial increase in demand. Lending conditions remain tight, although they have begun to ease slightly, with some lenders offering higher loan-to-value ratios including some as high as 90%. Growth will accelerate strongly in 2011, with double-digit rates of increase forecast until 2013. The annual average growth rate is forecast to be 5.4% over the 2010-2019 period, in line with the long-term average.

Higher levels of funding for the 2008-2011 Affordable Housing Programme (AHP) should have led to increasing output in the public housing sector. However, the shift towards delivery of social housing units through section 106 agreements in recent years caused problems when the number of private housing developments dried up as a result of the recession. In addition, social housing providers were also affected by the significantly tighter lending conditions, both in terms of their ability to access funds directly from private lenders, and also through lower sales of units under low cost home ownership schemes (LCHO). Thus, output fell in both 2008 and 2009. Funding allocations under the current AHP gathered pace in 2009 and the next two years are looking much brighter for the sector. The situation changes again post-2011 as the next AHP is likely to have the same level of funding at best and therefore social housing providers will need to access higher levels of private funds if they are to increase the supply of new units. As credit conditions ease further, social housing providers are likely to see higher sales of units under LCHO schemes and this will enable them to invest in developing new units. Output in the public housing sector is forecast to see growth of 4% per year, on average over the period to 2019.

The rate of increase in housing RM&I activity is expected to be only modest between 2010 and 2019. In the early part of the forecast period activity is likely to decline in both the public and private sectors. The deadline for the Decent Homes for All programme in England is 2010, although some work will continue after that date it has begun to wind down. The Welsh and Scottish Housing Quality Standard schemes are ongoing, but they are not large enough to materially affect the UK figures in the light of a much more constrained environment for local authority finances going forward. Looking at the private side, disposable incomes are coming under pressure, particularly with further tax rises highly likely, in addition to the recent return of VAT to 17.5% and the recently announced National Insurance increases from April 2011. This, coupled with continuing employment uncertainties are likely to make home owners wary of big ticket purchases until there is more evidence of a more sustained recovery in

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economic conditions. The annual average growth rate for the period to 2019 is just 1%, but this is in contrast to the marginal annual average decline of 0.1% seen over the decade to 2007.

The outlook for the infrastructure sector is buoyant in the shorter term, with a number of large transport projects either on site or in the pipeline. The energy sector is likely to see work on the first of the new generation of nuclear power stations in 2013 or 2014, with the first projects likely either at Hinckley Point or Sizewell. Growth in the sector is likely to peter out in the second half of the forecast period as some of these large projects near completion, and output is expected to increase by 2.8% per year, on average, to 2019.

Two major programmes of work are driving the public non-residential sector in the short term – the Olympic Park and the Building Schools for the Future (BSF) programme. However, with the no-fail deadline of 2012 for the Olympics, work on this is expected to begin winding down in mid-2011, whilst the BSF programme is likely to suffer from expenditure cuts around the same time. Output in the sector is thus likely to start declining in 2011, following three years of good growth, and is forecast to see an annual average decline of 3.1% over the period to 2019.

2009 was a very bad year for the industrial construction sector which all but collapsed, hit by the double whammy of falling demand for manufactured products and the natural end to the boom in the supply of distribution and logistics facilities. It is unlikely that the sector can drop much lower and with global demand already beginning to pick up, the trend for the sector should be upwards from 2011. Growth is expected to be moderate to 2019 at an average rate of 2.1% per year.

The commercial construction sector is also projected to see only a moderate average annual growth rate of 2.1% over the 2010-2019 period, largely due to sharp falls in the shorter term. Demand for office, retail and leisure facilities is likely to remain muted for some time to come and this, coupled with significant levels of availability, mean that it will be a while before these sectors see the start of the next development cycle.

1.3 VAT overview

The VAT rules relating to the construction industry are quite complex and are set out in Notice 708 from Her Majesty's Revenue and Customs (HMRC). It is not the purpose of this report to provide a comprehensive analysis of these rules, but the intention here is to provide a short overview of how the rules affect the housing RM&I market, point out some of the anomalies present and some of the potential, and almost certainly unintentional, consequences of these anomalies.

1.3.1 New work versus RM&I

First it is important to stress that the construction of new buildings is zero rated for VAT purposes, whereas the bulk of RM&I work attracts VAT at the standard rate of 17.5%. This immediately suggests the possibility of situations where it may be more cost effective to demolish and rebuild rather than renovate, even though the building in question may be perfectly suitable for its intended use. A good example of this is of a school in Lewisham, which chose to demolish and rebuild its sports hall, despite it being less than 10 years old and built with Lottery funding, because it was cheaper to do this than pay a £4m VAT bill on its renovation.

We are not suggesting that new house building and housing RM&I are in direct competition. Except at the margins they generally are not as the sectors have different drivers and the 1996 *GB Home Improvement Market* survey, undertaken by Construction Forecasting and Research (CFR) and the Building Services Research and Information Association (BSRIA) indicated that the link between the housing market and the housing RM&I markets was tenuous at best. However, it could be that under the current VAT regime, the same sort of situations as that faced by the school in Lewisham could arise.

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1.3.2 The differing housing RM&I rates

Of at least equal concern are the many and varied exceptions that exist within the housing RM&I VAT regime that can easily lead to confusion as to what attracts VAT at the standard rate and what attracts a reduced rate. A short summary of the various VAT rates are listed below.

Figure 2: VAT rates on housing RM&I related works

Construction service	Rate of VAT
Other conversions of residential premises to a different residential use	5%
Renovation or alteration of empty residential premises	5%
Approved alterations to listed dwellings and communal residential buildings, and certain listed buildings used by charities	0%
Alterations to suit the condition of people with disabilities	0%
Installation of energy saving materials; and grant funded heating system measures and qualifying security goods	5%
First time gas and electricity connections	0%
Installation of mobility aids for the elderly for use in domestic accommodation	5%

Source: Notice 708 Customs: Building and Construction, HMRC, February 2008.

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On the face of it, this seems fairly straightforward. However, once one starts looking at the detail, the situation becomes much more complex. The following are examples culled directly from the Notice 708 quoted in the source above and relate to *other conversions of residential premises to a different residential use*:

What if I am both converting and refurbishing different parts of the building at the same time?

Work that is unrelated to changing the number of dwellings cannot be reduced-rated.

Example 1

A block of flats consists of four floors, each with four flats. A lift is installed and work is carried out throughout the whole building. On the ground, first and second floors the footprint of each flat is changed to take account of the new lift. This results in the internal configuration of each flat being changed. On the third floor three penthouse flats are created from the original four.

Although the overall number of single household dwellings in the building has changed (there has been a reduction by one unit) only the work to convert the third floor will be eligible for the reduced rate because it is only in this part of the building that the number of dwellings has changed.

Example 2

Taking the above example, if the reduction in the number of flats on the third floor happens by combining two of the original flats together – the other two being refurbished – then the reduced rate will only apply to the work to merge the two flats together.

Example 3

Taking example 1, as well as the changes to the top floor, the number of flats on the ground floor is changed to five smaller units. In this example, the overall number of dwellings in the building has not changed (there are 16 units both before and after the work). However, as parts of the building are examined independently, and because the respective parts of the building meet the conditions at paragraph 7.3, the reduced rate can apply to the work to convert those parts.

It may well prove difficult and time consuming for contractors in the above examples to separate out those works attracting VAT at the standard rate and those attracting the reduced rate, tempting them to play safe and charge everything at the higher rate. This is just one of many examples in the application of the VAT rules that could lead to similar thinking on the part of those undertaking the work.

1.3.3 VAT and the environment

Perhaps even more worrying is the potential for the current VAT regime to mitigate against the adoption of energy efficient measures. There are some very interesting anomalies in the reduced VAT rate of 5% for the installation of energy saving materials shown in Figure 2. For example, while the installation of heating controls attracts the reduced rate, the replacement of an old boiler with a modern energy efficient one does not. Likewise, the installation of cavity wall or loft insulation attracts the lower rate of VAT, but the installation of double-glazing, surely another insulating installation, does not. The rationale behind these exceptions seems to be that when installations are optional then they attract the reduced rate, but when they become mandatory, they do not.

The unintended consequence of such exceptions may be the encouragement of the maintenance of old, energy inefficient systems rather than their replacement with new.

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1.3.4 The impact of the recent VAT reduction

As part of its economic stimulus package the Government announced a temporary cut in the rate of VAT from 17.5% to 15% effective from 1 December 2008, with a return to the 17.5% rate on 1 January 2010. While any boost to consumer spending was welcome, the general reaction of the business community was that the cut was too small to have any significant effect. In a survey undertaken three months after the cut took place, the Federation of Small Businesses reported that 97% of its members had not noticed a positive effect on their sales.

In terms of retail sales, according to the official data published by the Office of National Statistics (ONS), the seasonally adjusted month on month increase for December 2008 was 1%. Unfortunately, the monthly movements in the volume of retail sales in 2008 ranged from -3.6% to +1.8%, thus the 1% increase in December lies within what could normally have been expected in the that year if there was no change to the tax regime.

Looking specifically at housing RM&I output, in the fourth quarter of 2008, when the VAT change was introduced, output rose by 3% in real terms when compared with the previous one. The range over the eight quarters preceding this was for quarter-on-quarter changes of between -6% and +8% in levels of activity, so again the +3% sits well within a reasonable margin of change.

We have not included in this section any examination of recent data relating to the effect of the return of the VAT rate to 17.5% as this has no relevancy to a permanent reduction in VAT. That leads on the final part of this section.

1.3.5 EC study results

In October 1999 Council Directive 1999/85/EC amended Directive 77/388/EEC to allow a reduced level of VAT to be applied to labour-intensive services on an experimental basis. Member States could apply a reduced rate of VAT to two, or in exceptional cases three, of the categories of services defined in Annex K of the Directive.

In total, Belgium, France, Italy, the Netherlands, Portugal, Spain, and the UK (Isle of Man only) chose to participate in the experiment and took all or part of the renovation and repair of private dwellings as part of the services covered. It is not our intention here to provide a full scale evaluation of these experiments, but to give an indication as to why we have found it impossible to use the results of any of these save France.

First, those in the Netherlands and Spain were so proscribed to very specific areas of renovation – painting and plastering in dwellings over 15 years old in the former and masonry work in the latter – that they were unlikely to elicit any results applicable to housing RM&I as a whole. In Belgium it was not possible to establish any direct links between the VAT reduction and changes in demand, supply and employment as it was felt that there were many other factors impinging on levels of activity in the sector.

In Italy, there seemed to be some suggestion of a significant increase in turnover in the housing RM&I market due to the reduced VAT rate and that it could have contributed to some 65,000-75,000 extra jobs. However, the effects of another major change in the tax system were not taken into account and no methodology on how the labour effects were calculated were given in the evaluation report, thus the above figures are open to question.

The Isle of Man case was interesting in that a significant evaluation by survey of contractors, covering 7% of the market, was undertaken. This indicated that around 95% of traders believed that their level of business increased after the implementation of the VAT reduction, although 60% of those that reported a rise in business did not take on any additional staff. 40% of respondents believed that it had

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encouraged consumers to have work done, and 20% thought that it had led to consumers using traders from the informal economy less.

These survey results certainly suggest that the VAT rate reduction did have a positive impact. Unfortunately the results are qualitative rather than quantitative, thus do not provide us with information regarding the scale of the impact. For example, it does not tell us by how much business increased for those 95%+ of traders that reported a rise. The average rise may have been just 1%. Thus it is not possible to use the results of the survey to infer any quantitative changes in activity, employment or the formal/informal economy mix. The same has to be said about the results of the second survey that was undertaken in 2007, with the added caveat that the increases in business registrations, activity and employment noted by the Isle of Man government may just have been the result of general economic growth and increase in overall construction activity that was prevalent across the UK as a whole during the same period. In other words, it is not possible to demonstrate a causal relationship between changes in the data available and the VAT reduction.

This leaves just the French evaluation, where, utilising some econometric modelling it was possible to put a figure on the net additional demand created by the VAT reduction, taking into account that housing RM&I would also have been boosted around that period by some serious storm damage. This gave us a figure of around 5% of increased demand, which was supported by data on the housing RM&I market that Experian has access to through the Euroconstruct Network. This has led us to build our central scenario around a 5% increase in demand of housing RM&I services on a VAT reduction of 17.5% to 5%.

In summary, what the evaluations of the VAT reduction experiments across the European Union have shown most of all, is the difficulty of assessing its effect on activity, employment and the formal/informal economy in any quantitative way, primarily because other factors can impinge on activity in the sector. However, the qualitative indications are that it does have a positive impact on activity and employment at least.

1.3.6 A worst case scenario – an increase in VAT

Recent steps by the government to stave of the possibility of a depression have required very significant sums of money to rescue the banking sector and steady the wider economy. On Experian's current forecasts, public debt is expected to reach around 80% of GDP by 2013. An incoming government after the 2010 election will be under severe pressure to rein in growth in the public debt, for which there is basically only two options – cut public expenditure and/or increase taxes. The expectation has to be that government will use a mixture of both over the next few years. This raises the spectre that the standard VAT rate may go up, the most likely increased rate being 20%. If this were the case and was applied to housing RM&I, it would be likely to have a negative effect on demand, of roughly the same scale as a decrease to 15% might be expected to have. The implications of this for employment, based on the most likely decrease in demand, of 2%, would be a fall of over 7,500 in the housing RM&I workforce in 2010, rising to nearly 11,400 by 2019. When the effects of the multiplier are added in the total employment loss to the UK economy could reach nearly 23,000 in 2010, and rise to over 34,000 by 2019.

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2 Assumptions

2.1 The GB Home Improvement Market

Construction Forecasting and Research (CFR) undertook a survey of 4,500 owner-occupiers in 1996 in collaboration with GfK (Gesellschaft für Konsumforschung) and the Building Services Research and Information Association (BSRIA) which produced detailed information of households' expenditure on RM&I undertaken by professionals over the course of one year. The survey included a detailed breakdown of the labour and materials elements of different types of RM&I work. Once the data was grossed up, the survey indicated that in any one year over Seven million households will have some work done on their properties and that total expenditure on RM&I work was £12.4bn in 1996. This survey covers 'clients' and thus it should have covered both the formal and informal economy. Therefore, comparing the total expenditure figure with official ONS statistics gives an indication of the size of the informal economy. Removing VAT from the survey figure of £12.4bn, and the estimates of unrecorded output from the ONS data, the 1996 RM&I expenditure figure from the survey is around 35% above the ONS figure of £8.1bn for current priced private housing RM&I output in that year.

The summary results from the survey are shown below:

Figure 3: Household expenditure on GB home improvements, 1996

	No. of Households		Expenditure		Average Expenditure per Household
	(000s)	%	£ m	%	£
Total	7161	100	12362	100	1726
Home extensions, additions, conversions	605	8	2711	22	4481
Roof/guttering/external drainage	976	14	807	7	827
Kitchens & bathrooms	1341	19	2102	17	1567
Central heating	1235	17	1044	8	845
Doors & windows	2114	30	3328	27	1574
Electrical/security systems	1305	18	464	4	356
Damp proofing/dry/wet rot/woodworm & insulation	528	7	202	2	383
Internal/external decorations	1898	27	979	8	516
Miscellaneous repair & maintenance	2011	28	724	6	360

Source: The GB Home Improvement Market, CFR/BSRIA, 1996.

2.2 Labour

The labour element of housing RM&I work was assumed to be 38% (ONS figures are for both labour and materials). This figure has also come from the CFR/BSRIA survey and there is no reason to think that the mix would have changed substantially since then. The high material content of the improvement element of RM&I – big ticket items such as extensions, conversions etc – has served to reduce the labour element of RM&I work as a whole. The table below shows the labour-materials breakdown for the main areas covered by the report. Work such as decorating is, unsurprisingly, much more labour intensive (63%) than work fitting new doors and windows (27%).

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Figure 4: Labour/materials breakdown of housing RM&I

	Total value	Labour cost		Materials cost	
	£m	£m	%	£m	%
Home extensions, additions, conversions	2711	1161	43	1551	57
Roof/guttering/external drainage	807	378	47	429	53
Kitchens & bathrooms	2102	642	31	1462	69
Central heating	1044	329	32	714	68
Doors & windows	3307	895	27	2392	73
Electrical/security systems	464	192	41	269	59
Damp proofing/dry/wet rot/woodworm & insulation	202	57	28	62	31
Internal/external decorations	976	612	63	364	37
Miscellaneous repair & maintenance	724	291	40	433	60

Source: The GB Home Improvement Market, CFR/BSRIA, 1996.

2.3 Output data

The ONS figures for RM&I work include an estimate of unrecorded output, i.e. those firms not on the statistical register that the sample is taken from. This is largely self-employed workers and those below the VAT threshold. The ONS has estimated that VAT registered businesses account for 81% of output in the construction sector as a whole[1]. Although this figure is likely to be different for the housing RM&I sector, there is no estimate of any sector differences in the report. ONS data also includes output by Direct Labour Organisations (DLOs); that is work done by employees of government departments, local authorities, new towns and nationalised industries in the transport sector who are engaged on building and civil engineering work. DLO output has been excluded from our calculations.

2.4 DIY work

The assumption is that a proportion of DIY work (5%) will shift to professionals as a result of the reduction in VAT to 5%. This is only the case for the reduction to a rate of VAT of 5% it is unlikely that the 'saving' on the higher VAT rates would occasion such a shift. Figures are available on the sales of DIY materials and Experian makes forecasts of these sales as part of its Consumer Market Forecasts. We have thus have worked out a 'labour' element based on the above split of labour to materials. While some DIY sales will in fact have gone to trade, we are not aware of any figures to inform a share, so for the purposes of this study we have assumed that 100% of material sales from DIY suppliers go to DIY work.

2.5 Demand

We have gone with increases of 2%, 5% and 10% in the amount of extra RM&I work that could be generated by a reduction in VAT to 5% and have reduced this pro-rata for the 10% and 15% rates. The French EC study has been the main informant of this. Analysis of the CAPEB report indicates that the housing RM&I sector experienced a 4.75% increase in output in 2000 over and above what would have been expected had the VAT remained the same. This fits in quite well with the data on housing RM&I that we have access to from the Euroconstruct Network. This showed a 4.25% increase in housing RM&I output in 2000 over and above the normal long-term growth rate in the sector. Thus we have set our central scenario for this at 5%, which based on the above evidence would seem to be realistic, with a lower level of 2% and a higher level of 10%. This suggests relatively low price elasticity, but this fits in

[1] DTI Review of early estimates of construction output for GDP in 2003

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with the survey findings from the CFR/BSRIA survey. The strongest link was between housing RM&I activity and consumer spending and thus indirectly with household disposable income and equity withdrawal. Generally speaking, the stronger the consumer spending growth, the stronger the growth in housing RM&I. However, a reduction in the cost of housing RM&I does not necessarily mean that the 'difference' will then be spent on more RM&I – it might be spent on a better holiday than had originally been envisaged in that year, or higher quality materials. Therefore, it is unlikely that we would see a price elasticity of 1, which would be the assumption if a 12.5% decrease in VAT led to a 12.5% increase in output.

2.6 Informal economy

As is always the case, calculating the size of the 'informal' economy is always fraught with difficulty, as by its very nature it is difficult to measure. However, the CFR/BSRIA survey mentioned above does give some guidance. The grossed up figure for private housing RM&I from this study, once adjusted to take out VAT, suggests an 'informal' economy around 35% of the size of the formal one. We have no reason to believe that the relativities would have changed substantially since then. We have gone with scenarios of 10%, 20% and 30% of the informal economy moving over to the formal one on the basis of a reduction in VAT to 5% and have decreased these pro-rata for 10% and 15%. These are educated guesses as there is no empirical evidence to support any figures. We have also been relatively conservative on the basis that, according to the Informal Economy Working Group, around 80% of the informal economy is work undertaken by those completely outside the tax system and thus would a reduction in VAT alone significantly influence their thinking? Those working outside the tax system would still be able to significantly undercut legitimate firms in terms of price as they will not be accounting for income tax and NI contributions. We have made the assumption that there would be no movement on the public side, as one would hope that public authorities would have systems in place to ensure that illegitimate firms were not undertaking public work. Thus, effectively the central scenario of a 20% move in value terms from the informal to the formal economy is purely as a result of legitimate firms ceasing to offer 'cash-in-hand' prices exclusive of VAT and that, for the reasons mentioned above, there is no movement of illegitimate traders into the formal economy.

2.7 Employment

We have calculated employment increases based on a set of labour coefficients developed for ConstructionSkills to forecast employment requirements. These give us a figure for the amount of employment created per £1m of output across a range of sectors, including housing R&M. We have assumed that all the increase in output would directly feed into increases in employment, however, it is very doubtful that this would be the case. Longer working hours and increased productivity could soak up some of the increase, but productivity in construction is notoriously difficult to estimate and to get into a discussion on productivity rates in housing RM&I is outside the scope of this research.

2.8 Devolved nations

The main devolved nation difference is the relative size of the informal market – the 1996 CFR/BSRIA survey provided breakdowns for England, Scotland and Wales, but not Northern Ireland (NI). Thus for NI we have assumed the GB average. The implied size of the informal economy was largest in Scotland at 56%, with Wales also having a larger proportion than in GB with a figure of 40%.

The other main difference is the relative sizes of the housing RM&I sectors in the devolved nations. Northern Ireland has a very small RM&I sector which, in 2008, accounted for just 8% of total construction output in the province. In contrast, the figure for GB is 23%, with the RM&I sector in Wales accounting for a marginally smaller proportion (22%), and the proportion being 20% in Scotland.

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2.9 Growth

The growth forecasts we have used are those we have made for the latest edition of the Office of Government Commerce's Capacity Utilisation Model, which is run by Experian and goes to 2019. These forecasts are in constant prices and we have thus used the output price deflators generated by this model to put the data into current prices.

2.10 Tax and National Insurance

The tax and National Insurance figures were calculated using current HMRC rates.

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3 The effects of a reduction in the VAT rate on Housing RM&I

Summary

Reduction in the rate of VAT to 5%

- Range of total VAT losses on 5% increase in demand and shift from informal to formal economy: £816m–£874m in 2010
- Range of net tax losses on 5% increase in demand, shift from informal to formal economy and taking account of income tax, National Insurance and other social benefits: £102m–£508m in 2010
- Range of construction employment gains from 5% increase in demand and shift from informal to formal economy: 14,954–39,507 on the above basis
- Employment multiplier effects assuming 5% increase in demand: 31,035 in 2010
- By 2019, assuming a 5% increase in demand, a total of around 81,500 extra jobs could be created directly and indirectly by a cut in VAT to 5%

Devolved nations (2010)

- **Scotland**: Range of construction employment gains from 5% increase in demand: 1,383–3,655
  Employment multiplier effects 5% increase in demand: 2,178
- **Wales**: Range of construction employment gains from 5% increase in demand: 644–1,702
  Employment multiplier effects 5% increase in demand: 760
- **Northern Ireland**: Range of construction employment gains from 5% increase in demand: 147–388
  Employment multiplier effects 5% increase in demand: 174

Reduction in the rate of VAT to 10% (2010)

- Range of net tax losses on 5% increase in demand, shift from informal to formal economy and taking account of income tax, National Insurance and other social benefits: £294m–£363m
- Range of construction employment gains from 5% increase in demand and shift from informal to formal economy: 3,683–18,415
- Employment multiplier effects assuming 5% increase in demand: 18,621

Reduction in the rate of VAT to 15% (2010)

- Range of net tax losses on 5% increase in demand, shift from informal to formal economy and taking account of income tax, National Insurance and other social benefits: £37m–£72m
- Range of construction employment gains from 5% increase in demand and shift from informal to formal economy: 3,031–15,157
- Employment multiplier effects assuming 5% increase in demand: 15,326

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3.1 Introduction

RM&I work for the housing sector is everything short of rebuilding the house; repairs, maintenance, improvements, house/flat conversions, extensions, alterations, redecoration etc on existing housing. According to the latest data from the ONS, output in the housing RM&I sectors totalled just under £28bn, in current prices, in 2008. This figure includes estimates of unrecorded output by those firms legitimately under the VAT threshold.

Output data from the ONS on housing RM&I work is inclusive of labour and materials. As this report is only looking at the impact of a reduction in the rate of VAT on the labour element of this, we have used a figure of 38% for the labour element of housing RM&I work of 38%. This figure was calculated as an average of labour-materials spend across a range of RM&I work which came out of the CFR/BSRIA 1996 survey on the home improvement market[2].

The vast majority of housing RM&I work attracts rate at the standard rate of 17.5%. However, there are a number of areas which are currently zero-rated and those that attract a rate of 5%. These include:

- Other conversions of premises to a different residential use (5%)
- Renovation or alteration of empty residential premises (5%)
- Approved alterations to listed dwellings and communal residential buildings and certain listed buildings used by charities (zero-rated)
- Alterations to suit the condition of people with disabilities (zero-rated)
- Installation of energy saving materials; and grant funded heating system measures and qualifying security goods (5%)
- First time gas and electricity connections (zero-rated)
- Installation of mobility aids for the elderly for use in domestic accommodation (5%).

In the following sections we have examined the likely results of a reduction in VAT to 5%, 10% and 15%, respectively, on the labour element of all housing RM&I work, based on what we believe are a series of realistic assumptions relating to the likely effects on overall demand for RM&I and transfers from the informal to the formal economy.

3.2 Reduction in the rate of VAT to 5%

3.2.1 UK commentary

A reduction in the rate of VAT to 5% would give a base VAT receipt loss of £933m to the Treasury in 2010 due to the fall of 12.5% in the VAT rate. This assumes output of £24.2bn, in current prices.

Figure 5: Base annual VAT receipt loss due to VAT rate reduction to 5% (£millions)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction	-933	-954	-996	-1040	-1069	-1127	-1189	-1253	-1323	-1403

We have assumed three possible increases in demand generated by a reduction in VAT to 5% – 2%, 5% and 10% – and looked at the effect these would have on the VAT revenues to the Treasury (lines 3 to 5 in Figure 6). These figures suggest a price elasticity of less than 1 (which would be the assumption if a 12.5% decrease in VAT led to a 12.5% increase in output), which is backed up by results of the

[2] CFR/BSRIA: GB Private home improvement market, 1996

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CFR/BSRIA survey. The survey showed that the main reason for expenditure on home improvements was due to things being worn out or damaged, i.e. cyclical.

All previous studies done on the subject suggest that any reduction in VAT on the labour element is unlikely to be revenue positive for HM Treasury VAT and tax receipts. As an example, let us assume a labour element of £1.175bn (for simplicity's sake). The VAT revenue would be £175m. With a VAT rate of 5%, this revenue would fall to just £50m, a decline of £125m. In order to generate £175m of tax revenue at the 5% VAT rate, output would need to more than double to £2.5bn.

Factoring in the 5% shift from DIY to 'professionals' assumed under the this level of VAT reduction and the above price elasticity scenarios, the net loss to HM Treasury in the VAT take reduces to between £885m and £914m in 2010, as shown in the figure below.

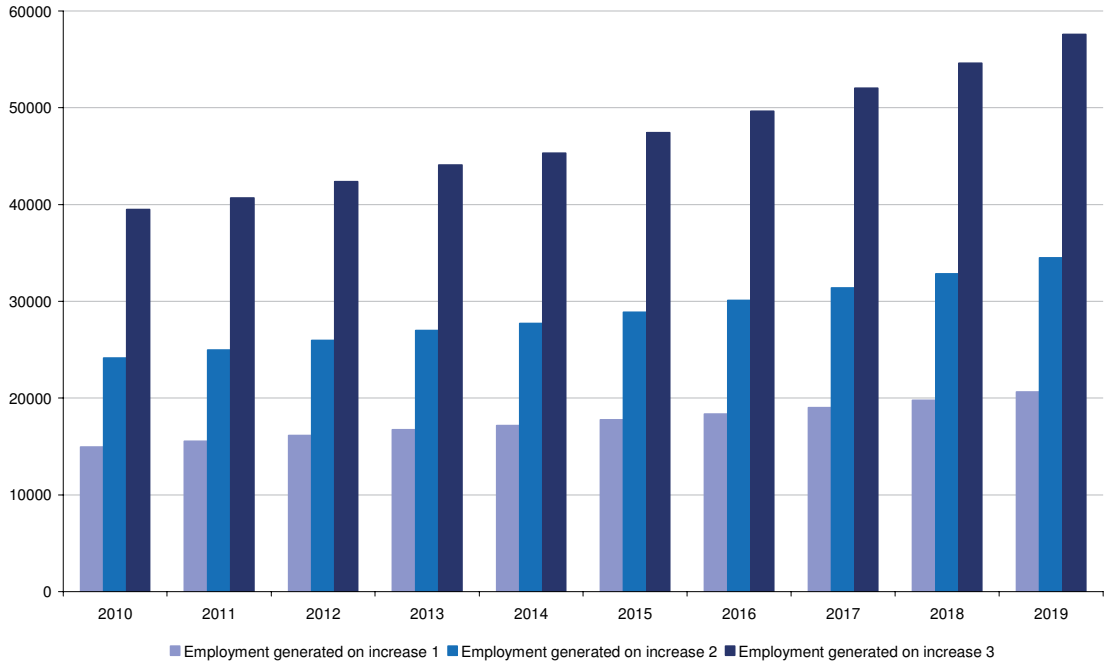
Figure 6: Summary of the VAT effects of various rates of increase in demand and a shift of 5% from DIY to professionals resulting from a reduction in the rate of VAT to 5% (£millions)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
VAT generated from shift from DIY to professional	11	11	12	12	12	13	13	13	13	14
VAT generated on price elasticity = 0.16	7	8	8	8	9	9	10	10	11	11
VAT generated on price elasticity = 0.4	19	19	20	21	21	23	24	25	26	28
VAT generated on price elasticity = 0.8	37	38	40	42	43	45	48	50	53	56
VAT loss/gain on price elasticity = 0.16 (1)	-914	-935	-976	-1019	-1048	-1106	-1166	-1230	-1299	-1378
VAT loss/gain on price elasticity = 0.4 (2)	-903	-923	-964	-1007	-1035	-1092	-1152	-1215	-1283	-1361
VAT loss/gain on price elasticity = 0.8 (3)	-885	-904	-944	-986	-1014	-1070	-1128	-1190	-1256	-1333

In order to examine the possible labour effects of a reduction in VAT, we have used labour coefficients developed for ConstructionSkills to forecast employment requirements, which give a figure for the amount of employment created per £1m of output across a range of sectors, including housing R&M.

The central scenario of an increase in demand of 5%, plus an assumed 5% shift from DIY work to professionals, would generate up to 24,200 extra full-time equivalent jobs in 2010 alone, with further job creation forecast over the period to 2019. For the lower increase in demand, of 2%, up to 15,000 full-time equivalent jobs could be created, whilst the figure for the higher rate of increase in demand (10%) is up to 39,500 full-time equivalent jobs. This is summarised below.

Figure 7: Effects of a reduction in the rate of VAT to 5% on construction employment



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The extra employment created by the increase in demand will have a number of positive effects on revenues. Higher levels of employment will lead to a reduction in payments of unemployment benefits and other social benefits, calculated at between £44m and £117m in 2010, depending on the assumed shift in demand. Increased employment will also generate increased revenue from extra income tax and National Insurance receipts, calculated at between £180m and £760m in 2010 (depending on assumed rate of increase in demand and the size of the shift from the informal to the formal economy). The impacts of the possible increase in employment on HM Treasury receipts are summarised in the following figure:

Figure 8: Effects of increased employment on income tax and National Insurance receipts and social benefit savings (£million)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Xtra income tax & ni generated on employment PE (1)	182	189	196	203	209	216	223	231	241	251
Xtra income tax & ni generated on employment on PE (2)	294	303	316	328	337	351	366	381	399	419
Xtra income tax & ni generated on employment PE (3)	480	494	515	536	550	576	603	632	664	700
Xtra income tax & ni generated on shift from informal to formal economy C	280	286	299	312	321	338	357	376	397	421
Unemployment & other social benefits saved on PE (1)	44	46	48	50	51	53	54	56	59	61
Unemployment & other social benefits saved on PE (2)	72	74	77	80	82	86	89	93	97	102
Unemployment & other social benefits saved on PE (3)	117	120	126	131	134	141	147	154	162	171
Unemployment & other social benefits saved on shift frm informal to formal economy C	68	70	73	76	78	82	87	92	97	103

In addition, reducing unemployment will have wider benefits on HM Treasury revenues. For example, there may be a rise in consumption expenditure which would increase HM Treasury revenues from VAT on these goods.

This increase in employment will have wider impacts than just on the construction industry. The multiplier effect for the UK has been calculated at 2.83. This means that for every extra £1m of output, around £2.83m of effects are likely to be generated throughout the wider economy. In order to give estimated figures of employment impacts in the whole economy, we have used an approximate calculation to give a figure of £34,014 as the cost of employment (using a proxy of an employee's salary and employer's National Insurance contribution as an estimate). The central scenario of a 5% increase in demand will generate around £373m of extra construction output in 2010 so incorporating the multiplier effect gives a figure of £1.06bn. Thus, using our approximation for the average cost of employment, gives an increase of up to 31,000 full-time equivalent jobs generated in 2010. This is summarised below.

Thus the total effect of the £508m to £102m reduction in the tax take could provide a boost of £1.4bn to the UK economy as a whole in 2010 alone, once the impact of the multiplier effect is taken into account. Over the decade to 2019 this would equate to over £17bn of extra value created in the economy for a cumulative tax decrease of between £1.3bn and £6.2bn.

In employment terms, the direct and indirect (multiplier) effects could result in around 81,500 extra jobs in the UK by the end of 2019.

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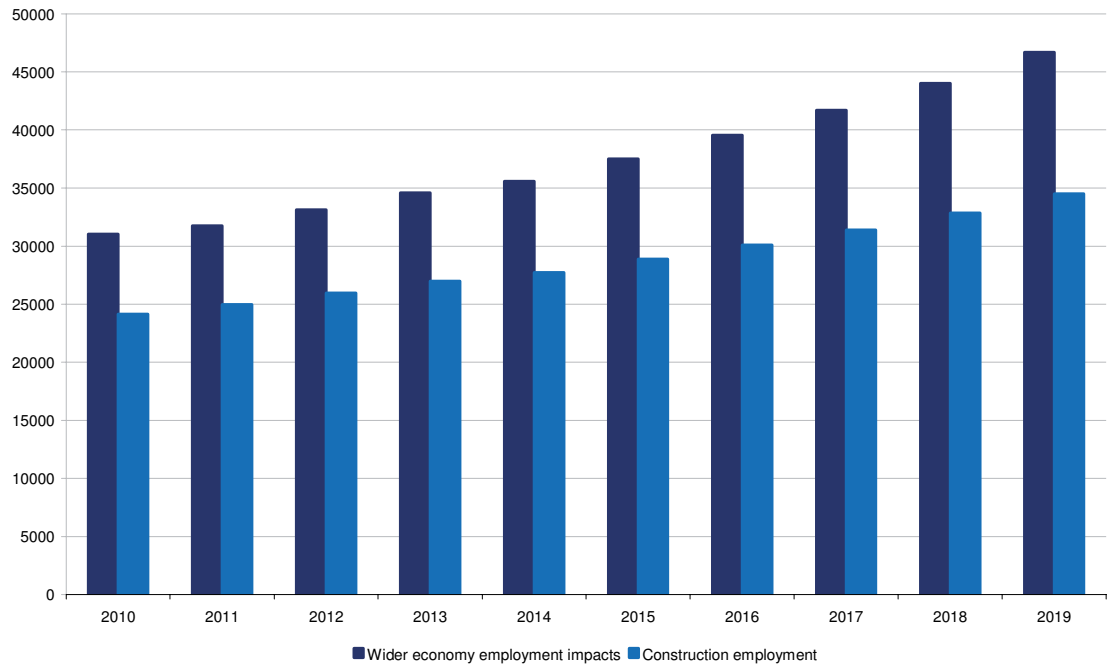
Figure 9: Effects of a reduction in the rate of VAT to 5% on employment in the wider economy



The 'informal' economy is, by its nature, very difficult to quantify. However, the CFR/BSRIA survey gives some guidance in this area, suggesting an 'informal' economy around 35% of the size of the formal one. The three figures we have used for the shift to the formal economy are 10%, 20% and 30%.

The central scenario of an increase in demand of 5% would lead to a loss in VAT revenue of between £816m and £874m in 2010 (dependent on the size of the shift from the informal to the formal economy). Taking into account other major revenue gains and losses (in the form of lower unemployment benefit, higher income and national insurance), the net effect would be a loss of between £102m and £508m in revenue. It may be the case that there are some unexpected impacts on taxes that have not been captured by these figures, but these are likely to only have a small affect on overall revenue. Although this scenario leads to a net revenue loss for HM Treasury using our calculations, the full benefits of an increase in unemployment may not have been included; for example higher levels of consumption expenditure (so higher VAT revenue from this) and also the social benefits of a reduction in unemployment.

The alternative scenario of a higher increase in demand of 10% would lead to a loss in VAT revenue of between £798m and £856m in 2010, again depending on the size of the shift from the informal to the formal economy. Taking account of other major revenue gains and losses would give something between a net loss of £259m and a net gain of £147m, depending on the assumptions regarding the size of the shift from the informal to the formal economy.

The scenario where the increase in demand is assumed to be just 2% would lead to a loss in VAT revenue of between £827m and £885m in 2010, which again is dependent on the size of the shift from the informal to the formal economy. Taking account of other tax losses and gains would give a net effect of a reduction in revenue of between £253m and £659m.

3.2.2 Devolved nation differences

The most significant difference in the analyses for England, Scotland, Wales and Northern Ireland is the size of the informal economy in each nation. These figures came from the 1996 CFR/BSRIA survey in the case of England, Scotland and Wales, and in the absence of any specific breakdown for Northern Ireland, we have applied the UK average to the province.

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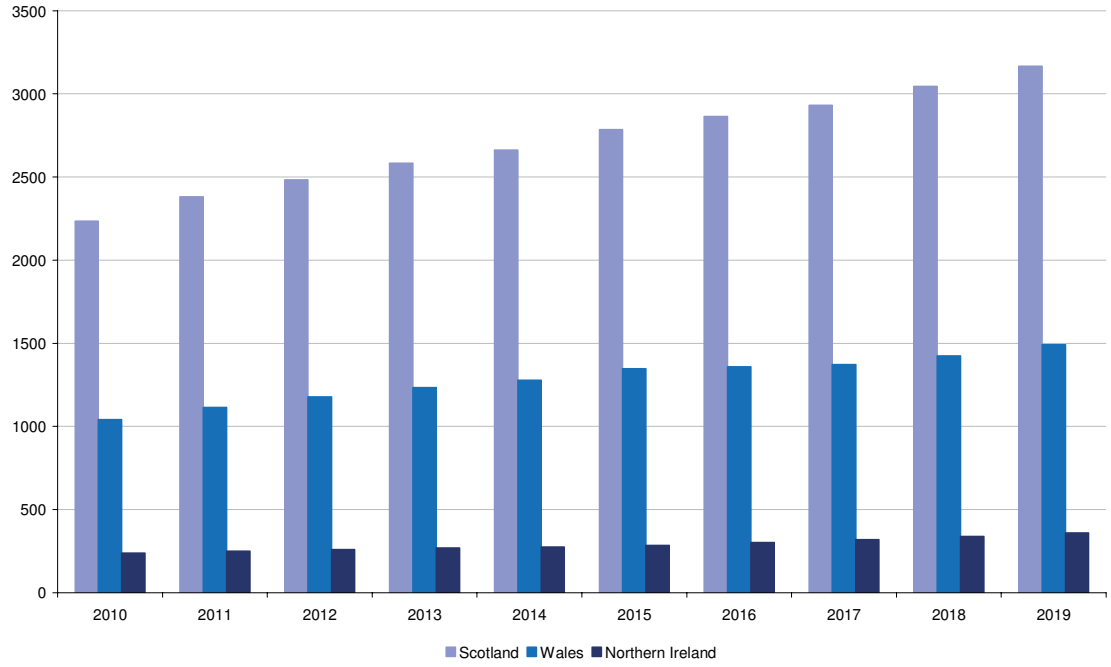
The other main difference is the relative sizes of the housing RM&I sectors in the devolved nations. Northern Ireland has a very small RM&I sector which, in 2008, accounted for just 8% of total construction output in the province. In contrast, the figure for GB is 23%, with the RM&I sector in Wales accounting for a marginally smaller proportion (22%), and the proportion being 20% in Scotland.

The central scenario – an increase of 5% in demand and a shift of 5% from DIY to professionals – would lead to the creation of up to 2,235 new jobs in the construction sector in Scotland in 2010 and further jobs growth forecast over the period to 2019. In Wales, the figure is up to 1,041 full-time equivalent jobs and 238 in Northern Ireland. This job creation is likely to have a positive impact on HM Treasury revenues through increased tax and National Insurance revenue and savings on social benefits payments. A summary of the employment effects of the central scenario in the devolved nations is shown below.

Figure 10: Effects of a reduction in the rate of VAT to 5% on employment in the devolved nations



3.3 Reduction in the rate of VAT to 10%

3.3.1 UK Commentary

The assumption is that there would be no significant shift from DIY work to the professional sector with a reduction in the rate of VAT to 10%, as the 'saving' on the higher VAT rate is not seen to be enough to induce such a shift.

A reduction in the rate of VAT to 10% would give a base VAT receipt loss of £560m to HM Treasury in 2010. This assumes output of £24.2bn, in current prices.

Figure 11: Base annual VAT receipt loss due to VAT rate reduction to 10% (£millions)

Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction	-560	-572	-597	-624	-641	-676	-713	-752	-794	-842

The impact on demand is expected to be weaker than if VAT was reduced to 5%, given that the reduction is smaller. Thus, for a reduction of VAT to 10%, the central scenario is for a 3% increase in demand, with a 1.2% increase for the lower level and 6% as a higher level. These figures are pro-rata reductions of those for the 5% VAT scenario.

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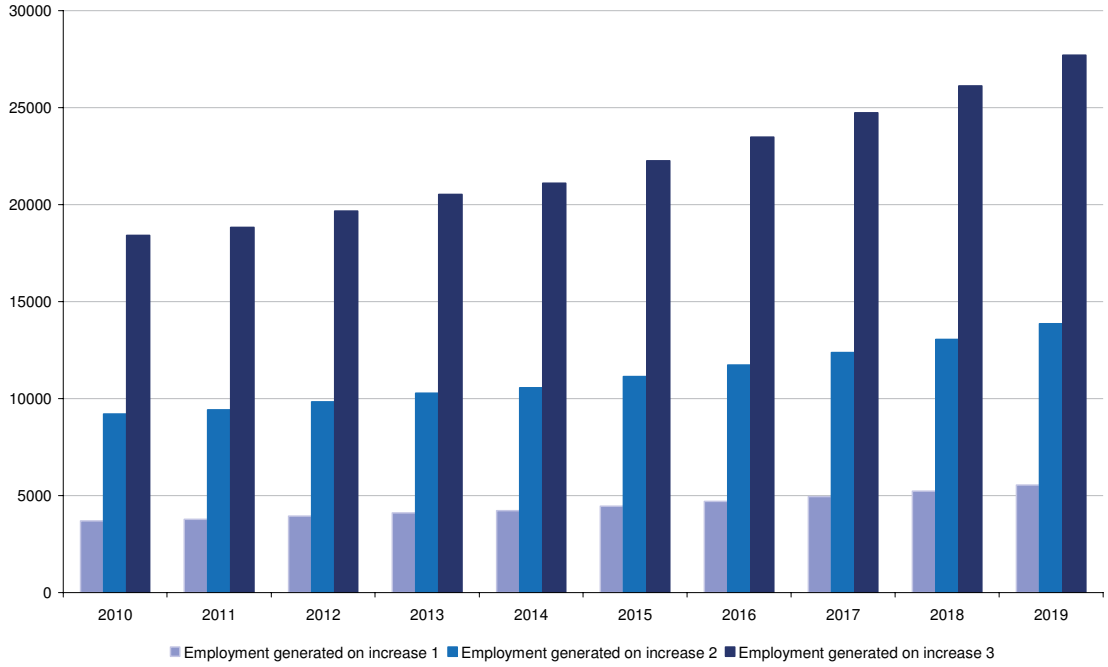
The net loss to HM Treasury in the VAT take for the above price elasticity scenarios is between £515m and £551m in 2010, as shown in the figure below.

Figure 12: Summary of the VAT effects of various rates of increase in demand resulting from a reduction in the rate of VAT to 10% (£millions)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
VAT generated on price elasticity = 0.16	9	9	10	10	10	11	11	12	13	13
VAT generated on price elasticity = 0.4	22	23	24	25	26	27	29	30	32	34
VAT generated on price elasticity = 0.8	45	46	48	50	51	54	57	60	63	67
VAT loss/gain on price elasticity = 0.16 (1)	-551	-563	-588	-614	-631	-666	-702	-740	-781	-828
VAT loss/gain on price elasticity = 0.4 (2)	-537	-549	-573	-599	-616	-649	-685	-722	-762	-808
VAT loss/gain on price elasticity = 0.8 (3)	-515	-527	-550	-574	-590	-622	-656	-692	-730	-774

The central scenario of an increase in demand of 3% would generate up to 9,200 extra full-time equivalent jobs in 2010, with further job creation forecast over the period to 2019 due to growth in housing RM&I activity. Under the scenario of a weaker increase in demand of 1.2%, up to 3,600 extra full-time equivalent jobs would be created in the construction industry in 2010. For the stronger increase in demand of 6%, up to 18,400 full-time equivalent jobs would be created in 2010. Further jobs growth is anticipated over the period to 2019, as housing RM&I output is expected to increase, year-on-year.

Figure 13: The effects of a reduction in the rate of VAT to 10% on construction employment



The increase in employment is likely to have a positive impact on both tax and National Insurance receipts and also further impacts via multiplier effects. In 2010, the extra revenue from income tax and National Insurance is likely to be around £112m, assuming a 3% increase in demand. The savings in terms of unemployment and other social benefits is likely to be around £27m. A summary of the revenue effects of the increase in employment is shown in the table below.

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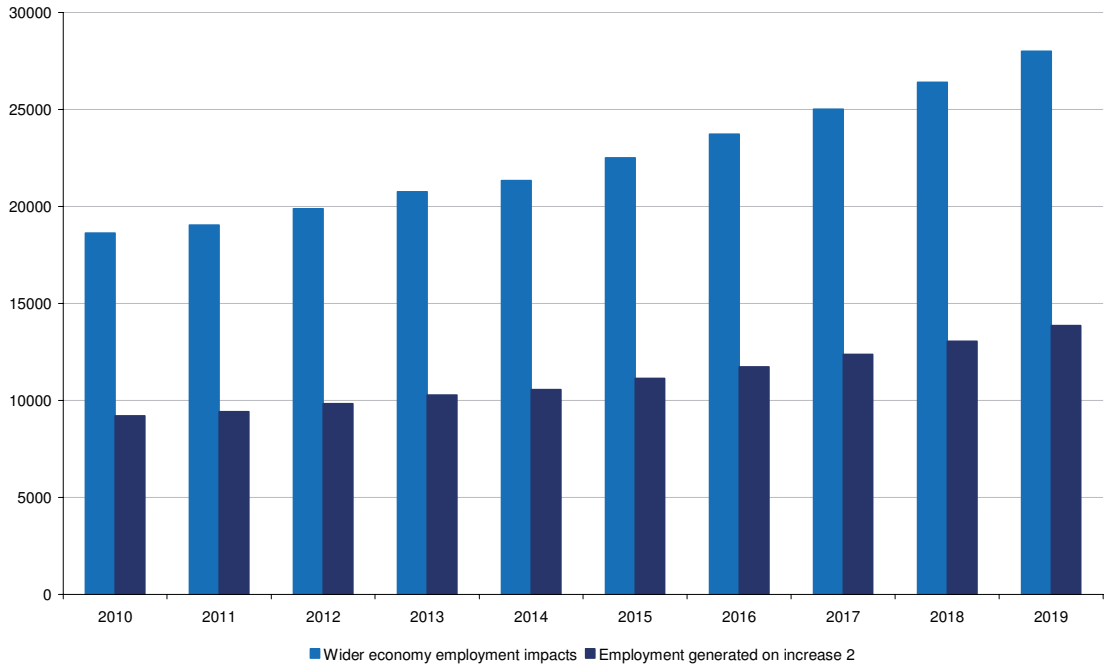
Figure 14: Effects of increased employment on income tax and National Insurance receipts and social benefit savings (£million)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Xtra income tax & ni generated on employment PE (1)	45	46	48	50	51	54	57	60	63	67
Xtra income tax & ni generated on employment on PE (2)	112	114	119	125	128	135	143	150	159	168
Xtra income tax & ni generated on employment PE (3)	224	229	239	249	256	270	285	301	317	337
Unemployment & other social benefits saved on PE (1)	11	11	12	12	13	13	14	15	15	16
Unemployment & other social benefits saved on PE (2)	27	28	29	30	31	33	35	37	39	41
Unemployment & other social benefits saved on PE (3)	55	56	58	61	63	66	70	73	77	82

The increase in employment will have impacts on more than just the construction industry. For the central scenario of an increase in demand of 3%, the multiplier will generate around £633m of additional output in 2010. Using our approximation for the average cost of employment, this gives an increase of up to 18,600 full-time equivalent jobs generated in 2010. This is summarised below.

Figure 15: Effects of a reduction in the rate of VAT to 10% on employment in the wider economy



3.3.2 Devolved nation differences

The central scenario – an increase of 3% in demand – would lead to the creation of up to 850 new jobs in the construction sector in Scotland in 2010 and further jobs growth forecast over the period to 2019. In Wales, the figure is up to 400 full-time equivalent jobs and up to 90 in Northern Ireland. This job creation is likely to have a positive impact on HM Treasury revenues through increased tax and National Insurance revenue and savings on social benefits payments. A summary of the employment effects of the central scenario in the devolved nations is shown below.

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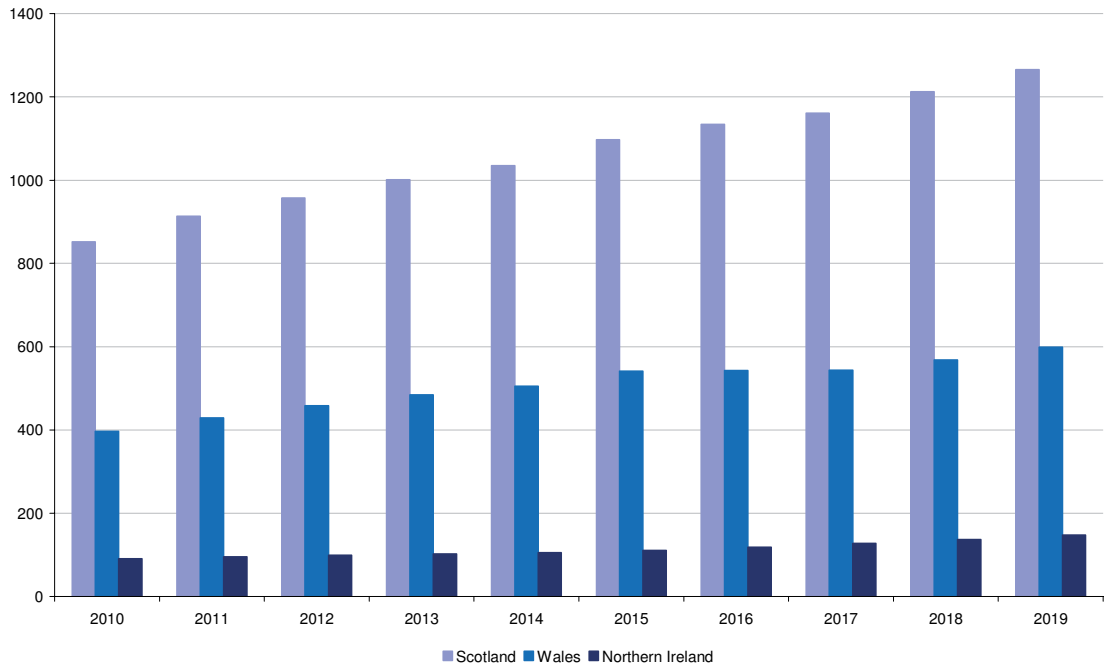
Figure 16: Effects of a reduction in the rate of VAT to 10% on employment in the devolved nations



3.4 Reduction in the rate of VAT to 15%

3.4.1 UK Commentary

There is expected to be no shift from DIY work to the professional sector with a reduction in the rate of VAT to 15%, as the 'saving' on the lower rate of VAT is not seen to be significant enough to induce such a shift.

A reduction in the rate of VAT to 15% would give a base VAT receipt loss to HM Treasury of £230m in 2010, assuming output of £24.2bn, in current prices.

Figure 17: Base annual VAT loss due to a reduction in the rate of VAT to 15% (£millions)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction	-230	-236	-246	-257	-264	-278	-294	-309	-327	-346

The impact on demand is expected to be weaker than for the larger reductions in VAT . Thus, for a reduction in the VAT rate to 15%, the central scenario is for a 2% increase in demand, with figures of 0.8% and 4% for the lower and higher levels, respectively. These figures are pro-rate reductions of those for the 5% VAT scenario.

The net loss to HM Treasury in terms of VAT take for the above price elasticity scenarios is between £175m and £219m as shown in the table below.

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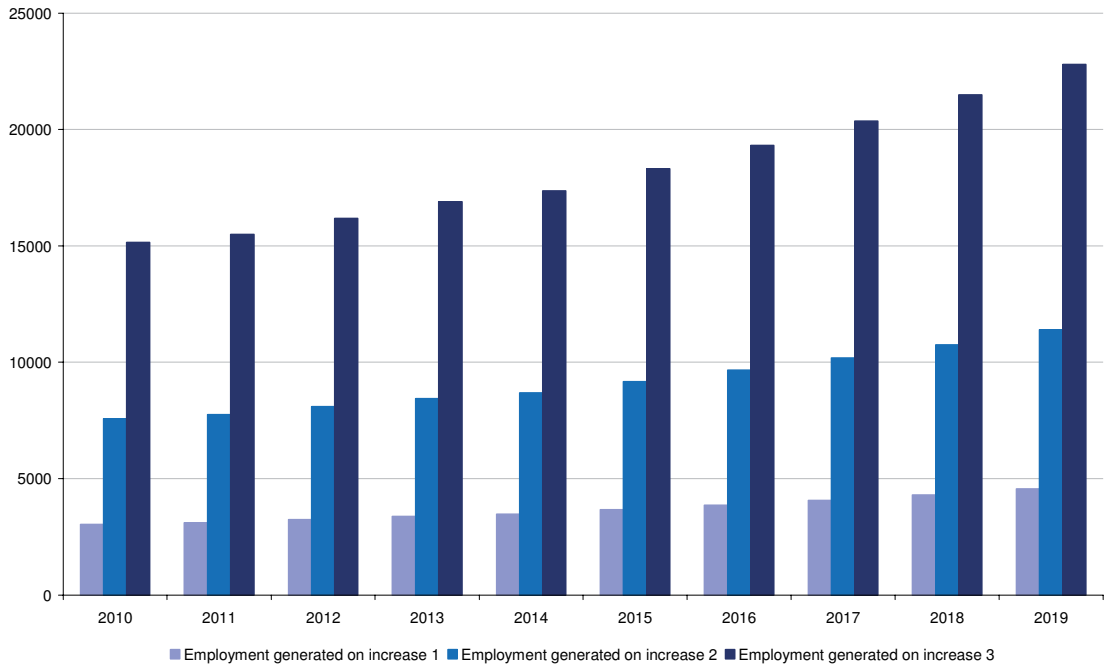
Figure 18: Summary of the VAT of various rates of increase in demand resulting from a reduction in the rate of VAT to 15% (£millions)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
VAT generated on price elasticity = 0.16	11	11	12	12	13	13	14	15	16	17
VAT generated on price elasticity = 0.4	28	28	30	31	32	33	35	37	39	42
VAT generated on price elasticity = 0.8	55	57	59	62	63	67	70	74	78	83
VAT loss/gain on price elasticity = 0.16 (1)	-219	-224	-234	-244	-251	-265	-279	-294	-311	-330
VAT loss/gain on price elasticity = 0.4 (2)	-203	-207	-216	-226	-232	-245	-258	-272	-287	-305
VAT loss/gain on price elasticity = 0.8 (3)	-175	-179	-187	-195	-201	-212	-223	-235	-248	-263

In employment terms, the central scenario of a 2% increase in demand would lead to the creation of up to 7,578 full-time equivalent jobs in 2010, and further jobs growth over the period to 2019. For the lower increase in demand of 0.8%, up to 3,000 full-time equivalent jobs could be created, whilst the figure for the higher rate of increase in demand (4%) is up to 15,100 full-time equivalent jobs. This is summarised below.

Figure 19: Effects of a reduction in the rate of VAT to 15% on construction employment



Any increase in employment is likely to have positive impacts on HM Treasury revenues in the form of tax and national insurance receipts and savings in terms of social benefits. The extra revenue from income tax and national insurance is likely to be around £92m in 2010, assuming a 2% increase in demand. The savings in terms of unemployment and other social benefits is likely to be around £22m. A summary of the revenue effects of any increase in employment is shown below.

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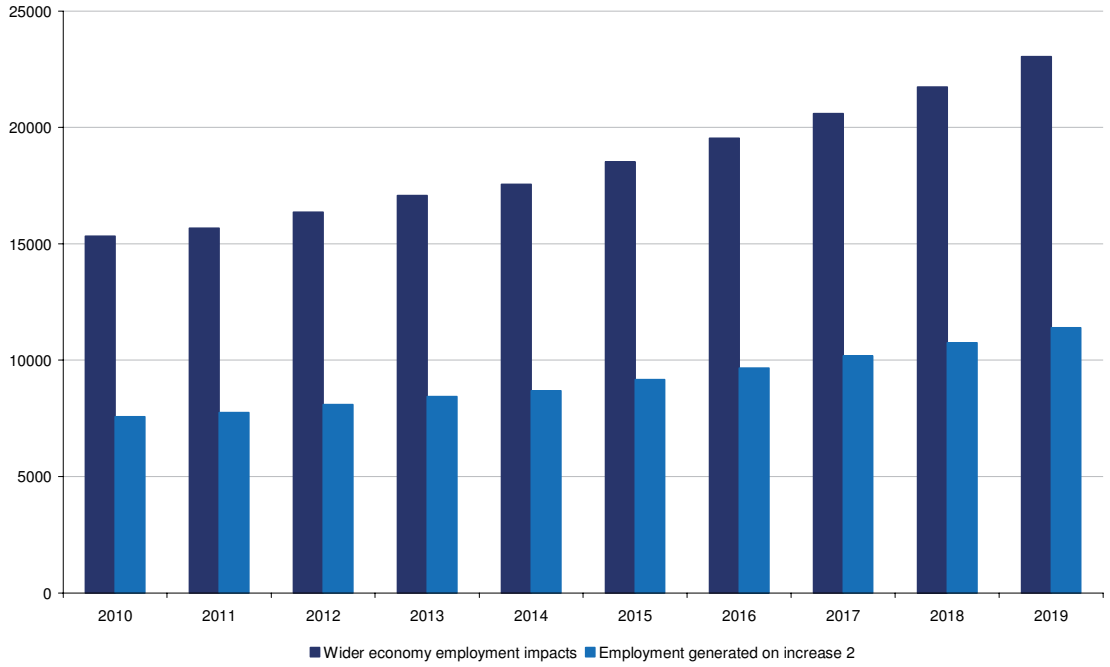
Figure 20: Effects of increased employment on income tax and National Insurance receipt and social benefit savings (£millions)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Xtra income tax & ni generated on employment PE (1)	37	38	39	41	42	45	47	49	52	55
Xtra income tax & ni generated on employment on PE (2)	92	94	98	103	106	111	117	124	131	138
Xtra income tax & ni generated on employment PE (3)	184	188	197	205	211	223	235	247	261	277
Unemployment & other social benefits saved on PE (1)	9	9	10	10	10	11	11	12	13	14
Unemployment & other social benefits saved on PE (2)	22	23	24	25	26	27	29	30	32	34
Unemployment & other social benefits saved on PE (3)	45	46	48	50	51	54	57	60	64	68

The extra employment generated by the increased in demand will have wider impacts than just on the construction industry. The central scenario of an increase of 2% in demand will generate around £521m of additional output in 2010. Using our approximation for the average cost of employment, this gives an increase of up to 15,300 full-time equivalent jobs generated in 2010. This is summarised below.

Figure 21: Effects of a reduction in the rate of VAT to 15% on employment in the wider economy



3.4.2 Devolved nation differences

For a reduction in the rate of VAT to 15%, the central scenario of an increase in demand of 2% could generate up to 570 additional full-time equivalent jobs in the construction industry in 2010. With growth of housing RM&I activity forecast in each year to 2019, further positive effects on job creation are expected. In Wales, up to 260 jobs could be created, whilst the figure for Northern Ireland is up to 60 full-time equivalent jobs. This anticipated increase in employment is likely to have positive revenue effects in terms of income tax and national insurance receipts and savings on social benefits payments. A summary of the employment effects of the central scenario in the devolved nations is shown below.

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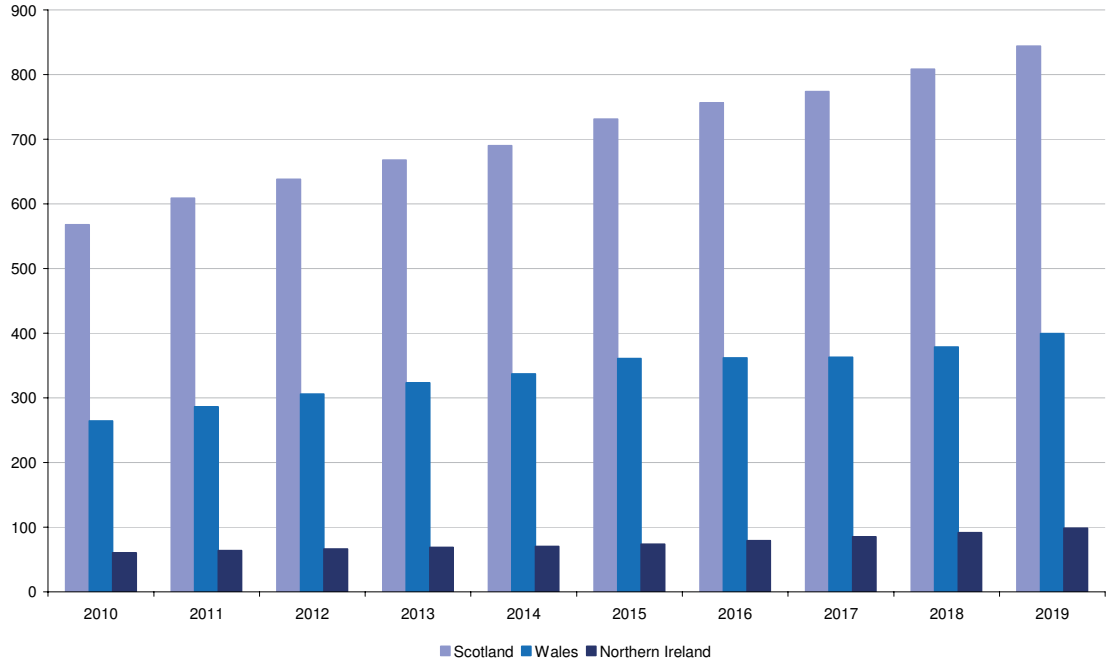
Figure 22: Effects of a reduction in the rate of VAT to 15% on employment in the devolved nations



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4 Environmental benefits

Summary

- Carbon emissions from domestic properties total close to 150 million tonnes of CO_2, 27% of the UK total.
- To replace our existing housing stock with new carbon-zero homes will take between 130-250 years based on new build levels over the past 30 years.
- The energy efficiency market is currently worth around £4.6bn, of which £4.5bn attracts VAT at the standard rate.
- The extra demand created by a cut in the VAT rate on housing RM&I to 5% could generate around £1.23bn extra expenditure over the next decade on energy efficiency measures.
- This would equate to an extra 174,000 homes fully insulated and with energy efficient boilers between 2010 and 2019 and would save around 337,000 tonnes of CO_2 emissions.
- The VAT rules and rates around the installation of energy-efficient projects are somewhat complex and an argument could be made for a flat-rate reduction to 5% just for simplicity's sake.

In recent years the spotlight has increasingly focussed on man-made carbon emissions as a major contributor to climate change and global warming. While there is still some dispute as to some of the exact science relating to climate change, it is generally accepted that it is happening and that it is being driven at least in part, by man-made emissions. In the international arena concern around climate change led to the 1992 "Earth Summit" in Rio de Janeiro, the 1997 Kyoto Protocol, finally ratified in 2005, and the Copenhagen summit on climate change, which sought to find a replacement agreement to the Kyoto Protocol, which lapses in 2012.

In the UK, the Government has committed us to reduce total carbon emissions by 80% by 2050. This is undoubtedly a tough target and will require significant changes to the way we live and work. According to the Energy White Paper (2007), the UK emitted 550 million tonnes of CO_2 in 2005, 45% of which came from the built environment, and 27% specifically related to domestic emissions. Thus domestic emissions accounted for a little below 150 million tonnes of CO_2 in 2005, a significant proportion of the total, not surprising considering the total stock of domestic dwellings in the UK is approaching 27 million.

Until very recently the spotlight has tended to be on new house building, with a whole series of code levels for energy efficient new dwellings developed, and a number of government targets across the devolved nations as to when these code levels should be reached. However, there has been increasing realisation that new house building, even in a good year, only equates to around 0.75% of the total housing stock and by that reckoning, even if all new building was a straight replacement for the existing stock, it would take over 130 years to completely replace it with new carbon-zero homes. Realistically, the take would probably take nearer 250 years and thus its contribution to carbon emission reduction by 2050 can only be limited.

Thus the retrofitting of existing buildings has risen in importance, as evidenced by the recently announced funding for boiler replacement in the Pre-Budget Statement. In general terms, the carbon footprint of an existing dwelling can be mitigated by two types of work, take-up of energy efficiency measures, and the installation of microgeneration technologies.

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The main energy efficiency measures are:

- Cavity wall insulation
- Loft insulation
- Boiler replacement
- Double glazing.

The main microgeneration technologies are:

- Solar panels
- Photovoltaic panels
- Wind turbines
- Ground and air source heat pumps
- Combined heat and power district heating systems
- Biomass.

The former reduces a property's need for energy, and latter provides part or all of a property's energy requirements from renewable sources.

4.1 Energy efficiency measures

The VAT rules and rates around the installation of energy efficient projects are somewhat complex and an argument could be made for a flat-rate reduction to 5% just for simplicity's sake. A review of the HMRC notice on energy saving materials (708/6 – August 2006) also forces one to the conclusion that the logic around the choices of what would attract the reduced rate of VAT is somewhat debatable. Thus all the forms of insulation listed below attract the reduced rate of 5%, but the installation of double-glazing does not, despite its contribution to energy efficiency (according to the Energy Saving Trust, the installation of double glazing can save up to 720kg of CO_2 emissions a year in an average dwelling). Furthermore, the installation of central heating and hot water system controls attracts a VAT rate of 5% but the installation of a more energy-efficient boiler does not, unless it is part of a grant-funded installation.

The CFR/BSRIA 1996 survey of repair, maintenance and improvement (RM&I) expenditure by owner-occupiers provides some useful data on the level of expenditure on energy efficiency measures in that year. According to the grossed up survey data, the following expenditure was made on the above energy efficiency measures by owner-occupiers in the year to October 1996:

Figure 23: Expenditure by owner occupiers on energy efficient measures, 1996

	No of jobs (000s)	Total expenditure	Average expenditure per job
Double glazing	1427	£2442m	£1,711
Boiler only replacement	249	£282m	£1,133
Cavity wall insulation	86	£36m	£419
Other external wall insulation	17	£4m	£235
Loft floor insulation	137	£28m	£204
Roof insulation	75	£15m	£200
TOTAL		£2724m	

Source: The GB Home Improvement Market, CFR/BSRIA/GfK, 1996.

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The items highlighted in red already attract VAT on their installation at the reduced rate of 5% thus have been omitted from the total at the bottom of the table.

As the total expenditure on housing RM&I was estimated in the survey at £12.3bn, expenditure on energy efficiency measures, at £2.8bn, accounted for nearly 23% of the total. If we assume that environmental concerns and cost saving implications have increased expenditure in these areas relative to the totality of the private housing RM&I market, to 25% of total spending, this would indicate expenditure on these measures in 2008, the last year for which we have full statistics, of around £4.6bn in current prices, broken down as follows:

Figure 24: Estimated expenditure in 2008

	Total expenditure
Double glazing	£4044m
Boiler only replacement	£467m
Cavity wall insulation	£60m
Other external wall insulation	£7m
Loft floor insulation	£46m
Roof insulation	£25m
TOTAL	£4511m

Once again, we have adjusted to take into account those items that already attract a reduced rate of VAT, leaving an estimated £4.5bn of energy efficiency work that attracted VAT at the standard rate in 2008.

The labour element differs across types of RM&I works and the 1996 survey indicated a labour input of 29% of the total cost of the installation of double glazing and for boiler only replacements. Thus this would give us a labour element of the above figures of:

Figure 25: Labour element of expenditure in 2008

	Labour element
Double glazing	£1172m
Boiler only replacement	£135m
TOTAL	£1307m

Thus £1.307bn would be the element of the above installations that would attract a VAT charge at 17.5%. In theory the above figure should be adjusted for the fact that the figures from the 1996 survey include the informal economy. However, these types of installation we believe are unlikely to be installed by contractors outside of the legitimate economy. Most of the major double glazing manufacturers either have their own installation staff or will have lists of certified installers who they will insist do the work, while boiler replacement can only be undertaken by Gas Safe[3] registered installers.

Reduction of the VAT rate on installation of these two products from 17.5% to 5% would potentially generate a further £195m a year to fund other repair, maintenance and improvement work in the private housing sector. Using our base case figure of price elasticity for the sector of 0.4, then more realistically the extra work generated would be more in the region of £78m. A reasonable assumption would be that owner-occupiers that were already pre-disposed to spend on energy efficiency measures are likely to continue to do so.

[3] Since 1 April 2009, Gas Safe Register has replaced CORGI gas registration as the official gas safety body.

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However, of potentially much more benefit to carbon emission targets would be the share that energy efficiency retrofitting could take of the overall extra demand for housing RM&I that might be generated by lowering the VAT rate to 5%. Owner-occupiers may well be tempted to spend some of the VAT saving on energy efficient measures, particularly as they would generate long term savings. Furthermore social housing providers are likely to see this as one of their priorities should extra funds be available.

Assuming a reduction of VAT to 5%, our central scenario is an increase in demand of 5% which would equate to £373m of extra expenditure on housing RM&I in 2010, rising to £561m in 2019 on our forecasts. Taking our figure above that around 25% of total spending in the RM&I market is on double glazing, boiler replacement, cavity and other wall insulation, and loft and roof insulation, and assuming that this share will rise to 30% by 2019 driven by the sustainability agenda, then we end up with the following figures:

Figure 26: Projected extra expenditure on energy efficient measures, 2010-2019

£m	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Increased spending on RM&I	373	381	398	416	427	451	475	501	529	561
Increased spending on energy efficiency measures	93	95	103	108	115	122	133	140	159	168

Source: Experian.

The above suggests that around £1.23bn extra could be spent on energy efficiency measures over the next decade, given an increase in overall housing RM&I demand of 5% and a gently rising share of this extra demand for these measures. Using the figures in figure 23 on average expenditure per job and taking account of likely inflation, this could result in over 174,000 extra homes installing double glazing, cavity wall or other wall insulation, loft or roof insulation, and energy efficient boilers between 2010 and 2019.

Using figures from the Energy Saving Trust on the possible carbon emission reduction from each of the above measures, this would lead to a saving of up to 337,000 tonnes of CO_2 over the decade.

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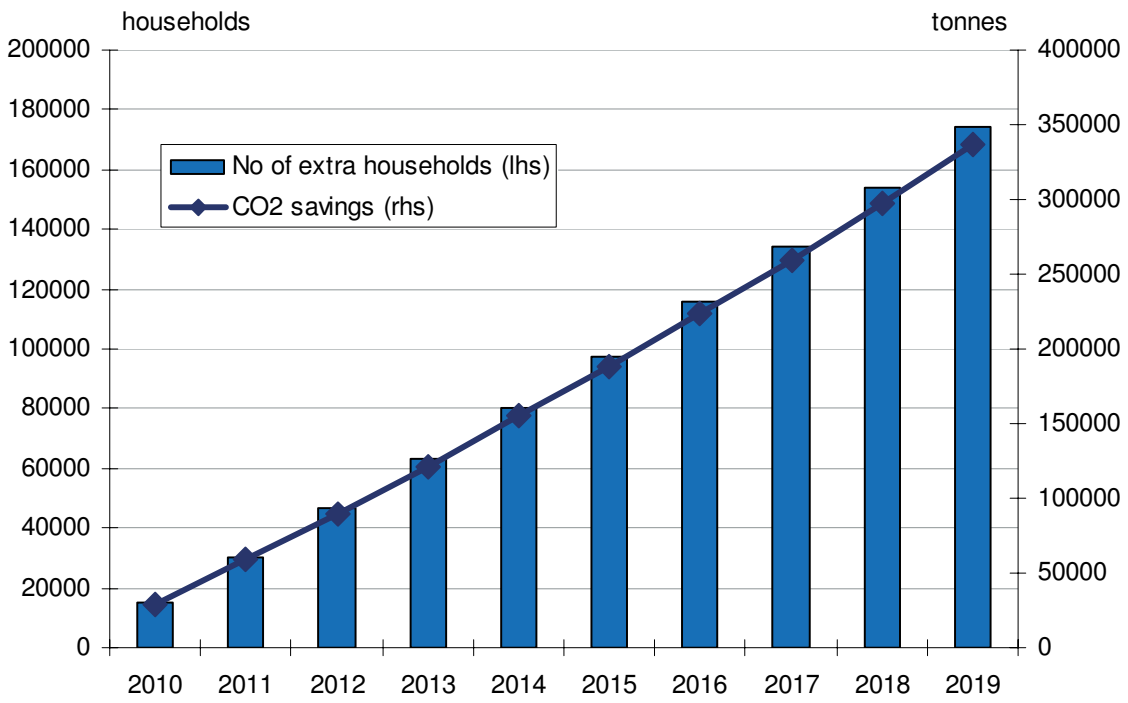
Figure 27: Estimated cumulative effects of 5% demand increase on CO2 emissions



Source: Experian.

4.2 Microgeneration

While it is relatively simple to put at least some indicative figures to the likely rise in energy efficiency measures that a VAT reduction could drive and their consequent affect on CO_2 emissions, it is less easy to do so for microgeneration technologies.

First of all, the major microgeneration technologies already attract a reduced rate of 5% on their installation, thus will not benefit directly from lower costs should a flat-rate 5% be adopted across the whole of housing RM&I sector. However, it would be expected that they would benefit in some respect from the extra demand created for housing RM&I from an overall reduction in costs. But trying to attribute a level of increase in a market that is still in its infancy and for which analysts are finding it difficult to forecast growth trends without the added factor of changes in the VAT rate, is problematical to say the least.

Perhaps the most authoritative report to date on the microgeneration market is that undertaken by Element Energy[4] for a consortium of interested parties, including the Department for Business Enterprise and Regulatory Reform (now Business, Innovation and Skills) and the Energy Saving Trust and published in June 2008. This report estimated that by 2007 there were some 95,000-98,000 microgeneration installations throughout GB, the vast bulk of which were solar thermal (90,000), and that these contributed some 30,000 tonnes of CO_2 emissions savings a year. According to Element Energy's baseline projections, which take into account currently announced policy commitments, this could rise to 1 million installations by 2020, which on a pro-rata basis suggests a CO_2 emissions saving of around 300,000 tonnes a year by that date. These figures cover total microgeneration installations across all buildings, both new and existing.

[4] The growth potential for Microgeneration in England, Wales and Scotland, Element Energy, June 2008.

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As part of its research, Element Energy conducted a number of consumer surveys on attitudes to microgeneration and not surprisingly the main factors affecting purchasing behaviour were installation and running costs, thus ultimately payback times. Another major consideration was single systems to deliver all energy needs rather than a requirement for multiple systems, i.e. simplicity.

This would seem to suggest that an overall reduction in the VAT rate putting more funds in consumers' pockets to re-invest back into their property is not going to, of itself, lead to a greater uptake of microgeneration technologies, although it may be a contributory factor in conjunction with other measures that would make these installations cheaper and thus lower payback times.

4.3 The heritage environment

When looking at the environmental benefits, consideration should also be given to the conservation of our current built environment, which is what we all live in. The English Housing Conditions Survey has defined a historic building as one built before 1919. According to data from the Department for Communities and Local Government, 19% of all dwellings in England were built before 1919 as of 31 March 2007. If the same percentage is applied to Scotland, Wales and Northern Ireland, then around 5 million dwellings in the UK qualify as historic buildings.

Historic dwellings, being older than the rest of the housing stock, are likely to require a higher level of maintenance on average per year, thus any reduction in the VAT rate would disproportionally benefit the historic dwelling sector.

Focussing in on one particular element of the historic dwelling market, the National Trust has responsibility for the maintenance of 4,500 cottages on its books, at a cost of £6.7m a year. This equates to an average spend of £1,500 per cottage, although in practice not all properties will have repairs undertaken in any one year. The National Trust estimates that the organisation's VAT liability on the labour element of repairs to its domestic properties is approximately £700,000. If the VAT rate on housing R&MI was to be reduced to 5% from 17.5% across the board, the National Trusts VAT liability on this element of expenditure would fall to around £200,000, a saving of £500,000. This saving could fund repairs to around 330 cottages a year at the average spend of £1,500 per cottage.

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Appendix A - Glossary

Constant price output: output measured in relation to a base year (currently 2005) in order to exclude the effects of inflation. Often also know as output in real terms

Current price output: output measured in current prices, including the effects of inflation. Often also known as output in nominal terms.

Full-time equivalent employment: for some occupations a full-time equivalent may equal one worker on site for a full year, however for others this may mean more workers on site for a shorter period. For example, a carpenter is likely to undertake a range of work over a long period of time, whereas scaffolders will be on site to either erect or dismantle scaffolding, which requires short spells of intense work.

Price elasticity: the responsiveness of demand to a change in price

Multiplier: for every £X of extra output created directly, there are indirect effects of £Y

Appendix B

The full matrices

Figure 28: Impact of reduction of VAT from 17.5% to 5% - UK, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-933	-954	-996	-1040	-1069	-1127	-1189	-1253	-1323	-1403
VAT generated from shift from DIY to professional		11	11	12	12	12	13	13	13	13	14
VAT generated on price elasticity = 0.16	2%	7	8	8	8	9	9	10	10	11	11
VAT generated on price elasticity = 0.4	5%	19	19	20	21	21	23	24	25	26	28
VAT generated on price elasticity = 0.8	10%	37	38	40	42	43	45	48	50	53	56
VAT loss/gain on price elasticity = 0.16 (1)		-914	-935	-976	-1019	-1048	-1106	-1166	-1230	-1299	-1378
VAT loss/gain on price elasticity = 0.4 (2)		-903	-923	-964	-1007	-1035	-1092	-1152	-1215	-1283	-1361
VAT loss/gain on price elasticity = 0.8 (3)		-885	-904	-944	-986	-1014	-1070	-1128	-1190	-1256	-1333
shift from informal to formal economy A - increase in VAT receipts	10%	29	30	31	32	33	35	37	39	41	44
shift from informal to formal economy B - increase in VAT receipts	20%	58	59	62	65	67	70	74	78	82	87
shift from informal to formal economy C - increase in VAT receipts	30%	87	89	93	97	100	105	111	117	123	131
Range of total VAT loss/gain on PE (1)A-C		**-885/-827**	**-905/-843**	**-945/-883**	**-987/-922**	**-1015/-948**	**-1071/-1001**	**-1129/-1055**	**-1191/-1113**	**-1258/-1176**	**-1334/-1247**
Range of total VAT loss/gain on PE (2)A-C		**-874/-816**	**-893/-834**	**-933/-871**	**-975/-910**	**-1002/-938**	**-1057/-987**	**-1115/-1041**	**-1176/-1098**	**-1242/-1160**	**-1317/-1230**
Range of total VAT loss/gain on PE (3)A-C		**-856/-798**	**-874/-815**	**-913/-851**	**-954/-889**	**-981/-914**	**-1035/-965**	**-1091/-1017**	**-1151/-1073**	**-1215/-1133**	**-1289/-1202.**
Xtra income tax & ni generated on employment PE (1)		182	189	196	203	209	216	223	231	241	251
Xtra income tax & ni generated on employment on PE (2)		294	303	316	328	337	351	366	381	399	419
Xtra income tax & ni generated on employment PE (3)		480	494	515	536	550	576	603	632	664	700
Xtra income tax & ni generated on shift from informal to formal economy C		280	286	299	312	321	338	357	376	397	421
Unemployment & other social benefits saved on PE (1)		44	46	48	50	51	53	54	56	59	61
Unemployment & other social benefits saved on PE (2)		72	74	77	80	82	86	89	93	97	102
Unemployment & other social benefits saved on PE (3)		117	120	126	131	134	141	147	154	162	171
Unemployment & other social benefits saved on shift frm informal to formal economy C		68	70	73	76	78	82	87	92	97	103
Range of net tax losses/gains on PE (1) A-C		**-659/-253**	**-670/-252**	**-701/-267**	**-734/-281**	**-755/-289**	**-802/-312**	**-852/-334**	**-904/-358**	**-958/-382**	**-1022/-411**
Range of net tax losses/gains on PE (2) A-C		**-508/-102**	**-516/-101**	**-540/-106**	**-567/-114**	**-583/-120**	**-620/-130**	**-660/-142**	**-702/-156**	**-746/-170**	**-796/-185**
Range of net tax losses/gains on PE (3) A-C		**-259/147**	**-260/155**	**-272/162**	**-287/166**	**-297/169**	**-318/172**	**-341/177**	**-365/181**	**-389/187**	**-418/193**

Figure 29: Impact of reduction of VAT from 17.5% to 10% - UK, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-560	-572	-597	-624	-641	-676	-713	-752	-794	-842
VAT generated on price elasticity = 0.16	1.2%	9	9	10	10	10	11	11	12	13	13
VAT generated on price elasticity = 0.4	3%	22	23	24	25	26	27	29	30	32	34
VAT generated on price elasticity = 0.8	6%	45	46	48	50	51	54	57	60	63	67
VAT loss/gain on price elasticity = 0.16 (1)		-551	-563	-588	-614	-631	-666	-702	-740	-781	-828
VAT loss/gain on price elasticity = 0.4 (2)		-537	-549	-573	-599	-616	-649	-685	-722	-762	-808
VAT loss/gain on price elasticity = 0.8 (3)		-515	-527	-550	-574	-590	-622	-656	-692	-730	-774
shift from informal to formal economy A - increase in VAT receipts	6%	35	36	37	39	40	42	44	47	49	52
shift from informal to formal economy B - increase in VAT receipts	12%	70	71	74	78	80	84	89	94	99	105
shift from informal to formal economy C - increase in VAT receipts	18%	104	107	112	116	120	126	133	140	148	157
Range of total VAT loss/gain on PE (1)A-C		**-516/-447**	**-527/-456**	**-551/-476**	**-575/-498**	**-591/-511**	**-624/-540**	**-658/-569**	**-693/-600**	**-732/-633**	**-776/-671**
Range of total VAT loss/gain on PE (2)A-C		**-502/-433**	**-513/-442**	**-536/-461**	**-560/-483**	**-576/-496**	**-607/-523**	**-641/-552**	**-675/-582**	**-713/-614**	**-756/-651**
Range of total VAT loss/gain on PE (3)A-C		**-480/-411**	**-491/-420**	**-513/-438**	**-535/-458**	**-550/-470**	**-580/-496**	**-612/-523**	**-645/-552**	**-681/-582**	**-722/-617**
Xtra income tax & ni generated on employment PE (1)		45	46	48	50	51	54	57	60	63	67
Xtra income tax & ni generated on employment on PE (2)		112	114	119	125	128	135	143	150	159	168
Xtra income tax & ni generated on employment PE (3)		224	229	239	249	256	270	285	301	317	337
Unemployment & other social benefits saved on PE (1)		11	11	12	12	13	13	14	15	15	16
Unemployment & other social benefits saved on PE (2)		27	28	29	30	31	33	35	37	39	41
Unemployment & other social benefits saved on PE (3)		55	56	58	61	63	66	70	73	77	82
Range of net tax losses/gains on PE (1) A-C		**-460/-391**	**-470/-399**	**-491/-416**	**-513/-436**	**-527/-447**	**-557/-473**	**-587/-498**	**-618/-525**	**-654/-555**	**-693/-588**
Range of net tax losses/gains on PE (2) A-C		**-363/-294**	**-371/-300**	**-388/-313**	**-405/-328**	**-416/-337**	**-439/-355**	**-463/-374**	**-488/-395**	**-515/-416**	**-547/-442**
Range of net tax losses/gains on PE (3) A-C		**-201/-132**	**-206/-135**	**-216/-141**	**-225/-148**	**-231/-151**	**-244/-160**	**-257/-168**	**-271/-178**	**-287/-188**	**-303/-198**

Figure 30: Impact of reduction of VAT from 17.5% to 15% - UK, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-230	-236	-246	-257	-264	-278	-294	-309	-327	-346
VAT generated on price elasticity = 0.16	0.8%	11	11	12	12	13	13	14	15	16	17
VAT generated on price elasticity = 0.4	2%	28	28	30	31	32	33	35	37	39	42
VAT generated on price elasticity = 0.8	4%	55	57	59	62	63	67	70	74	78	83
VAT loss/gain on price elasticity = 0.16 (1)		-219	-224	-234	-244	-251	-265	-279	-294	-311	-330
VAT loss/gain on price elasticity = 0.4 (2)		-203	-207	-216	-226	-232	-245	-258	-272	-287	-305
VAT loss/gain on price elasticity = 0.8 (3)		-175	-179	-187	-195	-201	-212	-223	-235	-248	-263
shift from informal to formal economy A - increase in VAT receipts	2%	17	6	6	6	7	7	7	8	8	9
shift from informal to formal economy B - increase in VAT receipts	4%	35	12	12	13	13	14	15	16	16	17
shift from informal to formal economy C - increase in VAT receipts	6%	52	18	19	19	20	21	22	23	25	26
Range of total VAT loss/gain on PE (1)A-C		**-202/-167**	**-218/-206**	**-228/-215**	**-238/-225**	**-244/-231**	**-258/-244**	**-272/-257**	**-286/-271**	**-303/-286**	**-321/-304**
Range of total VAT loss/gain on PE (2)A-C		**-186/-151**	**-201/-189**	**-210/-197**	**-220/-207**	**-225/-212**	**-238/-224**	**-251/-236**	**-264/-249**	**-279/-262**	**-296/-279**
Range of total VAT loss/gain on PE (3)A-C		**-158/-123**	**-173/-161**	**-181/-168**	**-189/-176**	**-194/-181**	**-205/-191**	**-216/-201**	**-227/-212**	**-240/-223**	**-254/-237**
Xtra income tax & ni generated on employment PE (1)		37	38	39	41	42	45	47	49	52	55
Xtra income tax & ni generated on employment on PE (2)		92	94	98	103	106	111	117	124	131	138
Xtra income tax & ni generated on employment PE (3)		184	188	197	205	211	223	235	247	261	277
Unemployment & other social benefits saved on PE (1)		9	9	10	10	10	11	11	12	13	14
Unemployment & other social benefits saved on PE (2)		22	23	24	25	26	27	29	30	32	34
Unemployment & other social benefits saved on PE (3)		45	46	48	50	51	54	57	60	64	68
Range of net tax losses/gains on PE (1) A-C		**-156/-121**	**-171/-159**	**-179/-166**	**-187/-174**	**-192/-179**	**-202/-188**	**-214/-199**	**-225/-210**	**-238/-221**	**-252/-235**
Range of net tax losses/gains on PE (2) A-C		**-72/-37**	**-84/-72**	**-88/-75**	**-92/-79**	**-94/-80**	**-100/-86**	**-105/-90**	**-110/-95**	**-116/-99**	**-124/-107**
Range of net tax losses/gains on PE (3) A-C		**71/106**	**61/73**	**64/77**	**66/79**	**68/81**	**72/86**	**76/91**	**80/95**	**85/102**	**91/108**

Figure 31: Impact of reduction of VAT from 17.5% to 5% - England, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-797	-808	-842	-879	-902	-950	-1007	-1067	-1128	-1199
VAT generated from shift from DIY to professional		9	10	10	10	11	11	11	11	12	12
VAT generated on price elasticity = 0.16	2%	6	6	7	7	7	8	8	9	9	10
VAT generated on price elasticity = 0.4	5%	16	16	17	18	18	19	20	21	23	24
VAT generated on price elasticity = 0.8	10%	32	32	34	35	36	38	40	43	45	48
VAT loss/gain on price elasticity = 0.16 (1)		-781	-792	-825	-861	-884	-932	-988	-1048	-1108	-1177
VAT loss/gain on price elasticity = 0.4 (2)		-772	-782	-815	-851	-873	-920	-976	-1035	-1094	-1163
VAT loss/gain on price elasticity = 0.8 (3)		-756	-766	-799	-833	-855	-901	-956	-1013	-1072	-1139
shift from informal to formal economy A - increase in VAT receipts	10%	23	24	25	26	26	28	29	31	33	35
shift from informal to formal economy B - increase in VAT receipts	20%	46	47	49	51	53	55	59	62	66	70
shift from informal to formal economy C - increase in VAT receipts	30%	70	71	74	77	79	83	88	93	99	105
Range of total VAT loss/gain on PE (1)A-C		**-758/-711**	**-768/-721**	**-800/-751**	**-835/-784**	**-858/-805**	**-904/-849**	**-959/-900**	**-1017/-955**	**-1075/-1009**	**-1142/-1072**
Range of total VAT loss/gain on PE (2)A-C		**-749/-702**	**-758/-711**	**-790/-741**	**-825/-774**	**-847/ -794**	**-892/-837**	**-947/-888**	**-1004/-942**	**-1061/-995**	**-1128/-1058**
Range of total VAT loss/gain on PE (3)A-C		**-733/-686**	**-742/-695**	**-774/-725**	**-807/-756**	**-829/-776**	**-873/-818**	**-927/-868**	**-982/-920**	**-1039/-973**	**-1104/-1034**
Xtra income tax & ni generated on employment PE (1)		171	177	184	190	195	202	209	217	226	236
Xtra income tax & ni generated on employment on PE (2)		276	284	295	306	315	327	342	358	375	395
Xtra income tax & ni generated on employment PE (3)		452	462	481	500	513	537	564	593	624	659
Xtra income tax & ni generated on shift from informal to formal economy C		255	259	270	282	289	304	323	342	362	384
Unemployment & other social benefits saved on PE (1)		38	39	41	42	43	45	46	48	50	52
Unemployment & other social benefits saved on PE (2)		61	63	65	68	70	72	76	79	83	87
Unemployment & other social benefits saved on PE (3)		100	102	106	111	114	119	125	131	138	146
Unemployment & other social benefits saved on shift frm informal to formal economy C		57	57	60	62	64	67	71	76	80	85
Range of net tax losses/gains on PE (1) A-C		**-549/-190**	**-552/-189**	**-575/-196**	**-603/-208**	**-620/-214**	**-657/-231**	**-704/-251**	**-752/-272**	**-799/-291**	**-854/-315**
Range of net tax losses/gains on PE (2) A-C		**-412/-53**	**-411/-48**	**-430/-51**	**-451/-56**	**-462/-56**	**-493/-67**	**-529/-76**	**-567/-87**	**-603/-95**	**-646/-107**
Range of net tax losses/gains on PE (3) A-C		**-181/178**	**-178/185**	**-187/192**	**-196/199**	**-202/204**	**-217/209**	**-238/215**	**-258/222**	**-277/231**	**-299/240**

Figure 32: Impact of reduction of VAT from 17.5% to 10% - England, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-424	-421	-430	-436	-439	-443	-450	-456	-462	-470
VAT generated on price elasticity = 0.16	0.8%	7	7	7	7	8	8	9	9	10	10
VAT generated on price elasticity = 0.4	2%	17	17	18	19	19	20	21	23	24	26
VAT generated on price elasticity = 0.8	4%	34	34	36	37	38	40	43	45	48	51
VAT loss/gain on price elasticity = 0.16 (1)		-417	-414	-422	-428	-432	-435	-441	-447	-453	-460
VAT loss/gain on price elasticity = 0.4 (2)		-407	-403	-412	-417	-420	-423	-428	-434	-438	-445
VAT loss/gain on price elasticity = 0.8 (3)		-390	-386	-394	-398	-401	-403	-407	-411	-414	-419
shift from informal to formal economy A - increase in VAT receipts	6%	28	14	15	15	16	17	18	19	20	21
shift from informal to formal economy B - increase in VAT receipts	12%	56	28	29	31	32	33	35	37	39	42
shift from informal to formal economy C - increase in VAT receipts	18%	84	42	44	46	47	50	53	56	59	63
Range of total VAT loss/gain on PE (1)A-C		**-389/-333**	**-400/-372**	**-407/-378**	**-413/-382**	**-416/-385**	**-418/-385**	**-423/-388**	**-428/-391**	**-433/-394**	**-439/-397**
Range of total VAT loss/gain on PE (2)A-C		**-379/-323**	**-389/-361**	**-397/-368**	**-402/-371**	**-404/-373**	**-406/-373**	**-410/-375**	**-415/-378**	**-418/-379**	**-424/-382**
Range of total VAT loss/gain on PE (3)A-C		**-362/-306**	**-372/-344**	**-379/-350**	**-383/-352**	**-385/-354**	**-386/-353**	**-389/-354**	**-392/-355**	**-394/-355**	**-398/-356**
Xtra income tax & ni generated on employment PE (1)		37	38	39	41	42	45	47	50	53	56
Xtra income tax & ni generated on employment on PE (2)		93	95	99	103	106	111	118	125	132	140
Xtra income tax & ni generated on employment PE (3)		187	189	197	206	211	223	236	250	264	281
Unemployment & other social benefits saved on PE (1)		8	8	9	9	9	10	10	11	12	12
Unemployment & other social benefits saved on PE (2)		21	21	22	23	23	25	26	28	29	31
Unemployment & other social benefits saved on PE (3)		41	42	44	46	47	49	52	55	59	62
Range of net tax losses/gains on PE (1) A-C		**-344/-288**	**-354/-326**	**-359/-330**	**-363/-332**	**-365/-334**	**-363/-330**	**-366/-331**	**-367/-330**	**-368/-329**	**-371/-329**
Range of net tax losses/gains on PE (2) A-C		**-265/-209**	**-273/-245**	**-276/-247**	**-276/-245**	**-275/-244**	**-270/-237**	**-266/-231**	**-262/-225**	**-257/-218**	**-253/-211**
Range of net tax losses/gains on PE (3) A-C		**-134/-78**	**-141/-113**	**-138/-109**	**-131/-100**	**-127/-96**	**-114/-81**	**-101/-66**	**-87/-50**	**-71/-32**	**-55/-13**

Figure 33: Impact of reduction of VAT from 17.5% to 15% - England, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-141	-140	-143	-145	-146	-148	-150	-152	-154	-157
VAT generated on price elasticity = 0.16	1.2%	7	7	7	7	8	8	9	9	10	10
VAT generated on price elasticity = 0.4	3%	17	17	18	19	19	20	21	23	24	26
VAT generated on price elasticity = 0.8	6%	34	34	36	37	38	40	43	45	48	51
VAT loss/gain on price elasticity = 0.16 (1)		-134	-133	-136	-138	-139	-140	-141	-143	-144	-147
VAT loss/gain on price elasticity = 0.4 (2)		-124	-123	-125	-127	-127	-128	-129	-129	-130	-131
VAT loss/gain on price elasticity = 0.8 (3)		-107	-106	-107	-108	-108	-107	-107	-107	-106	-106
shift from informal to formal economy A - increase in VAT receipts	2%	14	14	15	15	16	17	18	19	20	21
shift from informal to formal economy B - increase in VAT receipts	4%	28	28	29	31	32	33	35	37	39	42
shift from informal to formal economy C - increase in VAT receipts	6%	42	42	44	46	47	50	53	56	59	63
Range of total VAT loss/gain on PE (1)A-C		**-120/-92**	**-119/-91**	**-121/-92**	**-123/-92**	**-123/-92**	**-123/-90**	**-123/-88**	**-124/-87**	**-124/-85**	**-126/-84**
Range of total VAT loss/gain on PE (2)A-C		**-110/-82**	**-109/-81**	**-110/-81**	**-112/-81**	**-111/-80**	**-111/-78**	**-111/-76**	**-110/-73**	**-110/-71**	**-110/-68**
Range of total VAT loss/gain on PE (3)A-C		**-93/-65**	**-92/-64**	**-92/-63**	**-93/-62**	**-92/-61**	**-90/-57**	**-89/-54**	**-88/-51**	**-86/-47**	**-85/-43**
Xtra income tax & ni generated on employment PE (1)		25	25	26	27	28	30	31	33	35	37
Xtra income tax & ni generated on employment on PE (2)		62	63	66	69	70	74	79	83	88	94
Xtra income tax & ni generated on employment PE (3)		124	126	131	137	141	148	157	167	176	187
Unemployment & other social benefits saved on PE (1)		6	6	6	6	6	7	7	7	8	8
Unemployment & other social benefits saved on PE (2)		14	14	15	15	16	16	17	18	20	21
Unemployment & other social benefits saved on PE (3)		28	28	29	30	31	33	35	37	39	41
Range of net tax losses/gains on PE (1) A-C		**-89/-61**	**-88/-60**	**-89/-60**	**-90/-59**	**-89/-58**	**-86/-53**	**-85/-50**	**-84/-47**	**-81/-42**	**-81/-39**
Range of net tax losses/gains on PE (2) A-C		**-34/-6**	**-32/-4**	**-29/0**	**-28/3**	**-25/6**	**-21/12**	**-15/20**	**-9/28**	**-2/37**	**5/47**
Range of net tax losses/gains on PE (3) A-C		**59/87**	**62/90**	**68/97**	**66/105**	**80/111**	**91/124**	**103/138**	**116/153**	**129/168**	**143/185**

Figure 34: Impact of reduction of VAT from 17.5% to 5% - Scotland, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-86	-93	-97	-101	-105	-111	-115	-118	-123	-128
VAT generated from shift from DIY to professional		1	1	1	1	1	1	1	1	1	1
VAT generated on price elasticity = 0.16	2%	1	1	1	1	1	1	1	1	1	1
VAT generated on price elasticity = 0.4	5%	2	2	2	2	2	2	2	2	2	3
VAT generated on price elasticity = 0.8	10%	3	4	4	4	4	4	5	5	5	5
VAT loss/gain on price elasticity = 0.16 (1)		-85	-91	-95	-99	-103	-109	-113	-115	-121	-126
VAT loss/gain on price elasticity = 0.4 (2)		-84	-90	-94	-98	-102	-108	-111	-114	-119	-124
VAT loss/gain on price elasticity = 0.8 (3)		-82	-88	-92	-96	-99	-106	-109	-112	-117	-122
shift from informal to formal economy A - increase in VAT receipts	10%	4	4	5	5	5	5	5	5	6	6
shift from informal to formal economy B - increase in VAT receipts	20%	8	9	9	9	10	10	11	11	11	12
shift from informal to formal economy C - increase in VAT receipts	30%	12	13	14	14	15	16	16	16	17	18
Range of total VAT loss/gain on PE (1)A-C		**-81/-72**	**-86/-78**	**-91/-82**	**-95/-85**	**-98/-88**	**-104/-93**	**-107/-97**	**-110/-99**	**-115/-103**	**-120/-108**
Range of total VAT loss/gain on PE (2)A-C		**-80/-72**	**-85/-77**	**-89/-80**	**-94/-84**	**-97/-87**	**-103/-92**	**-106/-95**	**-109/-98**	**-113/-102**	**-118/-106**
Range of total VAT loss/gain on PE (3)A-C		**-78/-70**	**-83/-75**	**-87/-78**	**-92/-82**	**-95/-85**	**-100/-90**	**-104/-93**	**-106/-95**	**-111/-99**	**-116/-104**
Xtra income tax & ni generated on employment PE (1)		14	15	16	16	17	17	18	18	19	20
Xtra income tax & ni generated on employment on PE (2)		23	25	26	27	27	29	30	30	31	33
Xtra income tax & ni generated on employment PE (3)		38	40	42	44	45	48	49	50	52	54
Xtra income tax & ni generated on shift from informal to formal economy C		34	37	38	40	41	44	45	46	48	51
Unemployment & other social benefits saved on PE (1)		4	4	5	5	5	5	5	5	5	6
Unemployment & other social benefits saved on PE (2)		7	7	7	8	8	8	8	9	9	9
Unemployment & other social benefits saved on PE (3)		11	12	12	13	13	14	14	14	15	16
Unemployment & other social benefits saved on shift frm informal to formal e		10	11	11	12	12	13	13	13	14	15
Range of net tax losses/gains on PE (1) A-C		**-62/-10**	**-67/-11**	**-70/-12**	**-74/-13**	**-76/-13**	**-82/-15**	**-84/-15**	**-86/-16**	**-91/-17**	**-95/-18**
Range of net tax losses/gains on PE (2) A-C		**-50/2**	**-67/2**	**-70/2**	**-74/2**	**-76/2**	**-82/1**	**-84/1**	**-86/1**	**-91/1**	**-95/1**
Range of net tax losses/gains on PE (3) A-C		**-29/23**	**-32/24**	**-33/25**	**-35/26**	**-36/27**	**-39/28**	**-41/28**	**-42/29**	**-44/30**	**-46/31**

Figure 35: Impact of reduction of VAT from 17.5% to 10% - Scotland, 2010-2019

	Rate										
Base vat receipt loss due to reduction		-52	-56	-58	-61	-63	-67	-69	-71	-74	-77
VAT generated on price elasticity = 0.16	0.8%	1	1	1	1	1	1	1	1	1	1
VAT generated on price elasticity = 0.4	2%	2	2	2	2	3	3	3	3	3	3
VAT generated on price elasticity = 0.8	4%	4	4	5	5	5	5	6	6	6	6
VAT loss/gain on price elasticity = 0.16 (1)		-51	-55	-57	-60	-62	-66	-68	-69	-72	-76
VAT loss/gain on price elasticity = 0.4 (2)		-50	-53	-56	-58	-60	-64	-66	-68	-71	-74
VAT loss/gain on price elasticity = 0.8 (3)		-48	-51	-54	-56	-58	-61	-63	-65	-68	-71
shift from informal to formal economy A - increase in VAT receipts	6%	5	3	3	3	3	3	3	3	3	4
shift from informal to formal economy B - increase in VAT receipts	12%	10	5	5	6	6	6	6	7	7	7
shift from informal to formal economy C - increase in VAT receipts	18%	14	8	8	9	9	9	10	10	10	11
Range of total VAT loss/gain on PE (1)A-C		**-46/-36**	**-52/-47**	**-55/-49**	**-57/-51**	**-59/-53**	**-63/-56**	**-65/-58**	**-66/-60**	**-69/-62**	**-72/-65**
Range of total VAT loss/gain on PE (2)A-C		**-45/-35**	**-51/-46**	**-53/-48**	**-56/-50**	**-57/-52**	**-61/-55**	**-63/-57**	**-64/-58**	**-67/-60**	**-70/-63**
Range of total VAT loss/gain on PE (3)A-C		**-43/-33**	**-48/-43**	**-51/-45**	**-53/-47**	**-55/-49**	**-58/-52**	**-60/-54**	**-62/-55**	**-64/-57**	**-67/-60**
Xtra income tax & ni generated on employment PE (1)		4	4	4	4	4	5	5	5	5	5
Xtra income tax & ni generated on employment on PE (2)		9	9	10	10	11	11	12	12	12	13
Xtra income tax & ni generated on employment PE (3)		18	19	20	21	21	23	23	24	25	26
Unemployment & other social benefits saved on PE (1)		1	1	1	1	1	1	1	1	1	2
Unemployment & other social benefits saved on PE (2)		3	3	3	3	3	3	3	3	4	4
Unemployment & other social benefits saved on PE (3)		5	5	6	6	6	7	7	7	7	8
Range of net tax losses/gains on PE (1) A-C		**-42/-32**	**-47/-42**	**-49/-44**	**-52/-46**	**-53/-48**	**-57/-50**	**-59/-52**	**-60/-53**	**-63/-56**	**-65/-58**
Range of net tax losses/gains on PE (2) A-C		**-34/-24**	**-39/-33**	**-40/-35**	**-42/-37**	**-44/-38**	**-46/-40**	**-48/-41**	**-49/-42**	**-51/-44**	**-53/-46**
Range of net tax losses/gains on PE (3) A-C		**-20/-11**	**-24/-19**	**-25/-20**	**-27/-21**	**-27/-22**	**-29/-23**	**-30/-24**	**-31/-24**	**-32/-25**	**-34/-26**

Figure 36: Impact of reduction of VAT from 17.5% to 15% - Scotland, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-17	-19	-19	-20	-21	-22	-23	-24	-25	-26
VAT generated on price elasticity = 0.16	1.2%	1	1	1	1	1	1	1	1	1	1
VAT generated on price elasticity = 0.4	3%	2	2	2	2	3	3	3	3	3	3
VAT generated on price elasticity = 0.8	6%	4	4	5	5	5	5	6	6	6	6
VAT loss/gain on price elasticity = 0.16 (1)		-16	-18	-18	-19	-20	-21	-22	-22	-23	-24
VAT loss/gain on price elasticity = 0.4 (2)		-15	-16	-17	-18	-18	-20	-20	-21	-22	-23
VAT loss/gain on price elasticity = 0.8 (3)		-13	-14	-15	-15	-16	-17	-17	-18	-19	-19
shift from informal to formal economy A - increase in VAT receipts	2%	2	3	3	3	3	3	3	3	3	4
shift from informal to formal economy B - increase in VAT receipts	4%	5	5	5	6	6	6	6	7	7	7
shift from informal to formal economy C - increase in VAT receipts	6%	7	8	8	9	9	9	10	10	10	11
Range of total VAT loss/gain on PE (1)A-C		**-14/-9**	**-15/-10**	**-16/-10**	**-16/-11**	**-17/-11**	**-18/-12**	**-19/-12**	**-19/-12**	**-20/-13**	**-21/-13**
Range of total VAT loss/gain on PE (2)A-C		**-13/-8**	**-14/-9**	**-14/-9**	**-15/-9**	**-16/-10**	**-16/-10**	**-17/-11**	**-17/-11**	**-18/-11**	**-19/-12**
Range of total VAT loss/gain on PE (3)A-C		**-11/-6**	**-11/-6**	**-12/-7**	**-13/-7**	**-13/-7**	**-14/-8**	**-14/-8**	**-15/-8**	**-15/-8**	**-16/-9**
Xtra income tax & ni generated on employment PE (1)		2	3	3	3	3	3	3	3	3	3
Xtra income tax & ni generated on employment on PE (2)		6	6	7	7	7	8	8	8	8	9
Xtra income tax & ni generated on employment PE (3)		12	13	13	14	14	15	16	16	17	17
Unemployment & other social benefits saved on PE (1)		1	1	1	1	1	1	1	1	1	1
Unemployment & other social benefits saved on PE (2)		2	2	2	2	2	2	2	2	2	3
Unemployment & other social benefits saved on PE (3)		3	4	4	4	4	4	4	5	5	5
Range of net tax losses/gains on PE (1) A-C		**-11/-6**	**-12/-7**	**-12/-7**	**-13/-7**	**-13/-8**	**-14/-8**	**-15/-8**	**-15/-8**	**-16/-9**	**-16/-9**
Range of net tax losses/gains on PE (2) A-C		**-5/0**	**-6/0**	**-6/0**	**-6/0**	**-6/-1**	**-7/-1**	**-7/-1**	**-7/-1**	**-7/-1**	**-8/-1**
Range of net tax losses/gains on PE (3) A-C		**4/9**	**5/10**	**5/10**	**5/11**	**5/11**	**6/12**	**6/12**	**6/13**	**6/13**	**6/14**

Figure 37: Impact of reduction of VAT from 17.5% to 5% - Wales, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-40	-43	-46	-49	-51	-55	-55	-55	-58	-61
VAT generated from shift from DIY to professional		0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
VAT generated on price elasticity = 0.16	2%	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
VAT generated on price elasticity = 0.4	5%	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.2	1.2
VAT generated on price elasticity = 0.8	10%	1.6	1.7	1.9	2.0	2.0	2.2	2.2	2.2	2.3	2.4
VAT loss/gain on price elasticity = 0.16 (1)		-39	-43	-46	-48	-50	-54	-54	-54	-56	-60
VAT loss/gain on price elasticity = 0.4 (2)		-39	-42	-45	-48	-50	-53	-53	-53	-56	-59
VAT loss/gain on price elasticity = 0.8 (3)		-38	-41	-44	-47	-49	-52	-52	-52	-55	-58
shift from informal to formal economy A - increase in VAT receipts	10%	2	2	2	2	2	2	2	2	2	2
shift from informal to formal economy B - increase in VAT receipts	20%	3	3	4	4	4	4	4	4	4	5
shift from informal to formal economy C - increase in VAT receipts	30%	5	5	5	6	6	6	6	6	7	7
Range of total VAT loss/gain on PE (1)A-C		**-37/-34**	**-41/-38**	**-44/-41**	**-46/-42**	**-48/-44**	**-52/-48**	**-52/-48**	**-52/-48**	**-54/-49**	**-58/-53**
Range of total VAT loss/gain on PE (2)A-C		**-37/-34**	**-40/-37**	**-43/-40**	**-46/-42**	**-48/-44**	**-51/-47**	**-51/-47**	**-51/-47**	**-54/-49**	**-57/-52**
Range of total VAT loss/gain on PE (3)A-C		**-36/-33**	**-39/-36**	**-42/-39**	**-45/-41**	**-47/-43**	**-50/-46**	**-50/-46**	**-50/-46**	**-53/-48**	**-56/-51**
Xtra income tax & ni generated on employment PE (1)		6	7	7	7	8	8	8	8	8	9
Xtra income tax & ni generated on employment on PE (2)		10	11	12	12	13	13	13	14	14	15
Xtra income tax & ni generated on employment PE (3)		17	18	19	20	21	22	22	22	23	25
Xtra income tax & ni generated on shift from informal to formal economy C		12	13	14	15	16	17	17	17	18	19
Unemployment & other social benefits saved on PE (1)		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03
Unemployment & other social benefits saved on PE (2)		0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Unemployment & other social benefits saved on PE (3)		0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07
Unemployment & other social benefits saved on shift frm informal to formal economy C		0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.06
Range of net tax losses/gains on PE (1) A-C		**-31/-16**	**-34/-18**	**-37/-18**	**-39/-20**	**-40/-20**	**-44/-23**	**-44/-23**	**-44/-23**	**-46/-23**	**-49/-25**
Range of net tax losses/gains on PE (2) A-C		**-27/-12**	**-29/-13**	**-31/-14**	**-34/-15**	**-35/-15**	**-38/-17**	**-38/-17**	**-37/-16**	**-40/-17**	**-42/-18**
Range of net tax losses/gains on PE (3) A-C		**-19/-4**	**-21/-5**	**-23/-6**	**-25/-6**	**-26/-6**	**-28/-7**	**-28/-7**	**-28/-7**	**-30/-7**	**-31/-7**

Figure 38: Impact of reduction of VAT from 17.5% to 10% - Wales, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-24	-26	-28	-29	-31	-33	-33	-33	-35	-36
VAT generated on price elasticity = 0.16	0.8%	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6
VAT generated on price elasticity = 0.4	2%	1.0	1.0	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.5
VAT generated on price elasticity = 0.8	4%	1.9	2.1	2.2	2.4	2.5	2.6	2.6	2.6	2.8	2.9
VAT loss/gain on price elasticity = 0.16 (1)		-24	-26	-27	-29	-30	-32	-32	-33	-34	-36
VAT loss/gain on price elasticity = 0.4 (2)		-23	-25	-27	-28	-29	-32	-32	-32	-33	-35
VAT loss/gain on price elasticity = 0.8 (3)		-22	-24	-26	-27	-28	-30	-30	-30	-32	-33
shift from informal to formal economy A - increase in VAT receipts	6%	2	2	2	2	2	3	3	3	3	3
shift from informal to formal economy B - increase in VAT receipts	12%	4	4	4	5	5	5	5	5	5	6
shift from informal to formal economy C - increase in VAT receipts	18%	6	6	6	7	7	8	8	8	8	8
Range of total VAT loss/gain on PE (1)A-C		**-22/-18**	**-24/-20**	**-25/-21**	**-27/-22**	**-28/-23**	**-29/-24**	**-29/-24**	**-30/-25**	**-31/-26**	**-33/-28**
Range of total VAT loss/gain on PE (2)A-C		**-21/-17**	**-23/-19**	**-25/-21**	**-26/-21**	**-27/-22**	**-29/-24**	**-29/-24**	**-29/-24**	**-30/-24**	**-32/-27**
Range of total VAT loss/gain on PE (3)A-C		**-20/-16**	**-22/-18**	**-24/-20**	**-25/-20**	**-26/-21**	**-27/-22**	**-27/-22**	**-27/-22**	**-29/-24**	**-30/-25**
Xtra income tax & ni generated on employment PE (1)		2	2	2	2	2	2	2	2	2	2
Xtra income tax & ni generated on employment on PE (2)		4	4	5	5	5	5	5	5	6	6
Xtra income tax & ni generated on employment PE (3)		8	8	9	10	10	11	11	11	11	12
Unemployment & other social benefits saved on PE (1)		0	1	1	1	1	1	1	1	1	1
Unemployment & other social benefits saved on PE (2)		1	1	1	1	1	2	2	2	2	2
Unemployment & other social benefits saved on PE (3)		2	3	3	3	3	3	3	3	3	4
Range of net tax losses/gains on PE (1) A-C		**-20/-16**	**-21/-17**	**-22/-18**	**-24/-19**	**-25/-20**	**-26/-21**	**-26/-21**	**-27/-22**	**-28/-23**	**-30/-25**
Range of net tax losses/gains on PE (2) A-C		**-16/-12**	**-18/-14**	**-19/-15**	**-20/-15**	**-21/-16**	**-22/-17**	**-22/-17**	**-22/-17**	**-22/-16**	**-24/-19**
Range of net tax losses/gains on PE (3) A-C		**-10/-6**	**-11/-7**	**-12/-8**	**-12/-7**	**-13/-8**	**-13/-8**	**-13/-8**	**-13/-8**	**-15/-10**	**-14/-9**

Figure 39: Impact of reduction of VAT from 17.5% to 15% - Wales, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-8	-9	-9	-10	-10	-11	-11	-11	-12	-12
VAT generated on price elasticity = 0.16	1.2%	0	0	0	0	0	1	1	1	1	1
VAT generated on price elasticity = 0.4	3%	1	1	1	1	1	1	1	1	1	1
VAT generated on price elasticity = 0.8	6%	2	2	2	2	2	3	3	3	3	3
VAT loss/gain on price elasticity = 0.16 (1)		-8	-8	-9	-9	-10	-10	-10	-10	-11	-12
VAT loss/gain on price elasticity = 0.4 (2)		-7	-8	-8	-9	-9	-10	-10	-10	-10	-11
VAT loss/gain on price elasticity = 0.8 (3)		-6	-7	-7	-7	-8	-8	-8	-8	-9	-9
shift from informal to formal economy A - increase in VAT receipts	2%	1	1	1	1	1	1	1	1	1	1
shift from informal to formal economy B - increase in VAT receipts	4%	2	2	2	2	2	3	3	3	3	3
shift from informal to formal economy C - increase in VAT receipts	6%	3	3	3	3	4	4	4	4	4	4
Range of total VAT loss/gain on PE (1)A-C		**-7/-5**	**-7/-5**	**-8/-6**	**-8/-6**	**-9/-6**	**-9/-6**	**-9/-6**	**-9/-6**	**-10/-7**	**-11/-8**
Range of total VAT loss/gain on PE (2)A-C		**-6/-4**	**-7/-5**	**-7/-5**	**-8/-6**	**-8/-5**	**-9/-6**	**-9/-6**	**-9/-6**	**-9/-7**	**-10/-7**
Range of total VAT loss/gain on PE (3)A-C		**-5/-3**	**-6/-4**	**-6/-4**	**-6/-4**	**-7/-4**	**-7/-4**	**-7/-4**	**-7/-4**	**-8/-5**	**-8/-5**
Xtra income tax & ni generated on employment PE (1)		1	1	1	1	1	1	1	1	1	2
Xtra income tax & ni generated on employment on PE (2)		3	3	3	3	3	4	4	4	4	4
Xtra income tax & ni generated on employment PE (3)		5	6	6	6	7	7	7	7	7	8
Unemployment & other social benefits saved on PE (1)		0	0	0	0	0	0	0	0	0	0
Unemployment & other social benefits saved on PE (2)		1	1	1	1	1	1	1	1	1	1
Unemployment & other social benefits saved on PE (3)		2	2	2	2	2	2	2	2	2	2
Range of net tax losses/gains on PE (1) A-C		**-6/-4**	**-6/-4**	**-7/-5**	**-7/-5**	**-8/-5**	**-8/-5**	**-8/-5**	**-8/-5**	**-9/-6**	**-9/-6**
Range of net tax losses/gains on PE (2) A-C		**-2/0**	**-3/-1**	**-3/-1**	**-4/-2**	**-4/-1**	**-5/-1**	**-5/-1**	**-5/-1**	**-4/-2**	**-5/-2**
Range of net tax losses/gains on PE (3) A-C		**2/4**	**2/4**	**2/4**	**2/4**	**2/5**	**2/5**	**2/5**	**2/5**	**1/4**	**2/5**

Figure 40: Impact of reduction of VAT from 17.5% to 5% - Northern Ireland, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-9	-10	-10	-10	-11	-11	-12	-13	-14	-15
VAT generated from shift from DIY to professional		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
VAT generated on price elasticity = 0.16	2%	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
VAT generated on price elasticity = 0.4	5%	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
VAT generated on price elasticity = 0.8	10%	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6
VAT loss/gain on price elasticity = 0.16 (1)		-9.0	-9.5	-9.8	-10.2	-10.4	-10.9	-11.8	-12.7	-13.6	-14.7
VAT loss/gain on price elasticity = 0.4 (2)		-8.9	-9.4	-9.7	-10.1	-10.3	-10.8	-11.6	-12.5	-13.5	-14.5
VAT loss/gain on price elasticity = 0.8 (3)		-8.7	-9.2	-9.5	-9.9	-10.1	-10.6	-11.4	-12.3	-13.2	-14.2
shift from informal to formal economy A - increase in VAT receipts	10%	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
shift from informal to formal economy B - increase in VAT receipts	20%	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.9
shift from informal to formal economy C - increase in VAT receipts	30%	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.1	1.2	1.3
Range of total VAT loss/gain on PE (1)A-C		**-8.7/-8.2**	**-9.2/-8.7**	**-9.5/-8.9**	**-9.9/-9.3**	**-10.1/-9.5**	**-10.6/-9.9**	**-11.5/-10.8**	**-12.3/-11.6**	**-13.2/-12.4**	**-14.3/-13.4**
Range of total VAT loss/gain on PE (2)A-C		**-8.6/-8.1**	**-9.1/-8.6**	**-9.4/-8.8**	**-9.8/-9.2**	**-10.0/-9.4**	**-10.5/-9.8**	**-11.3/-10.6**	**-12.1/-11.4**	**-13.1/-12.3**	**-14.1/-13.2**
Range of total VAT loss/gain on PE (3)A-C		**-8.4/-7.9**	**-8.9/-8.4**	**-9.2/-8.6**	**-9.6/-9.0**	**-10.1/-9.5**	**-10.3/-9.6**	**-11.1/-10.4**	**-11.9/-11.2**	**-12.8/-12.0**	**-13.8/-12.9**
Xtra income tax & ni generated on employment PE (1)		1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.9	2.0	2.1
Xtra income tax & ni generated on employment on PE (2)		2.3	2.5	2.6	2.6	2.7	2.8	3.0	3.1	3.3	3.5
Xtra income tax & ni generated on employment PE (3)		3.8	4.0	4.2	4.3	4.4	4.6	4.9	5.2	5.6	6.0
Xtra income tax & ni generated on shift from informal to formal economy C		2.2	2.3	2.4	2.5	2.5	2.6	2.8	3.1	3.3	3.5
Unemployment & other social benefits saved on PE (1)		0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
Unemployment & other social benefits saved on PE (2)		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Unemployment & other social benefits saved on PE (3)		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
Unemployment & other social benefits saved on shift frm informal to formal economy C		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Range of net tax losses/gains on PE (1) A-C		**-7.2/-4.5**	**-7.7/-4.9**	**-7.9/-4.9**	**-8.3/-5.2**	**-8.4/-5.3**	**-8.9/-5.6**	**-9.7/-6.2**	**-10.4/-6.6**	**-11.2/-7.1**	**-12.2/7.8**
Range of net tax losses/gains on PE (2) A-C		**-6.3/-3.6**	**-6.6/-3.8**	**-6.9/-3.8**	**-7.2/-4.1**	**-7.3/-4.2**	**-7.7/-4.4**	**-8.3/-4.8**	**-9.0/-5.2**	**-9.8/-5.7**	**-10.6/-6.2**
Range of net tax losses/gains on PE (3) A-C		**-4.6/-1.9**	**-4.9/-2.1**	**-5.0/-2.0**	**-5.3/-2.2**	**-5.7/-2.6**	**-5.7/-2.4**	**-6.2/-2.7**	**-6.7/-2.9**	**-7.2/-3.1**	**-7.8/-3.4**

Figure 41: Impact of reduction of VAT from 17.5% to 10% - Northern Ireland, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-5.5	-5.8	-6.0	-6.2	-6.4	-6.7	-7.2	-7.7	-8.3	-9.0
VAT generated on price elasticity = 0.16	0.8%	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
VAT generated on price elasticity = 0.4	2%	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
VAT generated on price elasticity = 0.8	4%	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7
VAT loss/gain on price elasticity = 0.16 (1)		-5.4	-5.7	-5.9	-6.1	-6.3	-6.6	-7.1	-7.6	-8.2	-8.8
VAT loss/gain on price elasticity = 0.4 (2)		-5.3	-5.6	-5.8	-6.0	-6.1	-6.4	-6.9	-7.4	-8.0	-8.6
VAT loss/gain on price elasticity = 0.8 (3)		-5.1	-5.3	-5.5	-5.7	-5.9	-6.2	-6.6	-7.1	-7.7	-8.2
shift from informal to formal economy A - increase in VAT receipts	6%	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
shift from informal to formal economy B - increase in VAT receipts	12%	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.0	1.0
shift from informal to formal economy C - increase in VAT receipts	18%	1.0	1.0	1.1	1.1	1.1	1.2	1.3	1.4	1.5	1.6
Range of total VAT loss/gain on PE (1)A-C		**-5.1/-4.4**	**-5.4/-4.7**	**-5.5/-4.8**	**-5.7/-5.0**	**-5.9/-5.2**	**-6.2/-5.4**	**-6.7/-5.8**	**-7.1/-6.2**	**-7.7/-6.7**	**-8.3/-7.2**
Range of total VAT loss/gain on PE (2)A-C		**-5.0/-4.3**	**-5.3/-4.6**	**-5.4/-4.7**	**-5.6/-4.9**	**-5.7/-5.0**	**-6.0/-5.2**	**-6.5/-5.6**	**-6.9/-6.0**	**-7.5/-6.5**	**-8.1/-7.0**
Range of total VAT loss/gain on PE (3)A-C		**-4.8/-4.1**	**-5.4/-4.3**	**-5.1/-4.4**	**-5.3/-4.6**	**-5.5/-4.8**	**-5.8/-5.0**	**-6.2/-5.3**	**-6.6/-5.7**	**-7.2/-6.2**	**-7.7/-6.6**
Xtra income tax & ni generated on employment PE (1)		0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6
Xtra income tax & ni generated on employment on PE (2)		0.9	0.9	1.0	1.0	1.0	1.1	1.2	1.3	1.4	1.5
Xtra income tax & ni generated on employment PE (3)		1.8	1.9	2.0	2.0	2.1	2.2	2.3	2.5	2.7	2.9
Unemployment & other social benefits saved on PE (1)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Unemployment & other social benefits saved on PE (2)		0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
Unemployment & other social benefits saved on PE (3)		0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.9
Range of net tax losses/gains on PE (1) A-C		**-4.6/-3.9**	**-4.9/-4.2**	**-5.0/-4.3**	**-5.2/-4.5**	**-5.4/-4.7**	**-5.7/-4.9**	**-6.1/-5.2**	**-6.4/-5.5**	**-7.0/-6.0**	**-7.5/-6.4**
Range of net tax losses/gains on PE (2) A-C		**-3.8/-3.1**	**-4.1/-3.4**	**-4.1/-3.4**	**-4.3/-3.6**	**-4.4/-3.7**	**-4.6/3.8**	**-4.9/-4.0**	**-5.2/4.3**	**-5.7/-4.7**	**-6.2/-5.1**
Range of net tax losses/gains on PE (3) A-C		**-2.5/-1.8**	**-2.9/-1.8**	**-2.5/-1.8**	**-2.7/-2.0**	**-2.8/-2.1**	**-2.9/-2.1**	**-3.2/-2.3**	**-3.4/2.5**	**-3.7/-2.7**	**-3.9/-2.8**

Figure 42: Impact of reduction of VAT from 17.5% to 15% - Northern Ireland, 2010-2019

	Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Base vat receipt loss due to reduction		-1.8	-1.9	-2.0	-2.1	-2.1	-2.2	-2.4	-2.6	-2.8	-3.0
VAT generated on price elasticity = 0.16	1.2%	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
VAT generated on price elasticity = 0.4	3%	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
VAT generated on price elasticity = 0.8	6%	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7
VAT loss/gain on price elasticity = 0.16 (1)		-1.7	-1.8	-1.9	-2.0	-2.0	-2.1	-2.3	-2.5	-2.6	-2.8
VAT loss/gain on price elasticity = 0.4 (2)		-1.6	-1.7	-1.8	-1.8	-1.9	-2.0	-2.1	-2.3	-2.4	-2.6
VAT loss/gain on price elasticity = 0.8 (3)		-1.4	-1.5	-1.5	-1.6	-1.6	-1.7	-1.8	-2.0	-2.1	-2.3
shift from informal to formal economy A - increase in VAT receipts	2%	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
shift from informal to formal economy B - increase in VAT receipts	4%	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
shift from informal to formal economy C - increase in VAT receipts	6%	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8
Range of total VAT loss/gain on PE (1)A-C		**-1.5/-1.2**	**-1.6/-1.3**	**-1.7/-1.4**	**-1.8/-1.5**	**-1.8/-1.4**	**-1.9/-1.5**	**-2.1/-1.7**	**-2.3/-1.8**	**-2.4/-1.9**	**-2.5/-2.0**
Range of total VAT loss/gain on PE (2)A-C		**-1.4/-1.1**	**-1.5/-1.2**	**-1.6/-1.3**	**-1.6/-1.3**	**-1.7/-1.3**	**-1.8/-1.4**	**-1.9/-1.5**	**-2.1/-1.6**	**-2.2/-1.7**	**-2.3/-1.8**
Range of total VAT loss/gain on PE (3)A-C		**-1.2/-0.9**	**-1.3/-1.0**	**-1.3/-1.0**	**-1.4/-1.1**	**-1.4/-1.0**	**-1.5/-1.1**	**-1.6/-1.2**	**-1.8/-1.3**	**-1.9/-1.4**	**-2.0/-1.5**
Xtra income tax & ni generated on employment PE (1)		0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
Xtra income tax & ni generated on employment on PE (2)		0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.0
Xtra income tax & ni generated on employment PE (3)		1.2	1.3	1.3	1.3	1.4	1.4	1.6	1.7	1.8	1.9
Unemployment & other social benefits saved on PE (1)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Unemployment & other social benefits saved on PE (2)		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Unemployment & other social benefits saved on PE (3)		0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6
Range of net tax losses/gains on PE (1) A-C		**-1.2/-0.9**	**-1.2/-0.9**	**-1.3/-1.0**	**-1.4/-1.1**	**-1.4/-1.0**	**-1.5/-1.1**	**-1.7/-1.3**	**-1.9/-1.4**	**-1.9/-1.4**	**-2.0/-1.5**
Range of net tax losses/gains on PE (2) A-C		**-0.6/-0.3**	**-0.7/-0.4**	**-0.7/-0.4**	**-0.7/-0.4**	**-0.8/0.4**	**-0.9/-0.5**	**-0.9/-0.5**	**-1.0/-0.5**	**-1.0/-0.5**	**-1.0/-0.5**
Range of net tax losses/gains on PE (3) A-C		**0.4/0.7**	**0.4/0.7**	**0.4/0.7**	**0.3/0.6**	**0.4/0.8**	**0.3/0.7**	**0.5/0.9**	**-0.5/1.0**	**0.4/0.9**	**0.5/1.0**

Appendix C

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APHC

Bathroom
Manufacturers
Association
BMA

FMB
The sign of
building quality

CLA
Country Land &
Business Association
RURAL ECONOMY IS OUR BUSINESS

CLAY ROOF
TILE COUNCIL

EHA

House Beautiful
Magazine

BRITISH
PRECAST

NHIC
NATIONAL HOME IMPROVEMENT COUNCIL

NLA
NATIONAL
LANDLORDS
ASSOCIATION

the
civic
trust

RIBA

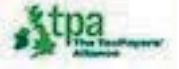
RICS
the mark of
property
professionalism
worldwide

TOG

tcpa

THE NATIONAL TRUST

The
Heritage
Alliance

The
Theatres
Trust

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