

10 Value added tax

Thomas F. Crossley, David Phillips and Matthew Wakefield (IFS)

Summary

- VAT is an important source of government revenue, forecast to raise £82.6 billion or 16% of total tax receipts in 2008–09. Like taxes on earnings, VAT distorts the choice between leisure and consumption. Because VAT is applied at different rates to different goods and services, it also distorts people’s spending decisions and firms’ production decisions. In its current form, it is mildly progressive, *not* regressive as some commentators suggest.
- The temporary cut in the standard VAT rate from 17.5% to 15% is a better stimulus measure than its critics suggest. We estimate that the VAT cut will reduce prices on average by 1.2%. Past experience suggests this may lead people to buy 1.2% more goods and services. Those dismissing it as a failure ignore the likelihood that things would have been even worse without it.
- The government considered an increase in the rate of VAT to 18.5% in 2011–12. This would have acted as a stimulus to expenditure before that date, as well as raising about £5 billion per year thereafter. Whilst, on its own, such a change would be less progressive than further increases in National Insurance, it would be possible to compensate most poorer households.
- Broadening the VAT base by extending the standard rate to most goods and services would remove many of the distortions to consumption decisions caused by the current system and would raise significant revenue even after *more than compensating* poorer households on average. For instance, a net £10 billion could be raised, with the rest of the revenues used to help meet the child poverty targets and compensate poorer households, households with children, those with disabilities and pensioners.

10.1 Introduction

Value added tax (VAT) played a starring role in the Pre-Budget Report (PBR) of November 2008. The Chancellor announced a temporary 13-month cut in the standard rate from 17.5% to 15% to help stimulate economic activity. He also considered raising the standard rate to 18.5% from 2011, to help reduce the government’s underlying budget deficit, before opting in the end to raise a similar amount of revenue from higher rates of National Insurance (NI).¹

In the coming Budget, the Chancellor will have to decide whether to provide an additional fiscal stimulus in the short term and whether to do more to reduce the underlying budget deficit in the longer term. In both cases, he needs to decide whether VAT is a good tool to use.

¹ See page 6 of House of Commons Library Paper 701 (<http://www.parliament.uk/commons/lib/research/briefings/snbt-00701.pdf>).

In this chapter, we begin with an introduction to the structure and economics of VAT, including its impact on work incentives and its distributional consequences (Section 10.2). We then examine how effective the temporary cut in VAT is likely to be as a stimulus measure, and whether it would be sensible to extend or increase it if the government feels the need to do more to encourage current economic activity (Section 10.3). In contrast to many commentators, our reading of the evidence is that a temporary cut in VAT is a reasonably effective form of stimulus – more so than income tax cuts, for instance. We then look at the choice between raising revenue from an increase in the VAT rate and raising it from higher rates of NI (Section 10.4). We also discuss the fact that revenue could be raised from VAT not just by raising the standard rate, but also by broadening the unusually narrow range of consumer spending to which it is applied at the full rate in the UK (Section 10.5).² Section 10.6 concludes.

10.2 The structure and impact of VAT

VAT was introduced in the UK on 1 January 1973 as a condition of entry into the European Economic Community (as it then was). It is a proportional tax paid on sales of registered businesses, both to final consumers and other businesses, although most businesses are allowed to deduct any VAT paid on inputs before remitting the tax to HM Revenue and Customs (HMRC). Since it was introduced, it has become an increasingly important source of government revenue and in 2008–09 is forecast by the Treasury to raise £82.6 billion.³ This is equivalent to about £1,360 per person, or 16% of total tax revenues.

VAT is not payable at a single rate nor is it fully comprehensive.⁴ The standard rate of 17.5% applies to roughly 55% of total consumer spending,⁵ with a reduced rate of 5% applying for domestic fuel and power and a few other products, and a zero rate applying to new housing, children's clothing, most food and some other goods. Zero-rating means that the seller does not charge VAT on its sales but is still entitled to credit for the input VAT paid (and hence due a refund), so that the goods are VAT-free. A further set of goods and services, including rent on housing, finance and insurance, betting and gaming, and healthcare, are VAT-exempt. This means that the seller does not charge VAT on its sales but is not entitled to reclaim VAT paid on inputs to production.

VAT can broadly be thought of as a sales tax, or (equivalently) a tax on final consumer spending, where rates vary by the type of goods in question. The fact that businesses can

² This chapter is not a thorough evaluation of the VAT system, nor does it offer suggestions for comprehensive reforms. The interested reader can find a more comprehensive and detailed assessment by I. Crawford, M. Keen and S. Smith, *Value Added Tax and Excises*, prepared for the Report of a Commission on Reforming the Tax System for the 21st Century chaired by Sir James Mirrlees, Institute for Fiscal Studies, 2008 (<http://www.ifs.org.uk/mirrleesreview/reports/indirect.pdf>).

³ Annex B, HM Treasury, *Pre-Budget Report 2008*, November 2008 (http://www.hm-treasury.gov.uk/d/pbr08_annexb_262.pdf).

⁴ For more details, see table 6 in S. Adam & J. Browne, *A Survey of the UK Tax System*, IFS Briefing Note 9, December 2006 (<http://www.ifs.org.uk/bns/bn09.pdf>).

⁵ See table C7 of HMRC, *Annual Report 2006–07 Tables and Statistics* (http://customs.hmrc.gov.uk/channelsPortalWebApp/channelsPortalWebApp.portal?_nfpb=true&_pageLabel=pageVAT_ShowContent&id=HMCE_PROD1_028433&propertyType=document). Note that the definitions used here are based on National Accounts principles and these do not correspond to VAT legislation, particularly for housing. However, calculations by IFS researchers based upon RPI expenditure weights give the same answer. In addition, the 55% figure is inclusive of VAT; excluding VAT, the appropriate proportion would be somewhat lower.

reclaim any VAT paid on inputs is an important and desirable property, as it ensures that intermediate business-to-business transactions are not taxed. This avoids costly distortions to production decisions. Note, however, that VAT-exempt goods break the chain of payments of VAT on sales and deductions on inputs, meaning that the production decisions of exempt firms are distorted by the tax. In addition, exemptions can cause significant administrative complexity, particularly when only a subset of a firm's transactions is exempt. VAT's desirable property of taxing final consumer spending only therefore breaks down with exemptions.

When people discuss the merits of using VAT as a way of raising revenue, the consequences for efficiency and fairness are naturally central to the discussion. Some enthusiasts argue that VAT is a good instrument because it does not harm work incentives. Some opponents argue that VAT is a bad instrument because the burden falls more heavily on poor households than rich ones.⁶ Neither proposition is in fact true, as we now discuss.

Myth 1: VAT does not distort work decisions

Contrary to first appearances, VAT has the same economic impact as a suitably structured income tax. To see this, consider two very simple tax systems: one with a uniform rate of income tax of 20% and the other with a uniform VAT of 25%. For simplicity's sake, assume that there is no borrowing or saving. An individual earning £10,000 would pay £2,000 in income tax under the income tax system, whilst his £10,000 expenditure would include £2,000 of VAT under the other system. In this instance, the uniform VAT and income tax are exactly equivalent – both allow the consumption of £8,000 of actual goods and services – and would therefore be expected to have the same behavioural impact.⁷

However, it is frequently suggested that a revenue-neutral shift from income tax to VAT (such as in the 1979 Budget) would reduce tax-induced disincentives to work.⁸ But in deciding how much to work (or whether to work at all), individuals care about the actual goods and services they can purchase from their wages, and therefore a uniform VAT and income tax would have the same effect. A shift from income taxation to VAT does not in itself reduce the distortions to labour supply caused by the tax-induced reduction in the real (net) wage. In practice, where neither income tax nor VAT is fully uniform, the shift to VAT may raise the amount of tax paid by one group (e.g. those with low incomes or in receipt of non-taxable benefits) and reduce the burden on others (e.g. those with higher incomes) and this may affect work incentives. But these effects are caused by the redistribution of the tax burden and have little to do with the choice of VAT or income tax per se. A similar incentive effect could be engendered by making the income tax system less redistributive, for instance. The upshot: indirect taxes such as VAT do distort labour supply decisions.

⁶ For a recent example of use of both misconceptions, see BBC Political Editor Nick Robinson's blog at http://www.bbc.co.uk/blogs/nickrobinson/2008/11/further_vat_rise_was_considered.html.

⁷ See the editorial section of the *Mirrlees Review: Reforming the Tax System for the 21st Century*, Oxford University Press, forthcoming, for details about how this result is modified when individuals can borrow and save and when savings income may include 'rents' (e.g. accruing from monopoly power) in addition to the normal return on riskless capital.

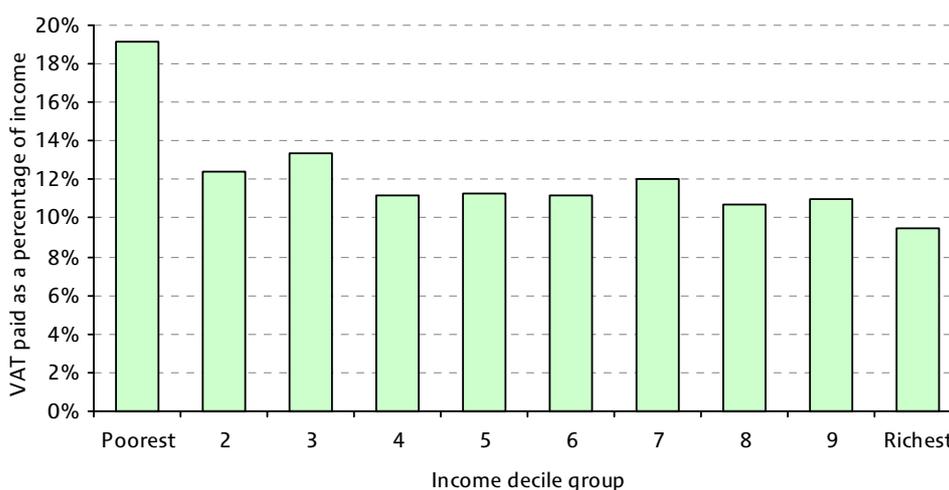
⁸ See 1979 Budget Speech, available at <http://www.margaretthatcher.org/archive/displaydocument.asp?docid=109497>.

It is important to realise, however, that whilst taxes on expenditure (such as the VAT) and those on labour income (for instance, NI) cause similar distortions to the trade-off between consumption and leisure at any given time, changes in these taxes have quite different effects. As Section 10.3 will explain in more detail, temporary changes in VAT change the relative price of consumption today compared with tomorrow and this will affect people's decisions about when to consume. However, if people are able to borrow and save, it should not affect when they choose to work. Similarly, changes in NI would affect when they work but not when they consume.

Myth 2: VAT is a regressive form of taxation

Another commonly-cited 'fact' is that VAT is a regressive form of taxation: poorer households pay proportionally more in VAT than do richer households. Figure 10.1 shows the average amount of VAT paid as a percentage of average household current net income by current income decile. It shows that the percentage of net income paid as VAT varies relatively little across most of the income distribution, with the biggest exception being that the bottom decile group does pay a higher fraction of its net income on VAT than do other income groups.

Figure 10.1. VAT paid as a percentage of net household income



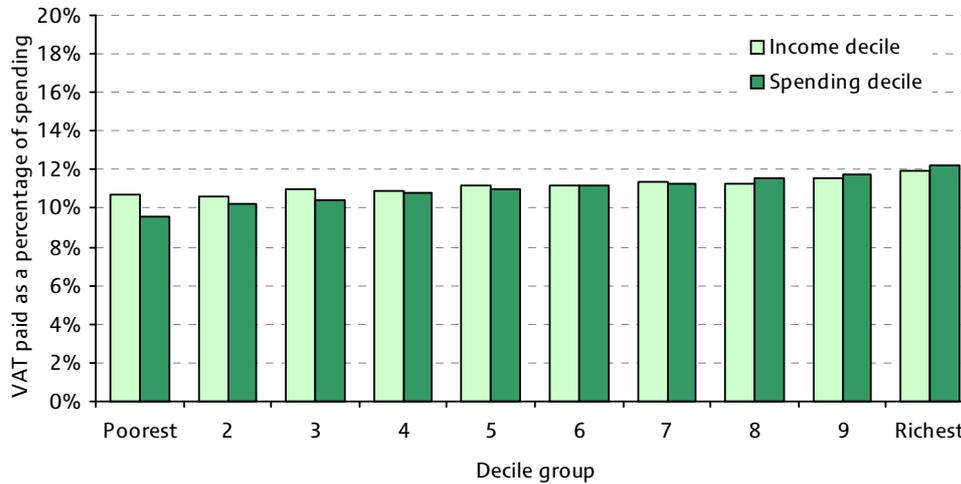
Notes: Income deciles based on equivalised household net income using McClements equivalence scales. Net income is defined as private income minus income tax, NI and council tax plus benefits and tax credits. The Family Expenditure Survey significantly under-records expenditure on VATable goods and hence all VAT amounts have been increased by a factor of 1.410 so that estimated VAT revenue matches government revenue estimates. Incomes data are from the Family Resources Survey 2006–07.

Sources: Family Expenditure Survey 2005–06; Family Resources Survey 2006–07; HM Treasury, *Pre-Budget Report 2008*, November 2008 (http://www.hm-treasury.gov.uk/prebud_pbr08_repindex.htm); and authors' calculations.

However, looking at a snapshot of the patterns of spending, VAT paid and income in the population at any given moment is misleading, because incomes are volatile and spending can be smoothed through borrowing and saving. Consider a student or a retiree: their current income is likely to be quite low but their lifetime earnings could be relatively high. The student may borrow to fund spending, whilst the retiree may be running down savings. Similarly, many people in the lowest income decile will be temporarily not in paid work and able to maintain relatively high spending in the short period they are out of the labour market. Because their spending is higher than their current income, these

people will be paying a high fraction of their current income in VAT. Similarly, those with high current incomes tend to have high saving, and so appear to escape the tax, but they will face it when they come to spend the accumulated savings. Because of this ‘consumption smoothing’, expenditure is probably a better measure of living standards (and households’ perceptions of the level of spending they can sustain).

Figure 10.2. VAT paid as a percentage of household expenditure



Notes: Income deciles based on equivalised household net income using McClements equivalence scales. Net income is defined as private income minus income tax, NI and council tax plus benefits and tax credits and is derived from the Family Resources Survey 2006–07. Expenditure deciles based on equivalised household non-housing expenditure using McClements equivalence scales. The Family Expenditure Survey significantly under-records expenditure on all goods and hence expenditure has been increased by a factor of 1.37 so that it matches National Accounts data. Expenditure on VATable goods is particularly underestimated and hence all VAT amounts have been increased by a factor of 1.410 so that estimated VAT revenue matches government revenue estimates.

Sources: Family Expenditure Survey 2005–06; Family Resources Survey 2006–07; HM Treasury, *Pre-Budget Report 2008*, November 2008 (http://www.hm-treasury.gov.uk/prebud_pbr08_repindex.htm); National Accounts; and authors’ calculations.

Figure 10.2 shows average amount of VAT paid as a percentage of average household expenditure – the light green by current income decile (as in Figure 10.1) and the dark green by current expenditure decile. It shows that, particularly when considering deciles based on household expenditure, poorer households pay a smaller proportion of their spending in VAT than do richer households. This makes sense: those goods that are zero- and reduced-rated, such as food and domestic fuel and power, are a higher proportion of the spending of poorer households than of rich households. Indeed, reduced- and zero-rating is often justified in terms of redistribution, although, as will be shown in Section 10.5, this is not particularly well targeted at helping poorer households.

In the following sections, whilst it would be preferable to use expenditure deciles (as we believe these more accurately capture living standards), data limitations force us to use income deciles. Nevertheless, we can still express gains and losses as a proportion of expenditure. For the reasons explained above, it is sensible to express gains and losses from VAT as a proportion of expenditure, and doing this the current VAT system is seen to be mildly progressive.

10.3 Cutting VAT as a stimulus measure

In the 2008 PBR, the government announced that it would cut the standard rate of VAT from 17.5% to 15% with effect from 1 December 2008 to 31 December 2009. The aim was to stimulate consumer demand and to reduce the depth and duration of the recession.

In some quarters, this has been dismissed as a gesture that weakens the public finances but will do little to boost the macroeconomy. Professor Olivier Blanchard, the International Monetary Fund's chief economist, has been quoted as saying: 'Temporarily cutting VAT, a measure that was adopted in Great Britain, does not seem to me to be a good idea – 2% less is not perceived by consumers as a real incentive to spend'.⁹ Leaders of the main UK opposition parties have also criticised the policy, with Nick Clegg saying: 'We would not waste £12.5bn on the VAT cut which the Prime Minister has delivered, which we don't think makes much difference',¹⁰ while David Cameron is already using the past tense to speak about the failure of the policy: 'The VAT cut has been an unbelievable and expensive failure. This government, that lectured us about prudence, has spent £12.5bn of our money, and wasted it.'¹¹

However, in a separate paper with Hamish Low, Crossley and Wakefield have argued that this policy change is likely to be a reasonably effective economic stimulant.¹² In this section, we summarise why we believe this to be the case and briefly discuss whether VAT might be a useful tool for further stimulus, should events over the coming year indicate that further stimulus is required. Chapter 3 discusses the impact of the stimulus package on the public finances.

Assessments of the effects of the VAT cut often start from the government's estimated costing of £12.4 billion and discuss the effects of pumping this amount of current resources into the economy via consumers' pockets. But just as important as this income effect is the fact that the temporary nature of the VAT cut lowers the price of purchases today relative to next year. This will lead to increased purchases today through a substitution effect, as people want to increase their purchases when prices are relatively low.

In order to assess how the change in VAT will affect total (real) consumer purchases, it is important to know how large an effect on prices it will have and how consumers are likely to respond.

⁹ Blanchard's quotes came from an interview with French newspaper *Le Monde* and were reported at <http://news.bbc.co.uk/1/hi/business/7797478.stm>.

¹⁰ Mr Clegg was speaking on BBC Radio 4's Today programme; see http://news.bbc.co.uk/1/hi/uk_politics/7809330.stm.

¹¹ Mr Cameron was speaking on BBC Radio 2's Jeremy Vine programme, on 2 January; see http://news.bbc.co.uk/1/hi/uk_politics/7808634.stm.

¹² T.F. Crossley, H. Low and M. Wakefield, 'The economics of a temporary VAT cut', IFS Working Paper WP09/02, January 2009 (<http://www.ifs.org.uk/wps/wp0902.pdf>).

The impact on prices

We cannot be sure to what extent retailers will pass on the VAT cut to their customers.¹³ Changing prices (for whatever reason) is potentially costly. If so, the VAT cut may get incorporated into prices over time as retailers can adjust for it when they would have next revised prices anyway. But technological innovations have substantially lowered the cost of making price changes and, in the current environment, retailers are strongly motivated to maintain sales. Both of these encourage rapid pass-through of the VAT cut to prices. Thus the assumption of full pass-through – that prices will fall by exactly the amount of the VAT cut – does not seem unreasonable as a first approximation. But, even if we do make this assumption, it is not true that the enacted change in VAT will lead to a 2.5% cut in prices. There are two reasons why not:

- Even for goods that face the full rate of VAT, full pass-through would not reduce prices by 2.5%. The VAT rate is expressed as a proportion of the price before tax. Thus, a good that retails for 117.5p before the reform has 17.5p of VAT included in its price. After the reform, assuming full pass-through, this good will retail for 115p and so the proportional fall in price is approximately 2.1%.
- As we noted earlier, many goods do not face the full rate of VAT, and this is the only rate that has been adjusted. Around 55% of consumer expenditure is on goods taxed at this rate. If the price of 55% of consumer spending falls by 2.1% and the price of the remainder is unchanged, the average fall in prices would be 1.2%.

In fact, this last calculation is still a simplification. Goods that are VAT-exempt are still subject to the full rate of VAT on intermediate stages of the production process, and so full pass-through would lead to some fall in the prices of these goods and services. However, our calculations suggest that the impact of this is small (probably further reducing overall prices by no more than 0.1%). To introduce some caution into our estimate of the effect of the tax change on average prices, we take the 1.2% price cut excluding this effect as our baseline assumption. It is worth noting that this is comparable to the change in the price of current consumption that would result from a (slightly larger than) 1 percentage point cut in interest rates. At least in normal times, such a cut would be considered substantial.¹⁴

How will consumers respond?

It is helpful to think of the responses to the policy by distinguishing between two different types of consumer: forward-looking consumers who do not face binding credit constraints (in other words, consumers who are able to increase spending today by borrowing or running down savings); and consumers who are either not forward looking or who are credit constrained, and so consume all of the resources currently available to them.

¹³ The ONS first release of December 2008 inflation figures suggests that inflation fell by 1 percentage point and that the VAT cut made the largest contribution to this change. See <http://www.statistics.gov.uk/pdfdir/cpinr0109.pdf>.

¹⁴ Further explanation of this comparison can be found in T.F. Crossley, H. Low and M. Wakefield, 'The economics of a temporary VAT cut', IFS Working Paper WP09/02, January 2009 (<http://www.ifs.org.uk/wps/wp0902.pdf>).

Forward-looking consumers

For forward-looking consumers who are not subject to binding credit constraints, the substitution effect of the change in relative prices between today and next year is the key determinant of how they will respond. The fact that these consumers are in effect enjoying a one-off boost to their real income for 13 months is less relevant, because it makes only a tiny difference to the resources they will expect to have available to spend over their entire lifetime. Furthermore, if consumers believe that the tax cut will be recovered through higher future taxes, the income effect on total lifetime resources may actually be zero.¹⁵

To assess how large the effect on current purchases of a 1.2% fall in consumer prices this year will be, we can draw on a large empirical literature measuring the extent of the substitutability of consumption across periods when relative prices change.¹⁶ A recent survey of this literature¹⁷ concluded that a good central estimate would be that a 1% cut in the price of consumption this year relative to next would lead to around a 0.75% increase in the level of purchases this year relative to next, with the range of plausible estimates lying between 0.5% and 1%. There are at least two reasons to think that the relevant estimate to judge the impact of this particular policy change will lie towards the top end of this range. Both have to do with the fact that the VAT cut will fall on a particular set of goods, not on the full range of non-durable items that are usually the subject for empirical studies.

- The first point to note is that goods to which zero and reduced VAT rates apply are (mostly) necessities. As Browning and Crossley point out, 'luxuries are easier to postpone'.¹⁸ The basic intuition is that necessities today are often not a good substitute for necessities tomorrow. For example, eating next month is not really a good substitute for eating this month; it is important to eat in both months. On the other hand, luxuries can probably be brought forward, or pushed back, in time, to take advantage of interest rates or changes in the VAT rate.
- The second issue is that, by cutting only the standard rate, the VAT cut is focused more than it otherwise would be on 'durable goods' (such as fridges and TVs) that are long-lasting and yield a flow of services over time. We expect durables purchases to be highly substitutable across time for two reasons. First, many durables are also luxuries. Second, the durability of durables – or more precisely, their storability – breaks the link between expenditure and consumption. To a certain extent, the timing of expenditures on durables can be adjusted without altering the timing of consumption of service flows (one can still use an old car or fridge, as long as it has not failed). This in turn means that expenditure on durable goods should be highly responsive to expected changes in price over time.

To summarise, the basket of goods affected by the temporary VAT reduction is one that we expect to include many items for which expenditures can relatively readily be

¹⁵ This hypothesis – that individuals might not perceive a wealth increase when government policy increases current resources – is known as 'Ricardian equivalence' after the 19th century British economist David Ricardo.

¹⁶ This parameter is called the elasticity of intertemporal substitution (EIS).

¹⁷ O. Attanasio and M. Wakefield, *The Effects on Consumption and Saving of Taxing Asset Returns*, prepared for the Report of a Commission on Reforming the Tax System for the 21st Century chaired by Sir James Mirrlees, Institute for Fiscal Studies, 2008 (<http://www.ifs.org.uk/mirrleesreview/reports/consumption.pdf>).

¹⁸ M. Browning and T.F. Crossley, 'Luxuries are easier to postpone: a proof', *Journal of Political Economy*, 108(5):1064–8, October 2000.

transferred across time periods. Thus, it seems reasonable to argue that the substitution effect of a 1.2% fall in current prices due to this VAT cut would be an increase in the current purchases of a similar magnitude. As such, for forward-looking consumers, a response of purchases of at least 1% seems a reasonable lower bound, and a 1.2% increase in purchases this year is our preferred estimate. Note that since the price of consumption is reduced by 1.2%, a 1.2% increase in the amount purchased implies that total (nominal) spending is unchanged: consumers will be buying 1.2% more goods and services 1.2% more cheaply.

Credit-constrained consumers

For those currently experiencing binding credit constraints (or those who are not forward looking), the temporary VAT cut has only an income effect: these individuals spend all their available resources so cannot change their spending to take advantage of price changes, but a price cut does mean that their resources buy more goods and services. Fortunately, this income effect is easy to assess. As these consumers would like to consume more in the current period, they will increase consumption to offset completely the fall in prices, continuing to spend as much as they can. Thus a 1.2% fall in current prices induces a 1.2% increase in purchases.

In normal times, we would expect only a small fraction of UK consumers to be so credit constrained. However, in the current economic environment, the number of credit-constrained consumers may be significantly greater. Conveniently, however, in this circumstance, the expected response of constrained and unconstrained consumers is of a similar magnitude, making the incidence of credit constraints largely immaterial for the overall effect on household spending.

Summary: why the temporary VAT cut should stimulate demand

We expect the temporary VAT cut to increase purchases in 2009 (or, strictly, in the 13 months December 2008 to December 2009) by around 1.2%. It is important to emphasise that this prediction is relative to the counterfactual of no policy change. An increase of 1.2% against a trend of falling purchases (recession) may translate into a reduced fall, rather than an actual rise, but we believe consumers' purchases should be around 1.2% higher than in the absence of the policy.

There are, though, two important evidence gaps in this analysis of this policy. The first is the extent to which the tax cut will feed through to prices. The second is the degree to which spending on durables will respond to a change in their price this year versus next year.

Bearing these points in mind, the likely impact of the VAT cut is as follows:

- With full, or near full, pass-through, average consumer prices would be 1.2% lower.
- For forward-looking and unconstrained consumers, we would expect the income effect of a temporary cut in VAT to be small and the substitution effect to be relatively large. We believe that for these households, a response to the 1.2% price fall of an increase in purchases of around 1.2% seems reasonable. This would leave the cash value of consumer spending broadly unchanged.
- The effect on (real) demand for domestically-produced goods and services is, of course, less than 1.2%, because some of the additional purchases will be imports.

However, this will be true of all policies that stimulate household spending, both monetary and fiscal.¹⁹

- For constrained households, the mechanism is quite different, but the outcome is the same. This suggests that the overall response does not depend significantly on the incidence of credit constraints in the economy and we should expect the amount of goods and services that consumers purchase to rise by 1.2%.
- Given that prices are falling by a similar amount to the increase in purchases, we should expect little change in nominal expenditures. This in turn means no increase in saving (in contrast to what the Treasury suggests²⁰).
- Since we are predicting a slightly larger increase in consumer demand than the Treasury assumes, we also project that the cost of the policy in 2008–09 is slightly smaller than the Treasury suggested. However, the effect on VAT revenues from the change in the volume of purchases is small relative to the effect from all spending on goods facing the standard rate of VAT facing a tax rate of 15% rather than 17.5%. Thus our analysis suggests that the revenue cost of the policy in 2008–09 will be around £12 billion, which is only slightly different from the Treasury's costing of £12.4 billion.²¹

In terms of the relative price of consumption today, the temporary VAT cut has about the same effect as a (slightly more than) 1 percentage point (or 100 basis point) cut in interest rates. If the effectiveness of monetary policy was expected to be dampened by the reluctance of banks to lend, then a temporary VAT cut was a reasonable way to try to make current purchases more attractive. Moreover, note that in terms of income effects, an interest rate cut hurts savers and helps borrowers. In contrast, to the extent that the VAT cut has income effects, those income effects are independent of the household's balance sheet. Thus the temporary VAT cut could be viewed as a 'pro-saver' stimulus (at least relative to interest rate cuts) and hence not inconsistent with calls from opposition parties for more saver-friendly policies.

Prospects for further stimulus

Suppose that the government comes to believe that additional fiscal stimulus is required beyond the end of 2009. Would further changes to VAT be an effective way to deliver that stimulus? While we believe that the temporary VAT cut enacted in December 2008 is likely to be a reasonably effective stimulus, it does not necessarily follow that additional manipulation of the VAT rate would also be an attractive option to deliver a further stimulus.²²

For unconstrained consumers, this kind of policy works by lowering the price of current purchases relative to purchases in the future. To stimulate extra purchases by these

¹⁹ It is true that different policies might induce incremental spending with different import intensities. However, we have little evidence to guide us on this point.

²⁰ See paragraph 2.25 of HM Treasury, *Pre-Budget Report 2008*, November 2008 (http://www.hm-treasury.gov.uk/prebud_pbr08_repindex.htm).

²¹ For a fuller explanation, see T.F. Crossley, H. Low and M. Wakefield, 'The economics of a temporary VAT cut', IFS Working Paper WP09/02, January 2009 (<http://www.ifs.org.uk/wps/wp0902.pdf>).

²² While we consider possibilities for a longer period of stimulus through VAT, we do not consider the possibility of making the stimulus stronger by reducing the main VAT rate below 15%: there are practical difficulties with such an approach, given European legislation.

consumers in 2010, the government would need to lower the prices in 2010 relative to those in 2011 and beyond. This could be done in one of two ways:

- First, the government could announce an extension of the temporary VAT cut through 2010: this would imply a price increase of 1.2% at the end of 2010 (rather than 2009 under current plans). The potential problem with this option is that for unconstrained households, the effectiveness of the policy rests on the belief that VAT, and hence prices, will rise in the future. With each extension of the temporary reduction, this claim will seem less credible, and once households come to perceive the 15% rate to be permanent, the effect of the policy due to the change in relative prices is negated.²³
- Second, the government could allow VAT to return to 17.5% as scheduled, but pre-announce a further rise (perhaps to 18.5%) at the end of 2010. Forward-looking consumers would then perceive purchases in 2010 to be less expensive than purchases in 2011 and beyond. It is difficult to quantify the additional stimulus this would achieve, but it is likely to be smaller than an appropriately-scaled version of our assessment of the response to the current temporary cut. There are two reasons for this:
 - First, as current prices are not falling (but rather future prices rising), credit-constrained households cannot increase current purchases. They will have no substitution response. We cannot say with any confidence how many households are currently credit constrained, but these are unusual times and it may be a significant fraction.
 - Second, the substitution response of forward-looking (and unconstrained) households may be offset by an income effect. The income effect associated with this VAT increase is not only in the opposite direction to the income effect associated with the temporary VAT cut, but is also potentially much larger if the VAT increase is to be permanent.

It has been widely reported that prior to the November 2008 PBR, the government considered the possibility of a future rise in VAT such as that discussed in the previous bullet point, but ultimately rejected it²⁴ (announcing a future increase in NI contributions instead²⁵). Nonetheless, given current concerns about the public finances (see Chapter 6), and given that there seems to be some willingness to consider reforms to VAT, it is worthwhile considering possible approaches to raising revenue through VAT. Section 10.4 therefore considers the economic and distributional consequences of raising the main rate of VAT, while Section 10.5 considers the reasons why it may be more

²³ Of course, the purchases of those whose expenditure is equal to current income will still be boosted by the policy, but nonetheless an important part of the mechanism to increase consumer purchases has been shut off once households come to believe that the cut is permanent. A perception of permanence might though encourage purchases through an income effect when the tax is assumed to be permanently lower. However, given current concerns about the public finances, it is plausible to argue that such a permanent change in VAT could only be expected if the income effect were anticipated to be offset through tax revenues being recouped from elsewhere.

²⁴ See BBC News Online, 'Treasury eyed VAT rise to 18.5%', 25 November 2008 (<http://news.bbc.co.uk/1/hi/business/7749074.stm>) and 'VAT rise to 18.5% scrapped at last minute', *Financial Times*, 26 November 2008, as well as page 6 of House of Commons Library Paper 701 (<http://www.parliament.uk/commons/lib/research/briefings/snbt-00701.pdf>).

²⁵ This policy might itself have effects that stimulate economic activity. The pre-announced increase in NI is an anticipated wage fall, which makes current leisure expensive relative to future leisure. This should stimulate labour supply. However, given current concerns about job losses in the economy, it is not clear that this would be an effective stimulus at the present time.

economically attractive instead to broaden the range of consumer spending to which the full rate of VAT is applied.

10.4 Raising revenue by increasing the VAT rate

In the November 2008 PBR, Chancellor Alistair Darling pre-announced a revenue-raising set of changes to NI to take effect in 2011–12. This raises the primary threshold to the same level as the income tax personal allowance and at the same time increases all rates of NI by 0.5 percentage points. Overall, the government estimates these measures will raise £3.8 billion in 2011–12. As mentioned earlier, an alternative (or possibly additional) revenue-raising measure considered (but rejected) was an increase in the rate of VAT from 17.5% to 18.5%.

Chapter 6 argues that the government may need to find additional revenues in the future to bring the public finances back on track. Here we compare the distributional and economic impact of an increase in VAT (raising approximately £5 billion in 2011–12) with two different increases in NI raising the same amount according to the Treasury's 'Ready Reckoner':^{26,27} (1) an increase in the employers' and employees' rates of 0.5% each, both above and below the upper earnings limit (UEL); and (2) an increase in the additional rate of NI paid above the UEL from 1.5% to 6%. All three policies are in addition to the reforms of NI already announced in last November's PBR.

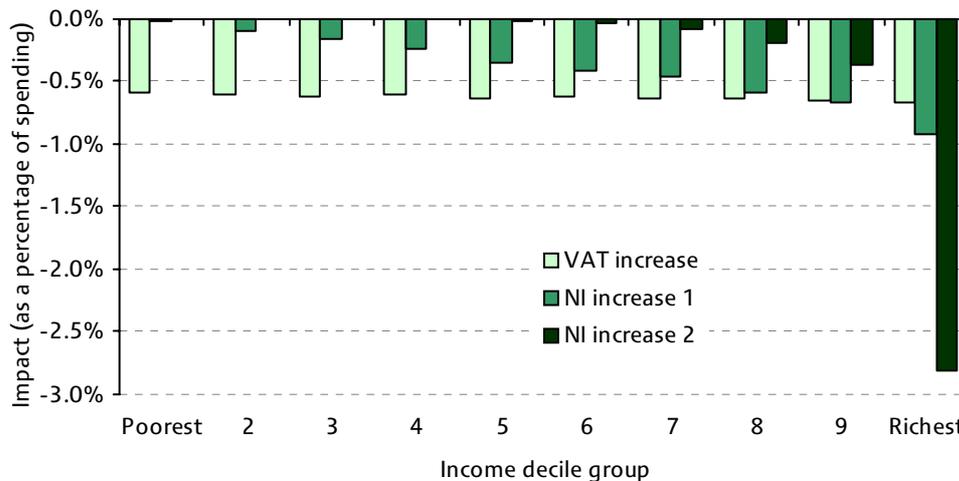
Whilst all three policies would be expected to be progressive to some extent, the increase in the rate of VAT would be least progressive as it applies to all expenditure on standard-rate goods, whilst the increase in the additional rate of National Insurance above the UEL would be expected to be most progressive as it only affects relatively high-earning individuals. Figure 10.3 confirms that this is the case.

As a proportion of non-housing expenditure, Figure 10.3 shows a very progressive pattern for both NI reforms. For the 0.5 percentage point across-the-board increase (NI increase 1), average losses increase as one moves up the income distribution from close to 0% for the poorest decile to 0.9% for the richest. When the increase in NI applies only to the additional rate paid above the UEL (NI increase 2), losses are negligible for the bottom six deciles and reach over 2.8% of expenditure for the top decile. For the increase in the standard rate of VAT, losses as a proportion of non-housing expenditure are slightly progressive, but not nearly as progressive as they are under either of the NI reforms. Those non-working or low-income households escaping the rise in NI are hit by the increase in VAT because, while their earnings are zero or very low, they are still spending on standard-rate goods.

²⁶ HM Treasury, *Tax Ready Reckoner and Tax Reliefs*, November 2008 (http://www.hm-treasury.gov.uk/d/pbr08_taxreadyreckoner_287.pdf).

²⁷ It should be noted that our estimate of the revenue raised by the across-the-board 0.5% increase in NI is somewhat lower than the Treasury's and this is reflected in Figure 10.3, though it does not affect the qualitative pattern of distributional results. This difference in costing is due to the fact that in the same way we allocate a rise in employees' NI to workers, we also allocate the increase in employers' NI to workers by reducing wages to keep employment costs fixed. These lower wages reduce the amount of income tax payable, and increase entitlement to benefits and tax credits, offsetting some of the increases in NI. It appears that Treasury estimates of the revenue raised from changes to employers' NI make different assumptions about 'second-round' effects or ignore them. See Box 11.3 for more details.

Figure 10.3. Comparing losses from NI reforms and potential VAT increase (percentage of household expenditure)



Notes: Income deciles based on equivalised household net income using McClements equivalence scales. Net income is defined as private income minus income tax, National Insurance and council tax plus benefits and tax credits and is derived from the Family Resources Survey 2006–07. The Family Expenditure Survey significantly under-records expenditure on all goods and hence expenditure has been increased by a factor of 1.37 so that it matches National Accounts data. Expenditure on VATable goods is particularly underestimated and hence all VAT amounts have been increased by a factor of 1.410 so that estimated VAT revenue matches government revenue estimates. All direct tax and benefit changes are modelled using the Family Resources Survey, whilst all indirect tax changes are modelled using the Family Expenditure Survey.

Sources: Family Expenditure Survey 2005–06; Family Resources Survey 2006–07; National Accounts; HM Treasury, *Pre-Budget Report 2008*, November 2008 (http://www.hm-treasury.gov.uk/prebud_pbr08_repindex.htm); and authors' calculations.

Relying on large increases in the rate of National Insurance payable above the UEL therefore imposes significant costs on the top decile that may be deemed politically unpalatable.²⁸ Hence, if the government is concerned about minimising the impact of tax increases on poorer households, but not hitting richer ones too hard, it would seem that further across-the-board increases in National Insurance look attractive.

However, it would be possible to increase VAT by more than 1 percentage point and use the additional revenue raised to compensate poorer households through a mixture of increased benefits and higher tax allowances whilst still raising £5 billion. Pre-announcing a future increase in VAT could also reinforce the boost to expenditure in 2009 that the temporary cut in VAT should cause; if we are right that the substitution effect is of key importance, a future rise in VAT will make expenditure in 2009 look even more attractive.²⁹ In addition, by reducing consumer prices in 2010 relative to 2011 and beyond, it should reduce the negative impact of the expiration of the temporary VAT cut in 2010 when the economy may still be relatively weak.

²⁸ Note that, while the PBR 2008 announcement that the rate of income tax on earnings above £150,000 would rise to 45% from April 2011 was largely uncontroversial, that reform will affect only the top 1% of earners. This NI reform applies to the highest 10% of earners.

²⁹ We pointed out at the end of Section 10.3 that it is difficult to quantify the additional stimulus this would achieve, but it is likely to be small.

10.5 Raising revenue by broadening the VAT base

As detailed in Section 10.2, a significant fraction of expenditure in the UK (about 45%) is subject to a reduced or zero rate of VAT or is on goods that are exempt. This means that instead of increasing the standard rate of VAT, one could raise revenue by reducing the number of goods subject to zero or reduced rates of VAT, or indeed abolish these lower rates altogether.³⁰ However, whilst exemptions cannot be easily justified due to their impact on production decisions,³¹ there are several plausible reasons why one may in principle wish to apply a reduced or zero rate of VAT (or indeed subsidy) for certain goods and services.³² For instance:

- Taxing earnings discourages people from undertaking paid work, but differential taxation of goods can offset this distortion. This argument suggests that those goods that are complements for working (such as childcare, household appliances and prepared food) should be taxed at a lower rate than those that are complements for leisure (such as gardening tools, golf clubs and food to prepare at home). This would make paid work more attractive relative to leisure. Whether it is worthwhile using differential taxation depends upon whether the efficiency gains from doing so outweigh the administrative and compliance costs. The current system of VAT in the UK taxes certain things that could be seen as a complement to labour (e.g. meals out and hot takeaway food) whilst zero-rating certain things that are potentially more complementary to leisure (e.g. home-prepared food) – the opposite of what is suggested by theory.
- It can be argued that the characteristics of certain goods mean they should be taxed at a higher or lower rate than other goods. Consumption of certain goods has wider costs or gains to society – for instance, alcohol, petrol and fatty foods impose costs on others in terms of crime, pollution and healthcare costs, and arguably they should therefore be taxed more heavily so that people purchasing them are made to take into account these costs for wider society. Other goods (e.g. healthy foods, preventative healthcare and informational material) may involve gains to others and therefore should be taxed less. Alternatively, it could be argued that some goods have particular merit in consumption – books, children’s clothing and healthy foods, for instance – that is not fully appreciated by consumers when they make their purchases.

Policymakers, however, sometimes emphasise a third argument, which has rather less justification: redistribution. Zero- and reduced-rating for goods such as food, children’s clothing, and domestic fuel and power are often justified on the grounds that poorer

³⁰ While the remainder of this section will focus on the distributional effects of broadening the VAT base, it is worth noting that a pre-announced broadening of the base would result in some current stimulus via a substitution effect because it would make some types of consumption more expensive in the future. Quantitative assessment of the resulting stimulus is difficult, but it is likely to be small. First, some of the points mentioned at the end of Section 10.3 regarding the stimulus effect of an increase in the VAT rate apply: we should expect no response from credit-constrained households, and the responses of forward-looking households may be dampened by an income effect (as the broadening would presumably be permanent). In addition, the broadening would raise the future price of goods that are largely necessities. As explained in Section 10.3, necessities have a small intertemporal substitution elasticity.

³¹ One potential argument is practical difficulties in defining the value added and the sale price (e.g. financial services) or in collecting the tax (e.g. from very small firms where costs of collection and compliance may exceed revenues).

³² For more details, see *Mirrlees Review: Reforming the Tax System for the 21st Century*, Oxford University Press, forthcoming.

households spend proportionally more on these goods than do richer households. However, for two related reasons, this is not a particularly convincing rationale:

- Whilst poorer households spend more on such goods as a proportion of their total income or expenditure, in absolute terms richer households spend considerably more on food, children's clothing, and domestic fuel and power. Therefore, in proportional terms, poorer households gain more from VAT concessions, but in cash terms, most of the benefit of these tax breaks goes to richer households. Hence, even universal flat-rate benefits (such as child benefit) are better able to redistribute to poorer households than VAT zero-rating.
- In developed economies, such as the UK, one can go further and use targeted transfers to give poorer households more in cash terms. Means-tested benefits and tax credits are much better targeted at poorer households than VAT concessions, allowing much greater redistribution per pound spent. However, means-testing does involve efficiency costs of its own, which must be weighed against the gains of better targeting and less distortion to consumption.

Crawford, Keen and Smith³³ examine the distributional implications of applying the standard rate of VAT to all reduced- and zero-rated goods and services³⁴ and find that the impact is highly regressive, with the losses (as a proportion of income) almost five times higher for the lowest income decile group than for the highest. On the other hand, losses were highest on a cash basis for the richest households. However, when combined with a 15% increase in income-related benefits, the lowest three deciles *gain* on average, with losses highest as a proportion of income in deciles 7 to 9. Furthermore, the overall reform raises a net £11 billion, which could be used to increase public spending, cut other taxes or reduce borrowing.

Using Crawford, Keen and Smith's paper as inspiration, we consider two potential reforms that broaden the VAT base and compensate lower-income losers, whilst still raising revenue. As a first step, we repeat their exercise and impose the standard rate of VAT on all reduced- and zero-rated goods.³⁵ This raises approximately £24.4 billion in 2009–10 prices. Then we compare two different compensation packages costing about £14.4 billion each, so that the net revenue raised is equal to £10 billion (roughly equivalent to 2% on the standard rate of VAT):

- Option 1 is a scaled-up version of Crawford, Keen and Smith (2008): an increase in rates of income support, housing benefit and tax credits of 16.5%.
- Option 2 compensates using a smaller increase in these benefits but with more general compensation for households with disabled, pensioner and child members. In particular, it focuses on using the additional revenue raised to make progress towards the government's child poverty target.

It should be noted that these compensation packages are illustrative only – the government might have different distributional priorities or different revenue needs.

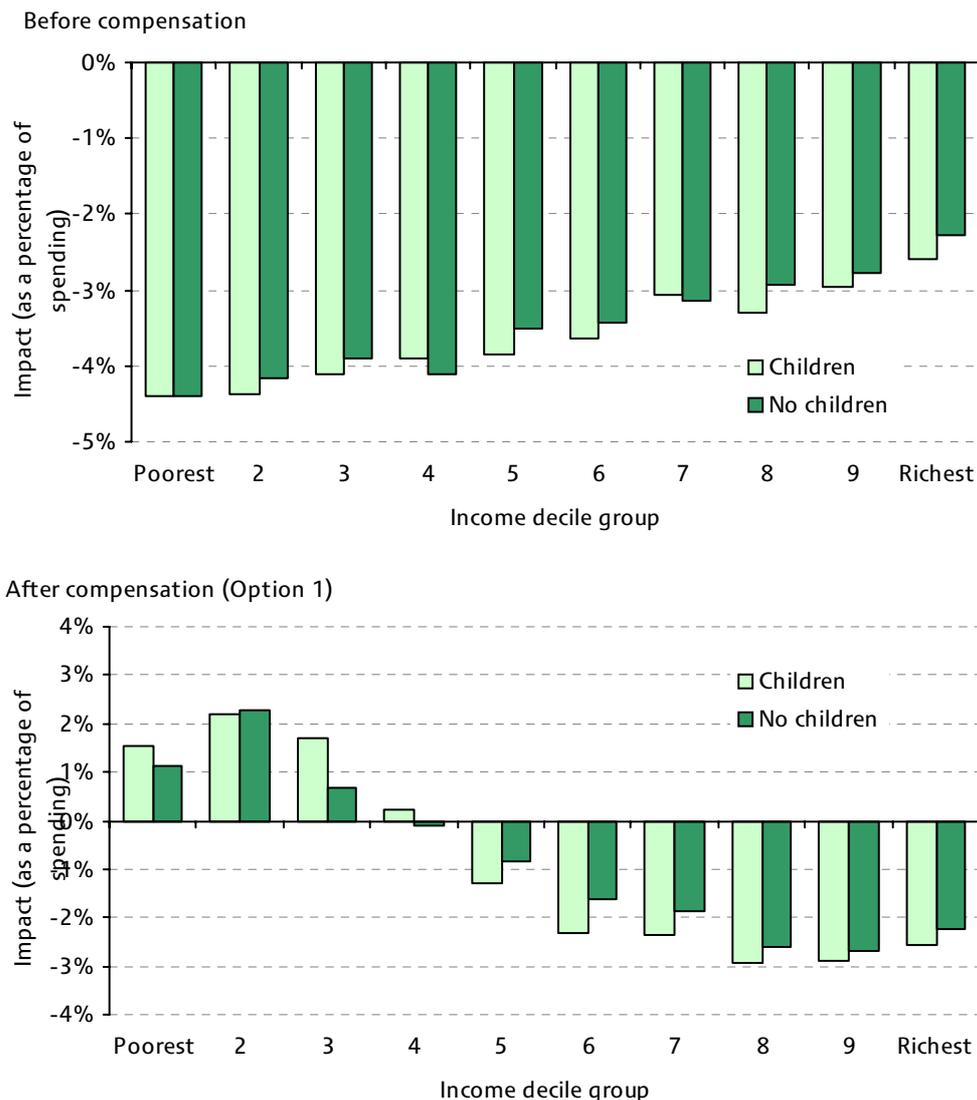
³³ I. Crawford, M. Keen and S. Smith, *Value Added Tax and Excises*, prepared for the Report of a Commission on Reforming the Tax System for the 21st Century chaired by Sir James Mirrlees, Institute for Fiscal Studies, 2008 (<http://www.ifs.org.uk/mirrleesreview/reports/indirect.pdf>).

³⁴ With the exception of new houses, the portion of international passenger transport that takes place in the UK, and ships and aircraft above a certain size. In addition, VAT is not imposed on goods currently classified as exempt (e.g. insurance and financial services). Insurance premium tax remains at 5%.

³⁵ Excluding the same categories that Crawford, Keen and Smith (2008) exclude.

Figure 10.4 shows the impact of the imposition of a uniform VAT rate of 17.5% by income decile, broken down by whether or not the household has children. The top panel shows the impact prior to compensation and the bottom panel shows the impact after low-income households are compensated using Option 1. Figure 10.5 repeats this analysis by household type, with the lighter columns indicating the impact of the VAT reform only and the darker columns including the compensation package.³⁶

Figure 10.4. Losses from applying a uniform rate of VAT of 17.5% (percentage of household expenditure): before compensation and after compensation (Option 1)

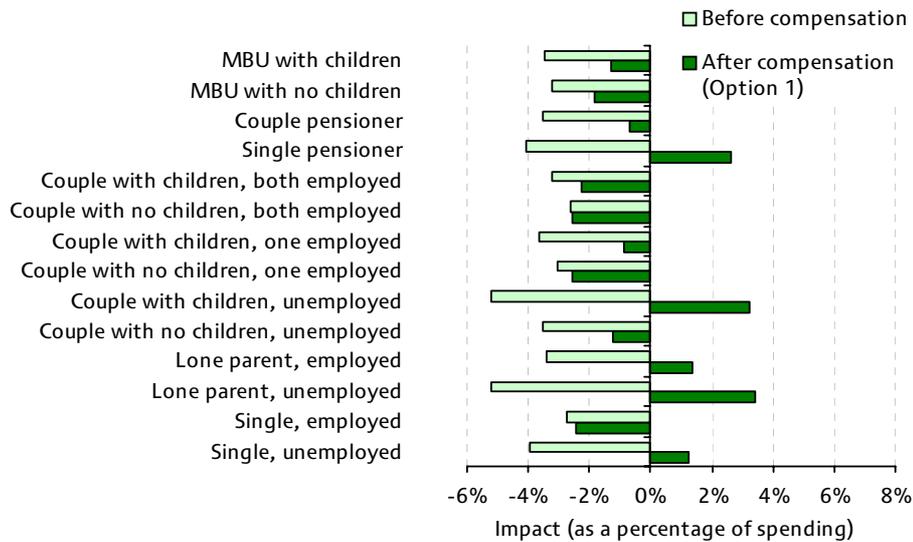


Notes: As Figure 10.3.

Sources: As Figure 10.3.

³⁶ Because our measure of spending is a 'snapshot', many households will not have purchased a particular item in the reference period that they do use and purchase at some point. For this reason, whilst we are able to present average gains and losses for large population groups (e.g. deciles or family types), we are unable to show the numbers of winners and losers because many people with recorded zero purchases in the reference week would purchase the relevant items over a longer period (e.g. a year), and would actually lose. Conversely, some people will have spent more than they usually do on certain goods during the reference period and their loss will be overestimated.

Figure 10.5. Losses from applying a uniform rate of VAT of 17.5% (percentage of household expenditure): before compensation and after compensation (Option 1)



Notes: MBU = household containing what the benefit system considers to be more than one family. Also see Notes to Figure 10.3.
Sources: As Figure 10.3.

Figure 10.4 shows that the imposition of a uniform VAT is, in itself, a regressive tax increase, with proportional losses greatest for poorer households; losses are about 4.4% of expenditure for the bottom decile versus about 2.4% for the top. Losses are particularly large for non-working households with children (see Figure 10.5), who spend a high proportion of their total expenditure on food, domestic heating and power, and children’s clothing.

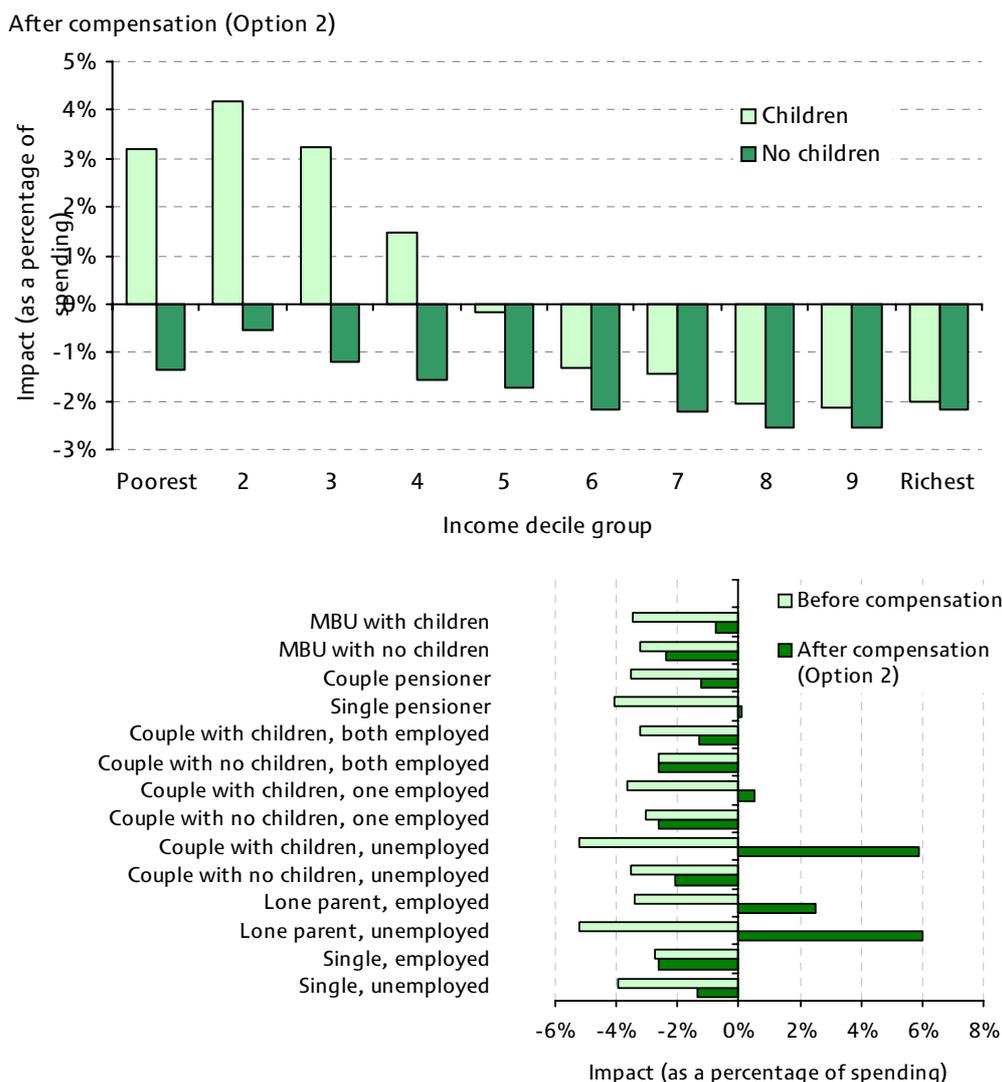
Under compensation Option 1, households in the lowest three deciles gain, on average, from the overall package, with proportional gains highest for those households without children in decile 2 – at close to 2.3% of expenditure (£6.71 per week). Households further up the income distribution lose on average, with households with children in decile 8 losing the most proportionally (2.9%) and those in decile 10 the most in cash terms (£41.34 per week). Overall, the distributional patterns look very similar for those households with children and for those without. Lone parents, unemployed couples with children, single unemployed individuals and single pensioners gain on average from the complete package, whilst other household types lose out (particularly employed households without children).

Compensation package Option 2 has a different focus and combines two main components. The first part is designed so that the government would make significant progress towards its 2010–11 target of halving child poverty. Work by IFS researchers has suggested that the government would need to increase spending on the child tax credit by £2.8 billion per year in order to have a 50:50 chance of meeting the target³⁷ (at the time of writing, this estimate is being updated). We illustrate an increase of this size,

³⁷ This assessment was made after Budget 2008, and reported in evidence to the Treasury Select Committee. See House of Commons Treasury Committee, *The 2008 Budget*, HC 430, London (<http://www.publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/430/430.pdf>), and look at Q67 of the oral evidence.

taking the form of an increase in the per-child element of £7.50 per week and the introduction of an additional £12.50 for the third and subsequent children. Note that while the increases in VAT would not impact *measured* child poverty (as measured child poverty is income- rather than expenditure-based), it seems sensible to take account of this tax rise when making policy to improve the living standards of poor children. For this reason, we additionally increase child benefit by £6.70 per week for the first child and by £4.25 for subsequent children.

Figure 10.6. Losses from applying a uniform rate of VAT of 17.5% (percentage of household expenditure): after compensation (Option 2)



Notes: MBU = household containing what the benefit system considers to be more than one family. Also see Notes to Figure 10.3.

Sources: As Figure 10.3.

The second component of the compensation package is an increase of 7.5% in housing benefit, income support and working tax credit rates and an increase of 5.0% in the state pension and employment and support allowance. Together, these are designed to minimise the negative impact of the tax increase on low-income households, pensioners and those with disabilities.

When compensation package Option 2 is introduced, average losses from applying the uniform VAT rate fall significantly for poorer and middle-income households, particularly those with children and pensioners (see Figure 10.6). Indeed, amongst families with children, those in deciles 1 to 4 gain on average from the overall package. Those households with children in the second decile are the biggest cash (£18.97 per week) and proportional (4.2%) gainers, whilst those in the top decile lose the most in cash terms (£32.18 per week) but not proportionally. In contrast, households without children lose, on average, right across the income distribution. Lone parents and non-working families without children are the largest gainers on average (6% of expenditure or £21 per week for the couples). On average, single pensioner households gain 20p per week whilst pensioner couples lose £6.25.

The important point to draw from these two illustrative reform options is not the specifics of who gains and who loses and by what amount. It is instead that because zero and reduced rates of VAT are an inefficient way of targeting help at poorer households, the abolition of these together with the introduction of a targeted package of benefits and tax credits can raise significant amounts of revenue whilst *benefiting* these households on average. Furthermore, doing this would reduce the distortions to consumption that the selective imposition of VAT currently entails.³⁸

10.6 Conclusions

VAT is a significant revenue raiser and recent changes to the VAT – while motivated by the need for macroeconomic stimulus – may indicate that reform of the system or its use as a revenue raiser is back on the agenda. The government could raise revenue by increasing rates or by reducing the scope of the zero and reduced rates, while also compensating the losses of particular groups. Of the two options, broadening the base of the VAT has greater economic rationale than raising the rate.

With respect to the use of VAT as a macroeconomic stimulant, we believe the recently-announced temporary cut in VAT to be a better policy than many commentators suggest. It is critical to bear in mind that the proper comparison is not between consumer spending now and last year but between spending now and what it would have been now in the absence of the tax cut.

³⁸ With exemptions and zero-rating still in place for new housing, they would not be totally eradicated, however.