

A retrospective evaluation of elements of the EU VAT system

Formal answers to evaluation questions

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Answers to the evaluation questions

- (1) To what extent do the current VAT arrangements for cross border supplies of goods and services maximise the potential of a genuine EU single market for businesses and customers (for both businesses and private individuals)?...

Broadly speaking, a destination-based VAT – one in which the VAT levied on goods and services depends on the country in which they are consumed – should not distort trade patterns within the single market, since goods are taxed at the same rate regardless of their origin. However, there are three reasons why the actual EU VAT regime is not neutral in this way:

1. There are exceptions to the application of the destination principle in the EU VAT regime. These are a particular problem for B2C trade in both goods and services, where (with certain exceptions such as for new motor vehicles) cross-border shopping, distance selling below the relevant distance selling threshold, and some B2C services are taxed in the supplier's location rather than (as the destination principle demands) in the customer's location. However, such B2C trade is a relatively small part of trade, so the magnitude of the problem is not necessarily that large; and in any case finding satisfactory ways to apply the destination principle to B2C sales would not be easy.
2. The costs to firms of complying with VAT obligations are higher when trading across borders than when trading domestically, creating a bias against cross-border trade. Our assessment is that this is likely to be a fairly significant problem, and that there could be potentially significant gains in trade and GDP if costs could be reduced (see response to the next sub-question for estimates), although research in this area is still at an early stage (partly because estimates of how compliance costs vary between domestic and cross-border transactions are limited). As an indicative example, we estimate how much trade would increase if costs equivalent to 1% of cross-border sales were abolished: intra-EU trade would increase by 4.3%, GDP by 0.4% and consumption by 0.3%. We also estimate how reductions in differences in VAT rules and procedures and VAT rates would affect cross-border trade and GDP. For instance, a 10% reduction in dissimilarities of rules and procedures ('obligations') is estimated to increase intra-EU trade by 3.7%, GDP by 0.4% and consumption by 0.3%. However, we believe the latter set of estimates should be considered very much upper bounds: the method used is likely to give estimates that are upwardly biased because it assumes causation runs all one way from differences in VAT

to trade, when what in fact may be occurring is countries choosing VAT systems similar to their main trading partners.

3. Where VAT paid on inputs is not recoverable, it will be built into the prices of traded goods, creating an incentive to source goods from one country rather than another. For instance, in the case of financial services, all else equal, firms will have an incentive to source these from countries with low VAT rates as financial institutions based in such countries will be able to provide their services at a lower price. For instance, we estimate that the fact that financial services firms cannot deduct input VAT means that the price of such services produced in the four largest Eurozone countries are around 3 – 5% higher than they would otherwise be. The significant size of the financial services sector means that such distortions may have significant economy-wide effects: we estimate overall international price competitiveness would be improved by 0.16% in the same four countries if input VAT could be reclaimed by Financial Services countries. Such differences in price competitiveness could distort trade patterns and patterns of economic activity, especially as technology increases the ease of relocation of financial services activities.

Available data do not generally allow us to quantify the magnitude of these non-neutralities directly and reliably (although note the qualitative discussion and quantitative examples in points 1., 2., and 3., above), but we account for their effects on trade by estimating directly the relationship between VAT policy and trade patterns.

...What is the range of GDP loss that could be attributed to the special rules, obligations and risks associated to EU trade?...

We estimate the relationship between features of the VAT system and trade, GDP and consumption. However, there is an important limitation to this estimation: the relationships found do not necessarily indicate that the relevant features of the VAT system are *causing* the associated trade patterns. There are two other strong possibilities. One is reverse causation: it may be that countries choose to adopt VAT rates and rules that are similar to those of their main trading partners, for example. The other is common causation: it may be that other characteristics, not allowed for in the estimation, help to determine both VAT policy and trade patterns independently: for example, that certain kinds of country are disposed both to adopt certain kinds of policy and to trade with each other.

Using some of the more plausible results of this estimation, we use the *Worldscan* general equilibrium model to simulate the effects of changes in VAT policy on trade, GDP and consumption, under the assumption that the relationship is a simple causal effect of VAT policy on intra-EU trade. Specifically, we estimate that:

- Removing all VAT obligations beyond EU requirements would increase intra-EU trade by 2.6%, GDP by 0.2% and consumption by 0.2%;
- A 10% reduction in the dissimilarity of general VAT obligations would increase intra-EU trade by 3.7%, GDP by 0.4%, and consumption by 0.3%;
- A 50% reduction in the dissimilarity of rates for specified goods and services would increase intra-EU trade by 9.8%, GDP by 1.1% and consumption by 0.7%;
- Moving to identical VAT rates across countries on specified internationally-traded services would increase intra-EU trade by 6.5%, GDP by 0.7% and consumption by 0.5%;

However, given the important caveats mentioned above about giving these associations such a simple causal interpretation, these findings must be treated with caution: in some cases the magnitudes seem implausible. To help give a sense of plausible magnitudes of the effect of VAT compliance costs on trade, we conduct two further simulations illustrating the effects of eliminating all VAT compliance costs under illustrative assumptions as to their size. If the VAT compliance costs associated with intra-EU trade were equivalent to 1% of firms' sales, eliminating them would increase intra-EU trade by 4.3%, GDP by 0.4% and consumption by 0.3%. If VAT compliance costs were 3% of turnover, eliminating them would increase intra-EU trade by 13.3%, GDP by 1.4% and consumption by 1.0%. These last estimates can be considered to be plausible upper bounds on the impact of removal of VAT compliance costs, since as they do not rely on potentially biased regression results.

...What are the related administrative burdens and collection costs?...

There is a strong consensus in the literature that the costs to firms of complying with VAT obligations are higher when trading across borders than when trading domestically – though some of the reporting requirements associated with trade would be needed even in the absence of VAT itself. To date there is little convincing quantification of the compliance costs of doing business across borders, though indirect estimates of their effects on trade were discussed above.

...What are the main reasons for any infringements and/or fraudulent activity [in the context of cross-border trade] and their extent at EU level?

Most VAT fraud is domestic (see Cnossen, 2009, as referenced in chapter 4), but cross-border trade is associated with particular forms of fraud, notably Missing Trader Intra-Community (MTIC) fraud. This arises because of the break in the VAT ‘chain’ (the collection of VAT in parts from traders throughout the supply chain) that occurs when exports are zero-rated, combined with the abolition of physical border controls at which VAT can be levied on imports (without sufficient cooperation between revenue authorities in enforcement and audit procedures to substitute effectively).

The complexity and variation in rules and procedures across countries may also increase the risk of infringements or fraud when trading across borders: mistakes are more likely to be made when firms have to deal with multiple, potentially quite different sets of procedures, and the additional compliance costs involved may encourage non-compliance. The differences in administration of VAT, a result of the subsidiarity principle, creates opportunities for skilled evaders and makes cooperation between tax authorities more difficult (European Commission (2007)).

While there are estimates of overall VAT gaps across the EU (discussed in addressing question (2) below), the existing literature has not produced separate estimates for fraud associated with cross-border trade at the EU level. This is a task very difficult to accomplish, since statistical information on intra-EU trade originates from the same information collected for VAT purposes, thus making it impossible to obtain a “theoretical VAT revenue” from intra-EU trade activities, which could be compared to actual revenues in the manner that VAT gaps are estimated.

(2) **To what extent is the current method of collecting VAT efficient, effective and robust, e.g. in terms of minimising the compliance cost for the enterprises and maximising the tax revenue for national administrations whilst preventing fraud?**

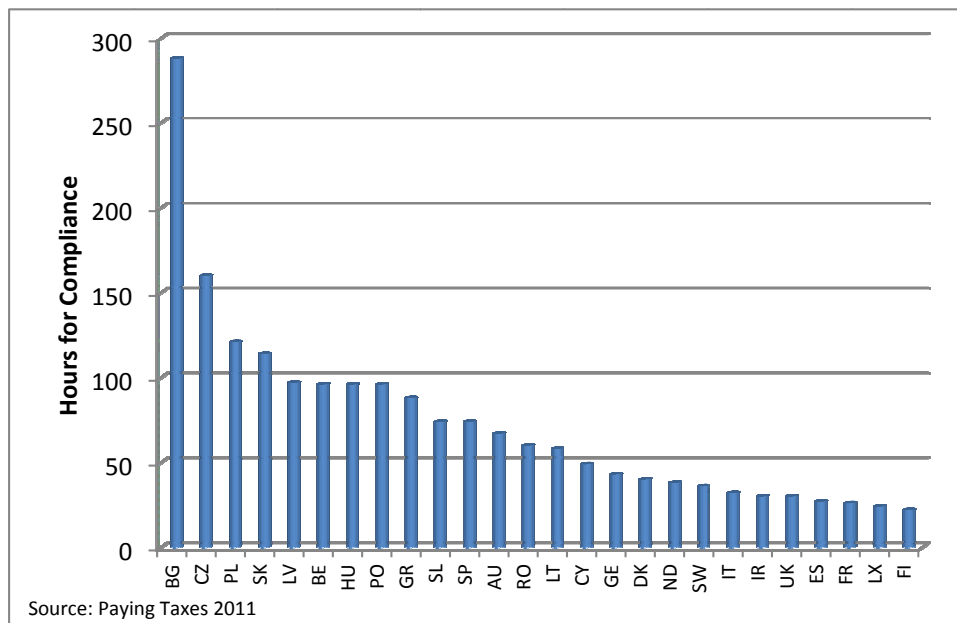
The compliance costs of VAT are substantial according to most studies, but the range of estimates is extremely wide. Studies for the UK, Australia and New Zealand in the 1980s and 1990s reported compliance costs between 2 and 9 percent of VAT collected; more recent ones, applying the Standard Cost Model methodology, ranged from the low of 0.3 percent reported in a study of Denmark, to as high as 8 or even 25 percent of VAT collected, as shown in studies of Croatia and Slovenia. Part of this variation reflects different methodologies used in the studies, but even single cross-country

studies show costs varying substantially across countries (and particularly high in the EU's newer members), as illustrated in Figure 4.2, reproduced below. The study that produced this estimate found that compliance with consumption taxes (mainly VAT) takes less time in countries where:

- VAT is administered by same tax authority as the corporate income tax;
- online filing and payment are in place;
- VAT returns are required less frequently and require less information and accompanying documentation;
- rule changes are less frequent.

Existing estimates do not give any indication that the compliance costs of VAT are falling over time, though it may be that the effects of e-filing and other initiatives are not yet visible in the data.

Figure 4.2. Consumption tax compliance burdens

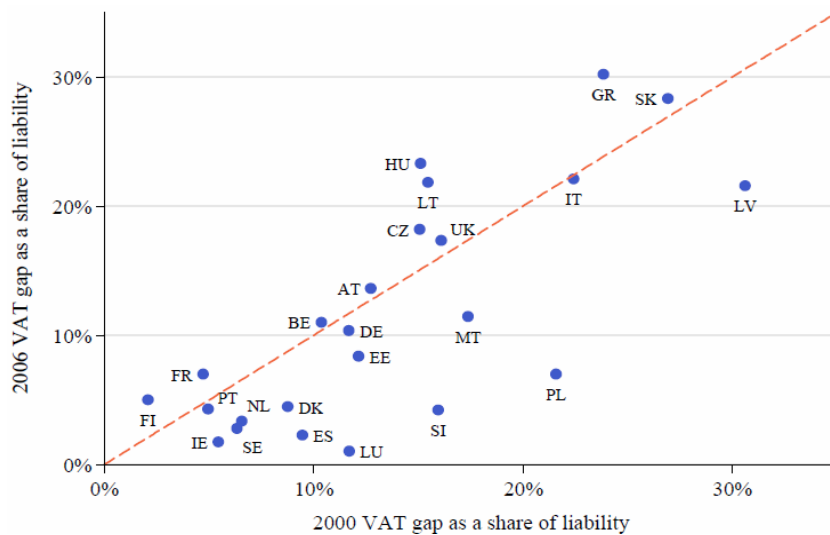


In terms of preventing fraud, the 'fractional' collection mechanism of VAT should make it more robust to non-compliance than alternatives such as a retail sales tax. Yet the 'VAT gap' – the gap between actual VAT revenues and what they would have been with full compliance – is big, estimated at an average of 12% of liabilities in 2006. Figure 4.3, reproduced below, shows that this too varies widely across countries, and

also that it has varied over time, falling sharply for several of the new member states after their 2004 accession.

The literature suggests that levels of compliance are associated with a number of 'behavioural' factors such as public trust in institutions and the prevalence of corruption; but also that they are associated with 'policy' factors such as VAT rates, bases, thresholds, special schemes, refund regimes, etc. The particular issues around fraud in the international context were addressed in answer to the previous question.

Figure 4.3. Comparison of estimated VAT gap in 2000 and 2006



Source: Reckon LLP (2009)

It is thus clear that compliance costs and non-compliance are both serious issues with VAT as currently collected in the EU. However, clearly all taxes involve some compliance costs and are subject to some degree of non-compliance; the question of whether those associated with the current EU VAT are higher or lower than those for other taxes, or for a differently collected VAT, would require an examination of alternative systems which is beyond the scope of a retrospective evaluation of the existing VAT system.

Nevertheless, features of the current EU VAT which will bear on the efficiency, effectiveness and robustness of the current method of collecting VAT, in comparison with conceivable alternatives, may be noted:

neutrality in relation to business purchasing decisions. With the principal exception of the financial services sector, the current method of collecting VAT ensures that businesses are indifferent to the rate of VAT on purchased inputs. As a result rather few resources are expended on contesting VAT on purchased inputs (for example through complex tax planning to minimise input VAT), and the VAT system does not distort business sourcing in the internal market. In the financial services sector, however, the position is very different and significant distortions and other costs arise (see the responses to question 1 and question 4). VAT systems which could encompass the financial services sector would in principle offer a gain in neutrality.

the certainty of revenue collection. Here the principal issues have to do with the exposure of different VAT systems to opportunities for fraud, evasion and other forms of non-compliance. These opportunities will depend on the particular VAT mechanism - so that, for example, different arrangements for the taxation of transactions between member states would be exposed to very different forms of fraud - and in the absence of detailed study of alternatives it is impossible to assess the relative vulnerability of the current system. One problem with the existing system of collection is the large volume of VAT refunds: it can exceed 40% of gross collections in many countries. The fact that firms can receive VAT refunds means that VAT fraud can lead to not only zero revenues from transactions on which taxes are due: there may in fact be negative revenues. Whilst any invoice-based system of VAT will involve refunds (because there will always be some firms selling goods at a loss), two other features of the existing VAT system influence the number of refunds: the zero-rating of exports and the reduced rates of VAT. This emphasises the link between the way VAT is collected (e.g. with many refunds) and the overall structure and operation of VAT: the issues are interrelated.

simplicity. The EU VAT system offers member states the scope to operate with relatively simple procedures, which limit the burden placed on taxpaying firms, and the costs of tax administration. For example, the current system allows non-collection from the smallest firms: issues of compliance are removed from these through the registration threshold which exempts smaller firms, for which the costs of operation may be out of proportion to the revenue raised. We highlighted above other features of collection methods that simplify compliance for firms: for instance, allowing online filing and payments, and requiring less frequent returns.

The current arrangements for operating tax adjustments on transactions between member states are more complex, and significantly different from VAT arrangements for purely internal transactions which opens up the possibility that the current VAT system could act as a barrier to participation in the Internal Market, by smaller firms in particular. Differences in rules about how VAT is collected in different areas of cross-border trade (e.g. whether the origin or destination country's VAT rates should be used, and whether the seller or buyer should remit the tax) also increase complexity and compliance cost, and the simplifications in this regard since 2010 are therefore welcome.

- (3) What are the cost and impacts¹ (positive, negative, intended, unintended) of the current restrictions applied to the right to deduct VAT including through the determination of the deductible proportion (businesses carrying on exempt and taxed activities, linked to question 4) for tax revenue (estimates of the additional tax revenue for member states), businesses (estimates of the VAT actually borne) and the customers? Is non-deductible VAT on business inputs the most appropriate/efficient way of taxing such businesses?**

The main restrictions to the right to deduct VAT are exemptions and limitations to the scope of VAT, which are discussed in answer to questions (4) and (10). All of the issues and problems mentioned there also apply to cases of partial exemption.

However, partial exemption causes additional problems because of the need to allocate inputs between exempt and non-exempt activities. This adds to firms' compliance costs in determining correct allocations, and creates tax avoidance opportunities, with corresponding anti-avoidance work for governments. The variation across countries in methods for allocating inputs can also have trade-impeding effects of the kind discussed above.

We have not found estimates of the impact of the determination of the deductible proportion on tax revenue or on businesses in general, although estimates for financial services in particular (where much exemption is in effect partial exemption since most financial services firms undertake a mixture of exempt and non-exempt activities) are discussed in response to question (4).

¹ For example, impacts on (distortion of) competition, consumption patterns (distortion and/or deflection of trade), etc.

But ultimately, whether non-deductible VAT is the most appropriate/efficient way of taxing such businesses is a question that requires a comparison with specific alternative systems and therefore cannot be answered by a retrospective evaluation of the existing VAT system.

(4) What are the cost and impacts of the current exemptions for tax revenue, businesses and final consumers?...

Exemptions are highly economically inefficient in a number of respects:

- They result in B2C sales being undertaxed, and B2B sales overtaxed.
- They give firms an incentive to supply their own inputs (or vertically integrate) rather than buy them, so as to reduce the amount of irrecoverable input VAT they face.
- They distort competition between exempt and non-exempt bodies, and between exempt bodies in different countries.

In addition to this, partial exemptions create additional problems, discussed above.

We have been unable to find EU-wide estimates of the total revenue cost of exemptions, or empirical estimates of the extent to which B2C sales are undertaxed and B2B sales overtaxed for all exemptions.

However, for the important cases of financial services and goods and services exempted for the public interest, some estimates have been made and it is clear that the revenue lost is substantial. A recent report for the EU Commission (Copenhagen Economics and KPMG (2011)) estimated that the exemption of large parts of the public sector and some private sector industries for reasons of public interest costs 195 billion Euros across the EU27. For financial services, Genser and Winker (1997) estimated a cost of DM 10 billion (€ billion) for Germany; for the EU as a whole, Huizinga (2002) estimated that the cost was €2 billion; and more recently, tentative estimates by the UK government imply that exempting financial services costs about £10 billion (€1 billion) in the UK alone (with a 20% VAT rate). New estimates for this study using input-output tables suggest that exemption of financial services imposes a tax burden equivalent to about 4.8% of their price (value) in Germany, 5.6% in France, 3.7% in Italy and 2.5% in Spain. In order that production and input decisions are not distorted, the effective tax rate on B2B transactions should be 0 (otherwise, for instance, firms would have an incentive to self-supply): these estimated implicit tax rates are thus estimates of the degree of overtaxation of B2B financial services. To avoid distorting

consumer spending patterns towards financial services, the standard rate of VAT should be applied to B2C sales. Hence, the difference between the estimated implicit tax rates and the standard VAT rates in each country are estimates of the degree of undertaxation of B2C financial services.

...What percentage of the member states' total consumption is VAT-exempted?

We have been unable to find estimates of what percentage of member states' consumption is VAT-exempt. The data requirements for such an exercise would be daunting: input-output analysis for the entire economy would be required, and one would need to estimate the under-taking of goods and services purchased by consumers in the market and produced by government for public consumption. Whilst the data generated by the VAT system itself would be of help in this, as far as we are aware the necessary data has not been made available to researchers and hence has not been exploited. Furthermore, a full assessment of the cost of exemptions would need to estimate how much is due to the VAT threshold: the fact that companies below this threshold do not have to file VAT forms means data for this group is particularly limited.

But there are some undoubtedly large areas of economic activity that are exempt or (equivalently) outside the scope of VAT, such as financial services, services in the public interest, much of the public sector, and businesses below the VAT registration threshold. We discuss the importance of these in answer to other questions.

(5) What are the cost and impacts of the current *diversification of the VAT rates*, including *reduced VAT rates*, on compliance for businesses in particular for cross border transactions and on collection/control costs?...

Diversification of VAT rates increases the chance that deductible VAT on firms' input purchases exceeds the VAT due on their sales, with the resulting refunds a notoriously difficult administrative area and a significant source of non-compliance.

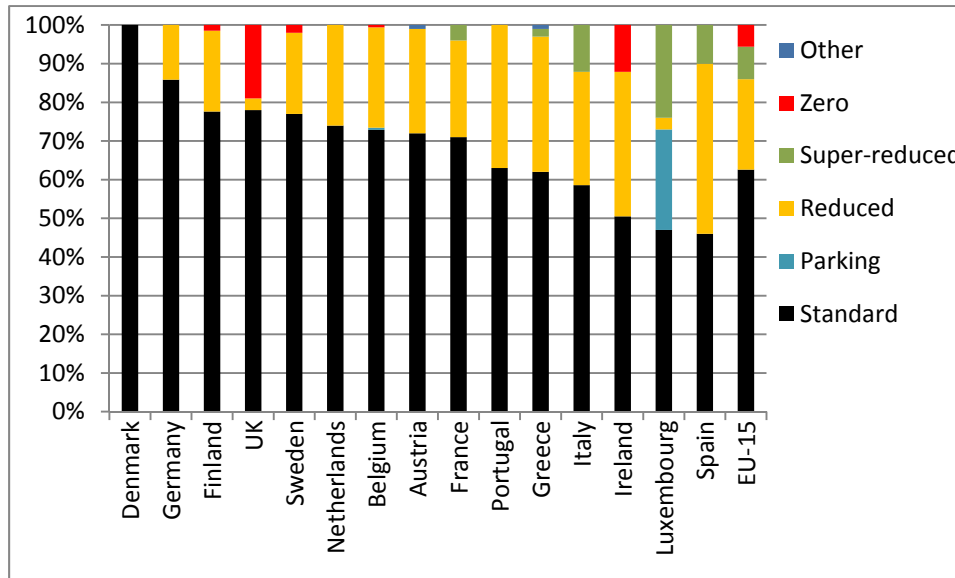
VAT rate differentiation entails the need to ensure that products are correctly categorised. This increases the cost to businesses of complying with VAT, increases opportunities for avoidance, and therefore increases the costs to government of administering VAT.

We are not aware of any quantitative estimates of the impact of VAT rate differentiation *per se* on administrative costs through either of these channels. Data on how having multiple rates of VAT affects VAT compliance is sparse as well. However using cross-country data, Agha and Haughton (1996) find that having an additional rate of VAT is associated with a 7 percentage point reduction in the rate of VAT compliance.

The application of the destination principle should mean that cross-border transactions are not directly affected by VAT rate differentiation (except by the zero-rating of cross-border sales themselves, discussed in answer to question (1)). We are not aware of any evidence that rate differentiation affects compliance rates in the context of cross-border transactions.

...What percentage of the member states' total consumption is subject to reduced VAT rates/ standard VAT rate?

Figure 2.5, reproduced below, shows that in 2000 (the latest international data we could find) two thirds of the EU-15's taxable (i.e. non-exempt) consumption was subject to the standard rate of VAT, with one quarter subject to reduced rates, 9% super-reduced rates and 6% zero rates. These proportions varied widely, with Denmark applying the standard rate to almost all of its tax base, Luxembourg making extensive use of parking and super-reduced rates and the UK and Ireland applying zero rates to a substantial proportion of consumption.

Figure 2.5. Shares of the tax base subject to different rates, 2000

Notes: 'Other' category is mainly flat rate schemes for farmers. Reduced and parking rates in Ireland (both 12.5%) not identified separately. Zero-rated share for the UK likely underestimated because traders only engaged in zero-rated activities in the UK are not obliged to register for VAT.

Source: Mathis (2004).

(6) To what extent and how do the different cost factors of the VAT impact the medium/large and pan-European businesses?

The impact of VAT costs on medium/large and pan-European businesses is to a large extent the issue discussed in response to the other evaluation questions: the impact of VAT on trade, and the issues of VAT compliance costs and non-compliance, *are* issues for medium/large businesses, since these businesses conduct a large proportion of trade both domestically and (especially) internationally. For instance, 2009 estimates for Germany suggest the 10 000 (approx) firms with turnover of more than 50 million Euros are responsible for 79% of exports, whilst the 2 800 000 firms with a turnover of less than 1 million Euros are responsible for just 7% of exports (despite representing 60% of exporters).

In this report we provide little new evidence on issues that are specific *only* to medium/large and pan-European businesses. One finding specific to large businesses is worth noting, however. Our analysis of the relationship between VAT systems and trade patterns reveals that countries which tax businesses services differently from each

other trade more (with our estimates suggesting that the elimination of VAT rate differences for services would reduce overall cross-border trade in services by around 8%). This may be indirect evidence of intra-company trade taking place in order to avoid tax. Part of services trade may be motivated by tax avoidance; dissimilarity in VAT regimes makes it attractive for firms to open a foreign subsidiary, as services traded between subsidiaries of multinationals can be used implicitly to shift the tax base into the country with the most favourable tax regime.

(7) To what extent does the current VAT framework for small businesses² help to create the right conditions for them to grow and prosper in the single market? To what extent and how do the different cost factors of the VAT impact them?

By far the most important part of the VAT framework for small businesses is the exemption thresholds applied in each country. Since exemption (particularly with the option of voluntary registration) is generally an advantageous position, this regime typically favours small businesses over others, and therefore encourages them to grow, at least up to the threshold. This favourable treatment comes at the expense of the larger businesses with which they compete, and at the expense of government revenue. It also discourages businesses from growing further so that they cross the threshold. Evidence of this is the significant bunching in small-business turnover just below the threshold: our analysis of a Finnish graduated threshold shows this for Finland, for instance.

Some registration threshold, however, may be justified by the administrative and compliance burdens of VAT, which would otherwise be disproportionate to the revenue at stake from these small businesses. There is a strong consensus in the literature that, because much of the cost of complying with VAT is fixed (i.e. costs that are incurred regardless of the level of sales, such as the time taken to register for VAT, or the purchase of VAT calculation software), compliance costs are much higher relative to firm size for small businesses. Quantification of this is scarce, but one study of Croatia (admittedly not yet an EU member) found that compliance costs represented 3.9% of turnover for unincorporated businesses but only 1.5% of turnover for firms with more than six employees. For the same reason, the additional costs of trading across borders are also more important for small firms, and some small businesses are deterred from selling abroad at all by its daunting VAT implications and perhaps particularly by their sheer uncertainty as to what the VAT implications would be.

² Different scopes and thresholds applied in member states, exemptions, simplified procedures, special schemes for farmers, etc.

The report discusses the trade-offs associated with choosing the level of the registration threshold, but finds that calculations of an ‘optimal’ threshold are highly sensitive to difficult-to-measure parameters and ignore important considerations.

Exemption thresholds are not the only arrangement put in place for small businesses. While simplified small business schemes can have merit, we do note the disadvantages of certain other schemes in operation. Optional flat-rate schemes (where firms can choose to account for purchases and sales in the normal manner or pay a flat percentage of their sales that varies according to industry) – such as that in place in the UK – can be counter-productive if they encourage businesses to estimate their liabilities under both options to see which is lower, thus maximising both compliance costs for firms and revenue loss for government. And Finland’s experience of a graduated threshold is not encouraging, complicating rather than simplifying the system – and therefore increasing compliance costs - and having little apparent impact on the target group. For instance, only 31% of firms eligible for the scheme took it up, and whilst the number of firms bunched below the VAT threshold has fallen somewhat it remains very significant, suggesting the threshold remains a disincentive to growth. This may reflect compliance costs, estimated at 389 Euros in 2007, and actually increased by the reform.

(8) To what extent does the current VAT acquis applied on services provided internationally³ guarantee adequate taxation (no double taxation or tax avoidance)?

The complexity of the place of supply rules makes it more likely that they will be interpreted and applied differently in different countries, giving rise to the potential for double or zero taxation where both or neither country claims taxing rights over the supply. The ‘use and enjoyment’ clause of the VAT Directive (which allows member states to treat the place of supply as “where the effective use and enjoyment” of the service takes place instead of applying the normal rules) is intended to prevent this, but it is not clear that they always work in a satisfactory way, not least because the concept of ‘use and enjoyment’ is itself ill-defined, giving rise to fresh interpretive uncertainty. These problems are discussed at length, with examples, in the legal literature (see eg de la Feria (2009) and references therein), but we are aware of no attempt to quantify their extent, and such quantification would seem extremely difficult.

³ Including services provided by branches/ head-offices situated in third countries to EU branches or head-offices.

However, recent reforms to the place of supply rules alleviate these problems in the taxation of B2B services, by moving further towards an approach of consistently taxing them in the customer's location and thus reducing the scope for different treatment in different member states.

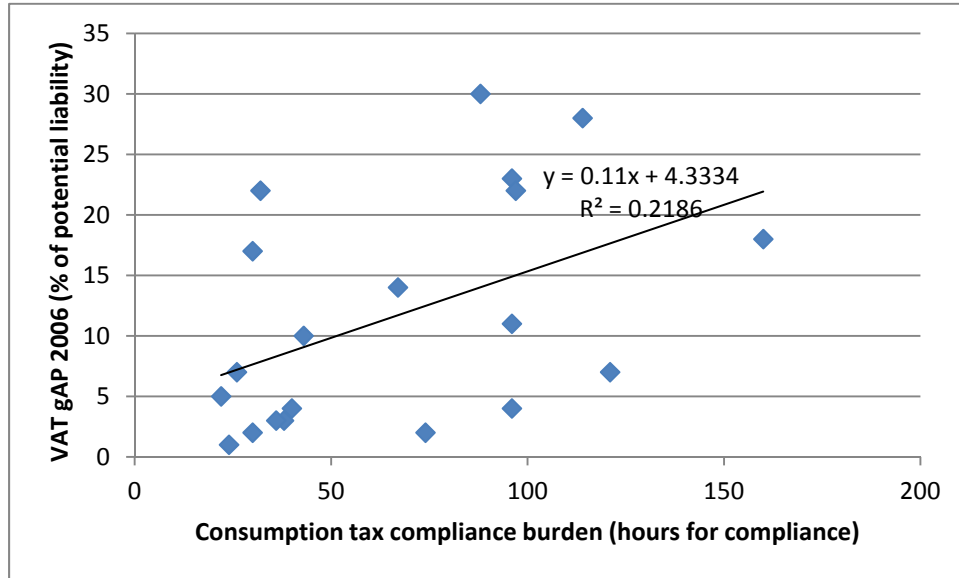
(9) What are the cost and impacts of the current national VAT arrangements applied in the member states on the bona fide traders in the context of the VAT fraud?

In a sense, almost all compliance obligations are imposed as a means of preventing fraud and non-compliance, so the impact of anti-fraud arrangements on the costs faced by bona fide traders is almost the same as the estimates of total compliance costs discussed in answer to question (2).

The impact of imposing additional anti-fraud VAT obligations on legitimate businesses is difficult to gauge. Some measures are tightly targeted at high-risk groups and have little impact on the bulk of firms; others are broader and make it more difficult for any firm to register for VAT and start trading. Figure 4.4, reproduced below, shows that countries that impose higher compliance burdens actually tend to have *more* non-compliance, but there are at least three possible reasons for this, which are not mutually exclusive:

- *Direct causation*: imposing high compliance burdens might drive firms into the informal economy, thus reducing compliance levels.
- *Reverse causation*: countries with large VAT gaps may feel the need to take more stringent and burdensome anti-fraud action.
- *Spurious correlation*: particular countries (specifically, the EU's newer member states) might happen to have both high compliance burdens and large VAT gaps for other (perhaps historical or cultural) reasons, with neither causing the other.

Figure 4.4. Compliance burden vs. VAT gaps



Such correlations are thus too broad to give definitive answers. Rather, the main lesson to be drawn is that the relationship between compliance burdens and compliance levels is not obvious, and given the variety and complexity of possible mechanisms at work, more detailed research is needed.

- (10) To what extent do the current *derogations, exemptions and options*⁴ continue to be relevant as compared with the needs they aim to satisfy? Do the benefits they bring validate the cost?

The costs of exemptions and other restrictions to the right to deduct were discussed in answer to questions (3) and (4).

Of the major areas where VAT exemption (or equivalent) is applied, the most defensible is the VAT registration threshold (discussed in answer to question (7)) where

⁴ Exemptions for certain activities in the public interest (i.e. for social, educational and cultural reasons), exemptions for other activities subject to technical concerns about applying VAT to the underlying transactions or interference with other taxes (i.e. postal and financial services, gambling activities, immovable property, etc.) and exemptions applied before the introduction of the VAT or at the time of the countries' accession to the EU (i.e. passenger transportation, etc).

the costs may be justified by the disproportionate costs of operating VAT for the smallest businesses. The report discusses the trade-offs associated with choosing the level of the registration threshold, but finds that calculations of an ‘optimal’ threshold are highly sensitive to difficult-to-measure parameters and ignore important considerations. However, it is possible to identify certain factors that drive the optimal threshold. Thresholds should be *higher* where: other taxes cause relatively little economic distortion; the proportion of revenue that is value added is low; and administrative and compliance costs are high. The VAT rate does have an effect (a lower rate implies a higher optimal threshold), but in our simulations this appears to be relatively modest. This implies that optimal thresholds are likely to vary by country and economic sector (sectors where value added is a low proportion of turnover, like manufacturing, would have higher optimal thresholds than sectors where value added is a high proportion of turnover, like labour intensive services), although the benefits from such variation would need to be traded off with the additional complexity involved (particularly for firms close to sector boundaries).

In most other cases, exemption (such as for activities with social, educational or cultural benefits) brings little compensation for the problems it imposes.

The effective exemption of much of the public sector and of services in the public interest is a clear weakness of the EU VAT regime. Exemption may support the objectives of providing support to activities deemed worthwhile, but such bodies and activities could be supported in more efficient ways without creating problems of the kind mentioned above.

The exemption of financial services is similarly damaging. The revenue and distortionary costs were discussed in response to questions (3) and (4), and the report also estimates the consequences of over-taxing B2B financial services in this way on the competitiveness of EU firms: by cutting the cost of producing financial services, we estimate that if exemption were removed in the four biggest euro-area countries (France, Germany, Italy and Spain), these four countries would see their terms of trade reduced (their competitiveness increase) by 0.16%.

The primary motivation for exempting financial services, however, is to avoid perceived practical difficulties with taxing them. The practical question of how VAT (or an equivalent) could successfully be applied to financial services is not examined in this report since our goal is a retrospective evaluation of the existing system. However, to assess the suitability of current arrangements it is important to consider whether

better alternatives exist. Hence, we note that there have been repeated serious proposals for taxes equivalent to VAT on financial services such as cash-flow taxation, Tax Calculation Accounts and some variants of the Financial Activities Tax (which are different to the Commissions proposals for a Financial Transactions Tax). The existence of such alternatives means the current treatment of financial services in VAT is not only damaging but also unnecessary.

(11) To what extent does the current diversification of the VAT rates, including the reduced VAT rates, continue to be relevant as compared with the needs they aimed to satisfy? Do the original motives⁵ for their introduction still justify their application?

The principal motives for using reduced (including zero) VAT rates are to help poorer households and to change behaviour in ways perceived to be desirable. In both cases, we find that VAT rate differentiation can help to achieve these objectives, but are usually an inefficient means of doing so.

We simulate the distributional impact of VAT rate differentiation for nine EU countries: Belgium, France, Germany, Greece, Hungary, Italy, Poland, Spain and the UK. Items subject to reduced or zero rates are typically those bought disproportionately more by poorer households, and rate differentiation is therefore a progressive feature of VAT systems, although the rich benefit most in cash terms since they spend more on almost all goods.

VAT rate differentiation can also be used to encourage ‘virtuous’ consumption and discourage ‘sins’, and there is strong evidence that people’s purchasing decisions do respond to changes in prices and hence changes in VAT rates (albeit to different extents in different cases). The size of these responses is estimated using data on expenditure patterns and prices. Several such models (called “demand models”) have been estimated as part of this project and show demand does respond to prices. The extent to which demand responds to price varies for different goods. For instance, an increase in the price of food by 1% in the UK is found to decrease the quantity purchased by only 0.11% for households with average characteristics, whilst an increase in the price of other zero rated goods (e.g. books, children’s clothing) would decrease demand by 1.11%.

⁵ For example, social justice, historical motives, environmental motives, technological difficulties, etc.

However, while VAT rate differentiation can be progressive and can be used to change behaviour, it is rarely a well-targeted instrument for pursuing either of these objectives. Other taxes and transfers can target the rich and the poor more directly: redistributing on the basis of spending patterns is a poor proxy; and the range and sophistication of direct tax and transfer instruments available to governments has increased in the decades since VAT was first introduced, offering governments greater flexibility and more precise targeting, and weakening the case for using VAT rate differentiation for that purpose.

Similarly, the particular features of VAT mean that it is rarely well targeted for changing behaviour either: it only encourages/discourages purchases by final consumers, when often business use of the goods in question can be equally beneficial/damaging (as in the case of environmental pollution, for example); and the encouragement/discouragement provided is proportional to price, when often the benefit/harm from consumption is no greater for more expensive varieties of the good in question. Of course, alternative instruments for redistributing and changing behaviour may have their own imperfections as well, and an assessment of each of them is beyond the scope of a retrospective evaluation of the existing VAT system; but the important weaknesses of VAT make it unlikely to be the best available option.

Some other rationales for using VAT rate differentiation are more convincing. The introduction of reduced rates for labour-intensive services was partly a pragmatic response to the fact that it is easier for some traders to evade tax than for others, and where evasion is easier it may be sensible to reduce the incentive to evade – reducing the tax rate can achieve that (because the incentive to evade is greater the more tax that can potentially be evaded). However reducing the incentives to evade is not the same as reducing evasion itself. The extent to which evasion has been reduced by the reduced rates in practise is unclear: the 2003 evaluation by the European Commission could find no demonstrable causal link, and Copenhagen Economics (2007) finds that overall marginal tax rates – which drive evasion as much as VAT - do not correlate with the extent of tax evasion.

Such labour intensive services are also often those that can be easily substituted for by home production (e.g. DIY). Taxation of market activities provides strong incentives for home production – tax is not paid on such activity, and the household can avoid the tax paid on income that would be used to pay for purchasing in the market – and reduced rates of VAT for goods and services which can be easily produced at home can offset

this distortion. This could lead to increased productivity and increased supply of labour to the market.

In their study of reduced rates, Copenhagen Economics uses economic modelling to estimate the impact of reduced rates of VAT on labour intensive services and finds that the resulting shifts from home production to formal market production raises productivity, welfare and tax revenues. They argue that the effect of reductions in evasion is less important than the effect of shifts from home production.

However, in assessing whether diversification of VAT rates is justified, we must ask not only how well it achieves the desired objectives; we must also assess whether any benefits justify the costs. The costs in terms of complicating the system were partly discussed in answer to question (5); but in addition, VAT rate differentiation tends to distort households' spending patterns and therefore reduce welfare. This is not always the case – VAT could be used to reduce distortions to behaviour by taxing time-consuming leisure activities more heavily and work-related expenditures less heavily, thereby reducing labour supply disincentives – but in practice that is rarely the way VAT is used. We estimate the effect of VAT rate differentiation on spending patterns and welfare for five EU countries (Belgium, France, Germany, Spain and the UK) under the assumption that work patterns are unaffected by VAT rate differentiation. We find that removing all zero and reduced rates and using the revenue to reduce the main rate would be a regressive move, because (as discussed above) zero- and reduced-rated items make up a larger share of household expenditure for poorer households; but we also find that, since consumption decisions are less distorted, the government could, in principle, redistribute the gains of the winners to the losers and still have revenue left over. That is a measure of the economic efficiency loss associated with VAT rate differentiation.

(12) **To what extent and how does the current VAT system impact the price-setting mechanism in the short and long run?**

Economic theory predicts that a number of factors should affect the extent to which firms pass on VAT into consumer prices (*Chapter 8*). These include the competitiveness of the market and the nature of any imperfect competition, and the relative responsiveness of the good's supply and demand to prices. In competitive markets, between 0% and 100% of a VAT change should be passed through into prices, with the degree of pass-through higher, the less responsive demand is to price changes and the more responsive supply is. Under imperfect competition the analysis is more

complex and a wide range of outcomes is possible, including prices changing by more than the full amount of a VAT change.

Pass-through of a VAT change for a specific good may be different from that of a broad-based VAT change, since a change that applies only to a narrow category of goods opens up the possibility of substitution towards other goods. Similarly, VAT reforms in a single country may affect prices differently from an EU-wide reform; and an EU-wide VAT reform may have different effects in different countries.

All this implies that it should be possible to observe a wide range of price responses to VAT rate changes. It is not possible to draw a simple universal conclusion either quantitatively or qualitatively. Furthermore, prices may not adjust immediately to changes in VAT rates. The long-run extent of pass-through may only be reached gradually – and not necessarily at the same rate for tax rises and tax cuts.

Existing empirical work and new case studies included in this report broadly bear out the significance of all these factors (*Chapter 8*). Estimates of pass-through vary widely (from 0% to 163%), as expected. Pass-through tends to be nearer 100% in more competitive markets and for more broad-based VAT changes. The long-run extent of pass-through seems to be achieved rather quickly – after the first few months there is little sign that prices adjust any further, and in some cases prices may adjust even before a reform is implemented. There is some evidence that short-run pass-through may be higher for tax rises than for tax cuts.