6503 DG TAXUD

Study on reduced VAT applied to goods and services in the Member States of the European Union Part B – Appendices

Final report

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COPENHAGEN ECONOMICS

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Appendix I Literature survey

The economics of VAT

In this section, we intend to provide the reader with a thorough survey of all relevant available economic studies on reduced VAT rates. We will focus on simple micro-economic arguments which can shed light on the relation between industry characteristics and the good and bad outcomes of reduced VAT rates.

One of the most important tasks in the literature survey is to assist the process of building a framework of the impact of reduced VAT rates on job creation, and economic growth. Specifically, we are interested in getting a deeper understanding of how reduced VAT rates are passed through to prices, and if so, how demand and eventually job creation respond to the price reduction.

The main findings from the literature survey are:

- High demand elasticities will reduce the measurable effect on prices, i.e. the passthroughs, but increase the effect on demand. Thus, the size of price pass-through and job-creating effects can be inversely related.
- Market structure matters for the pass-through to prices. The literature cannot give precise conclusions of whether over- or under-shifting will take place.
- Supply curves can be upward bounded in the short run. Thus, a VAT reduction could lead to no short-run effects, whereas an increase would be observed immediately.
- VAT declines in one sector are likely to be replaced with increases in other sectors, if provision of public goods is not to diminish.
- Selective VAT distortions may shield inefficient firms from competition, while other firms can exploit deficiencies of product delineation to take unlawful advantage of lower VAT.

The first three findings challenge the way we should set up and interpret our empirical analyses. First, we cannot be satisfied with solely looking at prices only since low pass-throughs could imply high job-creating effects. Second, the same good or service can have very different VAT effects across countries depending on the market structure. Third, we should be able to make a distinction between short and long run effects – especially if we are considering a VAT reduction.

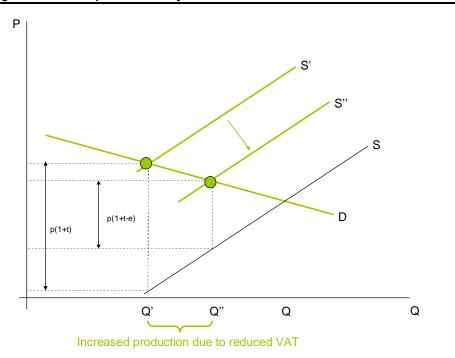
The latter two findings carry implications for the evaluation of the effectiveness of reducing the VAT. Given the possible negative outcomes of a VAT reduction, we look upon alternative instruments to VAT reductions – direct subsidies – which can bring in the same effect as the former.

The microeconomic foundation

To build a common terminology and to formalise ideas, we start by reviewing standard microeconomic arguments on the impact of indirect taxes, e.g. VAT, on the partial equilibrium of a given market, see e.g. Varian (1999) or Stiglitz (1988). We start by considering a situation going from no taxes to the introduction of a VAT. The immediate message from such investigations is that prices will be higher than marginal costs by the amount of the tax.¹ In the case without the tax, the market price would have equalled marginal costs. The price increase leads to reduced demand and thereby less production and employment.²

We have tried to depict this situation of lower after-tax demand in Figure 1 below. The reference situation without taxes is described by the lowest supply curve (which should equal marginal costs and is labelled S), and the situation with the standard VAT rate is given by the upper supply curve (S'). The curve has simply been shifted by the amount of the tax. The new intersection of supply and demand results in higher prices and lower demand as just stated.

Now we introduce reduced VAT rates; this implies a shift downward in the after-tax supply (S") curve whereby prices and quantities sold move back towards their hypothetical pre-tax levels. There is an increase in production from Q' to Q".





Source: Copenhagen Economics

Note: The figure shows partial equilibrium in quantity-price (Q, P) space. We denote the demand curve by D and the supply curve by S. We consider the normal VAT rate, t, and a reduced VAT rate, t-e. The two upper supply curves illustrate the standard and the reduced VAT rate. The good and the bad outcomes in the literature

¹ The term marginal cost defines the change in costs for a small (marginal) change in output, i.e. the cost increase of producing one more unit.

² There is a minor subtlety to this argument. The negative demand response generally consists of both an income and a substitution effect, but if the VAT rate is applied uniformly across all product markets we should not observe any substitution effects, only the income effect.

The good and bad outcomes in the literature

We have identified a number of good and bad outcomes of differentiated VAT rates. Among the good outcomes, we find aspects like higher demand, job creation, and reduced informal economy, whereas the bad outcomes include distortionary consumption and competition effects together with higher administrative costs.

In this section, we will see how the likelihood of achieving a certain outcome, good or bad, is related to different industry characteristics. For instance, we will be asking: how does the presence of a very elastic demand curve affect the probability of achieving large job-creating effects. In Table 1 we present a full overview of the different combinations between industry characteristics and good outcomes. The bad outcomes will be investigated later.

	-	Outcomes				
ş		Pass-through	Equality	Informal economy	"Good" products	
istic	Demand curve	1	7		10	
ter	Other demand factors	2	7			
Industry characteristics	Supply curve	3				
	Market structure	4				
	Labour intensity		8	9		
	Firm size			9		
	Locally supplied	5				
_	Uncertainty	6		9		

Table 1. Overview of the good outcomes

Source: Copenhagen Economics

In the following, we will go through each of the points from the table above. Then, we will turn to the bad outcomes where a similar exercise will be conducted.

1. Pass-through of VAT and demand curves

Conclusion:

Demand elasticities are important determinants of the pass-through to prices and of the potential for creating new jobs. Demand curves with high elasticities have the largest potential for creating new workplaces in response to a price decrease. At the same time, the pass-through to prices will generally be lower when demand elasticity is high.

The shape of the demand curve is very influential on the economic impact arising from a change in the VAT rate. This is straightforward to see: the more sensitive consumers are to changes in prices, the larger effect will be created by a given reduction in the VAT rate. Referring to Varian (1999), we apply our static partial equilibrium model as set out above in order to visualise this effect.

If the demand curve is very elastic, i.e. price sensitive, we get a large quantity response to a reduction of the VAT rate, but at the same time the pass-through to prices will be quite low. This is depicted in Panel A of Figure 2. In Panel B, we illustrate the situation with an inelastic demand curve. Here, the quantity response is very limited whereas prices are much more influenced. An important corollary for our empirical investigations is that *the size of the pass*-

through can be inversely related to the quantity impact. We remember that it is the quantity impact that will generate new jobs in the given industry.³

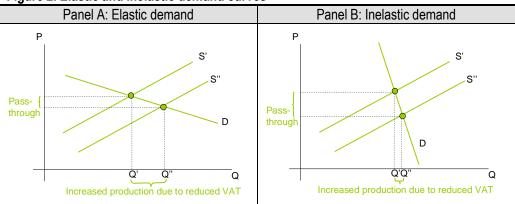


Figure 2. Elastic and inelastic demand curves

Source: Copenhagen Economics

The conclusions derived rest on the assumption that markets are competitive. This assumption may hold in some cases, but it will evidently fail in other cases. Below, we will return to the situation of oligopolistic and monopolistic market structures and how demand elasticities impact the effects from VAT changes.

2. Pass-through of VAT and other demand factors

Conclusion: Psychological factors may play a role for demand responses to price changes. In particular, demand could adjust disproportionally to larger price changes.

In this section, we present some ideas suggesting that consumer behaviour cannot be reduced in a single elasticity parameter (or function). In fact, consumers may respond to price changes in disruptive manners due to psychological factors.

First, there is the issue of reference and threshold prices, see e.g. Sawyer and Dickson (1984). The main idea is that consumers set a reference price within an interval where demand will be unaffected by any small price adjustments. Conversely, if the price exceeds the upper or lower threshold price of the interval, consumers will react promptly. This introduces discontinuity in demand responses.

Thus, if consumers do not anticipate the price reduction due to the VAT change, demand will only be higher if the threshold level is exceeded. Small VAT changes would have no effects. On the other hand, if consumers are aware of the VAT reduction, they may adjust their reference price interval in which case a lack of price adjustment from suppliers will lead to a reduction in demand. In this case, the VAT reduction would actually be counterproductive. Clearly, such effects are more of a short-run than long-run nature.

The second issue concerns some long-run aspects of consumer behaviour. Carbonnier (2005) suggests that there is rigidity in consumption behaviour represented by a shadow price to any change in habits. Thus, if consumers should change their behavioural pattern, the gain must be of a certain size (more than the shadow prize). This might indeed be very relevant for some of

³ In the case of inelastic demand, the large price reduction will have a positive income effect on consumers who choose to consume more of other products. For this reason, there is also potential for job creation, but it will be spread out over the entire economy and therefore hardly measurable.

the services of interest for this study where home production is a near alternative to buying; e.g. when people have become used to cleaning their own windows, they may require a very large price reduction before they consider hiring professional window cleaners.3. Pass-through and supply curves

Conclusion:

Supply curve elasticities are important determinants for the potential job creating effects from VAT reductions. Higher elasticities will create larger effects on prices and production. In the short run, supply curves may have upward boundaries so that positive demand effects cannot be satisfied.

As with the case of the demand curve, the shape of the supply curve will have important influence on the way VAT reductions lead to lower prices and more output. In fact, the argument behind this regularity is analogous to the demand curve argument. For completeness, we will also state it here.

We resort to our static partial equilibrium model from Varian (1999), and we consider two situations: one with an elastic supply curve and one with an inelastic. This is depictured in Panel A, respectively Panel B of Figure 3. When suppliers react markedly to small price changes, e.g. induced by VAT reductions, both the quantity and the price effect will be large as in Panel A. On the other hand, inelastic supply curves will limit the possibility of measurable effects on both prices and quantities, c.f. Panel B. We explicitly show that the VAT reduction is of the same magnitude in the two panels (visual inspection could be misleading as the two supply curves seem to be closer to each other in Panel B).

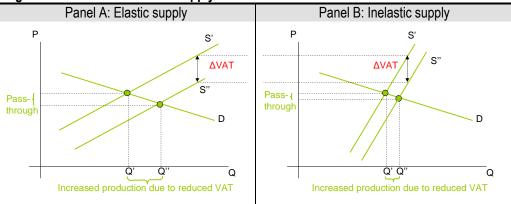


Figure 3. Elastic and inelastic supply curves

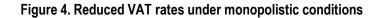
Source: Copenhagen Economics

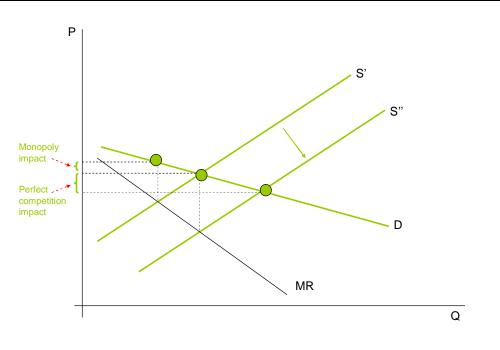
The literature also points to some short-run effects. In particular, Carbonnier (2005) focus on the asymmetries in short-run adjustments of production. Indeed, it is easier for firms to decrease their production than to increase it. Increasing output often requires hiring new workers and undertaking new investments, which can induce long delays. This implies that a reduction of VAT rates would only spill partly over to prices, whereas a rate increase would lead to immediate adjustment.

4. Pass-through and market structure

Conclusion:

The degree of competitiveness will set the limits for monopolistic and collusive behaviour. Pure monopoly would decrease the price and quantity impact from a VAT reduction compared to the competitive benchmark, but the impact inbetween could be smaller or larger than the benchmark. Stiglitz (1998) point out that the pass-through could be significantly lower when we give up the assumption of perfect competition. Instead, if we assume pure monopoly, we can show that the price and quantity impacts are lower. To see this, consider Figure 4 where we have introduced the marginal revenue curve to observe monopoly behaviour.⁴ The initial situation with the high VAT rate is given by the upper left point on the demand curve. As the marginal cost curve (S) shifts downwards due to the reduced VAT rate, the new intersection with the marginal revenue curve is indeed lower, but because of its higher steepness (compared to the actual demand curve), the price impact is less pronounced. We have also drawn the pass-through under perfect competition.





Source: Copenhagen Economics

Note: The figure shows partial equilibrium in quantity-price (Q, P) space. We denote the demand curve by D and the supply curve by S. We consider the normal VAT rate, t, and a reduced VAT rate, t-e. The two supply curves each illustrate the standard and the reduced VAT rate.

Leaving the assumption of pure monopoly, pass-throughs under other forms of imperfect competition becomes more complicated. Katz and Rosen (1985) consider the closed Cournot oligopoly, and Stern (1987) examines a free entrance oligopoly. The main result from these investigations is that taxes may be over-shifted, but this depends heavily on supply and demand elasticities.

Further, one can also show that as the demand curve becomes more inelastic the incentive to actually lowering prices will disappear.⁵ Since it is the responsibility of the service provider, e.g. the household cleaning company, to collect VAT, they have the possibility to keep prices at the level before the reduction in VAT rates and thereby increase profit margins by the amount of the VAT reduction. They will weigh the benefits of increased total revenue not only by the loss in profit margin but also by the loss in producers' surplus created by the tax reduction. For a

⁴ Remember that marginal revenue will be equated to marginal costs under monopoly.

⁵ See Stiglitz (1988).

very inelastic demand curve there will be no incentive at all simply because the marginal revenue curve becomes too steep.

At this point, we should mention some of the empirical reports on VAT pass-throughs. Their diverging findings may be seen in the light of different market structures. First, we have the report of the European Commission⁶ evaluating the experimental reduced VAT rate. The report concludes no noteworthy pass-through could be observed in the countries implementing the reduced rate. Conversely, Kenkel (2005) found that an increase in indirect taxes (on alcohol beverages) lead to a more than one-to-one pass-through. Baker and Brechling (1992) have conducted econometric analyses of tax pass-through for various consumption products, and they generally find the relation to be one-to-one.

Overall, we can conclude that the market structure will influence the pass-through of the tax reduction and thereby the impact on production and job creation.

5. Pass-through for local suppliers

Conclusion:

Local suppliers rely on a close buyer-seller relationship which restricts exploitation of consumers. At the same time, local suppliers often have monopoly power due to travel costs. Thus, pass-through could be both low and high for locally supplied goods and services.

The relevant geographical market could be narrowly delineated because of travel and transportation costs. Travel costs arise when consumers have to go to the supplier, whereas transportation costs arise when the good or service is brought to the consumer.

There are two important characteristics of local supply: (i) there is a closer interpersonal relation between buyer and seller, and (ii) the seller has a certain degree of monopoly power. These two characteristics lead to opposing effects on the pass-through. Crosby et al (1990) consider the interpersonal aspects of local services provision and conclude that relationship management is of major importance. Basically, both seller and buyer are interested in "trust-based contractual terms" and this would naturally imply that e.g. VAT reductions are (at least partially) passed on to the consumer. Else, trust would be lost.

On the other hand, the travel and transportation costs give rise to local monopoly power. The previous section laid out how pass-through is lowered when monopoly power exists. Since the consumer has few alternatives, the incentives for no pass-through could be high.

Which of the two opposing effects will dominate is likely to depend on the persons involved. The local hairdresser in one region could choose to focus on the interpersonal aspects, whereas the hairdresser in the twin region could behave monopolistically. There could be no objective reason for this difference.

6. Pass-through and uncertainty

Conclusion:

Generally, uncertainty will exacerbate the effects of taxes. Thus, the presence of uncertainty will increase the pass-through and the job-creating effects of a VAT reduction.

⁶ European Commission (2003)

Uncertainty can arise along several dimensions. In the current context, general supply-side uncertainty and demand-side quality uncertainty seem to be more relevant. Supply-side uncertainty arises when current and near-future prices and demands are not known with certainty. Sandmo (1971) gives an introduction to supply-side uncertainty and shows that production is negatively influenced when uncertainty is high. Riedl and van Winden (2005) confirm this finding using experimental techniques, and they conclude that taxes exacerbate this adverse effect. Thus, a tax reduction would have larger pass-through if uncertainty is high.

Also using experimental techniques, Kachelmeier et al (1994) examine how uncertainty about quality differences influence the market outcome. Nesbit (2003) uses empirical modelling to show the different impacts on product quality from unit and ad valorem taxes. It is shown that ad valorem taxes improve quality; the theoretical arguments for this fact have been laid out by Barzel (1976). There are valid reasons to believe that quality differences characterise the services markets of interest.

7. Improved equality and demand factors

Conclusion:

Differentiated taxes and subsidies are inefficient tools for improving equality in the society. If implemented, theory will be neutral to the choice of tax scheme; differentiated VAT rates are equivalent to a flat VAT rate augmented by other taxes and subsidies.

If wealthy and poor households have different consumption shares of the services or goods subject to VAT reduction, the households with the higher share will benefit from the reduction, see e.g. Gale et al (2004). This argument is normally put forward as an advantage of reduced VAT rates on food. It is then assumed that poorer households have higher expenditure shares on food than richer households, but this assertion has been challenged by figures from Statistics Denmark (2004). The redistributive effect will be more pronounced if the tax cut is equilibrated by a higher rate on other products where the opposing households have the larger consumption share.

In a Danish context, Smed and Denver (2004) examined the redistributional potential of reducing VAT rates on certain basic goods like food products. By estimating a near to complete household demand system, they find positive, but small effects on equality.

It is not quite clear whether the services mentioned in Annex K are used more heavily by poor or wealthy households. Some of the services like e.g. *renovation and repairing of private dwellings* might in fact be more intensively demanded by the richer households. To the extent that wealthy households have the larger consumption shares, we will observe undesirable distributional effects from the VAT reductions.

There are at least two obstacles to the use of differentiated VAT rates for redistributive purposes. First, VAT rates have to be much differentiated to obtain significant effects and this would, at the same time, cause high distortionary effects. Second, poor households should all have similar preferences as should rich households (but they should differ between the two groups). For these and other reasons, e.g. the administrative costs, differentiated VAT rates must be classified as inefficient redistributive tools.

8. Improved equality and labour intensity

Conclusion:

Taxes and subsidies are good instruments for promoting employment in industries with high intensity of low-skilled labour. There are other ways than reduced VAT rates which may induce additional positive effects.

Distributional effects will arise if the VAT initiative increases demand for low-skilled labour, c.f. Öberg (2005). The reason is quite simple: As unemployed and/or low-skilled labour typically belongs to the lower end of the income distribution, improved conditions in their segment of the labour market will naturally cause positive distributional effects.

Moreover, taxes can be quite powerful tools in "moving" preferences towards certain goods and services, see e.g. Stiglitz (1988). It should, though, be noted that an economic distortion is a necessary artefact, and (optimal taxation) theory would focus on this trade-off between distribution and economic efficiency.

The literature also raises the question of which tax scheme is preferable. Theoretically, a subsidy on labour in the industry of interest is actually superior to a VAT decrease since the former aims directly at creating new jobs. There are several issues, e.g. budget considerations, related to this debate.

From an empirical point of view, Liberati (2001) has investigated the distributional effects of the Italian multi-rate VAT structure, and his findings suggest that simpler VAT structures like the two-rate system proposed by the European directives on VAT coordination result in more equal distribution of society's wealth.

9. Firm size, labour intensity, and uncertainty and their influence on the informal economy

Apart from ethics, the choice of working in the formal or informal economy relies on a trade-off between enforceable contractual terms, the risk of punishment, administrative costs, and tax expenditures. In this calculus, the VAT rate is of some importance. Small, labour-intensive firms are most likely to engage in informal activities.

All informal activity has one common feature: the entrepreneurs who operate in the informal economy perceive the benefits of doing so to outweigh the costs of going formal. Recent studies have identified a number of reasons why some businesses perceive the benefits to be higher than the costs. The most important determinants are the prevalence of burdensome and costly government regulations (Johnson et al, 1997; Johnson et al 2000) and the level and administrative complexity of taxation (Enste and Schneider, 2000). Most often, tax evasion is the primary objective of informal activities, c.f. OECD (2004).

On the other hand, informal activities cannot take use of legal enforcement if contractual terms are not held. This, alongside the risk of punishment, is an uncertainty factor. Moreover, moral issues should also count on the cost side of engaging in informal activities.

It is worth noticing that firm size and labour intensity are two important determinants of where to find each firm on the trade-off curve between costs and benefits. Small privately owned firms are less publicly visible which reduces the risk of being uncovered. Moreover, small firms encounter proportionally much higher administrative costs from the same set of regulations than larger firms. High labour intensity also raises the probability of conducting informal work. Capital, e.g. in the form of machines, makes the undertaking more visible, and the capital good

often has to be purchased in the formal economy, whereas labour can more easily be bought under terms where both the employer and the employee gain from tax evasion.

Consequently, almost all kinds of tax reductions influence the spread of the black economy, c.f. Graafland (1990) and Lemieux et al (1994). A reduced VAT rate can make it less beneficial to provide services in the black economy. Of course VAT rates are not the only measure to reduce the size of the black economy.

The informal economy also includes home production – not only the black economy. One of the main arguments in favour of reducing VAT rates on labour-intensive services provision is that production at home will be less beneficial, see also Frederiksen et al (1996). Home production of services implies an economic loss insofar it does not take advantage of specialisation. For several services including renovation and repairing, do-it-yourself work will be much less productive compared to professional craftsmen, but the tax wedge creates distortions towards home production. In contrast, other services like childcare are sometimes – but not always – superiorly provided at home.

The subject has also been treated from the point of view of optimal taxation theory. If the informal economy represents a near to perfect substitute to white economy provision of the services there might be good reasons to deviate from flat tax rates. Harberger (1990) has put it:

"If a package of close substitutes contains some important items that by their nature are difficult to tax, the course of prudence may well be to leave the whole package in the untaxed sector rather than cause sharp tax-induced substitutions by introducing a tax just on a part of the group."

10. Demand and "good" products

Reduced VAT rates can be used to stimulate the demand "good" products. The main obstacle seems to be the implementation, i.e. how to decide the class of good products.

The concept of merit goods – which we will generally denote "good products" – is due to Musgrave (1959). Today, there is a large economic literature on the issue of levying taxes or subsidies on merit goods (bads) or goods producing positive and negative externalities. If we define "good" products to include both merit goods and goods with positive externalities, there is a clear case for tax reductions or simply subsidisation. The idea is simply that individual demand is too low due to imperfect knowledge, but that government, in the light of the merit character of the good, should promote it by correcting incentives.

The main problem of good products is to define and identify them. If we take art as an example of a good product, we can easily get an impression of the problems involved. We assume that alongside the individual satisfaction there is e.g. an educational (merit) effect of looking at art which is not appreciated by the normal consumer. But how can we delineate art in the economic space? How about mass-produced designer-articles? Architects? Photographs? And so on.

Moreover, if good products were legally exempted from VAT (or with a reduced rate), there would be a serious danger of using the category for all kinds of political purposes not related to the merits, and lobbyism would probably also be significant. All in all, there seems to be a number of practical limitations to the legal implementation.

Bad outcomes of VAT reduction

One of the main objections to reduced VAT rates on selected goods is the creation of economic distortions. Such distortions are likely to affect consumption and production choices, influence market structures and firm sizes, as well as change factor productivity or employment, and increase costs of compliance. Although the specific outcomes are attributable to contexts, such as industry characteristics or country institutional setup, changes of the VAT are likely to lead to the following detrimental outcomes, cf. Table 2.

	Outcomes					
		Pass-	Demand and	Equality	Informal	
SS		through	jobs		economy	
isti	Demand curve	1a / 1b	1a/1b	1d/9	-	
Industry characteristics	Other demand factors					
araı	Supply curve	2	1c	2/9	1c	
ché	Market structure	6/7				
ťry	Labour intensity	9		5	3	
snp	Firm size	6				
ľ	Locally supplied					
	Delineation		8		8	

Table 2: Overview of the bad outcomes

Source: Copenhagen Economics

1. Firm's control of pass-through makes price effects of VAT declines uncertain.

Consumption distortions (demand curve), as the reduced VAT rate is likely to affect, by means of lowered prices, consumption patterns leading to a violation of microeconomic optimality conditions, see e.g. Varian (1999). Such outcomes are a consequence of the price elasticity of demand for a particular product or service. Specifically, they can come about if:

1a. If VAT is reduced on goods with high price elasticity of demand, the drop in prices can lead to a substantial increase in demand. While the partial equilibrium of this change would be positive, (decrease the DWL), this is only warranted if the pass-through rate is substantial to induce the demand change. Insofar as reduced VAT is not passed-through, demand will remain unchanged, while benefits of lower VAT accrue to producers. This is equivalent to a sectoral subsidy. Therefore, there are at least two bad effects, 1) as not all DWL is eliminated due to less than full pass-through and 2) as further distortions are introduced due to by the selective sectoral subsidy.

1b. Alternatively, if VAT is reduced on goods with low price elasticity of demand, the drop in prices will not lead to an increase in demand, sectoral revenues will remain fairly unchanged, and therefore there will be a loss in government revenue. In this case, a high pass-through may actually be undesirable, since it would imply extra losses both to the firm (foregone revenues due to lower prices), and to the government (lower tax revenue).

1c. Further effects from changing the VAT rate may depend on the timing of the announcement, and the expectations about the permanence of the change. In this sense, the effects of the tax change are likely to exert an impact even before their formal implementation. Stiglitz (1988) notes that the value of assets may decline subject to an announcement of an increase in taxes affecting that asset.⁷ His example concerns the decline in the value of housing in anticipation of eliminating interest deduction on mortgages. In the VAT context, anticipation of future VAT rate increases may translate into fuelling demand for certain

⁷ Stiglitz (1988), p. 393.

services. Likewise, it can be envisioned that customers will decide to postpone consumption of products and services for which a decline in the VAT rate has been announced, and the pass-through is substantial enough to be reflected in markedly lower future prices. Clearly, the magnitudes of both effects are likely to vary by sector, since they will depend on behavioural parameters, i.e. price and income elasticities of demand, as well as cross-price elasticities of demand.

1d. Equality: Selective VAT reductions are by definition likely to benefit the consumers who already have a relatively high preference for consuming a certain high VAT-rated product, or in other words, who are not willing to consume another product despite it being subject to an already low VAT rate.⁸ In this sense, only that selected group is likely to thrive on the extra surplus due to lower prices, while consumers not interested in the product will, at best, not receive any benefit of the reduction. While the partial equilibrium effect is positive as VAT reduction is likely to take away some DWL, there are clearly distributional concerns insofar as lowering VAT makes some households better off relative to others.

2. Supply-side distortions must be balanced with provision of public goods.

Production distortions (supply curve) may come about, as a consequence, when taxes are raised on other goods to offset the loss in tax revenue. In case other taxes are held constant, there will inevitably be a reduction in the provision of public goods.

3. VAT reductions may not be the most efficient means of stimulating employment.

An argument in favour of VAT reductions postulates a reduction of in the size of the informal economy, as employment shifts to the formal sectors, for whose output there is now a higher demand. A productivity gain is expected, as formal economy sectors operate, by definition, with greater productivity than the inefficient informal economy. Nevertheless, Frederiksen et al. (1996) identify a number of complications putting this outcome in jeopardy.

Secondly, selective reduction of VAT may be an inefficient instrument for reducing unemployment in the sectors intensive in the low-skilled factor. Instead, it has been proposed that resources should be spent on active labour market policies, explicitly designed to target structural unemployment.

Thirdly, for the VAT reduction to spark off an actual contraction of the informal economy, the tax must be reduced on all closely substitutable goods. If this is not the case, the remaining highly-taxed goods will continue to be replaced by ones produced in the informal economy. As a result, the price of eliminating the informal economy activities (the VAT revenues drop) may simply prove too high in relation to the mediocre outcome. In this respect, Frederiksen et al. have argued for direct subsidization of high VAT rated sectors with high intensity in the low-skilled factor, which would be better suited to avoid the problems of selective VAT reductions.

4. Selective VAT reductions may weaken the internal market.

The well-functioning of the internal market rests on the condition that similar goods are subject to equal taxation rates irrespective of their country of origin or destination. It has been the achievement of the European Union to eliminate all unjust taxes and tariffs and thereby

⁸ Whose cross-price elasticity wrt. to a substitute good is high i.e. the substitute goods would need to command substantially lower prices in order to induce substitution.

enforcing competition between producers of different Member States. In contrast, the introduction of reduced VAT rates in a non-uniform manner across Member States obviously opposes the condition of equal taxation rates.

There exists a large literature on tax harmonisation and its potential benefits, e.g. Sinn (1991). Moreover, the issue of tax competition between Member States leading to a "race-to-the-bottom" with insufficient tax revenue is of importance in this respect. Apart from this version of the prisoners' dilemma, Dehejia and Genschel (1998) identify distributive conflict as a potential source of tax harmonisation problems. This would indeed by the case when we seek to influence the low-skilled segment of the labour market.

5. Corrective effects of VAT reductions on sectoral employment come at a price.

One attraction of selective VAT reductions is that they are likely to have interactions with labour supply decisions, which can be used to correct for losses introduced by uniform taxation. The mechanisms depend on consumer preferences. In what follows, we illustrate the losses due to uniform taxation, and review the Corlett-Hague argument for using differential commodity taxation to enhance labour supply.⁹

Uniform VAT increase

A uniform increase in the VAT rate on all goods reduces the real wage, which is equivalent to consumers having involuntarily lowered their labour supply. Typically, working more is not an option for consumers to restore their purchasing power in the short run, so demand for goods declines.

Selective VAT reduction

A selective reduction in VAT can have corrective effects in terms of inducing greater labour supply. We assume that consumers can have preferences for two types of goods: goods complementary to work and goods complementary to leisure. We analyze the likely demand and labour supply decisions due to a selective reduction in the VAT affecting both groups in turn.

High VAT on goods or services complementary to leisure, low VAT on goods or services complementary to work:

- Consumers preferring goods complementary to leisure, such as yachts or holiday, will find it more difficult to obtain them as the VAT is increased, and their real wages drop. It is likely that this group may already supply relatively small amounts of labour, and their purchasing power will be severely affected by the increase in the VAT. As a result, consumers would be stimulated to supply more labour to restore consumption.¹⁰
- Other consumers will not be much affected by the high VAT on holidays, because their demand is low. Instead, they would thrive from low VAT on goods complementary to work, such as bus-rides, tools, lunches or computers, increasing the demand for these goods and services. They are encouraged to work more to get a greater 'kick for the buck'.

⁹ Typically, the Corlett-Hague rule is presented as remedy for income taxation distortions. Here, will concentrate on the effects of differentiating the tax scheme.

¹⁰ But only to a point where the marginal cost of taking up more employment would not exceed the marginal benefit from consuming more of the desired good, which by definition requires simultaneous consumption of leisure.

It follows from above, that the VAT should be high on goods which complement leisure (substitute work) and low on goods which complement work (substitute leisure). In such cases, consumers preferring goods complementary to leisure will have to work more hours to obtain them, and consumers preferring goods complementary to work are encouraged to work more to increase their purchasing power further.

Is the standard Corlett-Hauge rule a compelling argument for reducing the VAT on complements to work?

While the overall goal of labour supply increase is met, this comes at the cost of consumers preferring goods complementary to leisure, who must bear the burden of the subsidy to work complements. This does not ensure an equal tax incidence. Furthermore, one may argue that even though consumers are likely to consume both types of goods, it is likely that they may shift their preferences to reduce their demand for the more expensive group of products. This may lead to suboptimal outcomes, as the balance of marginal preferences is distorted by the higher cost of leisure complements. Lastly, for the rule to be effective, it must be possible to delineate the product types with a sufficient degree of precision in order to apply the lower VAT to the services inducing higher labour supply. Problems of correct delineation are among the perennial problems of differential taxation, potentially contributing to companies exploiting the VAT to their advantage, dissipating the benefits it was designed to deliver.

Kleven et al. (2000) shed light on some of the complications hindering a straight-forward application of the rule, not the least because 'little is known about the degree of complementarity between leisure and various goods and services'.¹¹ They postulate adopting a low tax rate on domestically produced services, which despite being complementary to leisure, compete directly with market-produced services, and in so doing, distort demand and remove a part of labour supply from the market. In this respect, the application of the classic Corlett Hague rule, calling for a reduction of VAT on goods complementary to work only, would not discourage home production of certain services, retaining the above mentioned inefficiencies addressed by the Kleven et al. (2000) modification of the rule.¹² Furthermore, Kleven et al. (2000) shows that it is also optimal to apply a low tax rate on goods and services produced in the market that can be easily substituted with home production. This leads to the observation that low VAT on products complementary to home production would be detrimental.

6. Inefficient firms may shield under lower VAT obligations.

One of the criticisms raised against differentiated VAT, is that it may help inefficient firms sustain competitive advantage, especially in imperfectly competitive industries.

Inefficient firms may exploit changes in VAT to justify unnecessarily high prices in order to conceal their high operating costs. This can happen in two ways, depending on the direction of VAT change:

- following a VAT increase, prices can increase more than proportionally
- following a VAT decline, prices can decline less than proportionally

Evidence exists that firms tend to pass increases in VAT on to consumers in the form of higher prices. This means that consumers' burden of the VAT tax would increase by more than the

¹¹ Jacobsen Kleeven et al. (2000)

¹² The classic rule still holds if home production is negligible.

overall VAT raise, implying a loss. A similar loss would result from a less-than-complete reduction of prices following the decline in VAT rates.

However, the degree of tax shifting, as well as its speed, depends on 1) market structures and 2) whether taxes were increased or lowered.

7. VAT reductions may fail to remove distortions in the structure of competition.

Auerbach and Hines (2001) examine the interaction of taxation and competition (or the lack thereof) and find a role for governments to affect different levels of competition between markets by the use of taxes. Conversely, we can use their result to show, that if competition is similar between markets – which is likely to be the case for different kinds of services – taxation will have distortionary effects on competition.

Imperfectly competitive firms possess a degree of market power allowing them to mark-up their prices above marginal costs. This feature implies a dead-weight loss since a certain amount of output is permanently removed from the market. The imposition of taxes can have two effects on output: stimulate output and reduce DWL or restrict output and increase DWL.

Lowering the VAT, or subsidising the imperfectly competitive industry, has the potential to expand output without reducing corporate profits, which can provide the means to achieve reduction in the DWL, in the context of imperfectly competitive industries.

Nevertheless, subsidisation or VAT reductions imply a number of drawbacks, including:

- The necessity to rise taxes in other (competitive) sectors of the economy to finance the subsidy
- The difficulty in assessing the extent of the subsidy as competition intensity is difficult to measure
- Incorrect signals inducing entry to the industry leading to an inefficient allocation of resources
- The VAT reductions may, in fact, increase the total tax wedge between the competitive imperfectly competitive sectors, as an extra tax wedge is involved due to higher mark-up.
- Uncertainty about the imperfectly competitive industry profits affects the effectiveness of subsidies:

Given the need for subsidies is higher in the first case (as industries are less competitive), the uncertainty about profits diminishes the effectiveness of subsidies.

8. Firms may take advantage of delineation problems to reap advantages of lower VAT.

Delineation problems are more of legal character than of economic, but obviously, each choice of delineation will induce different economic impacts. Cnossen (1998) has investigated the implementation of VAT (including differentiated rates) in the EEC countries and comes to the conclusion that the introduction of VAT has raised several delineation problems. The findings suggest that more resources must be allocated to administration and tax collection to avoid loopholes from inadequate delineation.

In a report prepared for the Swedish State ministry, the problems of delineation when introducing a VAT exemption (or reduced rate) on books have been touched upon. Despite the apparent homogeneity of books, there were still raised issues about extension of the area to maps and globes. From there it can be a challenge to draw the line between an illuminated globe and an artistic lamp, etc. cf. Bokpriskommissionen (2005)

9. VAT exemptions are distortionary.

Analyzed in a simple theoretical setup, a uniform VAT exerts no differentiated influence no sectoral employment, leading to an efficient allocation of labour.¹³s Therefore, the uniform VAT is optimal. In order to remain non-distorting in practice, the net VAT liability should cover only the final consumption expenditure, i.e. the value added, not the inputs. This means that interindustry shipments should remain untaxed, else labour supply decisions become undistorted as labour is no longer compensated at its marginal product. Nevertheless, Keuschnigg (2004) examines the German VAT scheme to reveal that only 63% of the VAT falls on consumption, while 21% accrues to intermediary products and 16% on investment, which are both distorting in terms of the allocation of resources. While distorting taxes can be eliminated by means of two mechanisms including exemptions and zero rating, efficiency of the two methods is different.

- The zero rating scheme provides for a zero tax on sales, but retains tax refunds on inputs. VAT is levied on consumption, and there are no sectoral distortions (tax neutrality).
- Under the exemption scheme, there is no tax on sales, but also no refund of VAT on intermediary purchases. A sectoral distortion ensues, as the marginal revenue in the exempted sector falls due to higher intermediary prices vis-à-vis other sectors, and labour moves to sectors with higher marginal revenue due to tax refunds on intermediaries.

Lastly, administrative costs of several VAT rates will incur additional burden for both the public and the private sector. Automation through application of improved technologies may offset some of the administrative costs, but they will never disappear.

Applied literature on VAT

Value added tax is used all over the world as a means to finance public expenditure. The form of VAT which is prevalent in the developed world today was initially adopted in France in the 1950's and spread to the entire Western Europe throughout the 1960's and 1970's. VAT is thus a relatively new form of taxation, and though much research has been carried out on the effects of VAT, one can easily say that it is an under-researched topic in the light of its obvious economic importance.

¹³ 2 sectors – downstream and upstream, Leontief production function, fixed labour supply, VAT on sales less inputs.

Most empirical analyses of the effects of VAT fall in two broad categories: macro econometric analyses and applied (or computable) general equilibrium models. The first type of analysis attempts to identify effects of VAT by comparing countries, sectors or goods with different levels of VAT, or which experience changes in the level of VAT, on a number of dimensions. The effects of VAT in this type of analysis are identified from the temporal or cross-sectional co-variation between VAT levels or changes and the levels or changes of other variables of interest. The second type of analysis constructs a theoretical model, which is combined with empirical information on the behavioural parameters of individuals and firms. The effects of VAT in this type of analysis are the theoretical predictions of a model, which has been calibrated using empirical information.

The most frequently analyzed types of effects of VAT are the incidence on prices, national income and employment, company profits, income distribution, administrative burdens of companies, cross-border trade and the informal economy.

The incidence of VAT on the prices of consumer goods determine the effects on national income, employment and economic welfare in general, hence this effect is the object of several empirical studies.

Incidence of VAT: Macro econometric studies

From the literature two broad identification strategies appear as the most common. The first is to use geographic and temporal variation in VAT rates combined with geographic variation in consumer prices to identify the effect of VAT rates on prices. The second is to use variation in VAT rates between different goods or sectors combined with variation in prices, coupled with temporal variation in VAT and prices to identify the effect of VAT rates on prices. A minority of papers use only variation on one dimension of the data.

The first approach has a long tradition in quantitative analysis of VAT pass-through. The first internationally published scientific papers which looked at the pass-through of sales taxes used inter-city variation in sales taxes, c.f. Sidhu (1971). Sidhu (1971) used information on the consumer price index and sales tax rates for five product categories in a sample of seven cities between 1954 and 1966. She found that in all but one sector, changes in sales tax rates were shifted more than fully into prices. Poterba (1996) uses data from two panels of data for the clothing sector. The first panel contains information on eight cities for 30 years after Second World War, and the second panel contains information for 13 cities for 15 years before Second World War. The results for the post-war period consistently indicate full pass-through whereas the results for the pre-war panel indicate less than full pass-through. Delipalla and O'Donnell (2001) use data on the cigarette industry in EU12 in 1982-97. They estimate less than full pass-through of VAT and excise taxes.

Carbonnier (2005, 2006) analyze the effect of VAT changes on prices in different French sectors. The data encompasses the period 1995-2000 and some 296 goods are considered for analysis, but only a few of them are actually used for analysis. Carbonnier's (2005) results indicate that VAT hikes appear to be more passed over to consumers than VAT decreases. Carbonnier's (2006) findings indicate that the pass-through of VAT is less than full pass-through. Baker and Brechling (1992) have conducted econometric analyses of tax pass-through for various consumption products, and they generally find the relation to be one-to-one.

Harris (1987) analysed the pass-through of VAT using only the time series variation in VAT rates and prices. Harris (1987) analyzed the effect of increases in excise taxes on cigarettes in the U.S. in 1983 and found evidence of more than complete pass-through.

Finally, Besley and Rosen (1999) analyze the relationship between sales taxes and prices in three dimensions: time, regions and sectors. They use quarterly data from 1982 to 1990 for 12 commodities and 155 cities. Their results indicate a wide span of pass-through from sales taxes to prices. For some commodities they find full pass-through, but for others they find evidence of over shifting.

Most of the results on VAT pass-through above can be reconciled by taking into account the intensity of competition in the sectors which experience VAT changes. A fairly general empirical result is that the pass-through is greater for countries or sectors with intense competition than for sectors in which competition is highly imperfect.

Incidence of VAT: Experimental and micro econometric studies

There is also an emerging literature, which studies the incidence of VAT using controlled experiments. A recent and well-published study is Ruffle (2005), which studies the equivalence between sales taxes and subsidies. He finds that in competitive situations, changes in sales taxes are fully passed through to prices, but in imperfectly competitive situations, the pass-through is less than full.

Kenkel (2005) analyzed the effects of increasing excise taxes on alcohol in Alaska in 2002. His findings indicate that excise tax hikes are more than fully passed through to consumers. An interesting feature of the Kenkel (2005) study is that it is a micro econometric study based on survey data, which is uncommon for analysis of the pass-through of goods taxation.

Incidence of VAT: Computable general equilibrium models

The computable general equilibrium literature on the effects of VAT is relatively recent. One of the earliest papers in this literature is Lorwerth and Whalley (1998). Their analysis indicates nearly full pass-through of decreases in restaurant sales taxes on food: a 1.7 percentage point's decrease in the sales tax rate from 15 to 13.3 percent leads to a 1.8 percent decrease in restaurant prices. Full pass-through would imply a 1.5 percent decrease in prices.

More recent analyses by Bye et al. (2003) indicate that there is some pass-through of VAT changes to prices. They consider a policy simulation where the Norwegian VAT is made uniform across all types of goods, which implies an increase of VAT for some goods and a decrease for others. For material good the simulation involves an increase of VAT of 1.5 percentage points, which leads to a simulated increase in the prices of goods of 2.7 percent.

Effects on national income and employment

Most analyses of the effects of VAT and commodity taxation have been made using computable general equilibrium models. Recent simulation analyses performed by Boeters et al. (2006) and Bye et al. (2003) indicate that VAT changes affect demand, and differentiated VAT tends to increase demand in the sectors that are favoured by lower VAT levels. However, once general equilibrium effects are taken into account, e.g. that the government budget must balance, the positive effects in the sectors favoured tend to be offset by negative effects in the rest of the economy. Böhringer et al (2005) found evidence of the effects of general consumption tax decreases on employment using a computable general equilibrium model. They considered a 2 percent decrease in lump sum public income transfers, which is returned to the population through a decrease in consumption taxes. This policy experiment is found to result in a 0.3 percent increase in employment. They also find that decreases in the consumption tax are more effective than decreases in marginal wage taxes, but less effective than decreases in payroll taxes or increased income allowances. Sørensen (1997) conduct simulation analysis based on a computable general equilibrium model and finds that VAT increases which are channelled back to the population through a lower basic marginal tax rate leads to a reduction in official employment and an increase in unemployment. However, unofficial employment increases. The overall effect on society's welfare of such a change is, however, found to be negative.

Effects on firms' profits

The amount of a VAT change which is not passed through to consumers is borne by producers and the retail sector. In a sense, therefore, the results on the pass-through to consumers are very informative on the effects of VAT changes on profit margins. Carbonnier (2006) is the most recent econometric study of the effects of VAT changes on firms' profits. Analyzing data from the French car sales sector and maintenance and repair of housing, for the period 1990-2002 he found that approximately 23 percent of the cost changes induced by VAT changes in the housing repair sector and 48 percent in the car sales sector are borne by firms.

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Appendix II Industry specific job creation and VAT changes – Econometric analysis

Both theory and empirical evidence suggest that lower VAT rates in an industry subjected to a selective VAT reduction will be translated into lower *consumer prices* and subsequently higher demand, production and employment in *that particular industry*.

In this chapter, we will go into details about the pass-through of selective VAT rates to prices, production, and employment. Pass-through to prices and production is interesting as it is a prerequisite for job creating effects. We will identify circumstances under which the pass-through will be large and thereby causing large economic effects, and circumstances that will have the opposite effects.

The chapter is organised as follows: In the first section, we present the main results of how different sectoral characteristics determine the potential for job creating effects of reduced VAT. The section serves both as introduction to the technical analyses and as summary of findings; readers not interested in the technical details can restrict attention to this section. While the second section motivates the structure and methodological approach of the empirical analyses, the third section provides an overview of the sectoral coverage. The fourth to sixth section goes into details with each of three identified economic effects – lower prices, more demand, and more jobs – and presents details of the econometric methodology, the data, and the empirical results. These three sections are purely technical. At the end of the chapter, we conclude on whether temporary or permanent VAT changes are better for achieving the objective of lower prices, higher demand, and more jobs. These conclusions are based on a review of the results of the VAT-"experiments" carried out in some countries in the period 2000-2003. Finally, two appendices deal with sector definitions and data.

Industry characteristics and job-creating effects

The main objective of the empirical analysis of price, production, and employment effects from VAT changes is *not* to gauge the size of these effects historically, but to learn more about the circumstances under which these effects become larger or smaller. Unfortunately, the term "circumstances" is not very specific, and thus we need to operationalise it. We prefer to describe the circumstances by a range of characteristics. Most of these characteristics will be linked to the sector of interest, e.g. average capital intensity, but a few characteristics are more fundamental to the policy context, e.g. the temporary or permanent nature of a VAT change.

Three economic effects – three behavioural relationships

Before we turn to the various characteristics, we need to account for the economic chain starting with a VAT change to job destruction or creation. The job effects of a VAT change, say a reduction, depend on three behavioural relationships. First, the services or goods providers

within the sector must *lower the prices* to consumers. Second, consumers must respond to the price reduction by *buying more* of the good or service under consideration. Third, good producers or services suppliers must *hire new employees* to meet the increased demand. Our econometric estimations have shown that the existence of the three effects is indisputable as the corresponding econometric estimates are highly significant, but also that the magnitude of the effect may differ considerably between sectors.

In each of these three steps, sector characteristics will determine to what extent the effect dies out or becomes more pronounced.

In the first step where producers choose how to respond to the VAT reduction, the market structure is of major importance. If markets are very competitive, we will generally observe a large and swift pass-through to prices. On the other hand, we observe much smaller price reductions in weakly competitive industries where most of the VAT reduction is internalised in the producers' profit margins and costs. Moreover, the nature of the VAT-change will also be important in this aspect; if it is temporary, we expect limited pass-through; if it is permanent, we expect a fuller pass-through in the long run.

In the second step where consumers react to a full or partial price reduction, the size of their reaction – measured by the price elasticity of demand – will be decisive for the final impact on new jobs in the sector. At this point it is worth noticing that the more consumption is reacting, the more prices will start rising again. Thus, the size of the price pass-through and the jobcreating effects can be inversely related empirically. Due to this, it would be premature to look only for changes in prices when actually searching for job creation effects. Moreover, the type of good will normally be quite decisive for the price response; necessities like water and housing will not respond much to price changes, whereas luxury goods like televisions will be far more price sensitive. Thus, classifying the goods along a necessity-luxury dimension can provide us with straightforward insights to the magnitude of demand responses.

In the third step, we are looking for a large degree of sensitivity in firms' labour demand to output changes. There are two important characteristics in this aspect: the capital intensity and the labour market conditions, e.g. labour market regulations. Capital intensive sectors will generally respond less and slower to demand changes since new hires will have to follow new capital investments (except for firms with unutilised capital reserves). Additionally, labour market conditions will be an important determinant of the short-run employment effects. For example, labour markets with tight labour supply simply cannot generate any significant (positive) employment effects.

Sectoral characteristics are main determinants of the behavioural relationships

The different characteristics have been incorporated in the strategy of the empirical modelling; some of the characteristics directly enter the econometric equations, whereas other characteristics are compared to the results of the econometric exercise after the actual modelling. The empirical analyses have shown:¹⁴

- VAT changes with a temporary nature will only marginally lead to lower prices and more jobs;
- Necessities do not create many jobs when selectively reduced rates are applied. On the other hand, luxury type of goods do;
- High capital intensity will reduce the speed and magnitude of the job creating effects from a selectively reduced VAT rate.

Furthermore, our literature survey suggests:

¹⁴ Including the review of the evaluation of the experiments.

- Less competition reduces the short-run price pass-through;
- Large demand elasticities will reduce the size of the long-run pass-through;
- Low sector flexibility, e.g. high capital intensity, will reduce the short-run pass-through.

Table 3 summarises and organises the thoughts and results from above. Along the vertical dimension we find the three consecutive steps – each representing an isolated empirical analysis in the sections to come – and along the horizontal dimension we find the characteristics. The grey-shaded areas indicate that the conclusion is derived from empirical analyses, whereas the non-shaded areas are still working hypotheses to be tested by empirical work for the draft final report.

Looking at the evidence from Table 3, we can conclude that the identified characteristics will determine the *speed* and *magnitude* of the economic effects – in particular the job creating effects. With real world data these two dimensions are often very hard to distinguish, but our econometrical modelling has already showed some promising results.

Characteristic Type of economic effect	Competition	Temp. nature of VAT change	Demand (price) elasticity	Type of good or services	Capital intensity	Labour market conditions
Lower prices	Price responses will be smaller and slower in less competitive sectors	Knowledge about future reversals will seriously hinder pass- through	The price pass-through will be smaller for higher price elasticities.		More capital intensive industries will experience lower and slower pass- throughs	
More demand and production			The demand elasticity represents the long-run production response	Luxury goods will have larger quantity responses to price changes than necessities		
More jobs		Knowledge about future reversals will seriously hinder any job creating effects			Capital intensive sectors will respond less and slower than labour intensive	Tight labour markets will reduce positive labour market effects

Source: Copenhagen Economics

Obviously, knowing the consequences of each characteristic is only useful for policy-makers if some information on its "level" for the sector of interest also exists. Below, we shortly elaborate on that point.

An example of how to use the findings – Supply of new buildings in France

In Table 4 we present the characteristics of the sector "Supply of new buildings" in France (SNBFR) and compare them to an artificially selected "benchmark" sector – the average across all sectors in all EU25 countries. This choice of benchmark sector is generally not recommended, but it simply serves to illustrate the way of thinking.

On the basis of this benchmark sector, we can see that e.g. the demand elasticity is rather low; for an average product it is around -0.35 whereas the SNBFR only has an elasticity of -0.07. This implies that the production will only increase by 0.07 percent for a one percent drop in

prices, or conversely that prices should drop by 15 percent to create a one percent change in production.

Taking all the conclusions from Table 3 and comparing with the benchmark values, we will more generally be able to conclude that:

- low degree of competition, low demand elasticity, the type of good, and a high level of labour market rigidity point towards a limited effect on employment in the SNBFR;
- low capital intensity point towards the potential for larger employment effects in the SNBFR.

We stress that in order to reach an overall conclusion for the adequacy of applying selectively reduced VAT rates in the SNBFR, we need to consider all the characteristics investigated in this study. For example, it would probably be very relevant to also look at informal economy aspects of the SNBFR.

Characteristic Type of economic effect	Competition	Demand (price) elasticity	Type of good or services	Capital intensity	Labour market conditions
Source for stats	Lerner index based on Amadeus	Copenhagen Economics based on Eurostat	Copenhagen Economics	Amadeus	Eurostat / OECD
Supply of new buildings, France	8,59%	-0.07	Necessity	38,169 € per employee	Unempl.: 9.5 Regulation index: 2.47
All other sectors, EU25	3,83%	-0.35	Average good (no class)	67,249 € per employee	Unempl.: 9.0 Regulation index: 2.31

Table 4: Characteristics of supply of new buildings

Source: Copenhagen Economics

Note: The Lerner index measures sectoral profitability and is an indicator for the degree of competition. Demand elasticities are percentage change in quantity to a one percentage change in prices. Goods and services have been classified into: necessities, leisure goods, and luxury goods. Capital intensity is the Euro value of real capital per employee. Labour market conditions are measured by unemployment rates and the OECD labour market regulation index ranging from 0 to 5.5.

Strategy for the empirical analysis

Our overall objective is to track the economic effects caused by a permanent change in VAT rates at a sectoral level. However; we will not start by explaining what we are investigating, but rather what we are *not* investigating. In the end, this will serve to give a better understanding of the empirical analysis.

First, we are not interested in macro effects and economy-wide efficiency. In other words, we do not take the view of an altruistic macro-planner who seeks to maximise overall welfare. Other parts of the report consider macro- and efficiency-effects from both theoretical and empirical angles. Instead, our approach is far more narrow-scoped, and we are only interested in one sector at the time and the jobs that will be created or destructed in this particular sector. There is one simple reason for this choice of focus: there would simply be too much noise in the data for econometric modelling to capture effects on the aggregate level.

Second, we will not be interested in temporary changes in VAT rates. Our findings from evaluating the experiments (see below) suggest that only *permanent changes* in VAT rates can generate sizeable effects as temporary changes seem to have a limited effect on producer and consumer behaviour. We have evaluated the VAT-experiments for the 2000-2003 period and

reached a solid conclusion that the temporary nature has clearly been hindering any positive economic effects. This evaluation can be found at the end of the annex.

Third, we have simplified our models, i.e. our perception of the world, and excluded a number of factors from the models which will only influence the VAT effect marginally. Such factors are:

- psychological and habitudinal factors in demand
- market uncertainty
- the size of the geographical market

There are two reasons that such factors have not been included in our models: First and most importantly, because they will not change the way VAT rates impact job creation in a specific industry. They will have a marginal effect, but probably too small to be captured by current econometric methods. Second, high-quality data simply does not exist. The reader is referred to the literature survey for a further discussion of these factors.

Fourth, we are not interested in personal, social, or any other effects than *economic* which can be measured and related to the VAT rate.

Given these restrictions, we now explain what we actually are considering. In this quest, we will set up a chain of economic effects starting with the selective VAT reduction. We should stress from the beginning that we do not set up a causal relationship since repercussions from latter to former links are very likely to occur. Instead, we focus on a logical sequence where the presence of an effect at a former stage is necessary (but not sufficient) to achieve an effect at a later stage.

Our chain of economic effects starts with a change, say a reduction, in VAT rates, c.f. Figure 5. First, the VAT reduction will lead to three (collectively exhaustive) outcomes: (1) prices can go down, (2) profit margins can go up, and (3) the increased profits are eroded by higher costs (inefficiencies). If a product currently has a price of 5 EURO including VAT of 25 percent, and VAT is reduced to zero, the change corresponds to an effect of 1 EURO, and thus the magnitude of the three outcomes must sum to 1.

If a lower price is realised, there would be more demand creating more production and eventually more jobs. The illustration also suggests that we should account for two influencing factors: market structure and demand factors. The market structure will influence how suppliers react to the VAT reduction, and demand factors will influence how much production and employment will go up. It should also be clear that the time dimension will play a role: pass-through to prices can potentially happen immediately (but must not), whereas demand and job creation will take time to materialise.

Box 1: Prices, costs, profits, and VAT rates

This box serves as a reference for economists who prefer a more rigorous discussion behind the division into costs, profit margins and price pass-through. Our starting point is the identity of prices equalling costs plus a markup (profits) on which the VAT rate is added:

$$p \equiv c \cdot [1 + \pi] \cdot [1 + VAT]$$

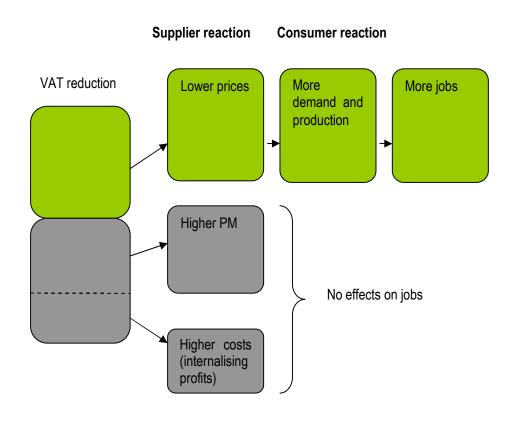
where p is unit price, c marginal costs, π profit margin and VAT the VAT rate. Without imposing any restrictions on possible behavioural relationships, we can deduce the following marginal effects of VAT changes (by total differentiation):

$$\frac{dp}{dVAT} = \left\{ \frac{dc}{dVAT} \cdot [1 + \pi] \cdot [1 + VAT] \right\} + \left\{ \frac{d\pi}{dVAT} \cdot c \cdot [1 + VAT] \right\} + \left\{ c \cdot [1 + \pi] \right\}$$
$$= \left\{ \frac{(m cost effect'')}{(m cost effect'')} + \left\{ \frac{(m cost effect'')}{(m cost effect'')$$

Now, economic theory should guide us to the signs of each of the derivatives. As we have drawn Figure 5, we have assumed both derivatives to be negative, i.e. lower rates are associated with higher costs and higher profit margins.

Source: Copenhagen Economics

Figure 5. From VAT reduction to more jobs



Source: Copenhagen Economics

We will set up an empirical modelling strategy that will trace all the economic effects in the chain. Thus, we will look into pass-through to prices, the effects on production, and the effects on employment. It should be clear from the outset that observing a large effect at one of the primary stages does not imply a large effect on jobs (the last stage).

Sectors covered

The objective of the empirical investigations in this Annex is to relate sectoral characteristics to the effects on sectoral economic activity. As a consequence, we should try to cover sectors with as different characteristics as possible.

Also, the sector choice will be targeted to the economically and politically interesting sectors. In this quest, we are helped by a gross list of 22 sectors issued by the European Commission, c.f.Table 5. These are the sectors in which differentiated VAT rates seem most politically viable and therefore the sectors specifically interesting in our context.

We have combined both of the above interests and estimated empirical models for *all 22* sectors whenever data availability allowed us to do so. Data restrictions were only severe in the first step of the empirical analyses. Thus, the coverage is as follows:

- Lower prices: Only eight instances of VAT changes from six sectors satisfied necessary data requirements.¹⁵
- More demand and production: All sectors (3-digit COICOP) encompassing the 22 sectors have been estimated;
- More jobs: 21 of the 22 sectors have been estimated.

The gross list of sectors together with the status for each step in the empirical analysis can be found in Table 5. For measuring the pass-through of VAT rates (Lower prices), the sectors were severely limited by both absence of VAT changes and bad correspondence between VAT applicability and price series definitions. The second step (More production) was conducted for the entire economy – except for the two COICOP categories prostitution and drugs – thereby also covering the 22 sectors. Finally, the third step (More jobs) could be completed for 21 out of 22 sectors, leaving only government services for which private firm data did not seem adequate.

Sector	Lower prices	More production	More jobs
Food and non-alc			
beverages Adults' clothing	N/A	2	2
Children's clothing	N/A	N	N
Books, newspapers etc.		N N	V
Housing	N/A		
Pharma products	N/A		
Medical equipment	N/A		
Reception of broadcasting services	N/A	\checkmark	\checkmark
Hotels			
Restaurants			
District heating, electricity and gas	\checkmark	\checkmark	\checkmark
Other energy	N/A		
Passenger transport	N/A		
Water	N/A		
Waste treatment	N/A		
Hairdressing			
Domestic care	N/A		\checkmark
Small repair	N/A		\checkmark
Other labour intensive (repair of el goods)	N/A	\checkmark	\checkmark
Charity organizations (social services)	N/A	\checkmark	\checkmark
Government services	N/A	\checkmark	N/A
Agricultural Inputs (fertilizer, pesticides, animal feed, etc.)	N/A	\checkmark	\checkmark

Table 5: Sectoral coverage for econometric estimations

¹⁵ The choice of sectors for this part of the analysis was dependent on three criteria: (i) the sector should have experienced a large change in the VAT rate, (ii) the change cannot be temporary, and (iii) there must be a satisfying coincidence between the VAT definition and the definition of the price series.

Source: Copenhagen Economics and the European Commission. This is the gross list presented by Copenhagen Economics on the meeting with DG TAXUD on the 10th of October 2006.

Lower prices

The effect on prices is of immediate interest as prices will determine whether consumers are likely to experience effects of VAT reductions. We develop the following hypotheses:

- In a fully competitive market, VAT changes are passed entirely through to consumers in the long run.
- In a less competitive market, VAT changes are not passed entirely through to consumers in the short to medium run.

In general, firms set prices and quantities to reflect the level of their variable (or marginal) and fixed costs. For firms which operate in fully competitive markets, the long run price will equal the smallest possible level of average costs, that is, the long run price will precisely cover marginal and fixed costs plus some normal profit level which covers the return to capital necessary to attract external capital. This is a standard result, c.f. Mas-Colell et al. (1995).

A VAT change affects firms' marginal costs and possibly also their fixed costs. Standard economic theory suggests that following a VAT change, firms which operate in fully competitive markets quickly change prices to compensate entirely for the change in marginal costs, but adjustments to changes in the fixed costs take place over a period of time. Eventually, a VAT change affecting firms in fully competitive markets will be passed through entirely to consumers as competition implies setting the lowest possible price sustainable by the market, i.e. without firms going bankrupt.

In less competitive markets, prices are higher than marginal costs: a higher level of production can only be sold at lower prices. Even if additional products are sold at a lower price still above marginal costs, this will be at the cost of reduced net revenues for existing sales. So the prices will have to be set above marginal costs. The counterpart is that a fall in marginal costs by way of VAT changes will not fully translate into lower prices.

The pass-through of VAT changes into prices depends on firms' type of strategic interaction, on the responsiveness of the market price to changes in supply, on the number of firms, and on the structure of firms' costs, c.f. Auerbach and Hines (2001), Seade (1985) and de Meza et al (1995). ¹⁶ The cost structure plays a major role as VAT increases can result in *lower* prices if there are large unexploited advantages of scale to be reaped in an imperfectly competitive industry, c.f. de Meza et al (1995).

Furthermore, in imperfectly competitive markets, the size distribution of firms (by turnover) in combination with the threshold for paying VAT can be expected to matter for the pass-through of a VAT on prices, c.f. Keen and Mintz (2004).

Fully competitive markets are most likely to prevail if the cost structure is compatible with the existence of small firms who have no market power or if entry into the market is very easy. If, on the other hand, there are strong economies of scale associated with the production of a good and entry is costly, then the industry will be dominated by large firms who cannot be expected to behave competitively. Thus, if a VAT change affects the level or structure of fixed costs, it will affect the number of firms in an industry and possibly the way active firms behave.

¹⁶ Besley (1989) and Myles (1989) both find that the responsiveness of prices to commodity taxation depend upon the curvature of the demand function. Besley (1989) analyzes a partial equilibrium setting with free entry, and Myles (1989) analyzes a general equilibrium setting without free entry.

In principle, a VAT change can contribute to a change in the functioning of the market away from fully competitive behaviour and towards less competitive behaviour.

VAT changes which increase the complexity and the administrative burden of firms are most likely to result in increased fixed costs and thereby potentially reduce competition in an industry in the long run. On the other hand, VAT changes which reduce the complexity and administrative burden of firms may increase competition in the long run.

Small VAT changes may feed into prices with some uncertainty. If it is costly for producers and retailers to change price list etc., then a minor change in the VAT rate, in a situation where no other cost changes had taken place since last price setting, may only affect price setting when the cumulative effect of cost changes warrants a new price. It may however also imply that a minor change in VAT may be the trigger for a much larger price adjustment following other small costs changes each which was too small to affect prices. In other words, we are not necessarily talking about a small effect at the firm level, but an uncertain, and often postponed effect.

The relevance of either of these caveats for the usefulness of lowering VAT rates is probably not very large. E.g., the issue of the effects about small and large changes in VAT rates is more about timing of effects than the pass-through in the medium to long run. This may though matter for the "selling" of policies: if effects cannot be demonstrated clearly they are more difficult to get adopted ex-ante and get credit for ex-post.

Box 2: Empirical findings of VAT pass-throughs

At this point, we should mention some of the empirical reports on VAT pass-throughs. Their diverging findings may be seen in the light of different market structures. First, we have the report of the European Commission¹⁷ evaluating the experimental reduced VAT rate. The report concludes that no noteworthy pass-through could be observed in the countries implementing the reduced rate. Conversely, Kenkel (2005) found that an increase in indirect taxes (on alcohol beverages) led to a more than one-to-one pass-through. Baker and Brechling (1992) have conducted econometric analyses of tax pass-through for various consumption products, and they generally find the relation to be one-to-one. Ruffle (2005) finds that commodity taxes payable by sellers are rapidly passed fully through to buyers in an experimental setting of competitive markets.

Source: Copenhagen Economics

Summing up, we will be focussing on the following hypotheses when investigating passthrough to prices:

- Following selective VAT changes (declines and increases) we expect to observe a pass-through effect on prices, though possibly with a time lag.
- Pass-throughs occur faster and have larger magnitude the more competitive the industry structure. With imperfect competition, the pass-through may be more than one-to-one
- Temporary changes will have much smaller pass-throughs.

Methodology

Empirically, we can investigate the above hypotheses by modelling sector prices as a function of VAT changes and deterministics and compare the results with the underlying structural characteristics of each sector studied. We should carefully specify the dynamic structure

¹⁷ European Commission (2003)

correctly as prices often are characterised by sluggish adjustments. The model we set up will be similar to Carbonnier (2005), but will differ in its stronger emphasis on deterministics:

$$p_t^{ki} = a(L) \cdot p_t^{ki} + b(L) \cdot VAT_t^{ki} + \sum_i c_{t_i} + \sum_j d_j \cdot trend_{t_j} + \sum_l s_l \cdot I_l + \varepsilon_t, \quad \varepsilon_t = \phi \cdot \varepsilon_{t-1} + \eta_t$$

where k refers to country, i to industry, and t to time. L is the lag operator allowing for a dynamic structure. The variables in the model are:

- p: logarithm of Eurostat price index at the 4-digit COICOP level;
- VAT: VAT indicator variable taking the value of one after the VAT change;
- c_t: constant term taking a value of zero before period t and a value of one after;
- trend_t: trend term starting in period t;
- I: Seasonal indicator (dummy) taking the value of one in season I;
- *et*: Error term possibly with serial correlation

The main feature of the model is that it links VAT rates – in particular changes in VAT rates – to sectoral prices.¹⁸ A combination of the parameters in a(L) and b(L) will tell us how prices are affected in the short and in the long run. If the parameter on contemporaneous VAT rates has a high positive value and this is combined with low positive values on lagged prices, we will conclude that prices are affected almost immediately.

The idea behind including a rich set of deterministics as well as both AR and MA parameters in the model is to capture the most important influences (apart from the VAT rates) governing the development of the series. E.g., if a series is strongly trending due to overall inflation, we have a much better chance of finding the right magnitude of the pass-through from VAT rates after the removal of the trend. Else, the VAT variable would simply be seen as a structural break and the estimator would allocate most of the trending behaviour to this variable although it is a completely distinct occurrence.

¹⁸ If non-stationarity issues seem to be present in the time series, the model will be estimated on first differences.

Box 3: Details of the applied econometric methodology

The above model is very general and only establishes the starting point for modelling each price series. In this box, we go into the details of each step in the econometric modelling. As will be seen, we proceeded by following the same six steps which in the end led to ten quite different models.

The six steps were as follows:

- 1. Graphical inspection of the price series (logarithm) and VAT changes leading to a preliminary list of deterministics to be included, e.g. trends and seasonal dummies.
- Estimation of ARMA-models including VAT changes and deterministics using MLmethods.¹ The structure of the deterministics was allowed to change as were the ARMA-terms.
- 3. Selection of the best model among the 5-10 models from step 3 using the Akaike Information Criterion.
- 4. If the AR(1) and possibly MA(1) parameters are above 0.85, we test the original price series for stationarity using the ADF unit root test. (No unit roots were ever found.)
- 5. Whenever the best model from step 4 does not include MA-terms, we re-estimate the model using least squares and compared with the ML-results. The final choice between ML and OLS will be dependent on the autocorrelation characteristics of the residuals.
- 6. If residuals are free of autocorrelation, we compute impulse-response functions of the VAT change; else we start over from step 1 again.

¹ All estimations were carried out using the statistical software package Stata. Source: Copenhagen Economics

Sectoral choice

Copenhagen Economics intended to cover a very broad spectrum of different sectors in order to get a thorough understanding of which sectoral characteristics were the most important determinants of VAT pass-throughs both regarding magnitude and speed. This would have implied at least 20-30 sectors carefully selected across the entire economy. Unfortunately, data limitations meant that there were only 8 relevant cases to select from! Below, we give an outline of the data problems we encountered.

The point of departure for sectoral coverage is the gross list of sectors to be included in the study stipulated in the EC terms of reference. Using information on the structure of VAT rates applicable in the EU15 during 1996-2006, we identify the sectors from the list that had experienced a VAT change in that period. We record whether it was a reduction or increase, the timing of the change and its magnitude.

Our sources for the VAT data are the publications VAT Rates Applied in the Member States of the European Community¹⁹, released annually by the DGTAXUD. From each issue of VAT Rates we extract the snapshot of the VAT Rates prevailing for a given sector in a given year, 1996-2006. Therefore, for each sector in each country we obtain a series of 11 annual observations. From this, we are able to identify the year of a change – increase or decline, if any – in the sectoral VAT.²⁰

To analyse price pass-through effects on the sectors defined by the gross list, we compile data on changes in the VAT and the development of prices on the sectoral level, at a monthly frequency over 1996-2006.

¹⁹ Hereinafter: VAT Rates

²⁰ Mention inconsistencies.

The sectoral price data for 1996-2006 is sourced from Eurostat's Harmonized Indices of Consumer Prices (HICP).²¹ Since the HICP data is classified using the COICOP²², we construct a consolidation key between the COICOP and the sectors used in *VAT Rates*. The key provides a match between a sector for which VAT information is available and the COICOP price series.

Consolidating the two series gives rise to three issues:

- The first one concerns the correspondence between the level of aggregation of the sectors in the gross list and sectors for which information about VAT rates is available.
- The second one concerns how precisely the sectors defined in the gross list can be matched with the COICOP.
- The third one concerns the need to obtain more information about the VAT change in order to match the VAT data to the monthly price series.

Firstly, a potential problem with the gross list is that it defines relatively aggregated sectors across the EU25. In some cases the level of observation differs from the level at which VAT changes are implemented, which complicates the identification of VAT pass-through to prices. The main problem is that a VAT change may affect a limited part of the macro-sectors, which we observe, and hence even large pass-through to prices of the small sector in which the VAT change takes place may not be visible at the level of the sector of observation. The approach used to solve this problem is to focus on the sectors where we believe the problem of poor match between the sectors for which prices are observed and the sectors which have experienced VAT changes is small.

Secondly, it is important to ensure correct correspondence between sectors from the gross list and the COICOP, otherwise the VAT changes will not be representative of the price changes, or vice-versa. In such cases, either no or spurious pass-throughs can be detected. When matching the series, we start with the most detailed COICOP category corresponding to a given sector in the gross list. If the COICOP is too narrow, we examine the more aggregated category, making sure that all of its constituents should be included in the sector. In cases where one or more of the COICOP constituents fall outside sectoral boundaries, we drop them. Our consolidation key defines each sector in terms of one aggregate, or several individual detailed COICOPs. By considering the relevant COICOPS at each level, we ensure the best possible correspondence to the sectors.²³

Lastly, COICOP's frequency is monthly, while the VAT data is annual. In order to identify passthrough effects, however, we must merge the VAT and price series in a contemporaneous manner. This means that we must supply the missing information about the month of the VAT change, in order to capture a valid response in the price series.

Section IX of VAT Rates summarizes the month and year of changes in the reduced, standard, normal, increased and parking VAT rates, for each country of the EU25. As this information is not given at the sectoral level, however, its usefulness for providing the month of the VAT

²¹ Available online on Eurostat's homepage, in the Economy and Finance section, Prices.

²² Classification of Individual Consumption by Purpose Adapted to the Needs of Harmonized Indices of Consumer Prices (2000).

²³ Some sectors, however, are not adequately covered by the COICOP. These include: agricultural inputs, government service and charity organizations.

change is limited in our purpose.²⁴ Instead, we turn to the original sources used in the compilation of *VAT Rates*, i.e. national VAT legislation.

We survey the relevant national Acts governing the application of the VAT, in force during 1996-2006. Our point of departure is the year of change in the sectoral VAT rate in a given country, for which we seek evidence in the national legislation. Having found a reference to a specific sectoral change, we note the month of entry into force of that change (if given explicitly) or the month of entry into force of the Act (if not given explicitly). In this way, we also verify the validity of the changes identified from VAT Rates.

One further issue with this approach has to do with ascertaining that the date of the VAT change is properly tuned to the price series, for any contemporaneous pass-through effects to be identified. Sectoral prices are likely to start reacting to VAT changes already at the date information about a future change VAT change reaches the market (i.e. the announcement date). The announcement date, however, is likely to occur before the date of entry of the said legislation into force, which we collect. Furthermore, the announcement date could be difficult to identify unequivocally.²⁵ Therefore, merging the annual VAT change series to the monthly price series using the month of entry of VAT legislation into force, may actually assign the VAT change to a month when price has already begun reacting the change. Nevertheless, using the date of entry of legislation into force ensures that the date is, more often than not, clearly defined, while the possibility of delayed or anticipatory price responses can be adequately captured by including lags or leads in the econometric model.

Consolidating the dataset from the two providers means that pass-through effects can be measured under the following conditions:

- 1) There has been a sectoral change in the VAT in our data (approximately. 200 cases left);
- The price series is representative of the modelled sector and responds to the VAT change around the recorded date of the entry of the legislation into force (app. 50 cases left);
- 3) The month of the change has been precisely identified as the date of entry into force of relevant legislation (were in fact found in most cases, else set to January 1st, still 50 cases left).

In addition, we are concerned with measuring the pass-throughs as precisely as possibly implying that small VAT changes are less interesting from a modelling point of view since the effect of small changes will be much harder to separate from the stochastic parts of the process. Due to this, we add a fourth requirement:

4) The VAT change should be at least 2 percentage points up or down (8 cases left)²⁶

Thus, starting out with 25 countries each comprising 156 unique COICOP price series, we are left with 8 (!) cases after very simple (and necessary) data requirements have been satisfied.

²⁴ We cannot assume generally that while the *level* of the VAT changes, the *type* of the VAT remains unchanged. This is indeed what happens in the experimental sectors, where the standard rates have been replaced reduced rates, in the respective countries.

²⁵ The market can start reacting to rumours about a potential VAT change, commencement of drafting the legislation, publishing of draft legislation, commencement of the parliamentary procedure, etc., each of which can be viewed as a potential announcement date. On the other hand, the date of entry into force is clearly defined.

²⁶ We acknowledge that focussing the empirical analysis on a subgroup of all possible VAT changes restrict the general applicability of results. We cannot be sure that the same pass-through rates would have been obtained had we focussed on small VAT changes.

We add two instances of 1 % VAT changes, showing to the reader the importance of the fourth criterion.

A case in point: Books in Sweden

The Swedish authorities decided to apply the reduced VAT rate of 6 per cent instead of the normal 25 per cent rate to books starting from January 2002. This is in fact the largest change, we have identified in the series fulfilling our data requirements. Below, we show the empirical modelling of the price pass-through which we determine to be around 16 per cent (out of 19).

In Figure 6, we show the development in the price index of Swedish books together with the VAT rate applicable at each point in time.

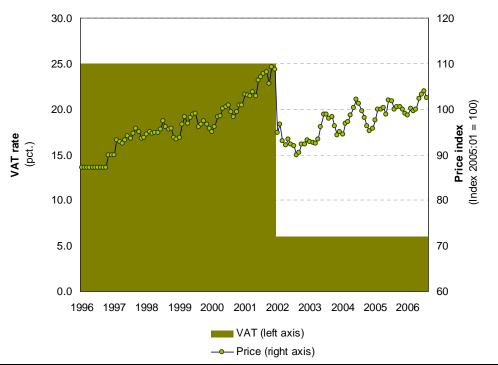


Figure 6: VAT rate and price index, books, Sweden

Source: Copenhagen Economics

Clearly, the VAT change triggered a fall in prices around its introduction. In fact, most of the pass-through seems to have taken place immediately, but prices keep falling slightly in app. eight months afterwards. This suggests that sluggish price adjustments have to be accounted for in the empirical modelling. Also, graphical inspection suggests that the year 1996 should be excluded from the analysis as prices are constant. Furthermore, a trend line should be included to capture general inflation in the price series.

We run several regressions in order to find the preferred dynamic structure. The results of these regressions can all be found in Table 6. By using the Akaike Information Criterion (AIC), we select the ARMA(2,0) model (marked with grey colours).

Table 0. Dil	Table 6. Different model specifications (Stata output)							
Variable	ARMA10	ARMA01	ARMA20	ARMA02	ARMA11	ARMA12	ARMA21	ARMA22
p (dependent)								
trend	0.002054	0.002145	0.002005	0.002057	0.002017	0.002001	0.002046	0.001997
vat	-0.1399	-0.13151	-0.14147	-0.15235	-0.14093	-0.14252	-0.13652	-0.14032
L.vat	0.012463	-0.00202	0.017979	0.025537	0.016444	0.019299	0.009683	0.017592
constant	4.497883	4.494063	4.499384	4.497373	4.498991	4.499556	4.49806	4.499505
ARMA								
L.ar	0.770587		0.933612		0.690409	0.633984	0.151222	1.361733
L2.ar			-0.20194				0.420644	-0.53537
L.ma		0.747157		0.7489	0.22246	0.270605	0.759361	-0.45381
L2.ma				0.594552		0.12525		0.007025
sigma								
_cons	0.013068	0.014571	0.012802	0.01352	0.012847	0.012812	0.012784	0.012729
Statistics								
AIC	-658.387	-633.438	-661.013	-648.347	-660.232	-658.832	-659.293	-658.295
0	Lesser Ferrer							

Table 6: Different model specifications (Stata output)

Source: Copenhagen Economics

Since the preferred model does not include any MA-terms, we re-estimate using least squares. In fact, the ML-results from above suggest a much higher long-run pass-through than what can be supported by visual inspection of the price series, so a consistency-check with OLS seems appropriate. The OLS-results are reported in Table 7.

Table 7: OLS results of AR(2) model, books, Sweden (Stata output)

	Source	SS	df		MS		Number of obs F(5, 108)			
	Model Residual	.175630788				5 .035126 108 .000180			Prob > F R-squared	= 0.0000 = 0.8999
	Total	.19517742	113	.001	727234		Adj R-squared Root MSE			
 р		Coef.	Std.	Err.		P> t	[95% Conf.	Interval]		
р										
	L1	.75171	.0845	666	8.89	0.000	.5840843	.9193357		
	L2	.0155185	.0675	994	0.23	0.819	1184753	.1495123		
t	Í	.000574	.0001	532	3.75	0.000	.0002702	.0008777		
vat	ĺ									
		1315559	.0140	746	-9.35	0.000	1594542	1036576		
	L1	.0951688	.0175	527	5.42	0.000	.0603764	.1299613		
_con	ıs İ	1.044843	.2844	421	3.67	0.000	.4810298	1.608657		

Source: Copenhagen Economics

We observe that the dynamic adjustment parameters actually differ significantly from the MLestimates with the parameter on the second lag being insignificant. All in all, the implied adjustment pattern of VAT changes from the OLS model seems to be a more adequate representation of the actual adjustments. The VAT variables are highly significant.

Based on the estimation results, simulations of VAT pass-through to prices will be conducted, and impulse-response functions will be presented. The figure below is an example of an impulse-response function based on the AR(2) model just presented. The figure illustrates the dynamic adjustment of prices to the 19 percent decrease in the VAT rate. Months are measured along the x-axis, and an index of prices and VAT rates is measured along the y-axis (two scales). The interpretation of the figure is thus, that a 19 percent decrease in the VAT rate

in the books sector after 12 months has lead to a 16 percent decrease in prices. The modelimplied response is similar to the pattern seen in the actual price series of Figure 6.

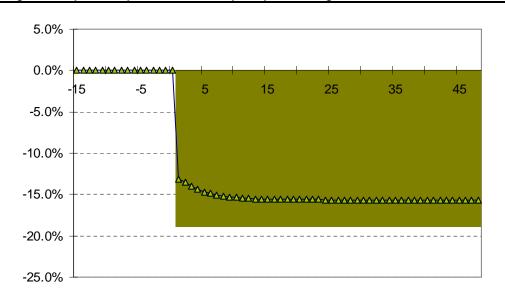


Figure 7: Impulse response function of price pass-through

Source: Copenhagen Economics

Results for all ten sectors

As discussed above, the econometric investigations could only be carried out for eight sectors. We have added two sectors with a 1 percentage point change in the VAT rates resulting in a total of ten sectors. The two additional sectors with 1 percentage point change in VAT rates clearly demonstrate the uncertainties in modelling small changes.

Sector	Country	VAT change (percentage points)	Estimated pass-through (percent of VAT change)		
Books	Sweden	-19	82		
Footwear	Italy	4	163		
Periodicals	ltoly.	10	134		
Penodicais	Italy	-16	0†		
Deverages	Portugal	-5	0†		
Beverages	Folluyai	-7	0†		
Restaurants	Portugal	-5	19		
Hairdraaaara	Iroland	-8	46		
Hairdressers	Ireland	1	1038		
Hotels	Finland	2	196		
Hairdressers	Portugal	2	175		
Newspapers	Ireland	1	276		
Electricity	Germany	1	687		

Source: Copenhagen Economics

Note: The column "VAT change" specifies the actual change in the VAT rate in percentage points. The column "Estimated pass-through" is the medium run price change in percent of the actual VAT change. Thus, 100 percent implies full pass-through.

[†]: The econometric model could not identify any effect at all. The estimated coefficients were practically zero or even had the wrong sign.

We see significant pass-throughs in most all cases, c.f. Table 8. Only in two cases, a 16 percent decrease in periodicals in Italy and a 5 and 7 percent decrease in Portuguese beverages, we did not find any sizeable pass-through. In the Portuguese case, this was more a result of some major fluctuations in the series which limited the scope for econometric modelling.

At the same time, we also observe a major asymmetry in the price responses; for every VAT increase the effects is more than 1:1 and for every VAT decrease the effect is less than 1:1 (or even non-existing). Obviously, this conclusion would have been stronger if more sectors had been investigated, but the tendency is clear.

We also see that larger VAT changes have pass-throughs closer to 100 percent than smaller ones. This confirms our suspicion that small VAT changes are much more difficult to handle econometrically. Concerning, the small positive VAT changes it could also be argued that they are in fact larger due to the menu cost argument where small costs accumulate over time and are passed on to prices at discontinuous points in time, e.g. when taxes are altered.

The asymmetry and the uncertainty for small VAT changes become very evident when we plot the actual changes against the estimated pass-throughs as in Figure 8.

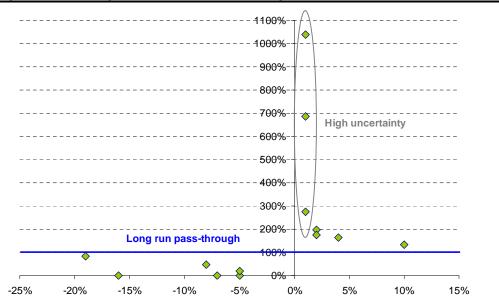


Figure 8: VAT changes and estimated pass-throughs

Source: Copenhagen Economics

As explained above Table 8 focuses on the medium run pass-throughs (1-2 years). In order to get a closer look at the short run effects, we have also calculated and drawn the impulse-response functions, c.f. Figure 9. The main conclusion is that most of the price adjustment happens within a few months. We stress that our modelling approach leads to somewhat more uncertain adjustment (speed) parameters so we do not put too much emphasis on this matter.

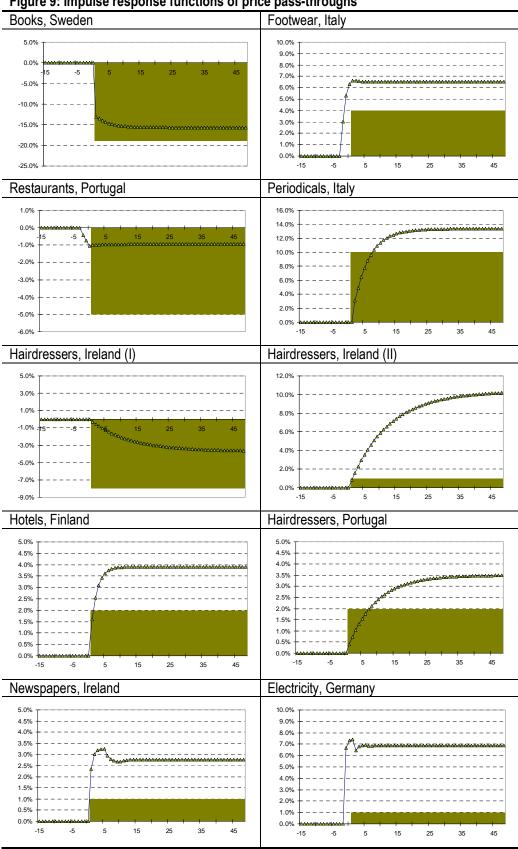


Figure 9: Impulse response functions of price pass-throughs

Source: Copenhagen Economics

Altogether, we find clear evidence of price changes in the short to medium run. We expected to find a 100 percent pass-through in competitive markets, and indeed we found statistically significant pass-throughs within a reasonable range around the 100 percent mark. Thus, policymakers can be ascertained that targeting end-user prices of certain products by the use of different VAT rates is indeed effective. Similarly, it allows us to proceed to the next step, where consumers respond to changed prices.

As a final note, we stress that our econometric models are not tuned to analysing long run price effects – only short to medium run –, but we believe that the long run effects are very close to full pass-through (and not more) as theory predicts.

More demand and production

Finding evidence of pass-through to prices, will lead us on to the discussion of price effects on demand and production. Generally, a price reduction by way of a lower VAT rate makes households more affluent and the product affected less costly than other products.

Below, we show why demand responsiveness – measured by the price elasticity of demand – will be the most important determinant of the job creating effects after there has been a pass-through to prices. We also show why a low pass-through in the first place should not necessarily be given a negative interpretation.

The shape of the demand curve is very influential on the economic impact arising from a change in the VAT rate. This is straightforward to see: the more sensitive consumers are to changes in prices, the larger effect will be created by a given reduction in the VAT rate. Referring to Varian (1999), we apply a static partial equilibrium model to visualise this effect.

If the demand curve is very elastic, i.e. price sensitive, we get a large quantity response to a reduction of the VAT rate, but at the same time the pass-through to prices will be quite low. This is depicted in Panel A of Figure 10. In Panel B, we illustrate the situation with an inelastic demand curve. Here, the quantity response is very limited whereas prices are much more influenced. An important corollary for our empirical investigations is that *the size of the price pass-through can be inversely related to the quantity impact*. We remember that it is the quantity impact that will generate new jobs in the given industry.²⁷

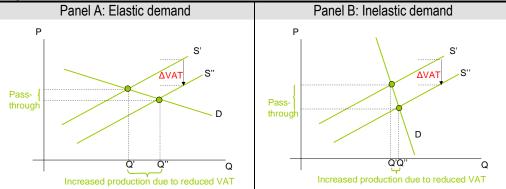


Figure 10: Elastic and inelastic demand curves

Source: Copenhagen Economics

Note: The figure illustrates the price and quantity responses in the short run, towards the same permanent VAT reduction in an industry with two customers possessing different elasticities of demand.

²⁷ In the case of inelastic demand, the large price reduction will have a positive income effect on consumers who choose to consume more of other products. For this reason, there is also potential for job creation, but it will be spread out over the entire economy and therefore hardly measurable.

International evidence suggests that the high price elasticity of demand plays a key role in shaping industry profitability and employment in the hospitality and restaurant sectors in Europe. The HOTREC (2002) report summarizes a number of cases from European countries, where VAT increases led to adverse effects in terms of lower demand and job cuts (Ireland, Netherlands, Norway). It also presents studies calculating benefits from the application of a reduced rate in the industry, in terms of higher sales and more jobs created in Belgium, Denmark, France, Greece, Germany, Sweden and the UK.

These considerations lead us to work with the following concrete hypotheses:

- Higher demand elasticities will be found in cases where price pass-throughs seem to be low and production is highly impacted.
- The short-run adjustment in output will mainly depend on supply curves, whereas the long-run effect will be determined by the demand curve.

Simulation analyses performed by Boeters et al. (2006) and Bye et al. (2003) indicate that VAT changes affect demand, and differentiated VAT tends to increase demand in the sectors that are favoured by lower VAT levels. However, once general equilibrium effects are taken into account, e.g. that the government budget must balance, the positive effects in the sectors favoured tend to be offset by negative effects in the rest of the economy.

Methodology

Since the estimate of the pass-through to prices already has been considered above, what we need is simply an estimate of the demand elasticity. With these two estimates, we can calculate the impact on long-run production. Estimates of demand elasticities can be obtained by regressing prices on output.

We wish to find out whether or not lower prices leads to higher demand. We will use price and consumption data to estimate demand equations giving rise to own price and cross price elasticities describing changes in demand. The estimation equation can be written as:

$$\ln C_{kit} = \varepsilon \cdot \ln P_{kit} + \sum_{j \neq i} \varepsilon_j \cdot \ln P_{kjt} + \gamma \cdot \ln Y_{kt}$$

where k refers to country, i to industry, and t to time. L is the lag operator allowing for a dynamic structure. The variables in the model are:

- C: consumption
- P: price
- Y: income

Both consumption and income must be expressed in real terms. The coefficient estimates $-\varepsilon$, ε_{j} , and γ – can all be interpreted as elasticities since the variables have been log-transformed. Notice, that the constant term has been suppressed.

The choice of model is a result of a careful literature review and of previous experience. In fact, the literature seems to favour two approaches for demand elasticity estimation: the log-specification as outlined above, e.g. Bernal and Cardenas (2003), or the AIDS-model, e.g. West and Williams (2005). The first is normally preferred because it gives a direct estimate of the demand elasticity, whereas the second is normally preferred for its theoretical generality – it can be shown that the AIDS-model is a linear approximation to a general (non-parameterised) indirect utility function. Copenhagen Economics have used both approaches in previous studies, and it is our experience that the log-specification is preferable when estimating a single, own-price elasticity, whereas the AIDS-model is more reliable for cross-

elasticity estimation. Since we are only interested in the own-price elasticity, we have chosen the log-specification.

Data

For the estimation of price elasticities, we draw on COICOP data from Eurostat. COICOP refers to the way of classifying similar consumer products into broader categories, and it is the classification used for calculating the Harmonised Index of Consumer Prices. It is clearly the most preferable classification since products are classified according to consumption (and not production) purposes. Data exists on the 3-digit COICOP-level. After excluding two minor sectors (narcotics and prostitution) with limited data availability, we have 39 consumption categories left for estimation.

Consumption is measured by consumption expenditure in fixed prices, prices are represented by price indices (base year is 1995), and income is proxied by total consumption expenditure in fixed prices. The frequency of the data is yearly and covers the period 1970-2002. All EU25 Member States are included in the sample, but data availability differs significantly across countries. Below, we present some descriptive statistics across consumption categories

Average Standard deviation of consumption conosumption conosumption consumption conosumption consumption conos	-				Average	
Average deviation of consumption of consumption growth rate Consumption consumption consumption consumption consumption rate Accommodation services 325 0.014 0.013 -0.007 -0.010 Actual rentals for housing 303 0.037 0.019 -0.017 -0.023 Actual rentals for housing 325 0.024 0.017 -0.013 -0.016 Audio-visual, photographic and information 316 0.016 0.011 0.060 0.056 Catering services 325 0.024 0.017 -0.002 Electricity, gas and other fuels 325 0.18 0.011 0.006 0.024 0.024 0.024 0.024 0.024 0.024 0.024 0.024 0.024 0.004 -0.007 Footwear 325 0.13 0.005 -0.011 -0.000 Electricity, gas and other 325 0.024 0.004 -0.007 Footwear 325 0.013 0.005 -0.004 -0.007 Footwear 325 <th></th> <th></th> <th></th> <th>Standard</th> <th></th> <th>Average</th>				Standard		Average
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Alcoholic beverages 325 0.024 0.017 -0.013 -0.016 Audio-visual, photographic and information 316 0.016 0.011 0.060 0.056 Catering services 325 0.069 0.030 -0.004 -0.006 Electricity, gas and other fuels 325 0.056 0.017 0.002 -0.013 -0.019 Food 325 0.148 0.111 -0.015 -0.020 Footwear 325 0.024 0.009 0.001 -0.004 Footwear 325 0.024 0.009 0.001 -0.004 Goads and services for routine household utensils 316 0.007 0.002 -0.004 -0.007 Household appliances 325 0.010 0.004 0.011 0.008 Household appliances 325 0.010 0.004 0.011 0.008 Insurance 315 0.106 0.056 0.002 -0.003 Insurance 316 0.010 0.009 0.013	Accommodation services	325	0.014	0.013	-0.007	-0.010
Audio-visual, photographic and information 316 0.016 0.011 0.060 0.056 Catering services 325 0.069 0.030 -0.004 -0.006 Clothing 325 0.056 0.017 0.002 -0.001 Financial services n.e.c. 315 0.026 0.015 0.024 0.024 Food 325 0.148 0.111 -0.015 -0.020 Footwar 325 0.013 0.005 -0.001 -0.004 Glassware, tableware and household utensils 316 0.015 0.006 -0.003 -0.007 Goods and services for routine household maintenance 316 0.015 0.006 -0.003 -0.007 Household textiles 325 0.010 0.011 0.008 0.002 Household textiles 325 0.010 0.011 0.008 0.002 Household textiles 325 0.010 0.011 0.013 0.010 Inputed rentals for housing 315 0.106 0.056 <t< td=""><td>Actual rentals for housing</td><td>303</td><td>0.037</td><td>0.019</td><td>-0.017</td><td>-0.022</td></t<>	Actual rentals for housing	303	0.037	0.019	-0.017	-0.022
Catering services 325 0.069 0.030 -0.004 -0.006 Clothing 325 0.056 0.017 0.002 -0.002 Electricity, gas and other fuels 325 0.030 0.012 -0.013 -0.019 Financial services n.e.c. 315 0.026 0.015 0.024 0.024 Food 325 0.148 0.111 -0.015 -0.020 Footwear 325 0.024 0.009 0.001 -0.004 Goads and services for routine household maintenance 316 0.007 0.002 -0.004 -0.007 Goads and services 0.011 0.019 0.008 0.002 Household appliances 325 0.010 0.004 0.011 0.008 0.002 Household textiles 325 0.010 0.004 0.011 0.008 0.002 -0.003 Insurance 316 0.016 0.027 0.023 -0.001 -0.001 -0.001 -0.012 -0.017 -0.013 0.009 <	Alcoholic beverages	325	0.024	0.017	-0.013	-0.016
Clothing 325 0.056 0.017 0.002 -0.002 Electricity, gas and other fuels 325 0.039 0.012 -0.013 -0.019 Financial services n.e.c. 315 0.026 0.015 0.024 0.024 Food 325 0.148 0.111 -0.015 -0.020 Footwear 325 0.024 0.009 0.001 -0.004 Fourniture and furnishings, carpets and other 325 0.024 0.009 0.001 -0.004 Goads and services for routine household trensils 316 0.017 0.002 -0.004 -0.007 Household appliances 226 0.010 0.004 -0.011 0.008 0.002 Household textiles 325 0.006 0.001 -0.001 -0.004 Insurance 316 0.010 0.009 0.013 0.009 Maintenance and repair of the dwelling 316 0.012 0.006 0.027 0.023 Non-alcoholic beverages 325 0.018 <	Audio-visual, photographic and information	316	0.016	0.011	0.060	0.056
Electricity, gas and other fuels 325 0.039 0.012 -0.013 -0.019 Financial services n.e.c. 315 0.026 0.015 0.024 0.024 Food 325 0.148 0.111 -0.015 -0.020 Footwear 325 0.024 0.009 0.001 -0.006 Furniture and furnishings, carpets and other 325 0.024 0.009 0.001 -0.004 Glassware, tableware and household utensils 316 0.007 0.002 -0.004 -0.007 Goods and services for routine household maintenance 316 0.011 0.019 0.008 0.002 Household textiles 325 0.016 0.001 -0.001 0.001 0.001 0.001 Inputed rentals for housing 315 0.106 0.056 0.002 -0.003 Insurance 316 0.012 0.011 0.013 0.009 Medical products, appliances and equipment 316 0.012 0.017 0.002 Non-alcoholic beverages	Catering services	325	0.069	0.030	-0.004	-0.006
Financial services n.e.c. 315 0.026 0.015 0.024 0.024 Food 325 0.148 0.111 -0.015 -0.020 Footwar 325 0.013 0.005 -0.001 -0.006 Furniture and furnishings, carpets and other 325 0.024 0.009 0.001 -0.004 Glassware, tableware and household utensils 316 0.015 0.006 -0.003 -0.007 Goods and services for routine household maintenance 316 0.015 0.004 0.011 0.008 0.002 Household tappliances 325 0.010 0.004 0.011 0.008 Household textiles 325 0.010 0.004 0.011 0.003 Insurance 316 0.021 0.011 0.013 0.010 Maintenance and repair of the dwelling 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.017 Non-3lcoholic beverages 325 0.016 0.005<	Clothing	325	0.056	0.017	0.002	-0.002
Food 325 0.148 0.111 -0.015 -0.020 Footwear 325 0.013 0.005 -0.001 -0.006 Furniture and furnishings, carpets and other 325 0.024 0.009 0.001 -0.004 Glassware, tableware and household utensils 316 0.015 0.006 -0.003 -0.007 Goods and services for routine household maintenance 296 0.011 0.019 0.008 0.002 Household appliances 325 0.010 0.004 0.011 0.008 Household textiles 325 0.006 0.001 -0.001 -0.004 Insurance 316 0.021 0.011 0.013 0.010 Medical products, appliances and equipment 316 0.011 0.013 0.009 Newspapers, books and stationery 325 0.018 0.005 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.010 Other major durables for recreation and culture 302 0.016 0.00	Electricity, gas and other fuels	325	0.039	0.012	-0.013	-0.019
Footwear 325 0.013 0.005 -0.001 -0.006 Furniture and furnishings, carpets and other 325 0.024 0.009 0.001 -0.004 Glassware, tableware and household utensils 316 0.007 0.002 -0.004 -0.007 Goods and services for routine household maintenance 316 0.011 0.019 0.008 0.002 Hospital services 296 0.010 0.004 0.011 0.008 Household appliances 325 0.006 0.001 -0.004 Imputed rentals for housing 315 0.106 0.056 0.002 -0.003 Insurance 316 0.021 0.011 0.013 0.009 Medical products, appliances and equipment 316 0.012 0.001 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.010 Operation of personal transport equipment 302 0.014 0.006 0.005 -0.001 Other major durables for recreation and culture 302 <	Financial services n.e.c.	315	0.026	0.015	0.024	0.024
Furniture and furnishings, carpets and other 325 0.024 0.009 0.001 -0.004 Glassware, tableware and household utensils 316 0.007 0.002 -0.004 -0.007 Goods and services for routine household maintenance 316 0.015 0.006 -0.003 -0.007 Hospital services 296 0.011 0.019 0.008 0.002 Household appliances 325 0.010 0.004 0.011 0.008 Household textiles 325 0.016 0.056 0.002 -0.003 Insurance 316 0.021 0.011 0.013 0.009 Meintenance and repair of the dwelling 316 0.010 0.009 0.013 0.009 Mewspapers, books and stationery 325 0.018 0.005 -0.012 -0.017 Non-alcoholic beverages 325 0.063 0.019 -0.005 -0.010 Other major durables for recreation and culture 302 0.016 0.005 0.026 0.024 Other recreational i	Food	325	0.148	0.111	-0.015	-0.020
Glassware, tableware and household utensils 316 0.007 0.002 -0.004 -0.007 Goods and services for routine household maintenance 316 0.015 0.006 -0.003 -0.007 Hospital services 296 0.011 0.019 0.008 0.002 Household appliances 325 0.010 0.004 0.011 0.008 Household textiles 325 0.006 0.001 -0.001 -0.001 Imputed rentals for housing 315 0.106 0.056 0.002 -0.003 Insurance 316 0.010 0.009 0.013 0.009 Medical products, appliances and equipment 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.012 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.012 Operation of personal transport equipment 302 0.004 0.002 0.010 0.008 Other major durables for recreation and	Footwear	325	0.013	0.005	-0.001	-0.006
Goods and services for routine household maintenance 316 0.015 0.006 -0.003 -0.007 Hospital services 296 0.011 0.019 0.008 0.002 Household appliances 325 0.010 0.004 0.011 0.008 Household textiles 325 0.006 0.001 -0.001 -0.004 Imputed rentals for housing 315 0.106 0.056 0.002 -0.003 Insurance 316 0.021 0.011 0.013 0.010 Maintenance and repair of the dwelling 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.012 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.010 Operation of personal transport equipment 325 0.063 0.019 -0.005 -0.010 Other major durables for recreation and culture 302 0.016 0.005 0.026 0.024 Other services n.e.c.	Furniture and furnishings, carpets and other	325	0.024	0.009	0.001	-0.004
Hospital services 296 0.011 0.019 0.008 0.002 Household appliances 325 0.010 0.004 0.011 0.008 Household textiles 325 0.006 0.001 -0.001 -0.004 Imputed rentals for housing 315 0.106 0.056 0.002 -0.003 Insurance 316 0.011 0.011 0.013 0.010 Maintenance and repair of the dwelling 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.010 Operation of personal transport equipment 325 0.043 0.002 0.010 0.008 0.011 0.008 0.010 0.008 0.010 0.008 0.010 0.008 0.010 0.008 0.010 0.008 0.010 0.008 0.010 0.008 0.010 0.008 0.010 0.008 0.014 0.002 <t< td=""><td>Glassware, tableware and household utensils</td><td>316</td><td>0.007</td><td>0.002</td><td>-0.004</td><td>-0.007</td></t<>	Glassware, tableware and household utensils	316	0.007	0.002	-0.004	-0.007
Household appliances 325 0.010 0.004 0.011 0.008 Household textiles 325 0.006 0.001 -0.001 -0.004 Imputed rentals for housing 315 0.106 0.056 0.002 -0.003 Insurance 316 0.021 0.011 0.013 0.009 Maintenance and repair of the dwelling 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.012 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.001 Operation of personal transport equipment 325 0.063 0.019 -0.005 -0.010 Other major durables for recreation and culture 302 0.004 0.002 0.010 0.008 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.013 0.008 -0.011 Personal care 316 0.022	Goods and services for routine household maintenance	316	0.015	0.006	-0.003	-0.007
Household textiles 325 0.006 0.001 -0.001 -0.004 Imputed rentals for housing 315 0.106 0.056 0.002 -0.003 Insurance 316 0.021 0.011 0.013 0.010 Maintenance and repair of the dwelling 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.012 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.010 Operation of personal transport equipment 325 0.063 0.019 -0.005 -0.010 Other recreational items and equipment 302 0.004 0.002 0.010 0.008 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.013 0.008 Package holidays 223 0.008 0.0011 0.002 Personal effects n.e.c. 316 0.002 0.003 -0.001 <td>Hospital services</td> <td>296</td> <td>0.011</td> <td>0.019</td> <td>0.008</td> <td>0.002</td>	Hospital services	296	0.011	0.019	0.008	0.002
Imputed rentals for housing 315 0.106 0.056 0.002 -0.003 Insurance 316 0.021 0.011 0.013 0.010 Maintenance and repair of the dwelling 316 0.012 0.006 0.027 0.023 Medical products, appliances and equipment 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.012 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.010 Operation of personal transport equipment 325 0.063 0.019 -0.005 -0.010 Other recreational items and equipment 302 0.016 0.005 0.026 0.024 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.0011 0.002 0.003 -0.001 Personal effects n.e.c.	Household appliances	325	0.010	0.004	0.011	0.008
Insurance 316 0.021 0.011 0.013 0.010 Maintenance and repair of the dwelling 316 0.010 0.009 0.013 0.009 Medical products, appliances and equipment 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.012 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.010 Operation of personal transport equipment 325 0.063 0.019 -0.005 -0.010 Other major durables for recreation and culture 302 0.004 0.002 0.010 0.008 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.0011 0.002 0.001 -0.005 Postal services 325 0.016 0.012 0.047 0.045 Pre-primary and primary education	Household textiles	325	0.006	0.001	-0.001	-0.004
Insurance 316 0.021 0.011 0.013 0.010 Maintenance and repair of the dwelling 316 0.010 0.009 0.013 0.009 Medical products, appliances and equipment 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.012 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.010 Operation of personal transport equipment 325 0.063 0.019 -0.005 -0.010 Other major durables for recreation and culture 302 0.004 0.002 0.010 0.008 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.011 0.002 0.001 -0.005 Personal effects n.e.c. 316 0.022 0.005 0.003 -0.004 -0.005 Postal	Imputed rentals for housing	315	0.106	0.056	0.002	-0.003
Medical products, appliances and equipment 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.012 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.010 Operation of personal transport equipment 325 0.063 0.019 -0.005 -0.010 Other major durables for recreation and culture 302 0.004 0.002 0.010 0.008 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.001 0.002 -0.001 Personal care 316 0.022 0.005 0.003 -0.001 Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 <td< td=""><td></td><td>316</td><td>0.021</td><td>0.011</td><td>0.013</td><td>0.010</td></td<>		316	0.021	0.011	0.013	0.010
Medical products, appliances and equipment 316 0.012 0.006 0.027 0.023 Newspapers, books and stationery 325 0.018 0.005 -0.012 -0.017 Non-alcoholic beverages 325 0.014 0.006 0.005 -0.010 Operation of personal transport equipment 325 0.063 0.019 -0.005 -0.010 Other major durables for recreation and culture 302 0.004 0.002 0.010 0.008 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.001 0.002 -0.001 Personal care 316 0.022 0.005 0.003 -0.001 Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 <td< td=""><td>Maintenance and repair of the dwelling</td><td>316</td><td>0.010</td><td>0.009</td><td>0.013</td><td>0.009</td></td<>	Maintenance and repair of the dwelling	316	0.010	0.009	0.013	0.009
Non-alcoholic beverages 325 0.014 0.006 0.005 -0.001 Operation of personal transport equipment 325 0.063 0.019 -0.005 -0.010 Other major durables for recreation and culture 302 0.004 0.002 0.010 0.008 Other recreational items and equipment 302 0.016 0.005 0.026 0.024 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.008 0.011 0.002 Personal care 316 0.022 0.005 0.003 -0.001 Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047	Medical products, appliances and equipment	316	0.012	0.006	0.027	0.023
Non-alcoholic beverages 325 0.014 0.006 0.005 -0.001 Operation of personal transport equipment 325 0.063 0.019 -0.005 -0.010 Other major durables for recreation and culture 302 0.004 0.002 0.010 0.008 Other recreational items and equipment 302 0.016 0.005 0.026 0.024 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.008 0.011 0.002 Personal care 316 0.022 0.005 0.003 -0.001 Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047	Newspapers, books and stationery	325	0.018	0.005	-0.012	-0.017
Other major durables for recreation and culture 302 0.004 0.002 0.010 0.008 Other recreational items and equipment 302 0.016 0.005 0.026 0.024 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.008 0.011 0.002 Personal care 316 0.022 0.005 0.003 -0.001 Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047 0.015 0.003 -0.001 Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 <td></td> <td>325</td> <td>0.014</td> <td>0.006</td> <td>0.005</td> <td>-0.001</td>		325	0.014	0.006	0.005	-0.001
Other recreational items and equipment 302 0.016 0.005 0.026 0.024 Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.008 0.011 0.002 Personal care 316 0.022 0.005 0.003 -0.001 Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047 0.015 0.009 0.003 Recreational and cultural services 316 0.298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 <td< td=""><td>Operation of personal transport equipment</td><td>325</td><td>0.063</td><td>0.019</td><td>-0.005</td><td>-0.010</td></td<>	Operation of personal transport equipment	325	0.063	0.019	-0.005	-0.010
Other services n.e.c. 316 0.010 0.007 0.000 -0.005 Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.008 0.011 0.002 Personal care 316 0.022 0.005 0.003 -0.001 Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047 0.015 0.009 0.003 Recreational and cultural services 316 0.029 0.008 0.014 0.011 Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 <	Other major durables for recreation and culture	302	0.004	0.002	0.010	0.008
Outpatient services 316 0.016 0.015 0.013 0.008 Package holidays 223 0.008 0.008 0.011 0.002 Personal care 316 0.022 0.005 0.003 -0.001 Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047 0.015 0.009 0.003 -0.003 Recreational and cultural services 316 0.029 0.008 0.014 0.011 Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010	Other recreational items and equipment	302	0.016	0.005	0.026	0.024
Package holidays 223 0.008 0.008 0.011 0.002 Personal care 316 0.022 0.005 0.003 -0.001 Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047 0.015 0.009 0.003 Recreational and cultural services 316 0.029 0.008 0.014 0.011 Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.008 -0.013	Other services n.e.c.	316	0.010	0.007	0.000	-0.005
Personal care 316 0.022 0.005 0.003 -0.001 Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047 0.015 0.009 0.003 Recreational and cultural services 316 0.029 0.008 0.014 0.011 Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.008 -0.013	Outpatient services	316	0.016	0.015	0.013	0.008
Personal effects n.e.c. 316 0.009 0.003 -0.004 -0.005 Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047 0.015 0.009 0.003 Recreational and cultural services 316 0.029 0.008 0.014 0.011 Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.008 -0.013	Package holidays	223	0.008	0.008	0.011	0.002
Postal services 295 0.016 0.012 0.047 0.045 Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047 0.015 0.009 0.003 Recreational and cultural services 316 0.029 0.008 0.014 0.011 Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.003 -0.013	Personal care	316	0.022	0.005	0.003	-0.001
Pre-primary and primary education 304 0.009 0.007 -0.001 -0.007 Purchase of vehicles 325 0.047 0.015 0.009 0.003 Recreational and cultural services 316 0.029 0.008 0.014 0.011 Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.008 -0.013	Personal effects n.e.c.	316	0.009	0.003	-0.004	-0.005
Purchase of vehicles 325 0.047 0.015 0.009 0.003 Recreational and cultural services 316 0.029 0.008 0.014 0.011 Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.008 -0.013	Postal services	295	0.016	0.012	0.047	0.045
Purchase of vehicles 325 0.047 0.015 0.009 0.003 Recreational and cultural services 316 0.029 0.008 0.014 0.011 Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.008 -0.013	Pre-primary and primary education	304	0.009	0.007	-0.001	-0.007
Social protection 298 0.012 0.007 -0.003 -0.005 Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.008 -0.013		325	0.047	0.015	0.009	0.003
Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.008 -0.013	Recreational and cultural services		0.029	0.008	0.014	0.011
Tobacco 325 0.025 0.012 -0.027 -0.033 Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.008 -0.013	Social protection	298	0.012	0.007	-0.003	-0.005
Tools and equipment for house and garden 303 0.004 0.002 0.004 0.003 Transport services 325 0.021 0.010 -0.008 -0.013				0.012		-0.033
Transport services 325 0.021 0.010 -0.008 -0.013	Tools and equipment for house and garden					
•	• • •			0.010	-0.008	-0.013
vvatel supply and miscellaneous services 290 UUTI UUUD -UUUT -UUUb	Water supply and miscellaneous services	295	0.011	0.005	-0.001	-0.006

Source: Copenhagen Economics

Note: Obs is the number of observations for estimation. Average growth rate of prices is the average growth rate across time and countries in the relative price of a given consumption category.

Estimation

According to standard demand theory, the estimated equation should, apart from own-price and income variables, include the prices of possible substitutes and complements to the product. In a narrowly defined demand system, this would simply imply including prices of all products in the system. A narrowly defined system, would on the other hand, consider specific products instead of broader consumption categories. For example, a modeller of food demand would consider bread to be a substitute for cereals and jam to be a complement to bread.

Here, there is no clear substitutes or complements to e.g. the category "food". This led us follow two paths: (i) in a first exercise we took the "data-driven way" and applied a slightly

modified general-to-specific methodology where (statistically) insignificant price variables from the entire list of categories are removed iteratively except from the own-price and the income variables which must always be present; and (ii) no inclusion of prices from other categories. The result of the first exercise was that a number of substitutes and complements were chosen for each sector, but the results were clearly spurious – e.g. "vehicles" entering as a complement for "food". Thus, we rely on the second method.

We estimate the log-specification for each consumption category giving rise to 39 estimations. Due to the rising nature of real consumption and price indices, we estimate all models in first differences. Each of the underlying estimation samples contains both a country and a time dimension, and we therefore need to apply a panel data estimator. Autocorrelation tests and preliminary runs of dynamic panel data models showed that there is no need for specifying dynamics; thus, we can apply a simple fixed effects estimator of a static panel data model.

All results are presented in Table 10. Apart from four consumption categories with insignificant positive demand elasticities (implying that demand increases together with a price increase) and a single category with a significant positive elasticity ("water supply"), all results seem very reasonable. The water supply model is clearly misspecified, but the nature of the good actually also suggests that any estimation attempts could lead to spurious results. First, water consumption is hardly influenced by income and price differences across countries, but rather by infrastructural, historic, and climatical factors. Second, actual end-user payment of water may differ significantly across countries with only few countries having transparent price setting. For most of the other consumption categories price elasticities range between -0.2 and -0.8 and income elasticities between 0.4 and 2.2.

We also note that the "Food" category comprises both restaurants and meals prepared at home. It is therefore a combination of a quite price sensitive good (restaurants) and a rather price insensitive good of the necessity type (home produced meals). This may very well explain why food is not located among the goods and services with lowest price elasticities.

Consumption category	Own-price elasticity	Income elasticity
Accommodation services	-1.94***	0.19
Actual rentals for housing	-0.06	0.08
Alcoholic beverages	-0.38***	0.75***
Audio-visual, photographic and information	-0.70***	1.96***
Catering services	-0.12	1.03***
Clothing	-0.62***	1.33***
Electricity, gas and other fuels	-0.04	0.45***
Financial services n.e.c.	-0.19	1.44***
Food	-0.42***	0.56***
Footwear	-0.38***	1.09***
Furniture and furnishings, carpets and other	-0.34***	1.60***
Glassware, tableware and household utensils	-0.59***	1.29***
Goods and services for routine household maintenance	-0.63***	0.90***
Hospital services	-0.11	1.31***
Household appliances	-0.40***	1.54***
Household textiles	-0.21***	1.17***
Imputed rentals for housing	-0.18***	0.15***
Insurance	0.09	0.74*
Maintenance and repair of the dwelling	0.05	1.63***
Medical products, appliances and equipment	-0.43***	0.78***
Newspapers, books and stationery	-0.37***	0.81***
Non-alcoholic beverages	-0.40***	0.79***
Operation of personal transport equipment	-0.31***	1.01***
Other major durables for recreation and culture	-0.04	2.73***
Other recreational items and equipment	-0.23**	1.19***
Other services n.e.c.	-0.24*	0.88***
Outpatient services	-0.72***	0.79***
Package holidays	-0.99***	2.15***
Personal care	-0.27**	1.12***
Personal effects n.e.c.	-0.80***	1.65***
Postal services	-0.33***	0.90***
Pre-primary and primary education	-0.31***	0.35*
Purchase of vehicles	0.27	4.34***
Recreational and cultural services	-0.25***	0.54***
Social protection	0.11*	0.43**
Tobacco	-0.39***	0.39***
Tools and equipment for house and garden	-0.13	1.45*
Transport services	-0.31***	0.89***
Water supply and miscellaneous services	0.87***	-0.28

Source: Copenhagen Economics

We have tried to organise all products along the necessity-luxury dimension. For example, housing and water have been classified as necessities and holidays and personal effects as luxury products. After making this simple classification it is extremely insightful to compare the elasticities across different product groups. We have indicated our result in Figure 11. For the necessities, we derived an average elasticity of -0.04, for the standard leisure goods the elasticity was -0.3 and for the luxury type of products it was -0.8. Thus, the type of good seems to be a very important determinant for the potential for job creating effects from selectively reduced VAT rates.

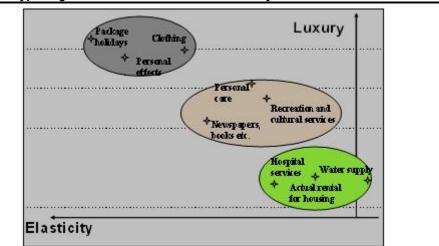


Figure 11: Type of good or service vs. demand elasticity

Source: Copenhagen Economics

Finally, we take a closer look at the fit of the estimations. Most of the estimations obtain a fit of 0.2-0.6 in terms of the R-square statistic, c.f. Table 11. Interestingly, the fit is normally much higher between countries than within a country which is very comforting for the robustness and interpretation of results. In the case of food, the fit between countries is 0.68, but only 0.24 within a country. The robustness should be better, because the variation is much higher between countries than over time within a country. Furthermore, if the between country effects dominate, the coefficient estimates can better be interpreted as long-run and not short-run elasticities.

Table 11: Stata-output for estimation of food

Fixed-effects Group variable	, , ,				of obs of groups		
	= 0.2359 n = 0.6814 . = 0.2893			Obs per			16.0
corr(u_i, Xb)	= 0.2284			F(2,283 Prob >	,		43.68 0.0000
consumption	Coef.	Std. Err.	t	P> t	[95% Co	nf.	Interval]
price	3966312	.0479987	-8.26	0.000	49111	1	3021515
income	.7866672	.1542784	5.10	0.000	.482988	5	1.090346
constant	.0037455	.0057528	0.65	0.516	007578	2	.0150693
sigma_u sigma_e rho	.06559671	(fraction of	varia	nce due t	o u_i)		
F test that al	.l u_i=0:	F(18, 283) =	3.2	26	Prob	>	F = 0.0000

Source: Copenhagen Economics

Summing up, we have shown that prices are in general inversely related to consumption quantities as theory predicts; lower prices mean more consumption. Specifically, we have shown that not all goods and services have the same price responsiveness with a few products hardly showing any sign of price response. This means that policymakers should be careful in selecting goods and services on which to apply differentiated VAT rates; if consumption does

not respond to lower prices, a VAT reduction will simply work like a lump-sum transfer to consumers. On the other hand, products with large price responsiveness will be suitable cases for VAT reductions, if the policymaker wishes to induce consumption and employment.

More jobs

Having established a link from VAT over prices to demand and production, we are now ready to look at the job creating effects. Clearly, more production will necessitate a higher use of inputs to production; in other words, firms would need to hire more employees to satisfy the increased demand.

We should notice that the labour demand elasticity may be far from 1. Increased demand for products can trigger new capital investments or other productivity enhancing measures, implying that firms' labour demand will not rise in a 1:1 relation, but less than proportionately.

At an earlier stage of this report, we went into the details of how and when it is preferable to pursue job creating effects in specific industries. We will also touch upon the point, that the job creating effects will, in the fiscally neutral scenario, be counterbalanced by job destruction effects in other industries.

As the job creating effects are the truly economically and politically interesting in our entire chain of economic effects, it seems adequate to sum up some of the main hypotheses that will be related to the empirical modelling of labour demand. These hypotheses are:

- The effect that has been tracked from VAT to prices to production will eventually lead to job creation or destruction;
- The higher the price elasticity of demand the higher the employment response (controlling for productivity changes);
- The lower the capital intensity the slower the effects on job creation.

Methodology

We will investigate the above hypotheses by setting up an empirical labour demand function where wages, potential output, market structure and obviously VAT rates will be determining factors. The model is a version of the widely acknowledged and applied model from Layard and Nickell (1986), and it can be estimated using firm level data combined with industry VAT-rates. The model to be estimated will have the following form:

$$\ln L_{kit} = \alpha \cdot \ln R_{it} + \beta \cdot \ln W_{kit} + \gamma \cdot \ln Y_{kit}^*$$

with *k* referring to firm, *i* to sector, and *t* to time. The included variables are:

- *L*: number of employees in each firm
- *R*: real interest rate (cost of capital)
- W: firm level wages
- Y*: Output

This model can be extended along two lines: first, we can include more explanatory variables, and second, we can introduce dynamics. When introducing more variables, we draw on evidence from the empirical literature. Here we find two important suggestions: the debt/asset ratio and the capital intensity. None of the suggestions are based purely on theoretical arguments, but mostly on adequacy in empirical modelling, see e.g. Funke et al (1999). Second, we can introduce dynamics which theoretically will be justified by labour adjustment

costs leading to persistency in the labour demand series, c.f. Navaretti et al (2002). Altogether, the most advanced of our models is therefore specified as:

$$\ln L_{kit} = \alpha \cdot \ln R_{it} + \beta \cdot \ln W_{kit} + \gamma \cdot \ln Y_{kit}^* + \lambda \cdot \ln L_{kit-1} + \delta \cdot DAR_{kit} + \varphi \cdot \ln(K/L)_{kit}$$

where DAR is the debt asset ratio and K/L is the capital-labour ratio. For the draft final report, we will make one important extension of our model.

Apart from providing us with interesting economic insights to the important factors of labour demand in different countries and sectors, the main issue of interest is the obtained coefficient on output, γ . If this is close to one, we have evidence of large job creating effects. Conversely, if this coefficient is far below one most of the previously identified output-creating effects do not materialise in new jobs.

Data

As input to the empirical analysis, we draw on data from Amadeus. Amadeus is a large scale pan-European database including more than 7.5 million firms collected by Bureau van Dijk, a European electronic publishing firm. All data is annual.

The Amadeus database primarily consists of accounting statistics. These are variables such as sales, turnover, profits, and cost of employees, as well as capital costs, taxation, exports and many more. Moreover, we have detailed information on number of employees, geographical belonging, NACE codes etc. From these accounting variables we have constructed variables suitable for economic modelling.

The variables are defined as follows: labour input (*L*) is measured by the number of employees; wages (*W*) are measured by costs of employees divided by number of employees, i.e. the average labour cost; output (Y^*) is represented by sales turnover; debt-asset-ratio (*DAR*) is measured as non-current liabilities to total assets; and capital intensity is given by tangible fixed assets divided by number of employees.

The real interest rate (R) has been calculated using national 3-month interbank rates on a daily frequency which have been compounded using quarterly rebalancing and in this way aggregated to a yearly frequency. Within this calculation, the interest rate was deflated by sectoral price indices taken from Eurostat leading to a real interest rate. Thus, the interest rate is country, sector, and year specific, but not firm specific.

For classification purposes, we use the 4-digit NACE codes. At this detailed level, we are able to focus quite narrowly on the companies *producing* the goods and services of interest. This is an important difference to the former empirical analyses where the focus remained on the companies selling the specific goods and services, i.e. the retailers. Since selectively reduced VAT rates of e.g. food will only induce marginally increased activity in today's diversified retail stores, we have to look for job creating effects in the companies actually producing the food products. For many services, though, producing and selling remain in the same company and the distinction is therefore superfluous, e.g. in the case of hairdressers.

Data covers private firms from all parts of the economy, implying that empirical analyses can be conducted for all sectors of interest apart from a few government services. We have selected 21 sectors which are especially interesting in terms of well-defined VAT changes. The results from these 21 sectors are presented below.

The 21 sectors together with some relevant descriptive statistics can be found in Table 12. Data is annual and covers the period 1994-2005.

				Average yearly	-		
		Average	Standard	wage (th	Standard	Average turnover	Standard
Sector	Obs	#employees	deviation	Euro)	deviation	(th Euro)	deviation
Beverages	13,362	82	285	25	30	16,593	71,109
Footwear	27,275	35	93	21	42	3,897	11,933
Books	15,166	29	116	33	74	4,750	28,381
Household electrical repair	11,916	8	40	23	17	632	2,911
Natural gas	3,011	193	1,512	39	131	102,562	628,745
Electricity	11,857	349	3,570	46	457	119,909	1,157,940
Firewood	646	471	2,909	15	12	78,560	736,371
Petroleum	17,742	26	108	31	35	56,489	544,150
Hotels	21,298	19	386	26	50	1,266	26,670
Small repairs	16,773	9	42	23	52	706	2,735
Domestic care	18,958	54	225	32	1,107	2,929	19,951
Hairdressers	59,170	7	24	21	14	207	680
Medical equipment	21,172	31	233	33	31	4,052	37,136
Housing (construction)	913,327	22	666	29	309	2,404	70,593
Pharma products	9,306	404	3,921	58	752	94,631	829,149
Reception of broadcasting	23,514	325	5,932	39	157	81,849	1,607,383
Restaurants	216,935	14	147	23	343	744	8,581
Passenger transport	84,133	6,570	2,037,305	47	3,313	17,321	837,683
Water supplies	7,771	179	1,125	33	146	24,968	255,115
Waste treatment	9,411	200	9,875	678	62,362	12,060	311,684
Agricultural inputs	25,417	52	251	29	39	12,060	67,517

Table 12: Descriptive statistics	for employees, wages, and output

Source: Amadeus

Estimation

Estimation is carried out sector by sector. For each sector we have a large number of firms with 12 yearly observations; thus, we have to think in terms of panel data estimators. For the static versions of the labour demand equation, i.e. the equation without lagged employment, we can apply fixed and random effects estimators.²⁸

For the dynamic versions of the equation, fixed and random effects estimators are no longer consistent, and we need to apply more advanced estimators. Two widely acknowledged GMMestimators currently exists; GMM-diff from Arellano and Bond (1991) and system-GMM as advocated by Blundell and Bond (1998). For small values of the adjustment parameter both estimators are quite similar, whereas the system-GMM is normally preferred for large values. In our case, the adjustment parameter is generally below 0.5 implying that both estimators are adequate.

Combining different models and different estimators, we obtain eight different estimates of the output elasticity, c.f. Table 13. We have four static (1-4) Insofar the different models deliver comparable results; we can obtain a high degree of certainty.

²⁸ There exists a long debate on the choice of fixed or random effects estimators which we do not want to enter into. Moreover, the standard Hausman test only tells whether there is a significant difference between the two estimators, but this can only be used to choose if we assume that a significant difference is due to bias and not efficiency. Thus, we prefer to present both estimators. See e.g. Johnston and DiNardo (1999) for a further discussion.

Table 15. Labour demand models and estimators							
Explanatory variables	Random	Fixed effects	GMM-diff	System-GMM			
	effects						
w, r, y*	Model 1	Model 2					
w, r, y*, DAR, k	Model 3	Model 4					
w, r, y, l ₋₁			Model 5	Model 6			
w, r, y, I ₋₁ , DAR, k			Model 7	Model 8			

Table 13: Labour demand models and estimators

Source: Copenhagen Economics

We start by looking at the specific estimations results from a single sector, books, c.f. Table 14. The results are very similar for other sectors. For all models, we obtain a satisfying degree of explanatory power of around 0.75 in terms of R square.

We find that the estimate of the output elasticity is larger for the static than for the dynamic models. At first sight this may seem as an inconsistency between the two types of models, but actually the results are very similar. The reason is that "future" adjustments will take place due to the dynamic structure thereby increasing the long-run effect of an output change. In this way the short-run estimate of around 0.30 is equivalent to a long-run estimate of 0.30/(1-0.35) \cong 0.46 in the books sector, c.f. Table 14.

All coefficients are extremely significant and have the sign predicted by economic theory; negative for labour and capital costs; positive for adjustments (the lagged endogenous variable); positive for the debt-asset ratio; and negative for capital intensity.

Books	у	W	r	<i>l</i> ₋₁	DAR	k
Model 1	0.58***	-0.30***	-0.25***			
Model 2	0.44***	-0.28***	-0.43***			
Model 3	0.60***	-0.30***	-0.27***		0.14***	-0.17***
Model 4	0.44***	-0.28***	-0.44***		0.14***	-0.19***
Model 5	0.26***	-0.30***	-0.32***	0.32***		
Model 6	0.33***	-0.25***	-0.26***	0.43***		
Model 7	0.28***	-0.26***	-0.30***	0.24***	0.00	-0.17***
Model 8	0.31***	-0.30***	-0.26***	0.39***	0.09**	-0.17***

Table 14: Results from eight labour demand models, books sector

Source: Copenhagen Economics

The interesting results concerning output elasticities for all sectors can be found in Figure 12, which decomposes the long-run elasticity in a short-run component and a postponed adjustment component. We obtain estimated long-run output elasticities in the range 0.4-0.8, which means that whenever output should be raised by 1 percent, labour demand will increase by 0.4-0.9 percent. Some sectors have significantly higher elasticities, e.g. restaurants, hairdressers, and domestic care. This is not surprising as these are generally labour intensive sectors. Conversely, electricity and petroleum supply is far more capital intensive and have lower output elasticities in their labour demand functions.

We also find housing in the lowest end. Most of the labour considered in this category comes from construction firms which are generally also quite labour intensive. Since the construction sector is very sensitive to business cycles, we believe the low value can be explained by the large procyclical shocks causing the econometric estimate to be seriously biased.

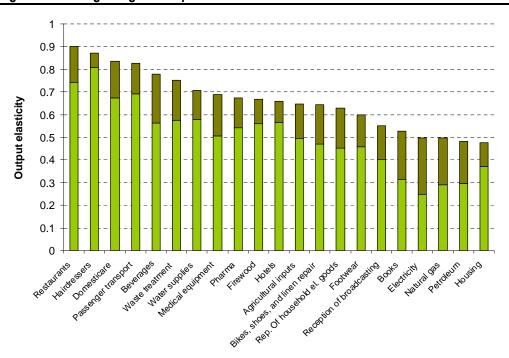


Figure 12: Average long-run output elasticities across sectors

Source: Copenhagen Economics

Note: The short-run elasticity is marked by the lighter green colour; the postponed response by the darker green. Together, the short-run and the postponed equal the long-run elasticity. The parameter values come from the most adequate estimation model among the dynamic estimators.

In general, we indeed expect to have a negative bias in each of the labour demand estimations due to omitted variables, e.g. business cycles. This is a standard feature of all similar estimations found in the literature, see e.g. Nickell and Layard (1986). In fact, under constant returns to scale and perfect competition, the output elasticity should equal one.

Thus, the reader may interpret the lower values found here (and elsewhere in the literature) as a combination of: (i) unmodelled shocks giving rise to econometric biases, (ii) increasing returns to scale, or (iii) imperfect competition. Increasing returns to scale simply means, that 1 percent more output can be produced with less than 1 percent inputs, implying that the output elasticity is below 1. Imperfect competition, e.g. unions with monopoly power, could cause positive output fluctuations to be followed by disproportional large (and economically inefficient) capital investments.

In conclusion, we have found highly significant effects on labour demand from increased production, but we have also found that the output elasticities are not the same across sectors. Thus, a reduction in the VAT rate will not have the same effect on job creation in all sectors. Specifically; the sectors with highest output elasticity will be most likely – given a full price pass-through and similar demand elasticities – to result in the highest number of new jobs. We have also seen the elasticity and the postponed adjustment are highly influenced by the capital intensity of a sector.

Evaluation of national VAT experiments

Between the years 2000-2003, nine member states²⁹ participated in an experiment outlined in the directive 1999/85/EC to apply temporarily reduced rates of the VAT in selected sectors. The sectors admitted for experiments were characterized by being local, labour intensive, and

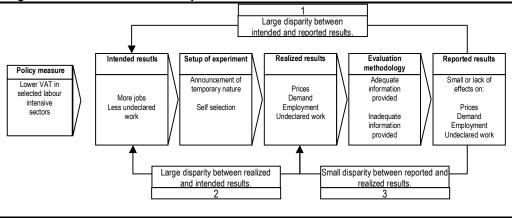
²⁹ Belgium, France, Greece, Italy, Luxembourg, the Netherlands, Portugal, Spain and the UK.

primarily provided to final customers. They were: repairing of bicycles, shoes, leather goods, clothing and household linen, renovation and repairing of private dwellings, window cleaning and cleaning in private households, domestic care services and hairdressing.

It was anticipated that VAT reductions would bring about large employment effects. The intended economic mechanism was for VAT reductions to boost demand – through lower prices – and thereby promote employment while facilitating reduction in undeclared work in these sectors. Contrary to the expectations, however, member states reported little, if any, of the anticipated effects on the completion of experiments, cf. COM 309.

Based on our investigations of the experiments, we find that the disparity between the intended and reported results is to a large degree due to the chosen experimental design, and less due to the evaluation methodology applied by the Member States. In other words, potential experiment revaluations are likely not to indicate substantially different results, even if better methods were to be applied.

In order to explain why this is the case, we first depict the conduct of the experiment and its evaluation, cf. Figure 13. The process was initiated to investigate the effects of a potential policy measure - sectoral reductions of VAT - whose indented consequences were to increase employment and decline the size of undeclared work in the in the chosen sectors for the participating countries. These consequences were hoped for being realized in the participating countries as the experimental set up was announced: the reductions were to take place within a precisely defined time interval, countries were invited to apply for participation (in Belgium and the Netherlands, specific firms were invited too), and certain administrative (reporting) requirements were placed on both the participating firms, as well as the countries. Full information about the experimental and temporary nature of the VAT reduction was given to the populations of the countries who chose to apply the reduced VAT rates. Once the rules had been set, and the participants chosen, the experiment was set in motion for the two years, thereafter extended to three, generating economic results in the countries and sectors concerned. On completion of the experiments, the participating countries were required to report back on these results to the Commission. In order to make international comparisons possible, the countries were supposed to use a common evaluation methodology, designed to avoid inconsistencies in measurement and reporting. While some countries struggled to collect the data necessary for carrying out evaluations along the complete evaluation methodology, those that were successful in collecting evidence from the participating firms, reported overall little, if any evidence for lower prices stimulating output and boosting employment, with the exception of France and Italy.





Source: Copenhagen Economics

Clearly, the outcome of the experiments has been contrary to the expectations. There was a large disparity between the reported and the indented results cf. Box 1 in Figure 13. Several issues have been immediately identified as possible reasons for this. Most prominently, it has been suggested that the incorrect design and/or application of the evaluation methodology has meant that the results reported had not properly accounted for, or misrepresented, the results realized, cf. Box 3 in Figure 13. This sparked off an investigation into the faults in the design of the evaluation methodology and its application by member states, cf. COM 309.

On the other hand, another possibility remained that the lack realized results was not so much a consequence of faulty evaluation methodologies, but because the results realized were indeed small in magnitude, or even entirely lacking. This line of thinking leads more in the general direction of identifying the problems with the setup of the experiment, cf. Box 2 in Figure 13, not so much the design and application of evaluation methodologies.

In what follows we start by examining the evaluation methodologies, and thereafter we delve into two issues with the design of the experiment that have affected the realized results in a profound way. We conclude that while the individual methodologies may have been improved, they most likely convey a correct image of the results actually realized by the participating countries. In other words, the absence of strong effects of the experiments it is not due to the choice of methodology applied to study them (Box 3), but rather due to the design of the experiment that created them (Box 2).

Assessment of applied evaluation methodologies

Difficulties in applying a 'common frame of reference' for evaluating the experiments as stipulated by the European Commission means that more weight should be put on certain results than others. This issue has been addressed by the COM 309 study; however the Commission report has not provided a detailed account of the methodological inconsistencies and their consequences.

The choice of sectors pre-determined the relatively modest size of potential price declines and employment increases, Table 15. Despite significant VAT reductions, between 9-15%, prices declined only marginally, if at all. Furthermore, bicycle repair, shoe repair, tailors, hairdressers, domestic care, and window cleaning, while collectively being significant employers of unskilled labour, are typically micro-enterprises with less than 10 employees, and although labour intensive in production, they have a rather limited job-creating potential.

Country	Sectors	VAT	Price change	Empl.
		reduction		change
Belgium	Small repair services	15 %pts.	-1 %	Undet.
	Renovation of private dwellings		Undet.	Undet.
France	Renovation of private dwellings	15.1 %pts.	-5 %	40000- 46000
	Window cleaning		Undet.	Undet.
	Domestic care services		Undet.	1650
Greece	Repair of clothing and household linen	10 %pts.	None	None
	Domestic care services		None	None
Italy	Renovation of private dwellings	10 %pts.	Undet.	65000- 75000
	Domestic care services		Undet.	Undet.
Luxembourg	Small repair services (shoes)	9 %pts.	20 % of firms reduced prices	Undet.
	Window cleaning		Undet.	Undet.
	Hairdressing		60 % of firms reduced prices	1.8-3.6 %
The	Small repair services	11.5 %pts.		
Netherlands	 Bicycle repair 		1.3 %	None
	- Shoe repair		0.7 %	None
	- Clothing repair		-10.5 %	None
	Renovation of private dwellings		-10; -11 %	None
	Hairdressing		-5.5 %	None
Portugal	Renovation of private dwellings	12 %pts.	Undet.	Undet.
	Domestic care services		Undet.	Undet.
Spain	Renovation of private dwellings	9 %pts.	None	None
	Hairdressing		None	None
UK	Renovation of private dwellings	12.5 %pts.	Approx. 10 %	Undet.

Table 15: Results of VAT experiments	Table 15	: Results of	VAT ex	periments
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Source: Copenhagen Economics

The evaluations have been carried out according to guidelines issued by the European Commission, in order for them to provide useful information in a consistent manner. The Commission required that the evaluations provide information on the economic situation of the country/sectors before and during the VAT experiment. Besides, the Commission called for the countries to provide a broad range of control variables, encompassing information on other policy measures which might have affected the economic situation of the sectors of the VAT experiment. The Commission specified a period of observation of at least five years prior to the start of the VAT experiment and the whole period of the experiment. Furthermore, the Commission specified that the experiment evaluations should use Eurostat data among possibly other data. The Commission also encouraged the countries to base their evaluations to the European Commission, but not all countries provide the information required by the Commission.

The methodologies applied in the evaluations are described in the national evaluations; see the Commission's webpage http://ec.europa.eu/taxation_customs/taxation/vat/how_vat_works/labour_intensive_services/index_en.htm. Most countries presented only descriptive statistics on the development of employment and sales/value added in the sectors subject to the VAT experiment. The Netherlands and France were the only countries to conduct a formal econometric analysis of the effect of the experiment on economic performance in the sectors relative to the general economic development. The Netherlands, France and the UK were the only countries to conduct a survey of the sectors affected in comparison to other sectors which are reasonably comparable.

Overall, we do find evaluation methodologies to have been relatively well chosen for the purpose of evaluating VAT experiments. Whereas the choice of individual methodologies may have weakened the robustness of reported results in certain countries, the overall picture of no or weak realized effects appears strong. This points, however, to the design of the VAT experiments as being responsible for the lack of any, or the small magnitude of, realized effects.

Assessment of the setup of the experiments

The setup of VAT experiments is characterized by two fundamental design deficiencies:

- 1. Announcing the temporary duration of the change has likely reduced the size of the realized pass-through to prices and employment effects.
- 2. Furthermore, the data collected was biased as countries and companies knew they were part of an experiment and could choose themselves to participate or stay out of the experiment (self-selection problem).

The first deficiency implies that the behaviour of the participants in the VAT experiments is not representative of the behaviour of individuals who experience a genuine and permanent change in VAT. The second deficiency implies that the populations which took part in the experiments are not representative of all populations who can be subject to VAT changes.

Deficiency 1: The temporary nature of experiments was announced.

The choice to inform the European public that the VAT changes were temporary and experimental is likely to have affected the behaviour of the individuals and firms who were subject to the VAT changes. Their behaviour has likely differed from that which they would exhibit if they were subject to a genuine and permanent VAT change.

The effect of knowing the experiment to be temporary is most likely different for different types of goods and services. Sectoral characteristics of significance are defined in terms of: the size of the firm and the relative importance of menu costs, degree of local monopoly power, and the durability of a product or service. We examine each in turn, in what follows:

The central premise of the economic mechanism behind job creation from lowering the VAT had been the anticipation that - within the assigned time frame of the experiment - lower prices will lead to higher demand, leading to higher employment. Whether this actually happens on the firm level depends to a large degree on the size of the firm, as larger firms will be more likely to be more capable of increasing output in the short run, and thereby passthrough the lower VAT onto lower consumer prices. On the other hand, small firms are less likely to do this, precisely because they lack the resources necessary for increasing production in the short run. Instead, they will choose to internalize the VAT reduction, i.e. increase their profit margins while keeping prices, demand, and ultimately employment, unchanged. Since most of the companies in the chosen sectors are likely to be small size firms, they are less likely to pass through lower VAT into prices, as assumed at the outset of the experiment. Instead, they may internalize the tax reduction - with no measurable consequences in terms of higher employment, as witnessed throughout the subsequent evaluations. This is reinforced by the fact that the temporary nature of the reduced VAT rate serves as a barrier to entry for new firms: As setting up a business requires some fixed costs, the temporary nature of the VAT reduction implying only a temporary period of extra profits, reduces the incentives for new firms entering the market.

Next, the smaller the firms the greater the significance of menu costs, i.e. costs of adjusting prices to changes in the underlying costs structures, such as a VAT reduction. Coupled with the knowledge that the reduction is temporary, one could easily imagine small firms, in sectors like window cleaning, to be reluctant to dramatically reduce their price lists, only to increase them thereafter. Since the price level in the sector is likely not to be prohibitively high, and the possibility to increase revenue limited due to the above reasoning, companies would rather choose to internalize VAT reductions keeping prices relatively constant, and thus avoiding a potentially detrimental loss of clientele when prices would have to be increased at the end of the experiment. Again, incentives for new firms to enter the marked would be limited due to the temporary nature of the lower VAT rate.

Closely linked to the small size of the firms is their local nature of operations. In practice, this means that even a small firm, such as a bicycle repair workshop, would possess a certain degree of market power, which it would not have an incentive to give away, even temporarily. To put simply, a client willing to service a broken bicycle in another workshop would need to bear the cost of transporting the broken bike to it, which makes him likely to choose the closest workshop to where he lives, even if that is somewhat more expensive than another one at the other end of the town.

Again, this model is likely to apply for the rest of the repair services, albeit perhaps to a lesser extent in hairdressing or even less to repair of private dwellings. Nevertheless, this does not mean that the other sectors do not derive monopoly power from their geographical location – one would still be reluctant to travel to a different town to get a haircut. This means that due to their local nature of operations, firms in the experimental sectors would less likely to pass through any declines in their costs into lower consumer prices, since that would erode their mark-up power – the power every company is striving to protect rather than give away. It is also straightforward that such firms do not have an incentive to increase output and thereby employment, but on the contrary keep it at their current (relatively) low, yet profit maximising, levels.

The more durable the good and service, the more likely it is that individuals will shift their consumption profile so that planned consumption is moved to the period where it is cheapest to buy the goods and services considered. In terms of the VAT experiments, the temporary VAT reduction on renovation of private dwellings is likely to result in a marked shift in the timing of consumption, because this kind of service is durable. On the other hand, a VAT reduction on hairdressing services is not likely to lead to similar shifts in the timing of consumption, because hairdressing services are less durable.

Deficiency 2: It was up to the individual member states to decide whether they would use the opportunity or not (self-selection).

This implies a bias in the effects compared to the intentions of the experiment, making it inherently difficult to isolate the true impact of the experiment, regardless of choice of evaluation methodology. Furthermore, several common characteristics of the sectors chosen for the experiments seem to explain that the apparent lack of reported results may indeed be because the realized results were relatively modest in magnitude. Sectoral features that explain the outcomes are similar as above. One of such characteristics is the size of the participating companies; the ability to sustain market power is another.

The choice to allow countries to choose whether they wanted to participate in the experiment on the basis of full information of the nature and details of the experiment is also problematic. The countries which chose to participate in the experiment are likely to do so because they expect to gain from it, while the countries which choose not to participate in the experiment expect to gain little from it. This, however, implies that we should expect to see strong effects of job creation if indeed the countries that chose to participate in the experiment ought to experience the highest increases in job creation. However, the temporary nature of the experiment leading to low entry even when facing higher profits, coupled with a degree of monopoly power and menu costs resulting in the first deficiency described above, is likely to have nullified the effect on job creation.

Furthermore, the types of gains which the countries hoped to achieve were not necessarily corresponds to the types of gains envisioned by the Commission. For example, the Isle of Man (UK) was not much concerned with the employment gains from the experiment, but was mainly interested in improving the quality of housing.

In Belgium and the Netherlands, the design of the experiment appears to have been affected even more by the problem of self-selection, as companies were allowed to choose whether or not to participate in the experiment. This may lead to self selection of firms with a particularly high probability of realizing an extra profit by keeping prices unchanged in the light of lower VAT. Furthermore, in countries that required firms wanting to apply the reduced rates of VAT to go through a bureaucratic application procedure, the self selection of such firms are even higher, as they face additional costs.

Companies were also monitored throughout the duration of the experiment, and required to submit data about price and employment changes, at its conclusion, which were both costly in terms of administration, the cost being more significant the smaller the company. As the sectors chosen for the experiment are profit-drive, the cost of participation had potentially the effect of reducing the number of firms participating to those who anticipated a reaping a net gain from the experiment.

The most direct way of realizing a net gain from participation was, irrespective of the company size, to internalize the VAT reduction in the form of higher margins at the unchanged level of production and employment. Yet, even if some of the larger companies, able to increase output in the short run, contemplated a possible reduction of prices to gain volume, some of them would have been prevented by the arguments listed in Deficiency one. Ultimately, it is likely that the companies that choose to participate in the experiments, where this opportunity was indeed given to them, were the ones expecting a net financial gain – e.g. by easily internalizing VAT reductions e.g. due to monopoly power. And in cases where participation was mandatory, firms could have behaved in a way to maximize the gains form participating, again by keeping fairly constant prices, exploiting the presented monopoly power or menu cost arguments, or simply in anticipation of the limited duration of the experiment. This means that the participating companies, where possible, have either self-selected or optimised their behaviour to exploit the certain features of the design of the experiment, resulting in its biased outcome.

Referring to the selectivity problem, further evaluations of the experimentally collected data are unlikely to unravel markedly different effects.

Conclusion

The VAT experiments were improperly designed with respect to its temporary nature, and the possibility for self-selection into the participant pool. This is likely to cause the observed small effects on job creation.

One can discuss the concrete modelling choices made in the countries' evaluations, but on the existing data collected from the experiments it is not likely that fundamentally different findings can be obtained by conducting re-evaluations based on the same data. Furthermore, some participant countries appear not to have supplied the information requested by the Commission, which further aggravates the problems of estimating the effects of the experiments.

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Appendix III Technical Documentation of the CEVM and micro simulation model including sector coverage

Description of the CEVM

The CEVM is a global, multi-regional, multi-sectoral general equilibrium model, and is specially designed to study the economic effects of VAT policies. The model captures all linkages between the different sectors of the economy and it therefore allows an economy-wide assessment of different VAT policies. Specifically, the model captures both the direct effects on sectors targeted by the specific policy and the indirect effects on their suppliers, consumers and competitors. Therefore, the model is suitable for answering a question like how much the total cost of the distortionary effect of a VAT reduction would be when taking all spill-over effects into account.

A basic principle of efficiency implies that a tax system should be as "neutral" as possible in terms of economic choices, and that consumption decisions should not be driven by tax considerations. As a result, in a first-best world similar goods and services should not face markedly different effective levels of taxation. Neither should taxation create any distortion in the competition between market operators. Therefore, a uniform VAT is by many regarded as an effective taxation base due to its non-distortionary nature. However, the optional nature of applying reduced rates and the huge variations between the VAT rates applied to the same category of goods or services in different Member States might have an influence on the efficient functioning of the Internal Market.

Since we propose a multi-regional model covering the whole EU, the model can capture spillover effects between markets. Hence, we are able to assess the overall impact of different VAT policies on the functioning of the Internal Market, in particular in terms of economic performance, job creation and competitiveness. Moreover, the detailed level of sector aggregation is specifically designed to capture the effects of both existing and future VAT derogations.

The CEVM builds on Copenhagen Economics' multi-regional multi-sectoral trade model, the Copenhagen Economics Trade Model (CETM) which has been used in numerous projects for the European Commission and national governments. However, the CEVM will be specifically adapted to the analysis of different VAT policies.

Country and Sector coverage

The Copenhagen Economics VAT Model is a global, multi-regional, multi-sectoral general equilibrium model specifically designed to study the economic effects of VAT policies. The focus on the Internal Market implies that the model represents all current EU Member States

excluding Bulgarian and Romania. The rest of the world is aggregated into a single region which is labelled "Rest of the World".³⁰ Each of the regions has 5 representative consumers, a government and a production sector for each of the goods and service sectors.

Regions		
1. Austria	10. Greece	19. Poland
2. Belgium	11. Hungary	20. Portugal
3. Cyprus	12. Ireland	21. Slovak Republic
4. Czech Republic	13. Italy	22. Slovenia
5. Denmark	14. Latvia	23. Spain
6. Estonia	15. Lithuania	24. Sweden
7. Finland	16. Luxembourg	25. United Kingdom
8. France	17. Malta	26. Rest of the World
9. Germany	18. Netherlands	

Table 16: Regions in the CEVM

Source: Copenhagen Economics

³⁰ The model embodies the assumption that all 25 EU Member States trade on the world market at constant prices.

CEVM sector	COICOP category	Coicop codes	CEVM share of private consumption (EU25)	Legal base
1. Food	Beer	cp0213	16,7%	
	Spirits	cp0211	10,170	
	Tobacco	cp022		
	Wine	cp0212		
	Bread and cereals	cp0111		Annex III (1)
	Fish and seafood	cp0113		Annex III (1)
	Food products n.e.c.	cp0119		Annex III (1)
	Fruit	cp0116		Annex III (1)
	Meat	cp0112		Annex III (1)
		•		Annex III (1)
	Milk, cheese and eggs	cp0114		
	Oils and fats	cp0115		Annex III (1)
	Vegetables	cp0117		Annex III (1)
	Coffee, tea and cocoa Mineral waters, soft drinks, fruit and	cp0121		Annex III (1)
	vegetable juices Sugar, jam, honey, chocolate and	cp0122		Annex III (1)
	confectionery Combined passenger	cp0118		Annex III (1)
2. Personal transport	transport Other services in respect of personal	cp0735	1,5%	Annex III (5)
	transport equipment Other purchased	cp0724		Annex III (5)
	transport services Passenger transport by air	cp0736		Annex III (5)
	Passenger transport by railway	cp0733 cp0731		Annex III (5) Annex III (5)
	Passenger transport by road Passenger transport by	cp0732		Annex III (5)
	sea and inland waterway	cp0734		Annex III (5)
0.11-1-1-	Accommodation		4.00/	Annex III
3. Hotels	services	cp112	1,6%	(11)
4. Restaurants	Canteens Restaurants, cafés and	cp1112	6,1%	
	the like	cp1111		
	Materials for the			
5. Construction of social Housing*	maintenance and repair of the dwelling Services for the	cp0431	0,1%	
	maintenance and repair of the dwelling	cp0432		Annex III (9)
	Medical products,		1	
	appliances and			Annex III
6.Medical equip.,	equipment Newspapers, books	cp061	3,4%	(3,4)
books and newspaper	and stationery Other articles of clothing and clothing accessories	cp095		Annex III (6)
	(children's)** Shoes and other	cp0313		
	footwear (childrens)**	cp0321		
7. Culture and	Cultural services	cp0942	3,6%	Annex III (7)
entertainment	Games of chance	cp0943		
	Other services n.e.c.	cp127		Annex III (8)
	Recreational and	cp0941		Annex III

	sporting services			(12,13)
8. Street cleaning,	Refuse collection	cp0442	0,05%	Annex III (17) Annex III
	Sewerage collection	cp0443		(17)
9. Government services	Education	cp10	4,2%	Annex III
	Hospital services	cp063		(14) Annex III
	Out-patient services	cp062		(14)
	Social protection	cp124		
10. Locally supplied services	Cleaning, repair and hire of clothing Maintenance and	cp0314	4,8%	Annex IV (1c)
	repair of personal transport equipment Other services relating	cp0723		Annex IV (1a)
	to the dwelling n.e.c. Repair and hire of	cp0444		Annex IV (3 Annex IV
	footwear	cp0322		(1b)
	Domestic services and household services Hairdressing salons	cp0562		Annex IV (4
	and personal grooming establishments Materials for the maintenance and	cp1211		Annex IV (5
	repair of the dwelling Services for the maintenance and	cp0431		
	repair of the dwelling	cp0432		Annex IV (2
11.Post, tele and	Package holidays	cp096	6,9%	
finansiel services	Postal services Financial services	cp081		
	n.e.c.	cp126		
	Insurance Telephone and telefax	cp125		
	equipment Telephone and telefax	cp082		
	services	cp083	0.101	A
12. Electricity, district	Water supply	cp0441	2,1%	Annex III (2)
heating, gas and	Electricity	cp0451		
water supplies	Gas	cp0452		
	Heat energy	cp0455		
	Liquid fuels	cp0453		
	Solid fuels	cp0454		
13. Rest of economy	Other	Other	49,0%	

Note: * Social housing has been calculated as part of the subsectors cp0431 and cp0432. The source for the share used in the calculation in "National board of housing (2005)". It has not been possible to get reliable data on supply of social housing. **In Coicop clothing are not divided on adults and Children's clothing. In sector 6 children's clothing has been calculated as 20% of the clothing sub sectors. This share is based on a consumption data survey carried out by Statistics Denmark (2003). This share has been used as a proxy for all the countries.

Data for calibration of the model

The GTAP database, version 6, provides the majority of the data for the empirical implementation of the model. The database is the best and most updated source for internally consistent data on production, consumption and international trade by country and sector. The CEVM therefore draws directly on the state-of-the-art in global databases for general equilibrium analysis and is based on detailed national accounts and balance of payments data from both national sources and international organisations.

The sectors in the CEVM have been collected in six groups. This selection reflects similar characteristic in the sectors within the group and on assessments of similar levels of

substitution believed to exist between certain commodities within each group rather than across groups.

The first group "Lodging and food" consists of:

- Hotels
- Restaurants
- Foodstuffs

The group's share of value added varies from 2.6 per cent in Denmark to 11 per cent in Cyprus. The reason for the large diversity lies solely within the hotel and restaurant business. Hotels make up more than 5 per cent of value added in Cyprus, but a mere 0.4 per cent in Denmark. Restaurants account for 4.7 per cent of value added in Cyprus while only 1 per cent in Denmark.

The second group "Culture and health" consists of:

- Medical equipment, books and newspapers, children's clothing
- Culture and entertainment

This group's share of value added varies from 1 percent in Luxembourg to 2.5 percent in Germany with an average of 1.7 percent across EU25 with almost half of the countries lying close to the average.

The third group *"Infrastructure"* contains:

- Passenger transport
- Construction of social housing
- Post, tele and financial services
- Electricity, district heating

The share of value added in the individual countries varies greatly: from 6 percent in Greece to 12.7 percent in Lithuania. In general, high levels of value added shares are found within the new member state group and the variation is to large extent due to the share of value added stemming from Electricity and District Heating. Most values lie within the span of 7-10 percent.

The fourth group "Locally supplied services" contains only

• Locally supplied services

This group has a value added share of 1 percent in Ireland and 2.7 percent in Cyprus, while the majority of the other country's values are spread evenly in a span of 1.6-2.2 percent around the average of 1.9 percent.

The fifth group "Public goods" contains

- Street cleaning
- Government services

The group's share of value added is almost entirely determined by Government Services, since the share of value added relating to Street Cleaning is close to zero. In general, countries lie close to 17 percent. There are some outliers in the low end (Czech Republic, Estonia, Lithuania and Ireland are below 14 per cent) and few in the high end (Portugal, Sweden, Denmark and France are above 20 per cent).

The sixth group "Rest of economy" contains

• The rest of the economy

There is a considerable spread in the size of the rest of the economy: From 58 per cent in Cyprus to 72.9 per cent in Ireland. The low value in Cyprus compared to the EU25 average of 66.6 percent is mainly due to the restaurant and hotel business, which yields and extra 6.9 percentage points share of value added in Cyprus compared to the EU 25. In Ireland, the high value is mainly due to the relatively small size of the public sector. In general, this can be said about most of the countries: If a country is relatively reliant on the hotel restaurant business compared to the EU25 average, it has a tendency to have a small rest of the economy sector. Further, if a country has a small government sector it also tends to have a large rest of the economy sector.

Group	Description	Share of value added by group	Share of value added by sector
1. Food	Foodstuffs	by group	0.9-2.1
	Hotels	2.6-11	0.4-5.2
	Restaurants		0.6-4.7
2. Merit	Medical equip., books and newspaper	1-2.5	0.2-0.8
	Culture and entertainment	1-2.5	0.6-2.1
3. Network	Passenger transport		0.9-4.7
	Construction of social housing	6-12.7	0-1.5
	Post, tele and finansial services	0-12.7	2.6-6.8
	Electricity, district heating		1.3-4.1
4. Local	Locally supplied services	1-2.7	1-2.7
5. Public	Street cleaning	13.1-22.9	0-0.6
	Government services	13.1-22.9	13-22.3
6. RoE	Rest of economy	58.1-72.9	58.1-72.9

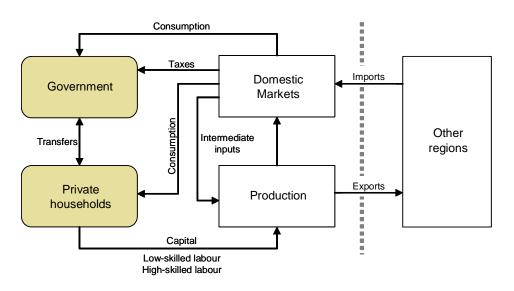
 Table 18: Summary of sector grouping in the CEVM

Source: CEVW

Overview of CEVM

All goods and services are being produced with materials and the primary factors capital and labour. A representative agent represents final demand and he finances his consumption with income from sales of capital and labour. Finally, a government provides public goods financed through taxes, including value added tax. The VAT is modelled as a consumption tax in the CEVM. Figure 1 gives an overview of the markets, the agents and the flows of goods, services and factors in the model.

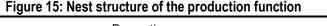
Figure 14: The Copenhagen Economics VAT Model (CEVM)

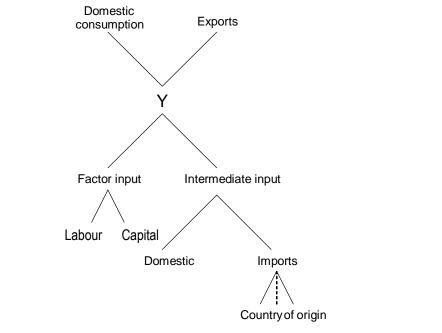


Note: CEVM is programmed in GAMS/MPSGE cf. Rutherford (1999) Source: Copenhagen Economics

The model is closed vis-à-vis the world market by assuming that the real exchange rate clears the market for foreign exchange. The market consists of proceeds from exports of EU production to the world markets and demand for imports to the EU from the world markets. The balance of payments is exogenous in each country.

In the model all producing sectors exhibit constant returns to scale and their firms sell their output in perfectly competitive markets. Figure 15 shows the structure of the production function.





Source: CEVM

The production function determines the level of the final sector production of a good or service, Y (c.f. Figure 15). The production Y meets domestic consumer demand and foreign demand (exports) for that sector good or service. Production of a good or a service relies on the inputs of primary factors, capital (K) and labour (L), and an intermediate input consisting of the 13 final goods and services produced. The intermediate input is comprised of both domestically produced goods and services and imported goods and services. This is handled in an armington function³¹. The distinction of the country of origin of the good or service is part of the decision on whether to use domestically produced or foreign produced intermediate inputs.

On the demand side of the CEVM a representative agent in each country is defined. Their preferences are defined over aggregate consumption of goods and services, and leisure time, and is characterised by a CES utility function. Aggregate consumption is a nested CES function of consumption of different goods and services.

The structure of the demand function has been carefully designed to match evidence from econometric studies of consumption patterns as well as the structure of the Infosim model.³² The nest structure of the demand function is illustrated in Figure 16.

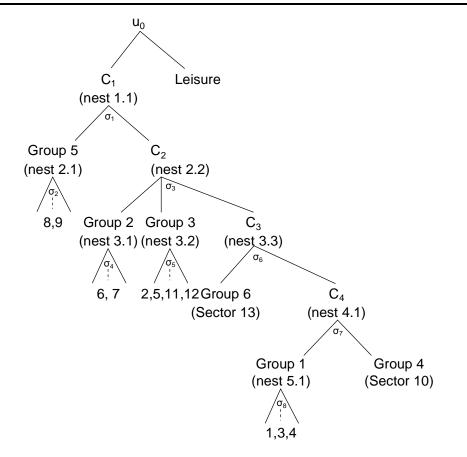


Figure 16: Nest Structures of the Demand Function

Source: CEVM

³¹ The armington function ensures that a good or services can be both imported and exported from a given country. Thereby CEVM can measure the absolute trade flows and not only net export of a given good or service.

³² Infosim is a CGE model for Denmark that can handled change in the formal and informal economy. The model is described in details in appendix VI and the connection between CEVM and Infosim is further elaborated in appendix VII.

The consumer bases his relative consumption choice on the type of consumption in question. This implies that overall the consumer must decide on how much leisure he wants and how much consumption of goods and services he wants (for which he has to work and earn income to be able to buy). Subsequently to the decision on consumption of goods and services, he then has to decide on how much income to spend on publicly produced services (group 5 in Figure 16) or privately produced goods and services (the consumption aggregate C₂ in Figure 16). This decision takes place in nest 1.1 in Figure 16. Upon the decision in nest 1.1, final demand for the publicly produced services of sectors 8 and 9 (Street Cleaning and Government Services) is settled in nest 2.1. The privately produced consumption aggregate C_2 has to be decomposed until final demand for the goods and services produced in the remaining 11 sectors is settled. In nest 2.2 the consumer decides on what to spend on the three consumption aggregates: Group 2 (consisting of goods and services produced in sectors 6 and 7), Group 3 (consisting of goods and services produced in sectors 2, 5, 11 and 12), and C₃ (which has several sub-nests). Final demands for goods and services in Group 2 and Group 3 are settled in nests 3.1 and 3.2, respectively. Upon deciding on how much income to spend on C₃, he then has to decide what to spend on (Rest of the Economy) and what to spend on the consumption aggregate C₄. This decision takes place in nest 3.3. In nest 4.1 the consumer decides on how much to spend on Locally supplied services (Group 4 which is sector 10) and how much to spend in total on food, restaurants and hotels (sectors 1, 3 and 4) before settling the final demands for those goods and services in nest 5.1.

Estimation of the substitution elasticities

The nest structure on the demand side gives possibility of refining the elasticity of substitution between the different nests. Unfortunately reliable elasticity parameters are very difficult to obtain which is a problem for any empirical modelling project. Moreover, in those cases where parameters are actually available for the use in simulation models, they are often fairly specific with respect to the regions, commodities or time period under consideration (Lotze, 1998). This makes it difficult to implement them directly in CEVM. To overcome this we have made our own econometric estimations of the own price elasticities for the CEVM sectors. The level of these estimations have then been compared with findings from an econometric literature survey with focus on cross price and own price elasticities for different sectors (Browning, 1993), (Banks et. al, 1997), (Assarsson, 2004), (Dimaranan et. al, 1997) and (Browning, 1998). The study by Assarsson is most comparable to our study because there is a large overlap in the sectors covered. In Table 19 Assarssons own price elasticises are shown together with our econometric estimates for the comparable sectors.

Copenhagen Economics estimates		Estimates by Assarsson		
Sector	Uncompensated	Sector	Uncompensated	
	own price		own price	
	elasticity		elasticity	
Foodstuffs	-0.30	Food and light beer	-0.40	
Hotels	-1.6	Hotels	-0.53	
	-0.2	Restaurants	-0.45	
Restaurants				
Medical equip., books	-0.48	Books and magazine	-1.56	
and newspaper		5		
Culture and	-0.25	Recreation and culture	-1.56	
entertainment				
Passenger transport	-0.34	Transport	-1.43	
Construction of social	0.0	Housing, fuel and	-0.31	
housing		furniture		
Post, tele and finansial	-0.44	Post and telephone	-0.78	
services				
Electricity, district	-0.02			
heating				
Locally supplied services	-0.90	Household utensils	-0.36	
Street cleaning	0.0			
Government services	-1.06	Healt care	-0.40	

Source: Copenhagen Economics and Assorsson 2004

Since the demand function is a CES function (Constant Elasticity of Substitution) we can use the following relationships to calculate the substitution elasticity:

1. Own price elasticity = $-\sigma - (\sigma - 1)^* e_i$ 2. Cross price elasticity = $(\sigma - 1)^* e_i$

Where σ = substitution elasticity e_i = expenditure share to good *i* e_j = expenditure share to good *j*

We calculate the substitution elasticity for each of the nest in the demand function. On basis of the calculation we define four groups of substitution elasticities:

Zero = 0 Low = 0.15 Medium = 0.3 High = 0.6

In Table 20 the assigned elasticity is showed for all the nests in the demand function (see Figure 16).

Table 20. Level of elasticity in demand function			
Elasticity	Level		
σ1	Zero		
σ_2	Zero		
σ_3	Medium		
σ_4	High		
σ_5	Low		
σ_6	Low		
σ ₇	High		
	$ \begin{array}{c} \hline \textbf{Elasticity} \\ \hline \sigma_1 \\ \hline \sigma_2 \\ \hline \sigma_3 \\ \hline \sigma_4 \\ \hline \sigma_5 \\ \hline \sigma_6 \\ \end{array} $		

Nest 5.1 Leisure/consumption	O ₈ Uncompensated labour supply elasticity	Low 0.1
---------------------------------	--	------------

Source: Copenhagen Economics

Measuring the welfare in CEVM

The two most often used welfare measures in CGE models are the equivalent variation (EV) and the compensated variation (CV). Both measures are defined from the consumers expenditure function (e) at the price vector p^0 and p^1 and the level of utility u^0 and u^1 for the benchmark situation and the scenario respectively.

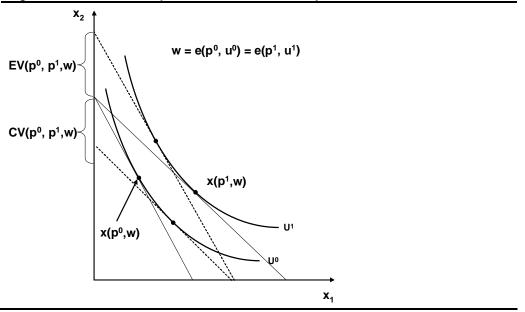
The equivalent variation can be thought of as the amount of money that the consumer would be indifferent about accepting in lieu of a price change. In other words that is the change in the consumer's wealth that would be equivalent to the price change in terms of its welfare impact.

$$EV = e(p^0, u^1) - e(p^0, u^0)$$

The compensating variation measures the net revenue of a public planner who must compensate the consumer for the price change after it occurs to bring the consumer back to the consumer's original utility level. CV can also be interpreted as the negative amount of money that the consumer would be willing to accept from the planner to allow the price change to happen.

 $CV = e(p^1, u^1) - e(p^1, u^0)$

In Figure 17 the difference between EV and CV is illustrated.





Source: Copenhagen Economics

Both measures can be used to evaluate and rank a benchmark situation with a scenario. We choose to use the EV as the welfare measure for two reasons:

- If we have more than one price vector (e.g. p¹ and p²) that we want compare with the benchmark price vector p⁰ we can use EV directly to say which of p¹ and p² is better for the consumer. That is not possible to do with CV without corrections because CV uses the new prices as the base price in the money metric utility function, which means that the rank between p¹ and p² not necessarily will be correct.
- 2. By decomposing EV we can calculate dead-weight loss (DWL).

DWL measure the extra amount by which the consumer is made worse off by a commodity taxation above what is necessary to raise the same revenue through a lump-sum tax T. In terms of expenditure function DWL can be defined in this way (Mas-Collell et al, 1995):

$$DWL = e(p^1, u^1) - T - e(p^0, u^1) = -T - EV(p^0, p^1)$$

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Appendix IV Scenarios to be simulated in the CEVM

Scenarios in CEVM

Four different main scenarios will be carried out with the CEVM model. The scenarios are characterised by focusing on different aspect of the economy. Scenario 1 focuses on abolishment on derogations. Scenario 2 focuses on derogations in only applied to locally supplied sectors. Scenario 3 expands derogations in non annex III sectors to all countries if at least one country has derogations. In scenario 4 a VAT system with only two rates are analysed. An overview of the scenarios is given in Table 21.

Sectors	1a/1b	1c	2a	2b	3	4a	4b
Annex IV	Standard	Standard	Reduced	Reduced	Reduced	5%	Reduced
Locally supplied	Standard	Standard	Reduced	Reduced	Reduced	5%	Reduced
Annex III	Current ²⁾	Standard	Standard	Current	Current	5%	Reduced
Other derogated	Standard	Standard	Standard	Current	Reduced	5%	Reduced
Exempted sectors	Zero	zero	Zero	Zero	Zero	zero	zero
Rest	Standard	Standard	Standard	Standard	Standard	Standard	Standard

Table 21: Overview of the VAT rates implemented in the scenarios ¹⁾

Note: 1) Denmark has as the only country no reduced rate. In scenarios where reduced rate are to be applied Denmark will apply the standard rate.

Note: 2) If the good or service is applied with zero rate or super reduced rate, the reduced rate will be applied. Scenario 1a is only applied in the new member states (EU10) while the old member states (EU15) keep their current VAT rates. In scenario 1b the specified rates are applied in EU15 while the EU10 keep their current VAT rates. For scenario 4a and 4b standard rates are used if the current rate is standard. Annex III and Annex IV sectors refer to sectors specified in the VAT directive (2006/112/EEC)

All policy scenarios will be modelled as equal yield reforms, i.e. they will be made revenue neutral from the perspective of the government. This will be done through either lump sum transfers, change in income taxes or change in the standard VAT rate.

Scenario 1 – An abolishment of the VAT derogations granted currently

The aim of this scenario is to analyse the effects of reducing the inefficiency that occurs in a VAT system with differentiated rates compared to a uniform rate.

To analyse a general abolition of VAT rate derogations, we will conduct three simulations:

Scenario 1a: Abolitions of all derogations in non-annex III sectors in the new EU member states

Scenario 1b (E): Abolitions of all derogations in non-annex III sectors in the old EU member states

<u>Scenario 1c (A)</u>: Uniform VAT rate in all member state. The country specific standard rates will be applied for all sectors in the countries.

Scenario 1b and 1c are further elaborated in the main report where they are referred to as scenario E and A respectively.

The VAT rates for scenario 1 are shown in Table 22.

	Scenario 1a:	Scenario 1b:	Scenario 1c:
Rate today (non Annex III)	New member states	Old member states	All member states
Zero rate	Standard rate	Standard rate	Standard rate
Super reduced rate	Standard rate	Standard rate	Standard rate
Reduced rate	Standard rate	Standard rate	Standard rate
Parking rates	Standard rate	Standard rate	Standard rate
Standard rate	Standard rate	Standard rate	Standard rate
Rate today (Annex III)			
Zero rate	Reduced rate	Reduced rate	Standard rate
Super reduced rate	Reduced rate	Reduced rate	Standard rate
Reduced rate	Reduced rate	Reduced rate	Standard rate
Parking rates	Reduced rate	Reduced rate	Standard rate
Standard rate	Standard rate	Standard rate	Standard rate

Table 22: VAT rates in scenario 1

Source: Copenhagen Economics

For example, Italy has a super-reduced VAT rate of 4 % for vegetables which is a part of Annex III. In simulation 1b the VAT rate for vegetables in Italy is set to reduced VAT rate in Italy, i.e. 10 percent. Italy has also has a super-reduced rate of 4% in service for repair of dwellings. This sector is not a part of Annex III and consequently the VAT rate will be set to standard rate i.e. 20% in scenario 1b.

Scenario 2 – Reduced rates in locally supplied sectors

The aim of the second scenario is to shed light on the consequences of an extension of the labour-intensive services (LIS) experiment to all locally supplied services. A lower VAT rate in these sectors will mainly benefit the low and medium skilled workers. In this analysis we will conduct two simulations:

Scenario 2a: Locally supplied services are applied reduced rates. All other sectors apply the standard rate.

Scenario 2b (B): Locally supplied services are applied reduced rates. All other sectors apply the current rate.

Scenario 2b is further elaborated in the main report where it is referred to as scenario B.

The VAT rates for scenario 2 are shown in Table 23.

Rate today	Locally supplied services (2a, 2b)	Other sectors (2a)	Other sectors (2b)	
Zero rate	Reduced rate	Standard rate	Zero rate	
Super reduced rate	Reduced rate	Standard rate	Super reduced rate	
Reduced rate	Reduced rate	Standard rate	Reduced rate	
Parking rates	Reduced rate	Standard rate	Parking rate	
Standard rate	Reduced rate	Standard rate	Standard rate	

Table 23: VAT rates in scenario 2

Locally supplied services are in this scenario defined as services sectors from Annex IV together with hotels, restaurants and maintenance and repair associated with social housing. A comprehensive list of the sectors concerned is given in Table 24.

(Part of) CEVM sector	Name of subsector	Coicop code
	Cleaning, repair and hire of clothing	cp0314
	Maintenance and repair of personal transport	
	equipment	cp0723
	Other services relating to the dwelling n.e.c.	cp0444
Locally supplied	Repair and hire of footwear	cp0322
services	Domestic services and household services	cp0562
	Hairdressing salons and personal grooming establishments	cp1211
	Services for the maintenance and repair of the	
	dwelling	cp0432
Hotels	Accommodation services	cp112
Restaurants	Canteens	cp1112
Residurants	Restaurants, cafés and the like	cp1111
Construction of social	Services for the maintenance and repair of the	
housing	dwelling	cp0432

Table 24: Sectors concerned in scenario 2

For example, Belgium has a reduced rate on cultural services which is not a part of locally supplied services. In simulation 2a the VAT rate in cultural services will be set to standard rate, i.e. 21% while in simulation 2b the current reduced rate at 6% will be applied.

Scenario 3 - Reduced rates in locally supplied and other derogated sectors

The aim of this scenario is to shed light on the consequences of a possible extension towards a general application of reduced rates to those categories of goods or services to which few Member States apply reduced VAT rates in non-annex III sectors.

This scenario is further elaborated in the main report where it is referred to as scenario C

The VAT rates applied in scenario 3 are specified in Table 25.

Rate today	Non-annex III sectors with derogations	Other sectors including Annex III sectors
Zero rate	Reduced rate	Zero rate
Super reduced rate	Reduced rate	Super reduced rate
Reduced rate	Reduced rate	Reduced rate
Parking rates	Reduced rate	Parking rates
Standard rate		Standard rate

Table 25: VAT rates in scenario 3

A detailed list of the sectors concerned in this scenario is given in Table 26.

(Part of) CEVM sector		Country with current
	Name of subsector	derogation
1. Food	Tobacco	LU
1.1000	Wine	AT, LU, PT
4. Restaurants	Contoons	AT, CY, FR, EL, IE, IT, LU, HU,
	Canteens	NL, PL, SI
		AT, CY, FR, EL, IE, IT, LU, HU,
	Restaurants, cafés and the like	NL, PL, PT, SI
6.Medical equip.,	Other articles of clothing and	
books and newspaper	clothing accessories	IE, LU, PL, UK
	Shoes and other footwear	IE, LU, PL, UK
9. Government services	Social protection	AT, DE, EL, LU, PL, SI
	Cleaning, repair and hire of	
	clothing	BE, EL, IE, LU, NL, PL
	Maintenance and repair of	
	personal transport equipment	BE, IE, LU, PL
	Other services relating to the	
	dwelling n.e.c.	BE, IE, LU, NL, PL
10. Locally supplied	Repair and hire of footwear	BE, IE, LU, NL, PL
services	Domestic services and	
	household services	BE, CZ, FR, EL, PLT
	Hairdressing salons and	
	personal grooming establishments	BE, IE, LU, NL
	Services for the maintenance	BE, CZ, FR, IE, IT, LU, NL, PL,
	and repair of the dwelling	PT, SI
11.Post, tele and		,
finansiel services	Package holidays	LV, LU, SE
		FR, EL, IE, IT, LU, HU, MT, PT,
	Electricity	UK
12. Electricity, district		CY, FR, EL, IE, IT , LU, HU,
heating, gas and water	Gas	MT, PT, UK
supplies	Heat energy	IE, IT, PT
	Liquid fuels	IE, IT
	Solid fuels	BE, IE, IT

Table 26: Sectors concerned in scenario 3

For example, UK and Ireland have a zero rate on children's clothing. In this scenario all countries will then have applied the country specific reduced VAT rate on children's clothing.

Scenario 4 – General application of reduced VAT rates

The aim of this scenario is to investigate what the impact would be if the VAT system is simplified to contain only two different rates, namely the standard rate and a reduced rate. To illustrate this we conduct two simulations:

Scenario 4a: The reduced rate is set to 5% in all member states. The standard rate is retained as the country specific ones.

Scenario 4b (D) : In case of two reduced rates the lowest one is chosen, while the standard rate is retained as the country specific ones.

Common for both scenarios is that the reduced rate only is applied in sectors where the particular member state today has a rate that differs from the standard rate.

This scenario 4b is further elaborated in the main report where it is referred to as scenario D

Rate today	Scenario 4a	Scenario 4b
Zero rate	5%	Lowest reduced rate
Super reduced rate	5%	Lowest reduced rate
Reduced rate	5%	Lowest reduced rate
Parking rate	5%	Lowest reduced rate
Standard rate	Standard rate	Standard rate

Table 27: VAT rates in scenario 4

Note: Lowest reduced rate = In case of two reduced rates the lowest (but not below 5%) is applied

For example, Finland has a reduced rate of 17% on fruit. In scenario 4a the applied rate will be 5%. In scenario 4b the rate will be 8% which is the lowest reduced rate in Finland.

Simulation results

In the following simulation results are showed for all eight scenarios. Common for all the results are that the government budget is balanced by adjusting the standard VAT rate.

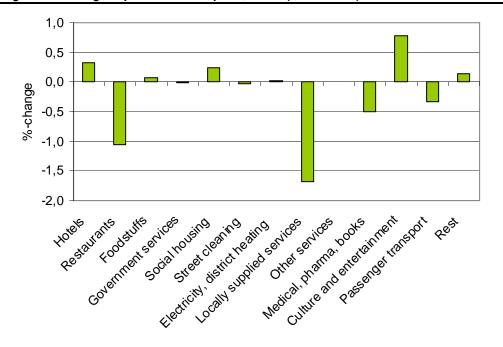


Figure 18: Change in private consumption, EU 10 (scenario 1a)

Source: Copenhagen Economics - CEVM

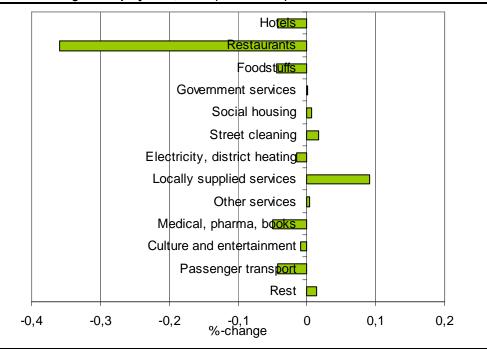


Figure 19: Change in employment, EU10 (scenario 1a)

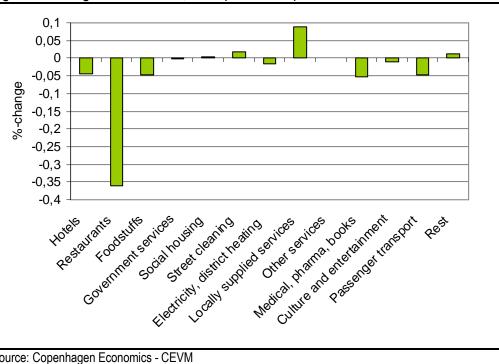


Figure 20: Change in value added, EU10 (scenario 1a)

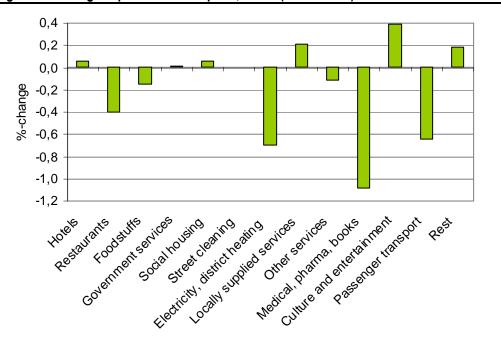


Figure 21: Change in private consumption, EU 15 (scenario 1b)

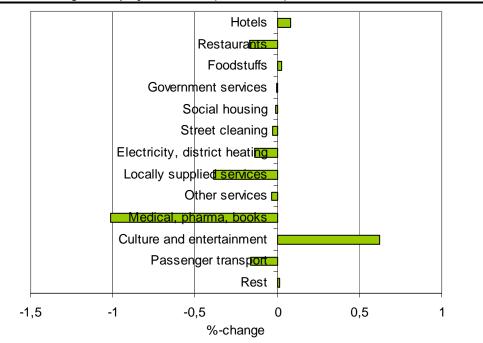


Figure 22: Change in employment, EU15 (scenario 1b)

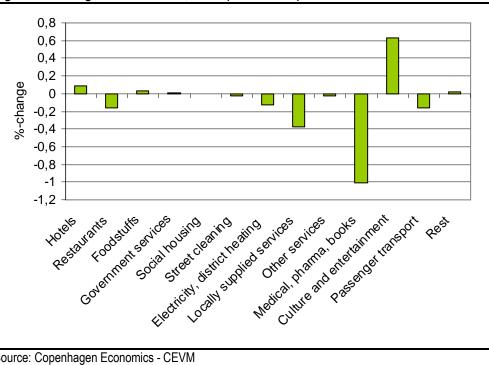


Figure 23: Change in value added, EU15 (scenario 1b)

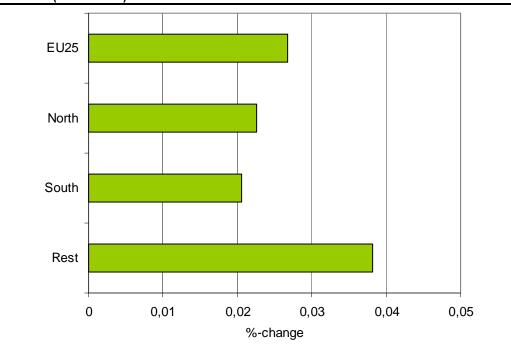


Figure 24: Change in consumer welfare relative to private expenditure, EU 25 (scenario 1c)

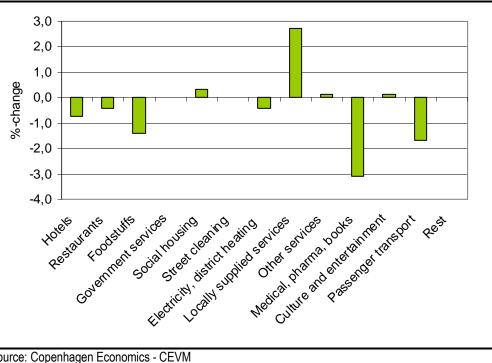


Figure 25: Change in private consumption, EU 25 (scenario 1c)

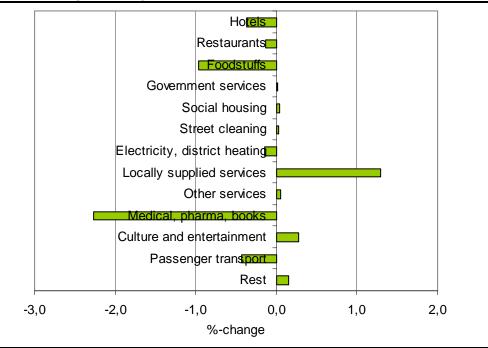


Figure 26: Change in employment, EU25 (scenario 1c)

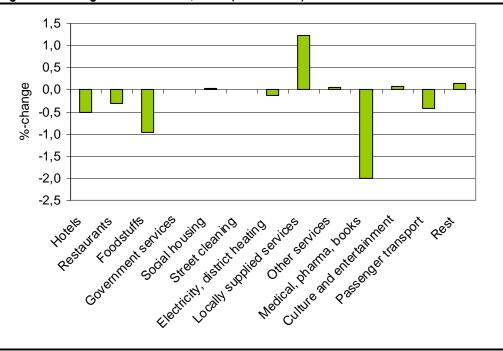


Figure 27: Change in value added, EU25 (scenario 1c)

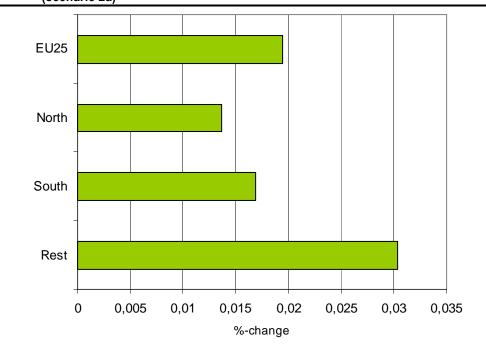


Figure 28: Change in consumer welfare relative to private expenditure, EU 25 (scenario 2a)

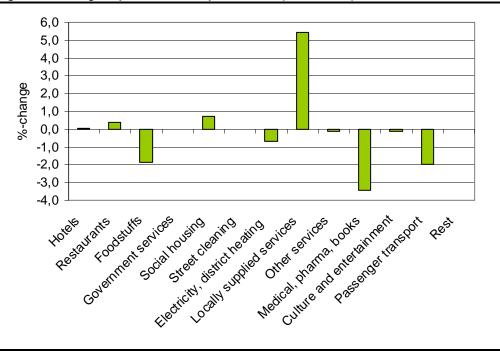


Figure 29: Change in private consumption, EU 25 (scenario 2a)

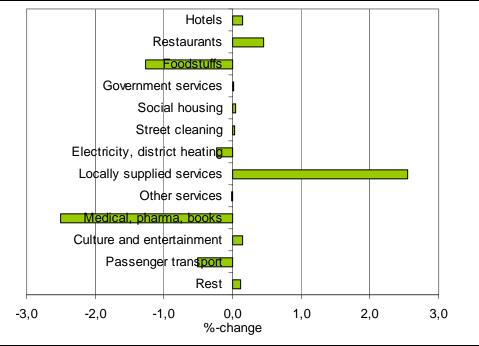


Figure 30: Change in employment, EU25 (scenario 2a)

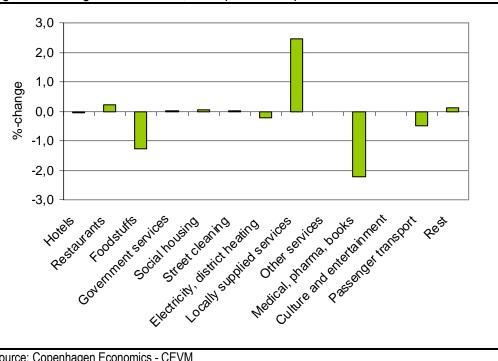


Figure 31: Change in value added, EU25 (scenario 2a)

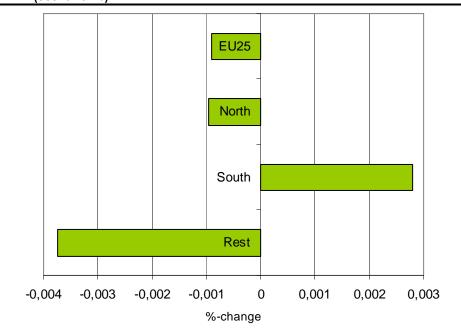


Figure 32: Change in consumer welfare relative to private expenditure, EU 25 (scenario 2b)

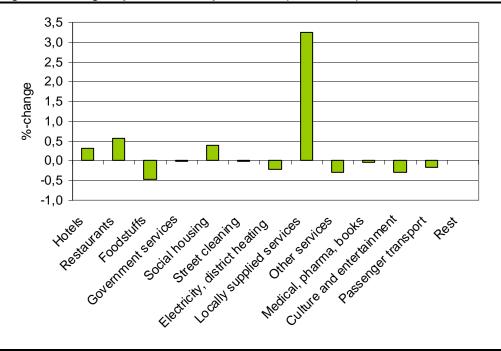


Figure 33: Change in private consumption, EU 25 (scenario 2b)

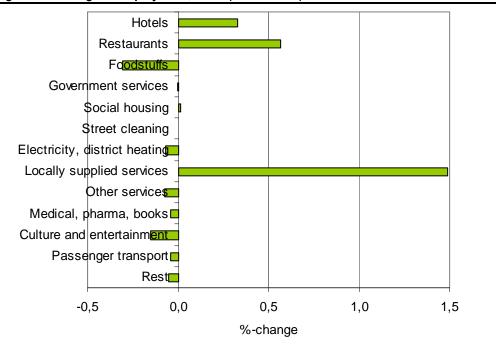


Figure 34: Change in employment, EU25 (scenario 2b)

Source: Copenhagen Economics - CEVM

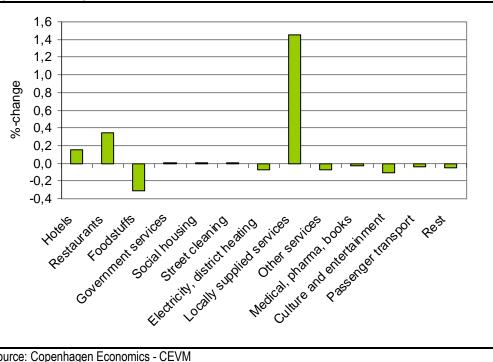


Figure 35: Change in value added, EU25 (scenario 2b)

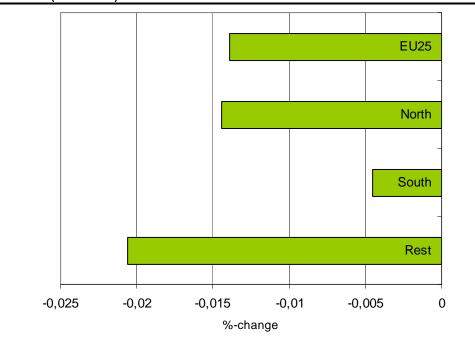


Figure 36: Change in consumer welfare relative to private expenditure, EU 25 (scenario 3)

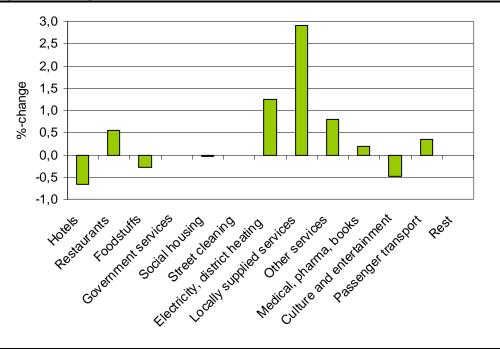


Figure 37: Change in private consumption, EU 25 (scenario 3)

Source: Copenhagen Economics - CEVM

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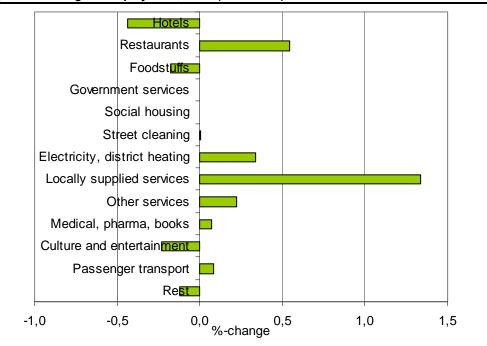


Figure 38: Change in employment, EU25 (scenario 3)

Source: Copenhagen Economics - CEVM

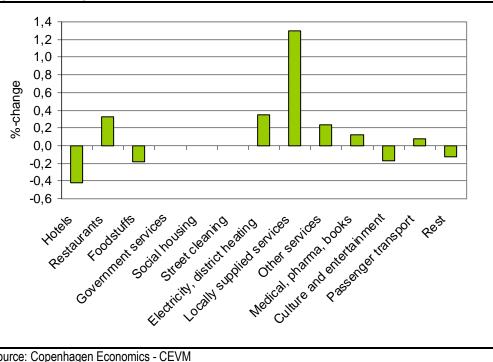


Figure 39: Change in value added, EU25 (scenario 3)

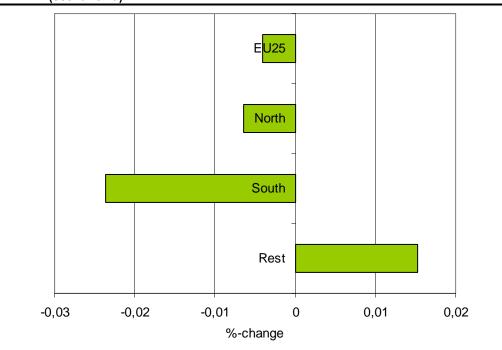
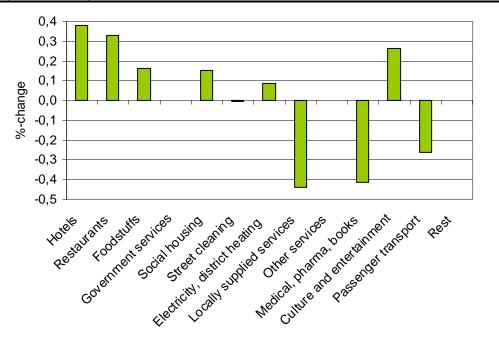


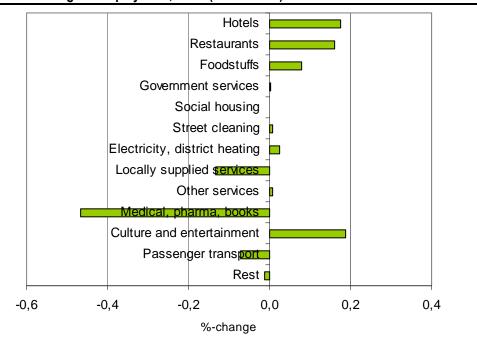
Figure 40: Change in consumer welfare relative to private expenditure, EU 25 (scenario 4a)

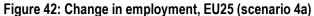




Source: Copenhagen Economics - CEVM

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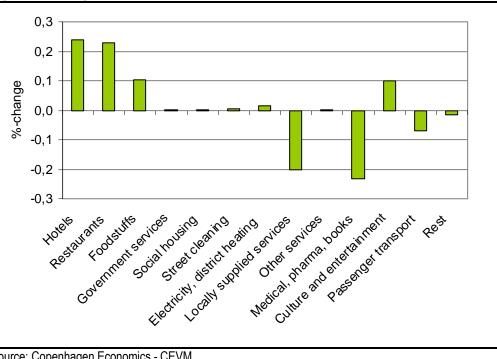


Figure 43: Change in value added, EU25 (scenario 4a)

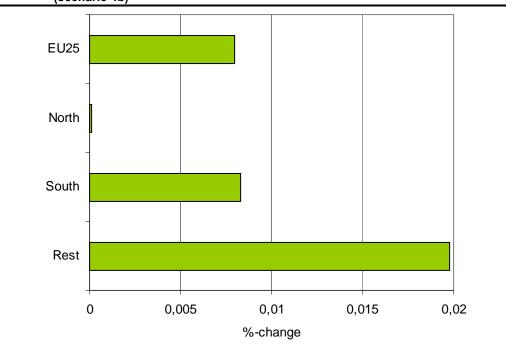


Figure 44: Change in consumer welfare relative to private expenditure, EU 25 (scenario 4b)

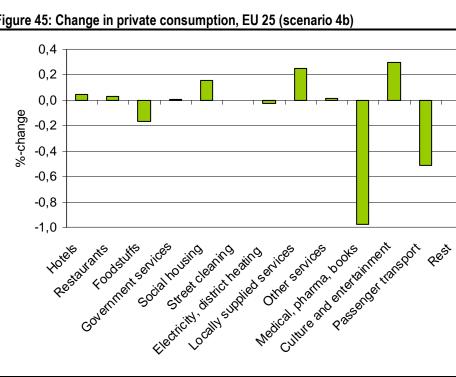


Figure 45: Change in private consumption, EU 25 (scenario 4b)

Source: Copenhagen Economics - CEVM

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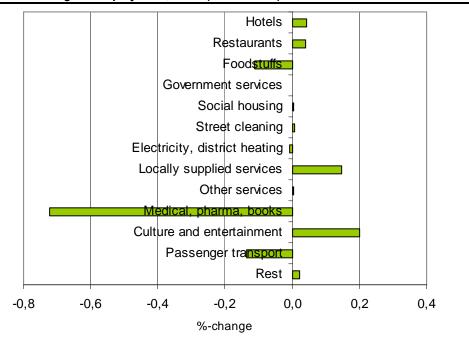


Figure 46: Change in employment, EU25 (scenario 4b)

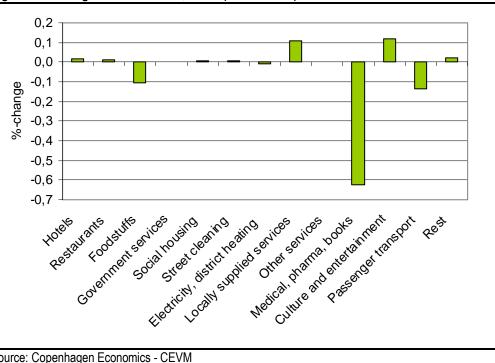


Figure 47: Change in value added, EU25 (scenario 4b)

Appendix V Informal Economy

Definition of informal economy

The concept of informal economy is not easily defined. The very nature of the informal (undeclared) economy makes it a difficult problem to deal with, and from a European perspective it is hard to find a common definition of un-declared work because of its different characteristics in the different parts of the Union. Moreover it is difficult to make a definite statement on the size of the problem since it can only be estimated. Furthermore, it does not add to clarity that there exists a wide variety of names for the phenomenon: the shadow economy, black activities, underground economy, and other terms are used in the literature.

Our terminology follows that of Pedersen (2003). The terminology and the definitions that we refer to are shown in Table 28.

Formal economy	Households: Agricultural goods and own production of investment goods Public goods Declared part of the market economy			Included in GDP	Total (theoretical) GDP
Informal economy	Shadow economy	Un-declared part of the market economy = The underground economy	Normal under- declaration	Partly included in GDP	
		Illegal economic activity (e.g. prostitution and drug-dealing)		In practice not included in GDP	
	Households: ((DIY)		•		

Table 28: Terminology used for the definition of formal economy and informal economy (from Pedersen, 2003)

The *shadow economy* consists partly of those productive activities which should be included in the official figures for GDP, but which are only partially included since these activities are precisely carried out to avoid taxation, and with it registration. The other part of the shadow

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economy consists of tax evasion involving transfer income, unearned income and deductions, etc., which are not directly included in the figures for GDP.

The underground economy, which is part of the shadow economy, consists of two parts. The first part is called underground activities in a narrow sense, and includes productive economic activities, which should be taxed, but on which tax is not paid because buyer and seller of the activity agree not to report their activities to the Inland Revenue. Thus, both buyer and seller derive an economic benefit from the Inland Revenue being kept in the dark, since they share the saved tax and VAT between them. Underground activities include both traditional underground activities, such as a mechanic who repairs a car for 'hidden' payment, and underground transactions, such as a farmer who sells a pig at the farm gate for 'hidden' payment.

The second part of the underground economy is called ordinary tax evasion. Here it is only the one party – the supplier – who knows about it and reaps the benefit of the Inland Revenue not knowing anything about the activity. Such activities include, for example, sales in a flower shop at full normal price not being rung up in the cash register, without the customer benefiting from the tax and VAT saved.

The underground economy thus consists of activities which in themselves are legal – except that they violate the tax laws. They are deliberately concealed from public authorities for one or more of the following reasons (SNA 93):

- a) To avoid the payment of income, value added or other taxes
- b) To avoid the payment of social security contributions
- c) To avoid having to meet certain legal standards such as minimum wages, maximum hours, safety or health standards, etc.
- d) To avoid complying with certain administrative procedures, such as completing statistical questionnaires or other administrative forms

In principle, the shadow economy also includes productive illegal activities, e.g. prostitution and drug-dealing, but in practise these activities are not included in published GDP.

In addition to this, the shadow economy also consists of another type of tax evasion, e.g. claiming higher deductions in your tax returns than you are entitled to. It can also include interests not declared to the tax authorities or fraud with transfer income. Such activities are not directly included in the estimate of GDP.

The informal economy also includes do-it-yourself (DIY) activities and production in households (except agriculture), which are not included in the national accounts.

These definitions of the different concepts of informal economy have also been adapted by OECD (2004).

Which factors influence the size of the shadow economy?

There are many factors that influence the size of the shadow economy. We find that the three causes that are discussed most extensively in the literature are:

- Taxation
- Excessive regulation
- Unemployment

Virtually all studies trying to determine the causes of the shadow economy have found that the burden of taxes and social security contributions is one of the main causes for the existence of the shadow economy (see, e.g., Andreoni, Erard and Feinstein, 1998; Kirchler, Maciejovsky and Schneider, 2002; Schneider, 2004, 2005; Kanniainen et al, 2004; Alanon and Gomez-Antonio, 2005; Davis and Henrekson, 2004; Schneider and Savasan, 2005). The logic behind this is straight-forward: the higher the taxes, the larger the incentives to hide economic activity from the government. Tax burden is also the mechanism that creates shadow economy in the different attempts to model the subject formally in general equilibrium models (see, e.g., Frederiksen et al 1996; Sørensen, 1997).

However, it is also clear that the tax burden is not the sole driver of the shadow economy. Friedman et al (2000) argue that entrepreneurs go underground not to avoid official taxes but to reduce the burden of bureaucracy and corruption. In their study, every available measure of over-regulation is significantly correlated with the share of the unofficial economy, and the sign of the relationship is unambiguous: more over-regulation is correlated with a larger shadow economy. A one-point increase of the regulation index (ranging from 1 to 5, i.e. a 20% increase of the index value) is associated with a 4.7% increase of shadow economy in 1997 (controlling for log GDP per capita). Johnson, Kaufmann and Zoido-Lobatón (1998) also confirm this notion in an empirical study, they find that a one-point increase of the regulation index (again ranging from 1 to 5), ceteris paribus, is associated with an 8.1 percent increase in the shadow economy, when controlling for GDP per capita.³³

Another factor that is thought to create shadow economy is the unemployment in the economy. If people are unemployed, they seek other income sources than the official job market. As Giles and Tedds (2002) points out, some officially unemployed spend a part of their time working in the shadow economy, and thus we may find a positive correlation between the unemployment rate and the size of the shadow economy. Boeri and Garibaldi (2002) argue along the same line: they suggest that the shadow economy and unemployment are two faces of the same coin, and that we therefore should observe a positive relation both over time and across space between the unemployment rate and the shadow economy rate. They show empirically that this is the case: looking across countries, there are indications of a strong positive correlation (0.60, significant at 99 percent confidence level) between estimates of shadow activity and unemployment rate. Furthermore, work done in estimating the size of the informal sector in transitional countries points to a positive time-series correlation between the share of unofficial economy in GDP and unemployment (Lacko, 1999). Also Schneider and Savasan (2005) show in their study of Turkey that high unemployment is a driving force creating shadow economic activities. On the other hand, in RRV (1998) it is argued that it is not primarily the unemployed that engage in the shadow economy as they lack contacts and access to materials and equipment.

As discussed in for example RRV (1998), EC (1998), and Renoy et al. (2004), other factors that influence the size of the shadow economy are:

- Industrial structure: In localities dominated by a few large companies, the underground labour market is relatively insignificant, whereas in local economies composed of a plethora of small firms, undeclared work is more likely.
- Goods and services market imperfections: Goods and services may be too expensive, of too poor a quality, or absent from the market altogether.

³³ The view that excessive market regulation is a factor that increases the shadow economy is furthermore backed by empirical evidence in, e.g., Scheider and Enste (1997), Schneider (2000, 2002, 2005), Bovi (2002), Schneider and Klinglmair (2004) and Dreher and Schneider (2006). Also some country-specific studies confirm this view, for example Alanon and Gomez-Antonio (2005) in their study of the Spanish economy, and Dell'Anno, Gómes and Pardo (2004) in their study of France, Spain and Greece.

- Low competitiveness: Use of undeclared labour may be a cost-cutting survival attempt by firms in declining sectors which would otherwise not be able to survive in a competitive market.
- Cultural acceptance/traditions: This refers to behaviour that is traditional or associated with certain social groups. Traditions create local or regional norms, and participating in the informal economy at local level will often be perceived as exchange of services or mutual assistance which does not need to be declared (cleaning, agricultural seasonal work, etc.)
- Norms and values and the distance between the individual and the state: The individual's moral considerations as regards undeclared work are affected by its mental and geographical distance to the powers that be. Little identification with the government or the society at large will induce people to more easily act against common rules.
- Household characteristics: Characteristics such as income situation, available skills, and level of education play a role in the decision to 'go informal'.
- Degree of enforcement/perceived risk of detection: When deciding whether to engage in undeclared work, the individual considers the risk of being caught. The degree of enforcement influences the perceived risk of detection.

The different factors influencing the size of the informal economy can be summarised as in Renoy et al. (2004) as belonging to one of three different sets of reasons: 1) market factors, 2) institutional factors, and 3) individual characteristics.

Basically, the appropriate mitigating strategy for each of the factors described above will belong to one of the following overall methods (see also RRV (1998)):

- Influence attitudes: Take measures to strengthen community morale and confidence in the public sector and its systems of rules. Measures could be national campaigns, improved provision of information and service, and changes in and simplification of the regulatory framework.
- Influence incentives to participate in the formal economy: Create incentives to declare all income. Measures could be tax benefits and other new rules of a structural nature.
- Increase the risk of detection: More effective checks will have a preventive effect.

In practice, measures should be co-ordinated in a national programme against illicit work. Also, a successful policy should be tailor-made, and there are no 'standard recipes' that can be applied.

Table 29 includes a list of appropriate measures when approaching some of the influencing factors in the combat against illicit work. The list should not be regarded as a complete list of measures.

Factors	Mitigating measures		
Tax levels and levels of social contribution	Decrease taxation on labour both as a cost for the employer (social security payments) and on individual's disposable income Reduce VAT on labour intensive services		
Excessive regulation and administrative burdens	Reform the social protection system Simplify and harmonize rules Change labour market regulation to promote access to formal labour market Reduce the administrative burden for businesses Financially support business start-ups Improve labour market flexibility		
Unemployment	Stimulate jobs in the formal economy		
Goods and services market imperfections	Subsidize or reduce overheads for services that are too expensive to be (sufficiently) supplied by the market (e.g. cleaning services)		
Cultural acceptance/traditions	Influence attitudes Increase control		
Norms & values and the distance to state	Influence attitudes Increase control		
Degree of enforcement/perceived risk of detection	Increase control Increase penalties/strengthen sanctions		

Table 29: Factors that influence the size of the informal economy and appropriate mitigating measures

Source: Copenhagen Economics

The fact that the size of the underground economy is driven by a number of different factors, as described above, implies that the level of the underground economy in different countries may have completely different causes. In chapter 3 we presented a figure on the size of the informal economy in different groups of European countries together with figures on the level of different drivers of informal economy in the same groups of countries. These figures made us suggest that in countries such as Denmark, Finland and Sweden the underground economy is driven mostly by high tax rates, whereas burdensome labour and product market regulation as well as weaker tax law enforcement are more important drivers in countries such as Spain, Italy and Portugal.

Modelling the informal economy

To be able to tell a clear story on the consequences for both the formal and the informal economy of changes in VATs, taxes or other parameters, we need a model that includes the informal economy as well as the formal.

We have developed a general equilibrium model that is able to capture the interaction between the formal and the informal economy, DIY- and black activities. The model has been developed

on the basis the Infosim-model, described in Sørensen et. al (1997). This model serves our purposes as it models the interactions between the formal and the informal economies.

The Infosim model describes a stationary long-run perfect-foresight equilibrium model in a small open economy with a predetermined total stock of financial wealth. All production factors are perfectly mobile within the domestic economy, and capital is perfectly mobile internationally. Households are divided into people of working age and a group of transfer recipients (pensioners) who are not active in the official labour market. The private business sector encompasses an official market economy producing housing repair (R-sector), so called 'other consumer services' (S-sector), and other goods and services (C-sector), plus an underground economy delivering housing repair and other consumer services. The informal economy also includes DIY activities, which is split into DIY housing repair and DIY other consumer services.

In the Infosim model, the sector 'other consumer services' encompasses household services such as cleaning, washing, gardening, window cleaning, domestic service, hairdressing, repair and maintenance of consumer durables (other than housing) plus restaurants. We refer to the sector simply as 'domestic services'. The model considers simultaneously the allocation of time between leisure, work in the home (DIY), work in the official labour market and work in the underground economy, and it is solved by numerical simulations.

We have extracted the following description of the key specifications in the Infosim model from Sørensen et al. (1997).

The household sector in the Infosim model includes eight socioeconomic groups: 1) whitecollar workers, 2) skilled blue-collar workers employed in the primary sector (C- and R-sector), 3) skilled blue-collar workers employed in the secondary sector (S-sector), 4) unemployed skilled blue-collar workers, 5) unskilled blue-collar workers employed in the primary sector, 6) unskilled blue-collar workers employed in the secondary sector, 7) unemployed unskilled bluecollar workers, and 8) transfer recipients (who are not active in the official labour market).

All households are assumed to have identical preferences, and each household type has a CES utility function with utility derived from the consumption of leisure and goods. The utility function is of a nested type as depicted in Figure 48.

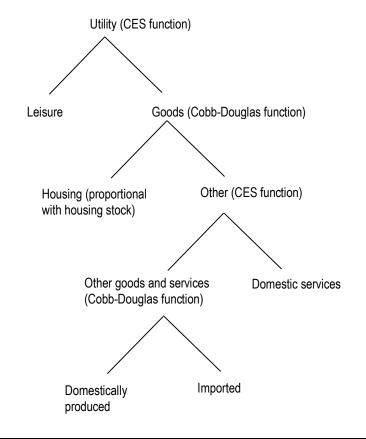


Figure 48: The nested utility function in the Infosim model

Source: Copenhagen Economics

For a working-age household holding a job in the official labour market, the consumption of leisure equals the total time endowment minus the time spent on work in the formal economy, on DIY housing repair, on DIY domestic services (such as cleaning, gardening, etc.), on underground production of housing repair, and on underground production of domestic services.

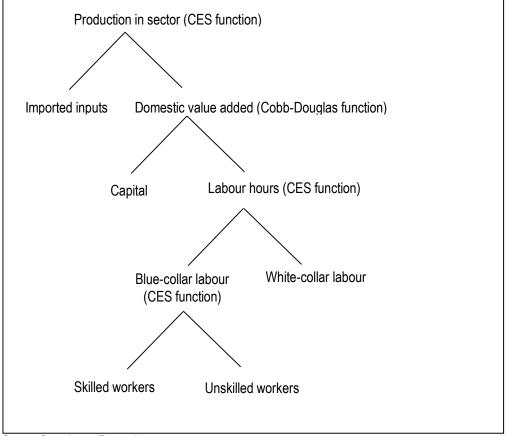
The utility derived from goods consumption is a Cobb-Douglas aggregate of the consumption of housing services and consumption of other goods. This 'other good' is again a CES aggregate of 'other goods and services' and of 'domestic services', with these domestic services consisting of DIY services and services bought in the official or in the underground market. Housing repair services do not enter this CES utility function as they generate utility only indirectly by serving to maintain the consumer's housing stock.

Finally, the utility from the consumption of 'other goods and services' is specified as a Cobb-Douglas function of the consumption of domestically produced goods and imported goods.

The technologies for DIY of housing repair services, DIY of domestic services, underground production of housing repair services, and underground production of domestic services are each described by a Cobb-Douglas production function of time and capital stock invested. These functions are specified such that a higher housing stock increases the marginal productivity of labour and capital allocated to housing repair, and such that DIY domestic services is subject to diminishing returns to scale, due to the fixity of the physical infrastructure of the household.

The private business sector encompasses an official market economy producing housing repair (R-sector), domestic services (S-sector), and other goods and services (C-sector), plus an underground economy delivering housing repair and domestic services. The informal economy also includes DIY, which is split into DIY housing repair and DIY domestic services.

The demands for labour and capital emanating from the three official business sectors of the Infosim model are derived from profit maximization, assuming competitive product markets. Each official business sector produces output by means of a nested CES production function of imported inputs and domestic value added. In Figure 49, we illustrate the nesting structure for the production functions.





Source: Copenhagen Economics

Domestic value added is a Cobb-Douglas function of the inputs of capital and labour hours, and total labour input is a CES aggregate of the inputs of white-collar labour and blue-collar labour. Furthermore, the input of blue-collar labour is specified as a CES function of the inputs of skilled and unskilled workers

The Infosim model is closed by imposing equilibrium conditions on all output markets, choosing the exogenous price of imported good as the numeraire, and specifying institutions for wage determination, assuming perfect mobility of all production factors within the domestic economy and perfect international mobility of capital. All output markets are taken to be competitive.

A general equilibrium is obtained when 1) firms maximize profits and households maximize expected utility at the going wages and prices, 2) all product markets clear, and 3) S-sector wage rates and working hours have adjusted such that the expected utility of each unemployed blue-collar worker equals the expected utility of an employed S-sector worker of the same skill

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category. In this equilibrium, the 'good' blue-collar jobs in the C- and R-sectors are rationed, with blue-collar workers in these sectors enjoying strictly higher utility than their colleagues in the S-sector and in the unemployment pool. Blue-collar wage rates in the primary sector are given by non-competitive wage-setting schedules (see Sørensen et al., 1997), so instead of competitive wage adjustments in the C- and R-sectors, equilibrium is obtained by endogenous adjustment of the unemployment rates for skilled and unskilled blue-collar workers.

The parameter values in the Infosim model have been chosen such that the general equilibrium of the model replicates a dataset for the Danish economy around 1994 as closely as possible (Sørensen et al., 1997). The dataset includes survey-based data on the size and pattern of illicit work, gathered by the Danish Rockwool Foundation Research Unit. The magnitude of the DIY sectors was calibrated rather conservatively on the basis of time budget studies carried out by Pedersen (1995).

We have chosen the elasticities in the CEVM model so as to reflect the parameter values in the Infosim model as closely as possible. In this way, we can interpret the results of the two equilibrium models jointly.

In Table 30 we show the values of the most important parameter values in the Infosim model. Empirical parameter estimates were used wherever such estimates were available (Sørensen et al., 1997).

Table 30: Selected parameter values in Infosim

Substitution elasticities	Value
Goods versus leisure	0.45
Domestic services versus other goods and services	0.15
Domestic value added versus imported goods	0.30 ª
White-collar versus blue-collar workers in C-sector	0.30
White-collar versus blue-collar workers in S- and R-sector	0.50
Skilled versus unskilled workers in C-sector	1.21 ^b
Skilled versus unskilled workers in S- and R-sector	1.21 1.91 ^b
	1.91
Ware charge in value added in	
Wage shares in value added in C-sector	0.58 °
S-sector	0.50 ° 0.61 °
R-sector	0.01° 0.77°
K-SECIOI	0.77 °
Output elasticities in the informal economy	
Elasticity of output of DIY domestic services with respect to	
- labour input	0.5
	0.5
- capital input	0.2
Elasticity of underground output of domestic services with respect to	0.4
- labour input	0.4
- capital input	0.3
Deputation charge	
Population shares White-collar workers	0.11 ^d
Skilled blue-collar workers	0.11ª 0.25 d
	0.25 d 0.28 d
Unskilled blue-collar workers	
Transfer recipients	0.36 ^d
Implicit wage and price elasticities	
Implicit uncompressed real net wage elasticity of labour supply for	
- white-collar workers	0.11
- skilled blue-collar workers in S-sector	0.11
- unskilled blue-collar workers in S-sector	0.10
- labour force as a whole	0.20
	0.05
Implicit relative price elasticity of aggregate demand for domestic services delivered from the official market	0.9
Other parameters	
Relative price elasticity of export demand	4.84 a
Consumer budget share of housing services	0.25 °
Import share of consumption of other goods and services	0.25 °
import share of consumption of other goods and services	0.20
Selected policy instruments	
General VAT rate	0.25
Marginal labour income tax rate for	0.20
- white-collar workers	0.62
- skilled blue-collar workers	0.495
- unskilled blue-collar workers	0.495
- unskilled blue-collar workers $N_{\rm track} = k_{\rm track} + 1 (1000)^{\frac{1}{2}} E_{\rm track} + 1 (1002)^{\frac{1}{2}} E_{\rm track} + 1 ($	0.400

Note: ^a Estimated from Frandsen et al. (1996), ^b Estimated from Risager (1993), ^c Estimated from Danish National Income Accounts, Statistics Denmark, ^d Estimated from National Income Accounts and Population Statistics and Social Statistics, Statistics Denmark

Source: Copenhagen Economics

Relative productivity of different types of work

Tax changes that induce shifts in the extent of informal production may have a scope for improving overall productivity, if the level of productivity is lower in informal production than in formal production.

With respect to underground production that involves professionals producing the same types of goods and services that they would otherwise have produced in the formal economy, it is reasonable to expect that they have approximately the same productivity in underground production as they would have had in formal production.³⁴ However, in the aggregate, total underground production may have a somewhat lower hourly productivity level at, say, 90 per cent of the level in the total formal economy. This is due to the fact that the composition of underground production is shifted towards sectors with productivity below average such as cleaning, repairs and restaurants.

In do-it-yourself production, however, one should expect that productivity is generally lower than in the formal economy, since this type of informal work is generally done by individuals who are not professionals within the particular line of work. The tax wedge between the value of income and the value of production means that individuals can undertake DIY at a substantially lower cost than would have had to be paid to a professional. Therefore, such production will be undertaken until the average level of productivity in DIY production is relatively small. Hourly wage rates in the sectors with most DIY such as cleaning and house keeping in general are substantially below average.³⁵ Given these differences, it seems reasonable to assume that hourly productivity in the DIY sector is 70 per cent of productivity in the formal sector.

The effects of subsidies differs between sectors

There is a better argument for lower VAT-rates for low-skill services such as cleaning and washing than for high-skill services such as housing repair. The first reason is that skill requirements are much stronger in the latter sector and DIY-activities (with low productivity) play a correspondingly lesser role. The second reason is that a lower VAT on domestic services such as cleaning and washing will imply a very limited mechanical revenue loss: taxed activities are at the outset at a very low level in most EU countries, so the tax loss associated with a support will largely go to entrants to the market rather than subsidising existing activities. For other sectors there will be larger mechanical revenue losses.

Another point we make is that there are diminishing returns to scale to lower VAT-rates which means that there is an upper limit for how much VAT-rates should be reduced for locally supplied services.

The Infosim model is particularly suited for simulating the effects of tax concessions or subsidies to locally supplied services because of the explicit interaction between the formal and the informal economy in the model. We simulate the effect of a lower VAT in two different sectors. First we look at lower VAT on domestic services. In a second scenario we analyse the effects of a lower VAT on housing repair.

³⁴ This is also the assumption in Brodersen (2003), where underground production in a number of Northern European countries is studied.

³⁵ In Denmark wage earnings for persons employed within cleaning and kitchen help is 68 per cent of average wage earnings while persons employed within housekeeping, hotels and restaurants have wage earnings at 70 per cent of the average. If these wage rates approximately reflect productivity, one should expect that the productivity levels of these individuals also are around 70 per cent of average. Source: Statistics Denmark.

First, in Scenario 1, we analyse the effects of a lower VAT on domestic services. To illustrate the decreasing marginal effect of lowering the VAT, we have made three experiments where we lower the VAT from one experiment to the next. For each step (each experiment) the lower VAT on domestic services is ex-ante financed by a higher general VAT for the rest of the economy.

Scenario 1: Lower VAT on domestic services:

- Base: Uniform VAT rates all set to 25%
- Experiment 1: VAT on domestic services reduced to 15%
- Experiment 2: VAT on domestic services further reduced to 5% (from 15%)
- Experiment 3: VAT on domestic services further reduced to -5% (from 5%)

In Table 31 we show the results of our simulations of the VAT reductions on domestic services as described for Scenario 1.

Effects	From 25% to 15%	From 15% to 5%	From 5% to -5%
Shift of man hours to formal economy (percentage points)	2.7	2.4	2.0
Shift to formal consumption (percentage points)	0.6	0.6	0.5
Productivity (% change)	0.8	0.7	0.6
Public finance (% change)	0.7	0.6	0.4
Welfare (change in % of private consumption) White-collar Skilled blue-collar employed in C- and R-sector Skilled blue-collar employed in S-sector Unemployed skilled blue-collar Unskilled blue-collar employed in C- and R-sector Unskilled blue-collar employed in S-sector Unemployed unskilled blue-collar Transfer recipients	-1.1 0.7 0.1 0.6 0.5 0.3 0.7	-1.3 0.6 -0.1 -0.1 0.5 0.2 0.2 0.5	-1.4 0.4 -0.3 -0.2 0.4 0.0 0.0 0.2
Aggregate utilitarian welfare	0.4	0.2	0.1

Table 31: Marginal VAT reductions on domestic services

Note: The welfare changes (measured as equivalent compensations) are expressed as a percentage of the consumer's expected total consumption (which equals his or hers expected net income in the present model where no net savings take place)

Source: Copenhagen Economics

Next, in Scenario 2, we analyse the effects of subsequent ex-ante financed VAT reductions in the housing-repair sector – similar to the experiments for the domestic service sector in Scenario 1.

Scenario 2: VAT reductions in the housing repair sector:

- Base: Uniform VAT rates all set to 25%
- Experiment 1: VAT on housing repair reduced to 15%
- Experiment 2: VAT on housing repair further reduced to 5% (from 15%)
- Experiment 3: VAT on housing repair further reduced to -5% (from 5%)

Table 32 shows the results of our simulations of the VAT reductions on housing repair as described for Scenario 2.

Effects	From 25% to 15%	From 15% to 5%	From 5% to -5%
Shift of man hours to formal economy (percentage points)	0.7	0.5	0.3
Shift to formal consumption (percentage points)	0.2	0.2	0.2
Productivity (% change)	0.2	0.1	0.1
Public finance (% change)	-0.2	-0.2	-0.4
Welfare (change in % of private consumption)			
White-collar	-1.2	-1.3	-1.5
Skilled blue-collar employed in C- and R-sector	0.0	-0.1	-0.2
Skilled blue-collar employed in S-sector	-0.6	-0.7	-0.9
Unemployed skilled blue-collar	-0.4	-0.5	-0.6
Unskilled blue-collar employed in C- and R-sector	-0.2	-0.3	-0.3
Unskilled blue-collar employed in S-sector	-0.5	-0.7	-0.9
Unemployed unskilled blue-collar	-0.3	-0.5	-0.6
Transfer recipients	-0.2	-0.4	-0.5
Aggregate utilitarian welfare	-0.3	-0.4	-0.5

Table 32: Marginal VAT reductions on housing repair

Note: The welfare changes (measured as equivalent compensations) are expressed as a percentage of the consumer's expected total consumption (which equals his or hers expected net income in the present model where no net savings take place)

Source: Copenhagen Economics

Conclusions from the results of Scenario 1 and Scenario 2 are:

- Lower VAT on locally supplied services will shift some of the less productive DIY work to the formal sector which will increase the overall productivity as well as the GDP. Lowering the VAT is much more effective for domestic services than for housing repair. The reason is that skill requirements are much stronger and DIY-activities therefore play a lesser role in the latter sector.
- Lower VAT on domestic services will improve aggregate utilitarian welfare. The gains
 in welfare correspond to 0.4% of private consumption for the first lowering of the VAT
 (from 25% to 15%) and 0.1% of private consumption for the third lowering of the VAT
 (from 5% to -5%). There is a tendency that white collar workers pay for the welfare of
 the rest of the society from these VAT reductions. The gains in welfare are primarily
 driven by higher productivity in the DIY-sector and in other goods and services as the
 least able households shift to formal activities for which they are trained.
- Lower VAT on housing repair will not improve the aggregate utilitarian welfare nor will it improve the welfare of any groups in society. The rather small improvements in productivity do not make up for the negative effects on welfare of consumer choice distortions.
- Lower VAT on domestic services will have a positive effect on public finances, but lower VAT on housing repair will have a negative effect on public finances. The reason is that for domestic services the initial share of formal work is limited and the positive public finance effect of the increase in formal work will outweigh the negative effect of the mechanical revenue loss. In the housing repair sector, the initial share of formal work is large and the mechanical revenue loss is therefore large. Hence, the

positive public finance effect of the increase in formal work is not big enough to outweigh the negative effect of the mechanical revenue loss.

 There are diminishing returns to scale in lowering VAT-rates. The effects on employment, consumption, productivity, public finances and welfare are less favourable – or in some cases, more unfavourable – for subsequent reductions of the VAT on both domestic services and housing repair.

The effects of subsidies differs between countries

The policy experiments in the scenarios above are based on the initial equilibrium calibrated to a dataset for Denmark where direct and indirect taxes are very high. The economic incentives to undertake informal production are generally lower in economies with low tax rates as the tax wedge between earned income and the value of production is smaller. Other countries with lower initial tax distortions would therefore not necessarily gain from introducing VAT reductions in the consumer service sector.

We want to explore the difference in the scope and composition of do-it-yourself work (DIY) and underground production between economies with different tax structures. In order to examine these differences, model versions of two stylized European economies have been implemented in the INFOSIM model, one for an archetypal Northern European country with high marginal income tax rates and high VAT rates (country N), and one for an archetypal Southern European country with smaller income tax rates and VAT rates (country S). More specifically, the two countries have been constructed as follows:

Country N: Simple average of marginal tax rates and VAT rates for Belgium, Denmark, Finland, France, Germany, Netherlands and Sweden.

Country S: Simple average of marginal tax rates and VAT rates for Greece, Italy, Portugal and Spain.

The two countries do not differ in any other respect in our model³⁶. In principle, the values for all parameters in Table 30 should be changed in order to incorporate the differences between country N and country S, but this has not been done for two main reasons. The first reason is that when only tax parameters are changed, we can isolate and illustrate the importance of tax structures for the size and composition of the shadow economy, and the effects will be a result of changes in other exogenous parameters. The second reason is that for a number of the parameters in Table 30 no particular change is needed. For the parameters for wage shares, Southern European countries can be expected to have much the same wage shares as Northern European countries, and for other structural parameters such as the wage, price and substitution elasticities, these are also expected to be of the same magnitude. For the parameters reflecting the composition of the population, it is clear that they may differ between North and South.³⁷ However, changing these parameters would change the model so much, that the initial calibration is no longer valid and make direct comparison of North and South virtually impossible. It should be noted that the main point in the present analysis is to examine the importance of tax variables for informal work and not the composition of the population per se.

³⁶ Hence, the present model simulations only serve to illustrate the importance of different tax structures for the amount of informal production and the response to different tax changes in this scenario. Other determinants, such as taste, composition of the labour force, income level or the extent of enforcement of tax laws, are not taken into account.

³⁷ In fact, data show that the share of low-skilled workers is somewhat higher in Southern Europe than in Northern Europe.

First we consider the effect of a 10 percentage point lower VAT on domestic services in both Country N and Country S. For both countries, the lower VAT on domestic services is ex-ante financed through an increase in the general VAT. Again we use the hourly productivity rates of 90 per cent and 70 per cent in underground production and DIY production, respectively. This implicitly implies that the relative levels of productivity between the formal and the two informal sectors are the same in the two stylized countries. It can be argued, however, that productivity in DIY production could be lower in country N than in country S due to the larger tax wedge in the former country. A larger tax wedge implicitly makes less productive efforts worthwhile since the amount needed to be earned to pay it in the formal market is larger. The results of the simulation are shown in Table 33.

As expected, we see from the results that country S – with lower initial tax distortions than country N – generally has less favourable effects of a lower VAT on domestic services.

Table 33: The effect of a 10 percentage points lower VAT on domestic services in Country N versus Country S: Analysis of the importance of marginal tax rates.

Effects		Country N	Country S
Shift of man hours	to formal economy (percentage points)	2.4	2.0
Shift to formal con	sumption (percentage points)	0.5	0.4
Productivity (% ch	ange)	0.7	0.6
Public finance (%	change)	0.6	0.4

Source: Copenhagen Economics

Next, we look at the 5 scenarios, A to E, from Appendix IV. We model these scenarios with VAT rates for country N and country S consistent with VAT rates in the CEVM model for the corresponding Northern European and Southern European countries.

The resulting distributions of hours spent on formal and informal production of applying Scenarios A-E to countries N and S are shown in Table 34.

Table 64 Distribution of formal and informal work fields in Section 65 (Shares)						
	Base	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E
Country N						
Formal	80.6	81.7	84.1	84.0	80.6	79.9
DIY	17.1	16.1	14.0	14.1	17.2	17.8
Underground	2.3	2.2	1.9	1.9	2.3	2.4
Country S						
Formal	86.2	86.4	87.1	87.1	86.3	84.7
DIY	12.2	12.0	11.4	11.4	12.2	13.6
Underground	1.6	1.6	1.5	1.5	1.6	1.7

Table 34 Distribution of formal and informal work hours in scenarios (shares)

Source: Copenhagen Economics

Table 34 clearly shows that the tax structure is important for the amount of DIY and underground production. In the baseline scenario, the total amount of time spent on informal activities is thus 5.6 percentage points lower in country S than in country N, reflecting the smaller incentive to do informal work in S. Furthermore, the table shows that the different scenarios have different effects on the composition of production in the two countries, cf. below.

The results on productivity of scenarios A to E are given in Table 35.

<u> </u>					
	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E
Country North	0.3	1.0	1.0	-0.0	-0.2
Country South	0.1	0.3	0.3	0.0	-0.4

Table 35 Productivity effects in country N and country S in scenarios A to E (percentage change)

Note: Figures show the percentage change in overall productivity within the given country Source: Copenhagen Economics

Given the results from Table 34 the productivity effects in Table 35 should come as no surprise. Since the shift of production from the informal to the formal sector is markedly higher in North than in South, and since the average productivity in the informal sectors is smaller by assumption, the resulting productivity gain must also be higher in N than in S.

Given the productivity effects in countries N and S from Table 35, and with a simple assumption on the similar effects in the un-modelled countries it is possible to give a reasonable estimate on the overall productivity effects from Scenarios A-D for the EU as a whole. These effects are shown in Table 36 below.

Table 36 Productivity effects in EU as a whole in scenarios

	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E
EU	0.2	0.8	0.7	0.0	-0.3
Note: Figures show the percentage change in overall productivity within whole of EU. The aggregate productivity					

effects at EU level have been found by weighting the productivity effects from Table 35 with the shares of GDP representing the countries from each group. For the un-modelled countries it has tentatively been assumed that the effects can be summarized as the simple average of country N and country S Source: Copenhagen Economics

Testing for the sensitivity of the model towards certain parameters

Because of widely diverging empirical estimates of tax elasticities as well as estimates of the elasticity of wages with respect to the rate of unemployment benefit, the calibration of the wage-setting schedules for blue-collar workers in the primary sector is a difficult task. To see how the challenge of setting the right elasticities might influence our results, we perform a sensitivity analysis where we consider a high-elasticity scenario – in addition to the low-elasticity scenario used in the experiments above. We therefore analyse the effect of a lower VAT on domestic services in the case of low elasticities in the wage function and compare it with the same experiment in the case of high elasticities in the wage function. The results of this sensitivity analysis are given in Table 37 below.

As can be seen, the results of the two experiments are very similar. We therefore conclude that the choice of elasticities in the wage function is not critical for the interpretation of the relative effects of the VAT experiments in our model.

Shift of man hours to formal economy (percentage points) Shift to formal consumption (percentage points) Productivity (% change)	2.7	2.7
Productivity (% change)		1
	0.6	0.6
Public finance (% change)	0.8	0.9
Public finance (% change)	0.7	0.8
Welfare (change in % of private consumption) White-collar Skilled blue-collar employed in C- and R-sector Skilled blue-collar employed in S-sector Unemployed skilled blue-collar Unskilled blue-collar employed in C- and R-sector Unskilled blue-collar employed in S-sector Unemployed unskilled blue-collar Transfer recipients Aggregate utilitarian welfare	-1.1 0.7 0.1 0.6 0.5 0.3 0.7 0.4	-0.9 0.6 0.2 0.1 0.5 0.5 0.4 0.7 0.4

Table 37: The effect of a 10 percentage points lower VAT on domestic services: Analysis
of the importance of the elasticities in the wage function

Source: Copenhagen Economics

Another parameter in the model, that can be difficult to assess, is the risk of being detected when engaging in underground activities. In a final sensitivity analysis, we look at what the effects of a lower VAT on domestic services will be if the initial risk of being caught in underground activities is different than the value presently used in the model. In the base case, the risk of detection is 5%. In our sensitivity test we consider the effects of a 10 percentage point lower VAT on domestic services in the case where the risk is the same as in the other simulations (the base case of 5% risk), a case where the risk of detection is 1% (the Reduced risk scenario) and the case where the risk of detection is 25% (the Increased risk scenario).The results are shown in Table 38.

Again, we observe that the results of the experiments are very similar. We therefore conclude that in the question of setting the right value, the risk of being caught is not critical for the interpretation of the VAT experiments in our model. This does *not* mean that the risk of being caught does not influence e.g. the distribution of work hours or the composition of private consumption. Indeed, it does quite much. What it *does* mean is that the relative effects of our VAT experiments can be interpreted without worrying about whether the parameter value used for the risk of detection in the model is set precisely at its 'true' value.

To illustrate the importance of the risk of detection, we show (in Table 39) some of the main effects in the economy of increasing the risk of detection by 20 percentage points – from 5% to 25%. As can be seen, the productivity does not change. This is due to the fact that although the higher risk of being caught reduces the number of man hours in the underground economy, only about half of these hours are shifted towards the formal economy, the remaining half is shifted to (unproductive) leisure.

Effects	Base risk	Reduced risk	Increased risk
Shift of man hours to formal economy (percentage points)	2.7	2.7	2.8
Shift to formal consumption (percentage points)	0.6	0.6	0.6
Productivity (% change)	0.8	0.8	0.9
Public finance (% change)	0.7	0.7	0.7
Welfare (change in % of private consumption)			
White-collar	-1.1	-1.1	-1.2
Skilled blue-collar employed in C- and R-sector	0.7	0.7	0.7
Skilled blue-collar employed in S-sector	0.1	0.1	0.1
Unemployed skilled blue-collar	0.1	0.1	0.1
Unskilled blue-collar employed in C- and R-sector	0.6	0.6	0.6
Unskilled blue-collar employed in S-sector	0.5	0.5	0.5
Unemployed unskilled blue-collar	0.3	0.3	0.4
Transfer recipients	0.7	0.7	0.7
Aggregate utilitarian welfare	0.4	0.4	0.4

Table 38: The effect of a 10 percentage points lower VAT on domestic services: Analysis
of the importance of the risk of detection

Note: In the base case, the risk of detection is 5%. In our sensitivity test we consider the case of a 10 percentage point lower VAT on domestic services in the case where the risk of detection is 1% (the Reduced risk scenario) and the case where the risk of detection is 25% (the Increased risk scenario). Source: Copenhagen Economics

Table 39: The effect of increasing the risk of detection when engaging in underground activities from 5% to 25%

Effects	Increased risk of detection
Shift of man hours to formal economy (percentage points)	1.2
Shift to formal consumption (percentage points)	0.6
Productivity (% change)	0.0
Public finance (% change)	0.7

Source: Copenhagen Economics

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Appendix VI Connection between Infosim and CEVM

The two models CEVM and Infosim capture effects from different parts of the economy. CEVM is excellent in measuring shifts between sectors at a detailed level, while Infosim has its forte in measuring changes from do it your self and the underground economy to the formal economy.

Both models are CGE models but because of their different purpose they differ a lot in the structure. Detailed descriptions of the models are given in appendix III (CEVM) and appendix VI (Infosim). In Infosim for instance is the labour market modelled to capture differences in productivity between workers in the formal economy and from do it your self and workers in the underground economy. CEVM is not able to capture these changes in labour supply, instead CEVM has been modelled with detailed sector level for all countries in EU25, while Infosim is based on data for Denmark only. Figure 50illustrates the interaction of the two models.

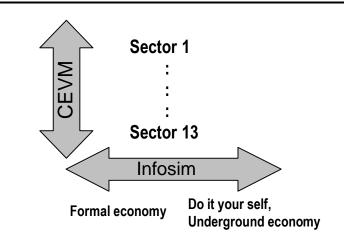


Figure 50: Interaction between CEVM and Infosim

Source: Copenhagen Economics

To be able to use the results from the Infosim model in the context of CEVM it has been crucial to choose a nest structure for the demand function in CEVM that creates a relationship between the two models. Infosim operates with fewer sectors than CEVM. Among these sectors are domestic service (also including restaurants) and housing repair. Domestic service is together with the sector other services combined and then nested together with housing repair in the Infosim demand function (see Figure 1 in appendix VI).

In CEVM housing repair is included in the sector locally supplied services while restaurants are modelled as an independent sector. To create consistency between the two models locally supplied services and restaurants are nested together in CEVM (see nest 4.1 in Figure 3, appendix III). Thereby the intersection of the Infosim sectors domestic service and housing repair are identical to the intersection of the CEVM sectors locally supplied services and

restaurants. In Table 40 the sub sectors from CEVM that match the sub sectors in Infosim are shown.

Infosim "Domestic services":	CEVM sector match:
Cleaning, washing, gardening	Cleaning, repair and hire of clothing;
Repair and maintenance of consumer durables	Maintenance and repair of personal transport equipment;
Window cleaning	Other services relating to the dwelling n.e.c.;
Domestic service	Repair and hire of footwear;
Hairdressing	Hairdressing salons and personal grooming establishments;
Restaurants	Restaurants
Infosim "Housing repair sector"	CEVM sector match:
Repair of private dwellings	Services for the maintenance and repair of the dwelling

 Table 40: Important sector match in Infosim and CEVM

Source: Infosim and CEVM

To further consolidate the two models we calibrate the weighted own price elasticity of domestic services and housing repair in Infosim to be equal to the weighted own price elasticity of locally supplied services and restaurants in CEVM. The weights used to calculate the own price elasticities of the intersections are the share of private consumption for domestic services and housing repair in Infosim and locally supplied services and restaurants in CEVM, respectively. Table 41 shows the share of private consumption and own price elasticities for the relevant sectors.

	Domestic services	Housing repair					
	Share of private consumption	Share of private consumption					
Infosim	10.9%	3.6%					
CEVM match (EU25)	10.4%	0.5%					
	Own price elasticity	Own price elasticity					
Infosim	-0.24	-0.18					
CEVM match (EU25)	-0.24	-0.15					
	Weighted own price ela	Weighted own price elasticity of intersected sectors					
Infosim		-0.23					
CEVM match (EU25)		-0.23					

Table 41: Private consumption and own price elasticity for relevant sectors

Source: Infosim and CEVM

Even though the database in Infosim only includes data for Denmark it is possible to simulate other countries or regions. Because the purpose of Infosim is to capture the effect on the labour market from changes in the formal economy other regions can be simulated by changing the relevant tax parameters for income and consumption (VAT). The non-tax parameters as consumptions shares, production structure and labour/capital ratios are less relevant in Infosim because these parameters primarily affect shifts between sectors in the formal economy which are captured in CEVM.

By choosing countries which to some extent have the same income tax structure we make a proxy for a Northern European region (Finland, Sweden, Denmark, Germany, Belgium, Netherlands and France) and Southern European region (Spain, Portugal, Italy and Greece). For these two regions we use Infosim to simulate the main scenarios from CEVM (scenario A-E). To simulate these scenarios with Infosim we calculate a VAT rate for domestic services, housing repair and a standard rate. This is done in three steps.

Step 1: The rates for domestic services and housing repair are calculated as weighted rates using the specific rates for each of the CEVM sub sectors shown in Table 40. The

rates are weighted with both the size of sub sectors and the size of the countries in the two regions.

- Step 2: In Infosim the share of consumption in housing repair are larger than in CEVM. This means that the economical effects in housing repair will be over dimensioned. To correct this error the VAT rate for housing repair is adjusted until the weighted VAT rate of housing repair and domestic services is equal to the corresponding weighted VAT rate in Infosim.
- Step 3: Given the VAT rates for domestic service and housing repair the standard rate are calculated to match the VAT revenue in benchmark.

	Benchmark	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E
Country North						
Domestic service	17.5	14.5	7.8	7.9	17.6	19.2
Housing repair	17.0	14.5	9.6	9.8	16.9	19.2
Standard rate	19.4	20.4	22.6	22.5	19.4	18.7
Country South						
Domestic service	12.4	18.3	9.1	9.1	12.3	16.7
Housing repair	11.9	18.3	9.2	9.1	10.9	16.7
Standard rate	18.0	11.5	19.2	19.2	18.2	16.3

Table 42: Calculated VAT rates used in Infosim in scenario A-E

Note: In scenario A in CEVM the VAT rate in food stuff increases which gives a direct substitution of 0.7 percent point to restaurants because they are in the same nest. To capture this direct substitution effect in Infosim we have adjusted the VAT rate using interpolation.

Source: Copenhagen Economics

Appendix VII The effect of VAT on the incidence of cross border trade and distance sales

In this appendix we document a methodological approach to study the effect of VAT on the incidence of cross-border trade and distance sales. We start by defining what features make a product tradable, and thereafter provide illustrative examples to investigate the extent to which product composition of cross-border trade and distance sales has been affected by the current structure of VAT rates.

In short, we find that product tradability is largely driven by specific product features, of which value density (price per kg) plays a particular role, and VAT differentials are not the decisive factors influencing the composition and volume of trade. In short, favourable VAT differentials do not facilitate trade in cheap bulky products, with low price per kg (foodstuffs or furniture). A similar conclusion holds for distance sales.

Cross border trade

We define cross border trade as purchases undertaken by a consumer physically present in a neighbouring country. A Copenhagener purchasing a pair of jeans on a weekend trip in Berlin is a prime example of cross border trade.

Because of this setup, certain goods are subject more to cross border trade than others. The main characteristics of cross-border tradability are the following:

- there must be a price differential between the neighbouring countries
- products must have high value density, proxied price per kilo
- products must endure transportation

To document the occurrence of cross-border trade, we use the example of Denmark where we collect detailed data about the volume and composition of cross border trade as well as domestic consumption. Our approach is to compare the price per kilo with trade intensity measured as purchases abroad as % of domestic consumption. Our hypothesis is that intensity of cross border trade increases with value density of the product.

We construct a dataset using two sources of data: The Danish Taxation Ministry, Skatteministriet, and Statistic Denmark.

Firstly, we compile a dataset on the value of goods purchased cross border by Danes in 2005, using data compiled by the Danish Taxation Ministry, Skatteministeriet, cf. column A in Table 43.

Secondly, we draw upon external trade data compiled by Statistik Danmark. We use the series SITC15A: Imports and exports by main SITC groups, country and unit. We extract detailed information about the value and mass of over 3000 individually traded goods imported to Denmark, in 2005.

Thirdly, we calculate the share of cross border trade as a percentage of total domestic household consumption expenditure calculated from the Coicop provided by Danmark Statistik.

The data is consolidated in the following way. Firstly, we group the relevant Coicop 5-digit categories representing cross-border traded products reported by Skatteministeriet. Thereafter, we match the relevant SITC sectors to the Coicop. Because both the Coicop and SITC are more disaggregated than the sectors defined by Skatteministeriet, we are able to cover them well with the data. Nevertheless, we have no information about the value and mass of trade in blank (unrecorded) media, diet supplements and pesticides. In addition, we drop gasoline and diesel fuel as the significance of VAT is overshadowed by excises. Finally, we drop the 'plants and seeds' sector, as cross-border trade there is dominated by few specialist enterprises, rather than consumer purchases.

	A	В	С
Product category	Value of imports to		Consumption in
	Denmark in 2005	Price per kg	Denmark as % of
	(€ mill.)	(€ / kg)	total domestic
			consumption
Foodstuffs	54,91	1,09	99,39
Diet supplements	0,48	n.a.	n.a.
Medicine	1,23	n.a.	n.a.
Electronics	71,28	27,58	90,12
Recorded media		28,74	92,79
(CC,CD,DVD)	20,44		
Blank CDs, DVDs	9,19	n.a.	n.a.
Blank CCs or VHS	0,48	n.a.	n.a.
Clothing	418,36	32,78	89,05
Cosmetics	57,39	3,17	94,72
Parfume	79,41		
Sports equipment	74,79	5,25	73,23
Car and motorcycle		5,77	97,11
equipment	44,57		
Gasoline	13,76	n.a.	n.a.
Diesel fuel	3,27	n.a.	n.a.
Furniture and carpets	40,28	2,80	97,78
Household durable		6,92	97,65
goods	19,12		
Construction		1,11	99,25
materials	5,48		
Hand tools	2,87	11,58	99,52
Other fuels	4,39	0,14	99,23
Other durable		5,04	97,26
purchases	104,65		
Plants and seeds	263,88	n.a.	n.a.

Table 43: Structure, value and quantity of Danish cross-border purchases

Pesticides	0,53	n.a.	n.a.
Total	1290,83		

Source: (A) Skatteministeriet, (B) Statistik Danmark (C) Statistik Danmark and Copenahgen Economics Note: All figures reported in € using a 7.5 DKK / € exchange rate.

We collect VAT information about the final selection of products in Germany and Denmark. With the exception of foodstuffs, the differential was constant in 2005, amounting to 9 %, cf. Figure 51, panel B.

We graph the price per kilo against the share of cross border trade value to total domestic consumption, cf. Figure 51. We observe that heavily traded products are responsible for determining the shape of the correlation: products with high value density are subject to more cross border imports than products with low value density. As predicted, clothes, CDs and Electronics trade more than furniture and foodstuffs. Although foodstuffs have the largest VAT differential favouring the Danish consumer to purchase in Germany, we do not observe that cross border trade in foodstuffs constitutes any significant share of Danish household expenditures on foodstuffs.

In short, even though all products are subject to the same VAT differential, products with low price per kg remain very little traded. For such sectors, the hare of foreign purchases in domestic consumption remains an order of magnitude below the most traded sectors, incl. clothes, CDs and electronics.

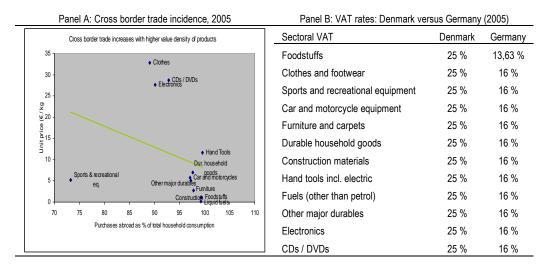


Figure 51: Structure of Danish-German cross-border trade

Source: Danmarks Statistik, Danish Ministry of Taxation (2006) and Copenhagen Economics Note: The VAT rate for foodstuffs is a COICOP-weighted average of constituent sectors

Distance sales

In contrast to cross border sales, distance sales do not require the physical presence of the consumer in a neighbouring country. An example is a Copenhagener purchasing a P.D. James crime novel via an online bookstore in the U.K.

We are currently acquiring information about estimates of the value and quantity of distance sales conducted over the internet. As of present, we have constructed an ordinal ranking of the importance of sectors subject to distance sales. In the next release of this appendix, this shall be supplemented with estimates of value and quantity from relevant studies.

We have constructed a ranking of sectors subject to distance sales using data from a qualitative survey of online sales incidence carried out by A.C. Nielsen. Using a survey technique, the study has identified sectors where distance sales took place on the Internet,

ranking them by popularity. To show the relative importance of the sectors in household expenditures, we have weighted sectors from this ranking using the EU25 average share of Coicop consumption expenditure and normalized the least traded sector to 1, cf. Figure 52.

Books, airline tickets, event tickets and recorded media account for the majority of distance sales, while trade in foodstuffs, auto parts, clothes and toys is marginal in comparison.

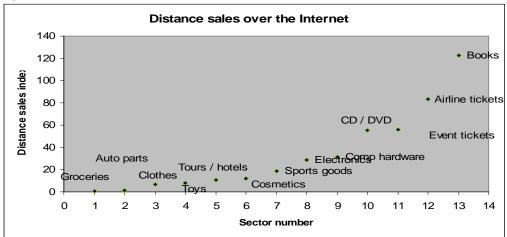


Figure 52: Distance sales over the Internet.

Source: A.C. Nielsen (2005) and Copenhagen Economics

References

A.C. Nielsen (2005) *Global Consumer Attitudes Towards Online Shopping.* A.C. Nielsen October 2005.

Danmarks Statistik (2007) *Detailed external trade*, Danmark Statistik accessed January 2007, http://www.statbank.dk/statbank5a/default.asp?w=1024

Danish Taxation Ministry (2006) 'Andre varer.' *Status over grænsehandel 2006* – Chapter 6. Skatteministeriet (Danish Taxation Ministry)

Appendix VIII Detailed information on VAT rates in CEVM scenario

Overview of the VAT rates in each country for the scenarios

The 13 CEVM sectors is an aggregate over large range of sub sectors that can have different VAT rates. For each of the CEVM sectors we need to calculate a VAT rate. This has been done by using detailed information for private expenditure taken from the Eurostat Coicop data base. For the 25 EU countries we have matched the VAT rates with 89 coicop sectors. Using information of the private expenditure for these sectors we calculate a "Consumption Expenditure Weighted Reduced Rate" (CEWRR) for each of the 13 CEVM sectors.

For each of the scenario we simulate with CEVM we calculate a new CEWRR for every sector in the countries. In the section "CEWRR for scenario simulations" we show the CEWRR for each sector in each country. In the section "Calculation of CEWRR" we show the detailed VAT rates for all the countries that are used to calculate CEWRR in the different scenarios.

VAT data sources: The IBFD and "VAT Rates Applied in the Member States of the European Community" (DOC/1829 /2006 – EN) by The European Commission's Tax and Customs Office.

The International Bureau of Fiscal Documentation (IBFD) is an independent bureau offering high quality independent tax research to tax practitioners. The IBFD VAT Database is the most detailed readily available information on the VAT systems of the individual member states of the EU. Where the information on what type of VAT rate to apply to a specific COICOP code, in order to calibrate the CEWRR, has not been applicable, the information of the EU Commission paper on applied rates (DOC/1829/2006 – EN) has been used.

Links to sources: <u>http://www.ibfd.org/</u> and <u>http://ec.europa.eu/taxation_customs/resources/documents/taxation/vat/how_vat_works/rates/v</u> <u>at_rates_en.pdf</u> (from the European Commission's Tax and Customs Office: <u>http://ec.europa.eu/taxation_customs/common/about/welcome/index_en.htm</u>)

Austria	22 <i>3 4</i>									
Standard rate:	20 %									
Reduced rate:	10 %									
Super reduced rate	: -									
Parking rate:	12 %									
Categories/Current	Categories/Current rate and Scenarios (pct.)		1A	1B	1C	2A	2B	3	4A	4B
 Foodstuffs 		11,8	11,8	12,0	20,0	20,0	11,8	10,8	7,6	11,7
2. Passenger transpo	ort	9,9	9,9	10,0	20,0	20,0	9,9	9,9	5,0	10,0
3. Hotels		10,0	10,0	10,0	20,0	10,0	10,0	10,0	5,0	10,0
4. Restaurants		10,0	10,0	20,0	20,0	10,0	10,0	10,0	5,0	10,0
5. Construction of so	cial housing	20,0	20,0	20,0	20,0	17,3	17,3	20,0	20,0	20,0
6. Medical equip., bo	ooks and newspaper	14,6	14,6	14,6	20,0	20,0	14,6	13,6	12,0	14,6
Culture and enterta	ainment	16,7	16,7	16,7	20,0	20,0	16,7	16,7	15,0	16,7
8. Street cleaning, re	fuse and sewerage services	10,0	10,0	10,0	20,0	20,0	10,0	10,0	5,0	10,0
9. Government service	ces	5,7	5,7	10,5	16,9	16,9	5,7	7,8	4,2	8,4
10. Locally supplied se	ervices	20,0	20,0	20,0	20,0	12,1	12,1	12,1	20,0	20,0
11. Post, tele and final	11. Post, tele and finansiel services		11,5	11,5	11,5	11,5	11,5	8,0	11,5	11,5
12. Electricity, district	12. Electricity, district heating, gas and water supplies		19,4	19,4	20,0	20,0	19,4	10,0	19,1	19,4
13. Rest of the economy		20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0

Belgium Standard rate:

21,00 %

Reduced rate: 6 %									
Super reduced rate: -									
Parking rate: 12 %									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4B
1. Foodstuffs	8,0	8,0	8,0	21,0	21,0	8,0	6,5	7,1	8,0
2. Passenger transport	5,9	5,9	6,0	21,0	21,0	5,9	5,9	5,0	6,0
3. Hotels	6,0	6,0	6,0	21,0	6,0	6,0	6,0	5,0	6,0
4. Restaurants	21,0	21,0	21,0	21,0	6,0	6,0	6,0	21,0	21,0
5. Construction of social housing	19,0	19,0	17,6	21,0	17,6	17,6	19,0	17,4	17,6
6. Medical equip., books and newspaper	6,8	6,8	6,8	21,0	21,0	6,8	6,0	5,9	6,8
7. Culture and entertainment	5,6	5,6	5,6	19,6	19,6	5,6	5,6	4,7	5,6
8. Street cleaning, refuse and sewerage services	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	8,0	8,0	21,0	21,0	8,0	8,0	8,0	7,1	8,0
11. Post, tele and finansiel services	10,6	10,6	10,6	10,6	10,6	10,6	6,2	10,6	10,6
12. Electricity, district heating, gas and water supplies	19,1	19,1	19,2	21,0	21,0	19,1	6,0	18,9	19,0
13. Rest of the economy	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

Cyprus

Standard rate: 15 %									
Reduced rate: 5 % (and an 8% rate)									
Super reduced rate: -									
Parking rate: -									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4E
1. Foodstuffs	2,4	6,6	2,4	15,0	15,0	2,4	1,3	6,6	6,6
2. Passenger transport	7,3	9,8	7,3	15,0	15,0	7,3	7,3	9,8	9,8
3. Hotels	8,0	5,0	8,0	15,0	5,0	5,0	8,0	5,0	5,0
4. Restaurants	8,0	15,0	8,0	15,0	5,0	5,0	5,0	5,0	5,0
5. Construction of social housing	15,0	15,0	15,0	15,0	10,1	10,1	15,0	15,0	15,0
6. Medical equip., books and newspaper	3,5	5,7	3,5	15,0	15,0	3,5	2,8	5,7	5,7
Culture and entertainment	6,1	6,1	6,1	6,1	6,1	6,1	6,1	6,1	6,1
8. Street cleaning, refuse and sewerage services	5,0	5,0	5,0	15,0	15,0	5,0	5,0	5,0	5,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	15,0	15,0	15,0	15,0	6,3	6,3	6,3	15,0	15,0
11. Post, tele and finansiel services	7,8	7,8	7,8	7,8	7,8	7,8	5,5	7,8	7,8
12. Electricity, district heating, gas and water supplies	11,8	13,8	11,8	15,0	15,0	11,8	5,0	11,8	11,8
13. Rest of the economy	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0

Czech Republic

Standard rate: 19 %									
Reduced rate: 5 %									
Super reduced rate: -									
Parking rate: -									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	7,2	7,2	7,2	19,0	19,0	7,2	5,7	7,2	7,2
2. Passenger transport	2,5	5,0	2,5	19,0	19,0	2,5	2,5	5,0	5,0
3. Hotels	5,0	5,0	5,0	19,0	5,0	5,0	5,0	5,0	5,0
4. Restaurants	19,0	19,0	19,0	19,0	5,0	5,0	5,0	19,0	19,0
5. Construction of social housing	11,7	11,7	11,7	19,0	11,7	11,7	11,7	11,7	11,7
6. Medical equip., books and newspaper	6,0	6,0	6,0	19,0	19,0	6,0	5,0	6,0	6,0
7. Culture and entertainment	5,0	5,0	5,0	19,0	19,0	5,0	5,0	5,0	5,0
8. Street cleaning, refuse and sewerage services	5,0	5,0	5,0	19,0	19,0	5,0	5,0	5,0	5,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	15,5	19,0	15,5	19,0	6,8	6,8	6,8	15,5	15,5
11. Post, tele and finansiel services	9,7	9,7	9,7	9,7	9,7	9,7	6,5	9,7	9,7
12. Electricity, district heating, gas and water supplies	17,3	17,3	17,3	19,0	19,0	17,3	5,0	17,3	17,3
13. Rest of the economy	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

Denmark

Standard rate:	25 %									
Reduced rate:	-									
Super reduced rate:	-									
Parking rate:	-									
Categories/Current rate	e and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	41
1. Foodstuffs		25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
2. Passenger transport		0,0	0,0	12,5	12,5	12,5	0,0	0,0	2,5	12,
3. Hotels		25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
Restaurants		25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
5. Construction of social	housing	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
6. Medical equip., books	s and newspaper	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
7. Culture and entertainr	nent	17,8	17,8	17,8	17,8	17,8	17,8	17,8	17,8	17,
8. Street cleaning, refuse	e and sewerage services	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
9. Government services		0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,
10. Locally supplied service	ces	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
11. Post, tele and finansie	el services	5,6	5,6	5,6	5,6	5,6	5,6	5,6	5,6	5,
12. Electricity, district hea	ting, gas and water supplies	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
13. Rest of the economy		25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,

Germany

Standard rate:19 %Reduced rate:7 %Super reduced rate:-Parking rate:-

Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	8,9	8,9	8,9	19,0	19,0	8,9	7,6	7,3	8,9
2. Passenger transport	7,2	7,2	7,6	19,0	19,0	7,2	7,2	5,8	7,6
3. Hotels	19,0	19,0	19,0	19,0	7,0	7,0	19,0	19,0	19,0
4. Restaurants	19,0	19,0	19,0	19,0	7,0	7,0	7,0	19,0	19,0
5. Construction of social housing	19,0	19,0	19,0	19,0	12,4	12,4	19,0	19,0	19,0
6. Medical equip., books and newspaper	13,2	13,2	13,2	19,0	19,0	13,2	12,5	12,2	13,2
7. Culture and entertainment	7,9	7,9	7,9	7,9	7,9	7,9	7,9	7,9	7,9
8. Street cleaning, refuse and sewerage services	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
9. Government services	4,7	4,7	6,4	12,8	12,8	4,7	4,7	3,4	4,7
10. Locally supplied services	19,0	19,0	19,0	19,0	8,9	8,9	8,9	19,0	19,0
11. Post, tele and finansiel services	17,0	17,0	17,0	17,0	17,0	17,0	10,7	17,0	17,0
12. Electricity, district heating, gas and water supplies	16,0	16,0	16,0	19,0	19,0	16,0	7,0	15,5	16,0
13. Rest of the economy	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0

Estonia

Standard rate:	18 %
Reduced rate:	5 %

%

-_

Super reduced rate:

Parking	rate:	
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Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4B
1. Foodstuffs	18,0	18,0	18,0	18,0	18,0	18,0	16,4	18,0	18,0
2. Passenger transport	9,0	11,5	9,0	18,0	18,0	9,0	9,0	11,5	11,5
3. Hotels	5,0	5,0	5,0	18,0	5,0	5,0	5,0	5,0	5,0
4. Restaurants	18,0	18,0	18,0	18,0	5,0	5,0	5,0	18,0	18,0
5. Construction of social housing	18,0	18,0	18,0	18,0	11,6	11,6	18,0	18,0	18,0
6. Medical equip., books and newspaper	6,0	6,0	6,0	18,0	18,0	6,0	5,0	6,0	6,0
7. Culture and entertainment	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
8. Street cleaning, refuse and sewerage services	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	18,0	18,0	18,0	18,0	6,8	6,8	6,8	18,0	18,0
11. Post, tele and finansiel services	9,2	9,2	9,2	9,2	9,2	9,2	6,2	9,2	9,2
12. Electricity, district heating, gas and water supplies	18,0	18,0	18,0	18,0	18,0	18,0	6,4	18,0	18,0
13. Rest of the economy	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

Finland

Standard rate:	22 %
Reduced rate:	8 % (and a 17% rate)
Super reduced rate:	-
Parking rate:	-

Cate	egories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4B
1.	Foodstuffs	17,8	17,8	10,3	22,0	22,0	17,8	16,6	7,8	10,3
2.	Passenger transport	4,0	4,0	8,0	22,0	22,0	4,0	4,0	5,0	8,0
3.	Hotels	8,0	8,0	8,0	22,0	8,0	8,0	8,0	5,0	8,0
4.	Restaurants	22,0	22,0	22,0	22,0	8,0	8,0	8,0	22,0	22,0
5.	Construction of social housing	22,0	22,0	22,0	22,0	16,9	16,9	22,0	22,0	22,0
6.	Medical equip., books and newspaper	8,6	8,6	8,6	22,0	22,0	8,6	8,0	5,7	8,6
7.	Culture and entertainment	8,0	8,0	8,0	22,0	22,0	8,0	8,0	5,0	8,0
8.	Street cleaning, refuse and sewerage services	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0
9.	Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10.	Locally supplied services	22,0	22,0	22,0	22,0	8,7	8,7	8,7	22,0	22,0
11.	Post, tele and finansiel services	13,9	13,9	13,9	13,9	13,9	13,9	11,0	13,9	13,9
12.	Electricity, district heating, gas and water supplies	22,0	22,0	22,0	22,0	22,0	22,0	8,7	22,0	22,0
13.	Rest of the economy	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

France

Standard rate: 19,6 % Reduced rate: 5,5 % Super reduced rate: 2,1 %

Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	8,2	8,2	8,2	19,6	19,6	8,2	6,7	7,8	8,2
2. Passenger transport	3,0	3,0	5,5	19,6	19,6	3,0	3,0	5,0	5,5
3. Hotels	5,5	5,5	5,5	19,6	5,5	5,5	5,5	5,0	5,5
4. Restaurants	14,1	14,1	19,6	19,6	5,5	5,5	5,5	13,9	14,1
5. Construction of social housing	16,4	16,4	16,4	19,6	16,4	16,4	16,4	16,2	16,4
6. Medical equip., books and newspaper	5,1	5,1	6,6	19,6	19,6	5,1	4,0	6,2	6,6
7. Culture and entertainment	10,3	10,3	10,3	17,5	17,5	10,3	10,3	10,1	10,3
8. Street cleaning, refuse and sewerage services	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6
9. Government services	16,7	16,7	16,7	16,7	16,7	16,7	14,7	16,7	16,7
10. Locally supplied services	16,8	16,8	19,6	19,6	7,7	7,7	7,7	16,7	16,8
11. Post, tele and finansiel services	5,7	5,7	5,7	5,7	5,7	5,7	4,7	5,7	5,7
12. Electricity, district heating, gas and water supplies	8,8	8,8	17,7	19,6	19,6	8,8	5,5	8,5	8,8
13. Rest of the economy	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6

Greece									
Standard rate: 19 %									
Reduced rate: 9 %									
Super reduced rate: 4,5 %									
Parking rate: -									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4B
1. Foodstuffs	10,6	10,6	10,6	19,0	19,0	10,6	9,2	7,3	10,6
2. Passenger transport	6,7	6,7	9,0	19,0	19,0	6,7	6,7	5,0	9,0
3. Hotels	9,0	9,0	9,0	19,0	9,0	9,0	9,0	5,0	9,0
4. Restaurants	9,0	9,0	19,0	19,0	9,0	9,0	9,0	5,0	9,0
5. Construction of social housing	14,6	14,6	14,6	19,0	14,6	14,6	14,6	12,8	14,6
6. Medical equip., books and newspaper	8,2	8,2	10,3	19,0	19,0	8,2	6,8	6,9	10,3
7. Culture and entertainment	9,7	9,7	9,7	14,1	14,1	9,7	9,7	7,9	9,7
8. Street cleaning, refuse and sewerage services	9,0	9,0	9,0	19,0	19,0	9,0	9,0	5,0	9,0
9. Government services	5,0	5,0	5,1	10,6	10,6	5,0	5,0	2,8	5,0
10. Locally supplied services	14,2	14,2	19,0	19,0	9,0	9,0	9,0	12,3	14,2
11. Post, tele and finansiel services	13,2	13,2	13,2	13,2	13,2	13,2	12,8	13,2	13,2
12. Electricity, district heating, gas and water supplies	13,0	13,0	17,7	19,0	19,0	13,0	9,0	10,6	13,0
13. Rest of the economy	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

Spain

opum	
Standard rate:	16 %
Reduced rate:	7 %
Super reduced rate:	4 %
Parking rate:	-

Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	6,8	6,8	8,1	16,0	16,0	6,8	5,8	6,3	8,1
2. Passenger transport	6,6	6,6	7,0	16,0	16,0	6,6	6,6	5,0	7,0
3. Hotels	7,0	7,0	7,0	16,0	7,0	7,0	7,0	5,0	7,0
4. Restaurants	7,0	7,0	16,0	16,0	7,0	7,0	7,0	5,0	7,0
5. Construction of social housing	8,4	8,4	8,4	16,0	8,4	8,4	8,4	6,7	8,4
6. Medical equip., books and newspaper	5,0	5,0	7,8	16,0	16,0	5,0	4,3	5,9	7,8
7. Culture and entertainment	4,1	4,1	4,1	9,3	9,3	4,1	4,1	2,9	4,1
8. Street cleaning, refuse and sewerage services	7,0	7,0	7,0	16,0	16,0	7,0	7,0	5,0	7,0
9. Government services	2,9	2,9	3,6	6,7	6,7	2,9	2,9	2,1	2,9
10. Locally supplied services	13,8	13,8	16,0	16,0	7,1	7,1	7,1	13,3	13,8
11. Post, tele and finansiel services	7,5	7,5	7,5	7,5	7,5	7,5	6,3	7,5	7,5
12. Electricity, district heating, gas and water supplies	15,9	15,9	15,9	16,0	16,0	15,9	7,0	15,9	15,9
13. Rest of the economy	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

Ireland

Standard rate:	21 %
Reduced rate:	13,5 %
Super reduced rate:	4,4 %
Parking rate:	13,5 %

Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4B
1. Foodstuffs	8,4	8,4	16,5	21,0	21,0	8,4	7,6	11,4	16,5
2. Passenger transport	0,0	0,0	6,8	10,5	10,5	0,0	0,0	2,5	6,8
3. Hotels	13,5	13,5	13,5	21,0	13,5	13,5	13,5	5,0	13,5
4. Restaurants	13,5	13,5	21,0	21,0	13,5	13,5	13,5	5,0	13,5
5. Construction of social housing	16,4	16,4	16,4	21,0	16,4	16,4	16,4	11,1	16,4
6. Medical equip., books and newspaper	0,0	0,0	14,2	21,0	21,0	0,0	1,3	5,0	13,5
7. Culture and entertainment	9,5	9,5	9,5	14,7	14,7	9,5	9,5	3,5	9,5
8. Street cleaning, refuse and sewerage services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	13,6	13,6	19,6	19,6	13,6	13,6	13,6	6,9	13,6
11. Post, tele and finansiel services	12,8	12,8	12,8	12,8	12,8	12,8	11,0	12,8	12,8
12. Electricity, district heating, gas and water supplies	13,0	13,0	20,2	20,2	20,2	13,0	13,0	4,8	13,0
13. Rest of the economy	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0

Standard rate: 20 %									
Reduced rate: 10 %									
Super reduced rate: 4 %									
Parking rate: -									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	8,8	8,8	10,8	20,0	20,0	8,8	8,1	6,2	10,8
2. Passenger transport	1,4	1,4	6,4	12,7	12,7	1,4	1,4	3,2	6,4
3. Hotels	10,0	10,0	10,0	20,0	10,0	10,0	10,0	5,0	10,0
4. Restaurants	9,5	9,5	20,0	20,0	10,0	10,0	10,0	5,0	10,0
5. Construction of social housing	11,7	11,7	11,7	20,0	11,7	11,7	11,7	7,6	11,7
6. Medical equip., books and newspaper	8,6	8,6	10,7	20,0	20,0	8,6	7,8	6,1	10,7
7. Culture and entertainment	12,5	12,5	12,5	14,5	14,5	12,5	12,5	11,5	12,5
8. Street cleaning, refuse and sewerage services	10,0	10,0	10,0	20,0	20,0	10,0	10,0	5,0	10,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	17,9	17,9	20,0	20,0	10,3	10,3	10,3	18,0	18,7
11. Post, tele and finansiel services	10,0	10,0	10,0	10,0	10,0	10,0	8,4	10,0	10,0
12. Electricity, district heating, gas and water supplies	10,0	10,0	19,1	20,0	20,0	10,0	10,0	5,0	10,0
13. Rest of the economy	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0
Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e	. weighted reduced rate	e according to	calculated	consumption	shares of to	tal consump	tion)		

Italy

Latvia Standard rate: 18 %									
Reduced rate: 5 %									
Super reduced rate: -									
Parking rate: -									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	18,0	18,0	18,0	18,0	18,0	18,0	16,4	18,0	18,0
2. Passenger transport	3,7	3,7	3,7	9,0	9,0	3,7	3,7	3,7	3,7
3. Hotels	5,0	5,0	5,0	18,0	5,0	5,0	5,0	5,0	5,0
4. Restaurants	18,0	18,0	18,0	18,0	5,0	5,0	5,0	18,0	18,0
5. Construction of social housing	18,0	18,0	18,0	18,0	11,6	11,6	18,0	18,0	18,0
6. Medical equip., books and newspaper	6,0	6,0	6,0	18,0	18,0	6,0	5,0	6,0	6,0
7. Culture and entertainment	5,1	5,1	5,1	7,5	7,5	5,1	5,1	5,1	5,1
8. Street cleaning, refuse and sewerage services	5,0	5,0	5,0	18,0	18,0	5,0	5,0	5,0	5,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	18,0	18,0	18,0	18,0	6,8	6,8	6,8	18,0	18,0
11. Post, tele and finansiel services	4,9	9,6	4,9	9,6	9,6	4,9	6,2	6,2	6,2
12. Electricity, district heating, gas and water supplies	18,0	18,0	18,0	18,0	18,0	18,0	6,4	18,0	18,0
13. Rest of the economy	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0

Lithuania

Standard rate:18 %Reduced rate:5 % (and a 9% rate)									
Super reduced rate:									
Parking rate:									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4B
1. Foodstuffs	18,0	18,0	18,0	18,0	18,0	18,0	16,4	18,0	18,0
2. Passenger transport	2,5	5,0	2,5	18,0	18,0	2,5	2,5	5,0	5,0
3. Hotels	5,0	5,0	5,0	18,0	5,0	5,0	5,0	5,0	5,0
4. Restaurants	18,0	18,0	18,0	18,0	5,0	5,0	5,0	18,0	18,0
5. Construction of social housing	13,4	11,4	13,4	18,0	11,4	11,4	13,4	11,4	11,4
6. Medical equip., books and newspaper	6,0	6,0	6,0	18,0	18,0	6,0	5,0	6,0	6,0
7. Culture and entertainment	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
8. Street cleaning, refuse and sewerage services	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
9. Government services	2,4	2,4	2,4	2,4	2,4	2,4	0,7	2,4	2,4
10. Locally supplied services	18,0	18,0	18,0	18,0	6,8	6,8	6,8	18,0	18,0
11. Post, tele and finansiel services	9,2	9,2	9,2	9,2	9,2	9,2	6,2	9,2	9,2
12. Electricity, district heating, gas and water supplies	18,0	18,0	18,0	18,0	18,0	18,0	6,4	18,0	18,0
13. Rest of the economy	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

COPENHAGEN ECONOMICS

Luxembourg									
Standard rate: 15 %									
Reduced rate: 6 %									
Super reduced rate: 3 %									
Parking rate: 12 %									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4B
1. Foodstuffs	4,5	4,5	7,4	15,0	15,0	4,5	3,7	5,3	6,3
2. Passenger transport	1,5	1,5	6,0	15,0	15,0	1,5	1,5	5,0	6,0
3. Hotels	3,0	3,0	6,0	15,0	6,0	6,0	3,0	5,0	6,0
4. Restaurants	3,0	3,0	15,0	15,0	6,0	6,0	6,0	5,0	6,0
5. Construction of social housing	9,7	9,7	11,0	15,0	11,0	11,0	9,7	10,6	11,0
6. Medical equip., books and newspaper	3,0	3,0	6,8	15,0	15,0	3,0	3,3	5,0	6,0
7. Culture and entertainment	4,4	4,4	7,1	15,0	15,0	4,4	4,4	6,2	7,1
8. Street cleaning, refuse and sewerage services	3,0	3,0	6,0	15,0	15,0	3,0	3,0	5,0	6,0
9. Government services	2,7	2,7	7,2	13,7	13,7	2,7	3,3	4,6	5,5
10. Locally supplied services	7,9	7,9	15,0	15,0	6,2	6,2	6,2	7,2	8,0
11. Post, tele and finansiel services	6,7	6,7	7,4	7,4	7,4	6,7	5,4	5,1	5,4
12. Electricity, district heating, gas and water supplies	8,3	8,3	14,7	15,0	15,0	8,3	5,9	7,7	8,4
13. Rest of the economy	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0

te: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

Hungary

	ŭ /								
Categories/Current rate and Scenarios (pct.)									
Parking rate:									
Super reduced rate:									
Reduced rate:	5 % (and a 15% rate)								
Standard rate:	20 %								

Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	15,8	7,5	15,8	20,0	20,0	15,8	14,1	7,5	7,5
2. Passenger transport	7,5	5,0	7,5	20,0	20,0	7,5	7,5	5,0	5,0
3. Hotels	15,0	5,0	15,0	20,0	5,0	5,0	15,0	5,0	5,0
4. Restaurants	15,0	20,0	15,0	20,0	5,0	5,0	5,0	5,0	5,0
5. Construction of social housing	20,0	20,0	20,0	20,0	12,7	12,7	20,0	20,0	20,0
6. Medical equip., books and newspaper	6,1	6,1	6,1	20,0	20,0	6,1	5,0	6,1	6,1
Culture and entertainment	11,6	3,9	11,6	15,5	15,5	11,6	11,6	3,9	3,9
8. Street cleaning, refuse and sewerage services	15,0	5,0	15,0	20,0	20,0	15,0	15,0	5,0	5,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	20,0	20,0	20,0	20,0	7,0	7,0	7,0	20,0	20,0
11. Post, tele and finansiel services	10,2	10,2	10,2	10,2	10,2	10,2	6,8	10,2	10,2
12. Electricity, district heating, gas and water supplies	16,2	18,3	16,2	20,0	20,0	16,2	6,1	8,6	8,6
13. Rest of the economy	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0
Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e.	weighted reduced rate	e according to	calculated c	onsumption s	shares of tota	al consumption	on)		

Malta

Standard rate:	18 %
Reduced rate:	5 % (and 15% rate)
Super reduced rate:	
Parking rate:	

Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4 B
1. Foodstuffs	3,9	7,8	3,9	18,0	18,0	3,9	2,4	7,8	7,8
2. Passenger transport	0,0	5,0	0,0	18,0	18,0	0,0	0,0	5,0	5,0
3. Hotels	5,0	5,0	5,0	18,0	5,0	5,0	5,0	5,0	5,0
4. Restaurants	18,0	18,0	18,0	18,0	5,0	5,0	5,0	18,0	18,0
5. Construction of social housing	8,4	8,4	8,4	8,4	8,4	8,4	8,4	8,4	8,4
6. Medical equip., books and newspaper	3,7	5,9	3,7	18,0	18,0	3,7	2,8	5,9	5,9
7. Culture and entertainment	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
8. Street cleaning, refuse and sewerage services	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	18,0	18,0	18,0	18,0	6,8	6,8	6,8	18,0	18,0
11. Post, tele and finansiel services	9,2	9,2	9,2	9,2	9,2	9,2	6,2	9,2	9,2
12. Electricity, district heating, gas and water supplies	9,2	16,4	9,2	18,0	18,0	9,2	4,4	8,0	8,0
13. Rest of the economy	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

Netherlands

Standard rate:	19 %
Reduced rate:	6 %

Super reduced rate:

Parking rate:

Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	7,9	7,9	7,9	19,0	19,0	7,9	6,7	7,1	7,9
2. Passenger transport	6,0	6,0	6,0	19,0	19,0	6,0	6,0	5,0	6,0
3. Hotels	6,0	6,0	6,0	19,0	6,0	6,0	6,0	5,0	6,0
4. Restaurants	6,0	6,0	19,0	19,0	6,0	6,0	6,0	5,0	6,0
5. Construction of social housing	19,0	19,0	19,0	19,0	15,3	15,3	19,0	19,0	19,0
6. Medical equip., books and newspaper	7,0	7,0	7,0	19,0	19,0	7,0	6,0	6,1	7,0
7. Culture and entertainment	4,3	4,3	4,3	13,7	13,7	4,3	4,3	3,6	4,3
8. Street cleaning, refuse and sewerage services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
9. Government services	4,6	4,6	4,6	4,6	4,6	4,6	1,4	4,6	4,6
10. Locally supplied services	13,6	13,6	19,0	19,0	8,8	8,8	8,8	13,2	13,6
11. Post, tele and finansiel services	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2
12. Electricity, district heating, gas and water supplies	16,9	16,9	16,9	19,0	19,0	16,9	6,0	16,7	16,9
13. Rest of the economy	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0

ture Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption) Note: CEWRR: Consumption Exp

Poland

Categories/Current rate	a and Scon
Parking rate:	-
Super reduced rate:	3 %
Reduced rate:	7 %
Standard rate:	22 %
Poland	

Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4 B
1. Foodstuffs	7,4	9,3	7,4	22,0	22,0	7,4	5,8	7,6	9,3
2. Passenger transport	3,5	7,0	3,5	22,0	22,0	3,5	3,5	5,0	7,0
3. Hotels	7,0	7,0	7,0	22,0	7,0	7,0	7,0	5,0	7,0
4. Restaurants	7,0	22,0	7,0	22,0	7,0	7,0	7,0	5,0	7,0
5. Construction of social housing	14,2	14,2	14,2	22,0	14,2	14,2	14,2	13,1	14,2
6. Medical equip., books and newspaper	7,0	8,2	7,0	22,0	22,0	7,0	7,0	5,0	7,0
7. Culture and entertainment	7,0	7,0	7,0	22,0	22,0	7,0	7,0	5,0	7,0
8. Street cleaning, refuse and sewerage services	7,0	7,0	7,0	22,0	22,0	7,0	7,0	5,0	7,0
9. Government services	4,6	6,8	4,6	14,4	14,4	4,6	4,6	3,3	4,6
10. Locally supplied services	13,4	22,0	13,4	22,0	8,9	8,9	8,9	12,3	13,4
11. Post, tele and finansiel services	11,1	11,1	11,1	11,1	11,1	11,1	7,7	11,1	11,1
12. Electricity, district heating, gas and water supplies	20,1	20,1	20,1	22,0	22,0	20,1	7,0	19,9	20,1
13. Rest of the economy	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

Portugal Standard

Standard rate:	21 %
Reduced rate:	12 % (and a 5% rate in the autonomous regions
Super reduced rate:	_

Super reduced rate: Parking rate:

Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	12,7	12,7	13,1	21,0	21,0	12,7	12,1	6,2	12,7
2. Passenger transport	2,5	2,5	12,0	21,0	21,0	2,5	2,5	5,0	12,0
3. Hotels	12,0	12,0	12,0	21,0	12,0	12,0	12,0	5,0	12,0
4. Restaurants	10,6	10,6	18,6	18,6	10,6	10,6	10,6	4,4	10,6
5. Construction of social housing	16,3	16,3	16,3	21,0	16,3	16,3	16,3	12,6	16,3
6. Medical equip., books and newspaper	12,6	12,6	12,6	21,0	21,0	12,6	12,0	6,1	12,6
7. Culture and entertainment	8,1	8,1	8,1	14,1	14,1	8,1	8,1	3,4	8,1
8. Street cleaning, refuse and sewerage services	12,0	12,0	12,0	21,0	21,0	12,0	12,0	5,0	12,0
9. Government services	5,7	5,7	5,7	10,0	10,0	5,7	5,7	2,4	5,7
10. Locally supplied services	17,1	17,1	21,0	21,0	12,6	12,6	12,6	14,0	17,1
11. Post, tele and finansiel services	12,4	12,4	12,4	12,4	12,4	12,4	11,6	12,4	12,4
12. Electricity, district heating, gas and water supplies	12,4	12,4	19,6	21,0	21,0	12,4	12,0	5,7	12,4
13. Rest of the economy	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0

Slovenia Standard rate: 20 %									
Reduced rate: 8,5 %									
Super reduced rate: -									
Parking rate: -									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	10,4	10,4	10,4	20,0	20,0	10,4	9,1	7,4	10,4
2. Passenger transport	5,2	8,5	5,2	20,0	20,0	5,2	5,2	5,0	8,5
3. Hotels	8,5	8,5	8,5	20,0	8,5	8,5	8,5	5,0	8,5
4. Restaurants	8,5	20,0	8,5	20,0	8,5	8,5	8,5	5,0	8,5
5. Construction of social housing	14,1	14,1	14,1	20,0	14,1	14,1	14,1	12,3	14,1
6. Medical equip., books and newspaper	9,4	9,4	9,4	20,0	20,0	9,4	8,5	6,1	9,4
7. Culture and entertainment	8,5	8,5	8,5	20,0	20,0	8,5	8,5	5,0	8,5
8. Street cleaning, refuse and sewerage services	8,5	8,5	8,5	20,0	20,0	8,5	8,5	5,0	8,5
9. Government services	5,5	7,2	5,5	13,1	13,1	5,5	5,5	3,3	5,5
10. Locally supplied services	18,9	20,0	18,9	20,0	10,0	10,0	10,0	18,6	18,9
11. Post, tele and finansiel services	10,4	10,4	10,4	10,4	10,4	10,4	7,8	10,4	10,4
12. Electricity, district heating, gas and water supplies	18,6	18,6	18,6	20,0	20,0	18,6	8,5	18,2	18,6
13. Rest of the economy	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

Slovakia

Standard rate:	19 %
Reduced rate:	10
Super reduced rate:	-
Parking rate:	-

Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4 A	4B
1. Foodstuffs	19,0	19,0	19,0	19,0	19,0	19,0	17,9	19,0	19,0
2. Passenger transport	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
3. Hotels	19,0	19,0	19,0	19,0	10,0	10,0	19,0	19,0	19,0
4. Restaurants	19,0	19,0	19,0	19,0	10,0	10,0	10,0	19,0	19,0
5. Construction of social housing	19,0	19,0	19,0	19,0	14,6	14,6	19,0	19,0	19,0
6. Medical equip., books and newspaper	19,0	19,0	19,0	19,0	19,0	19,0	18,3	19,0	19,0
7. Culture and entertainment	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
8. Street cleaning, refuse and sewerage services	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0
9. Government services	2,5	2,5	2,5	2,5	2,5	2,5	1,3	2,5	2,5
10. Locally supplied services	19,0	19,0	19,0	19,0	11,2	11,2	11,2	19,0	19,0
11. Post, tele and finansiel services	10,0	10,0	10,0	10,0	10,0	10,0	7,9	10,0	10,0
12. Electricity, district heating, gas and water supplies	19,0	19,0	19,0	19,0	19,0	19,0	11,0	19,0	19,0
13. Rest of the economy	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0

Sweden

Standard rate:	25 %
Reduced rate:	6 % (and a 12% rate)
Super reduced rate:	-
Parking rate:	

Parking rate: -									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4B
1. Foodstuffs	14,1	14,1	9,1	25,0	25,0	14,1	12,0	8,2	9,1
2. Passenger transport	3,0	3,0	6,0	25,0	25,0	3,0	3,0	5,0	6,0
3. Hotels	12,0	12,0	6,0	25,0	6,0	6,0	12,0	5,0	6,0
4. Restaurants	25,0	25,0	25,0	25,0	6,0	6,0	6,0	25,0	25,0
5. Construction of social housing	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0
6. Medical equip., books and newspaper	12,5	12,5	12,5	25,0	25,0	12,5	11,3	11,9	12,5
Culture and entertainment	6,0	6,0	6,0	25,0	25,0	6,0	6,0	5,0	6,0
8. Street cleaning, refuse and sewerage services	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	25,0	25,0	25,0	25,0	12,1	12,1	12,1	25,0	25,0
11. Post, tele and finansiel services	8,0	8,0	15,7	15,7	15,7	8,0	8,0	7,6	8,0
12. Electricity, district heating, gas and water supplies	25,0	25,0	25,0	25,0	25,0	25,0	12,2	25,0	25,0
13. Rest of the economy	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0

United Kingdom									
Standard rate: 17,5 %									
Reduced rate: 5 %									
Super reduced rate: -									
Parking rate: -									
Categories/Current rate and Scenarios (pct.)	Benchmark	1A	1B	1C	2A	2B	3	4A	4B
1. Foodstuffs	3,4	3,4	7,4	17,5	17,5	3,4	1,6	7,4	7,4
2. Passenger transport	0,0	0,0	5,0	17,5	17,5	0,0	0,0	5,0	5,0
3. Hotels	17,5	17,5	17,5	17,5	5,0	5,0	17,5	17,5	17,5
4. Restaurants	17,5	17,5	17,5	17,5	5,0	5,0	5,0	17,5	17,5
5. Construction of social housing	17,5	17,5	17,5	17,5	10,3	10,3	17,5	17,5	17,5
6. Medical equip., books and newspaper	0,0	0,0	6,2	17,5	17,5	0,0	0,5	5,0	5,0
7. Culture and entertainment	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5
8. Street cleaning, refuse and sewerage services	0,0	0,0	5,0	17,5	17,5	0,0	0,0	5,0	5,0
9. Government services	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
10. Locally supplied services	17,5	17,5	17,5	17,5	6,8	6,8	6,8	17,5	17,5
11. Post, tele and finansiel services	11,6	11,6	11,6	11,6	11,6	11,6	6,3	11,6	11,6
12. Electricity, district heating, gas and water supplies	5,4	5,4	16,9	17,5	17,5	5,4	4,7	5,6	5,6
13. Rest of the economy	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5

Note: CEWRR: Consumption Expenditure Weighted Reduced Rate (i.e. weighted reduced rate according to calculated consumption shares of total consumption)

Calculation of CEWRR

The following tables show the match between the VAT rate and the coicop sectors used to calculate the CEWRR.

COICOP data and CEVM sector gr	rouping, shares used to calculate CEWRR		ed rates	Super redu Benchi		Scena		Scenar	rio 1B	Scenar	io 1C	Scenar	io 2A	Scena	ario 2B	Scena	rio 3	Scenar	io 4A	Scenar	io 4B
			All VAT rates	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates	
CEVM sector	COICOP category	Codes	applied		CEWRR	applied	CEWRR		CEWRR		CEWRR		CEWRR	applied	CEWRR	applied	CEWRR	applied	CEWRR		CEWI
. Food	Beer	cp0213	20,0	20,0	11,8	20,0	11,8	20,0	12,0	20,0	20,0	20,0	20,0	20,0	11,8	20,0	10,8	20,0	7,6	20,0	1
	Spirits	cp0211	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	i i
	Tobacco	cp022	20,0	20,0		20,0		20,0		20,0		20,0		20,0		10,0		20,0		20,0	j –
	Wine	cp0212	12,0	12,0		12,0		20,0		20,0		20,0		12,0		10,0		5,0		10,0	i i
	Bread and cereals	cp0111	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	ĺ.
	Fish and seafood Food products n.e.c.	cp0113 cp0119	10,0 10.0	10,0 10,0		10,0 10,0		10,0 10,0		20,0 20,0		20,0 20,0		10,0 10,0		10,0 10.0		5,0		10,0 10,0	1
	Food products n.e.c. Fruit	cp0119 cp0116	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0 5,0		10,0	j i
	Meat	cp0118	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	1
	Milk, cheese and eggs	cp0112 cp0114	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	1
	Oils and fats	cp0115	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Vegetables	cp0117	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Coffee, tea and cocoa	cp0121	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Mineral waters, soft drinks, fruit and vegetable juice		20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	
	Sugar, jam, honey, chocolate and confectionery	cp0118	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
Personal transport Domestic	Combined passenger transport	cp0735	10,0	10,0	9,9	10,0	9,9	10,0	10,0	20,0	20,0	20,0	20,0	10,0	9,9		9,9	5,0	5,0	10,0	
	Other services in respect of personal transport equ	cp0724	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Other purchased transport services	cp0736	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Passenger transport by air	cp0733	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Passenger transport by railway	cp0731	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	1
	Passenger transport by road	cp0732	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	ĺ
		cp0734	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
International	Combined passenger transport	cp0735	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	ĺ
	Other services in respect of personal transport equ		10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	ĺ
	Other purchased transport services	cp0736	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	1
	Passenger transport by air	cp0733	0,0	0,0		0,0		10,0		20,0		20,0		0,0		0,0		5,0		10,0	ĺ
	Passenger transport by railway	cp0731	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	1
	Passenger transport by road	cp0732	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	1
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		0,0		10,0		20,0		20,0		0,0		0,0		5,0		10,0	L
Hotels	Accommodation services	cp112	10,0	10,0	10,0	10,0	10,0	10,0	10,0	20,0	20,0	10,0	10,0	10,0	10,0	10,0	10,0	5,0	5,0	10,0	
. Restaurants	Canteens	cp1112 cp1111	10,0 10.0	10,0 10.0	10,0	10,0	10,0	20,0	20,0	20,0	20,0	10,0 10.0	10,0	10,0 10.0	10,0	0 10,0 10.0	10,0	5,0	5,0	10,0 10.0	1
. Construction of social Housing	Restaurants, cafés and the like Materials for the maintenance and repair of the dw	cp11111 cp0431	20,0	10,0	20,0	10,0 20,0	20.0	20,0 20,0	20.0	20,0	00.0	10,0	47.0	10,0	47.0		00.0	5,0	00.0	10,0	–
. Construction of social Housing	Services for the maintenance and repair of the dw		20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	17,3	20,0	17,3	20,0	20,0	20,0	20,0	20,0	
.Medical equip., books and	Medical products, appliances and equipment	cp0432 cp061	20,0	20,0	14,6	20,0	14,6	20,0	14,6	20,0	20,0	20,0	20,0	20,0	14,6		13,6	20,0	12,0	20,0	
iewspaper	Newspapers, books and stationery	cp095	20,0	20,0	14,0	20,0	14,0	20,0	14,0	20,0	20,0	20,0	20,0	20,0	14,0	10,0	13,0	20,0	12,0	20,0	1
iewspapei			20,0	20,0		20,0		20,0		20,0		20,0		20,0		10,0		20,0		20,0	1
	Shoes and other footwear	cp0321	20,0	20,0		20,0		20,0		20,0		20,0		20,0		10,0		20,0		20,0	1
Culture and entertainment	Cultural services	cp0942	10,0	10,0	16,7	10,0	16,7	10,0	16,7	20,0	20,0	20,0	20,0	10,0	16,7	10,0	16,7	5,0	15,0	10,0	
	Games of chance	cp0943	20,0	20,0	,.	20,0	,.	20,0	,.	20,0	,-	20,0	,-	20,0	,.	20,0	,.	20,0		20,0	1
		cp127	20,0	20,0		20,0		20.0		20,0		20,0		20,0		20,0		20,0		20,0	
	Recreational and sporting services	cp0941	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	
. Street cleaning, refuse and		cp0442	10,0	10,0	10,0	10,0	10,0	10,0	10,0	20,0	20,0	20,0	20,0	10,0	10,0		10,0	5,0	5,0	10,0	
sewerage services	Sewerage collection	cp0443	10,0	10,0	.,.	10,0	- / -	10,0	- , -	20,0	- /-	20,0	- / -	10,0	- , -	10,0		5,0	- / -	10,0	
. Government services	Education	cp10	ex	ex	5,7	ex	5,7	ex	10,5	ex	16,9	ex	16,9	ex	5,7	ex	7,8	ex	4,2	ex	
	Hospital services	cp063	0,0	0,0		0,0		10,0		20,0		20,0		0,0		0,0		5,0		10,0	
	Out-patient services	cp062	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Social protection	cp124	0,0	0,0		0,0		20,0		20,0		20,0		0,0		10,0		5,0		10,0	
0. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	10,0	12,1	10,0	12,1	10,0	12,1	20,0	20,0	20,0	
	Maintenance and repair of personal transport equi	cp0723	20,0	20,0		20,0		20,0		20,0		10,0		10,0		10,0		20,0		20,0	
	Other services relating to the dwelling n.e.c.	cp0444	20,0	20,0		20,0		20,0		20,0		10,0		10,0		10,0		20,0		20,0	
	Repair and hire of footwear	cp0322	20,0	20,0		20,0		20,0		20,0		10,0		10,0		10,0		20,0		20,0	1
	Domestic services and household services	cp0562	20,0	20,0		20,0		20,0		20,0		10,0		10,0		10,0		20,0		20,0	1
	Hairdressing salons and personal grooming establ		20,0	20,0		20,0		20,0		20,0		10,0		10,0		10,0		20,0		20,0	1
	Materials for the maintenance and repair of the dw		20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	1
	Services for the maintenance and repair of the dwe		20,0	20,0		20,0		20,0		20,0		10,0		10,0		10,0		20,0		20,0	
Post, tele and finansiel	Package holidays	cp096	20,0	20,0	11,5	20,0	11,5	20,0	11,5	20,0	11,5	20,0	11,5	20,0	11,5	10,0	8,0	20,0	11,5	20,0	1
ervices	Postal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
		cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
		cp082	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0	1	20,0		20,0	1
	Telephone and telefax services	cp083	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	⊢
Electricity, district heating,	Water supply	cp0441	10,0	10,0	19,4	10,0	19,4	10,0	19,4	20,0	20,0	20,0	20,0	10,0	19,4		10,0	5,0	19,1	10,0	1
as and water supplies		cp0451	20,0	20,0		20,0		20,0		20,0		20,0		20,0		10,0	1	20,0		20,0	1
	Gas	cp0452	20,0	20,0		20,0		20,0		20,0		20,0		20,0		10,0		20,0		20,0	1
	Heat energy	cp0455	20,0	20,0		20,0		20,0		20,0		20,0		20,0		10,0		20,0		20,0	1
	Liquid fuels	cp0453	20,0	20,0		20,0	1	20,0	1	20,0		20,0		20,0	1	10,0	1	20,0		20,0	1
	Solid fuels	cp0454	20,0	20,0		20,0		20,0		20,0		20,0		20,0		10,0		20,0		20,0	
 Rest of economy 		1	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	1

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be Belgium COICOP data and CEVM sector gr	ouping, shares used to calculate CEWRR	Reduce		Benchr		Parking ra Scenar		Zero rates Scenar	io 1B	Exemption: Scenari		Scenar	rio 2A	Scenari	o 2B	Scena	rio 3	Scenar	io 4A	Scenario	o 4B
			AII VAT						-						-						
CEVM sector	COICOP category	Codes	rates applied	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied C	EWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWR
I. Food	Beer	cp0213	21,0	21,0	8,0	21,0	8,0	21,0	8,0	21,0	21,0	21,0	21,0	21,0	8,0	21,0	6,5	21,0	7,1	21,0	8
	Spirits	cp0211	21,0	21,0		21,0		21,0	-	21,0		21,0		21,0	-	21,0		21,0		21,0	
	Tobacco	cp022	21,0	21,0		21,0		21,0		21,0		21,0		21,0		6,0		21,0		21,0	
	Wine	cp0212	21,0	21,0		21,0		21,0		21,0		21,0		21,0		6,0		21,0		21,0	
	Bread and cereals	cp0111	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Fish and seafood	cp0113	6,0	6,0		6,0		6,0 6.0		21,0 21,0		21,0 21,0		6,0		6,0 6.0		5,0		6,0	
	Food products n.e.c. Fruit	cp0119 cp0116	6,0 6,0	6,0 6,0		6,0 6,0		6,0		21,0		21,0		6,0 6,0		6,0		5,0 5,0		6,0 6,0	
	Meat	cp0112	6,0	6,0		6,0		6.0		21,0		21,0		6,0		6.0		5,0		6.0	
	Milk, cheese and eggs	cp0112	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Oils and fats	cp0115	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Vegetables	cp0117	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Coffee, tea and cocoa	cp0121	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Mineral waters, soft drinks, fruit and vegetable juic	cp0122	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Sugar, jam, honey, chocolate and confectionery	cp0118	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
2. Personal transport Domestic	Combined passenger transport	cp0735	6,0 6,0	6,0	5,9		5,9	6,0	6,0	21,0	21,0	21,0	21,0	6,0	5,9	6,0	5,9	5,0	5,0	6,0	e
	Other services in respect of personal transport equ Other purchased transport services	cp0724 cp0736	6,0 6,0	6,0 6,0		6,0 6,0		6,0 6,0		21,0 21,0		21,0 21,0		6,0 6,0		6,0 6,0		5,0 5,0		6,0 6,0	
	Passenger transport by air	cp0736 cp0733	6,0	6,0 6,0		6,0 6,0		6,0		21,0		21,0		6,0		6,0		5,0 5.0		6,0	
	Passenger transport by railway	cp0733	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Passenger transport by road	cp0732	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Passenger transport by sea and inland waterway	cp0734	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
International	Combined passenger transport	cp0735	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Other services in respect of personal transport equ		6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Other purchased transport services	cp0736	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Passenger transport by air	cp0733	0,0	0,0		0,0		6,0		21,0		21,0		0,0		0,0		5,0		6,0	
	Passenger transport by railway	cp0731	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Passenger transport by road	cp0732 cp0734	6,0	6,0 0.0		6,0 0.0		6,0 6.0		21,0 21,0		21,0 21,0		6,0 0.0		6,0 0.0		5,0 5,0		6,0 6.0	
3 Hotels	Passenger transport by sea and inland waterway Accommodation services	cp0734 cp112	6.0	6,0	6,0	6,0	6.0	6,0	6.0	21,0	21,0	6,0	6,0	6,0	6,0	6,0	6,0	5,0	5.0	6,0	6
4. Restaurants	Canteens	cp112	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	6,0	6,0	6,0	6,0	6,0	6,0	21,0	21,0	21,0	21
	Restaurants, cafés and the like	cp1111	21.0	21.0	,.	21.0	,•	21.0		21.0	,.	6.0	-,-	6.0	-,-	6.0	-,-	21.0	,.	21.0	
5. Construction of social Housing	Materials for the maintenance and repair of the dw	cp0431	21,0	21,0	19,0	21,0	19,0	21,0	17,6	21,0	21,0	21,0	17,6	21,0	17,6	21,0	19,0	21,0	17,4	21,0	17
	Services for the maintenance and repair of the dw	cp0432	12,0	12,0		12,0		6,0		21,0	-	6,0		6,0		12,0		5,0		6,0	
6.Medical equip., books	Medical products, appliances and equipment	cp061	6,0	6,0	6,8		6,8	6,0	6,8	21,0	21,0	21,0	21,0	6,0	6,8	6,0	6,0	5,0	5,9	6,0	6
and newspaper	Newspapers, books and stationery	cp095	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Other articles of clothing and clothing accessories	cp0313	21,0	21,0		21,0		21,0		21,0		21,0		21,0		6,0		21,0		21,0	
7 Outburg and extentsions at	Shoes and other footwear	cp0321	21,0	21,0	5.0	21,0	5.0	21,0	5.0	21,0	40.0	21,0	40.0	21,0	5.0	6,0	5.0	21,0	47	21,0	5
Culture and entertainment	Cultural services Games of chance	cp0942 cp0943	6,0	6,0 ex	5,6	6,0 ex	5,6	6,0 ex	5,6	21,0 ex	19,6	21,0 ex	19,6	6,0 ex	5,6	6,0 ex	5,6	5,0 ex	4,7	6,0 ex	5
	Other services n.e.c.	cp0943 cp127	6,0	6,0		6,0		6,0		21,0		21,0		6,0		6,0		5,0		6,0	
	Recreational and sporting services	cp0941	6.0	6.0		6.0		6.0		21,0		21,0		6.0		6.0		5.0		6.0	
8. Street cleaning, refus	Refuse collection	cp0341	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21
e and sewerage services	Sewerage collection	cp0443	21,0	21,0	,.	21,0	,•	21,0	,.	21,0	,.	21,0	,.	21,0		21,0	,.	21,0	,.	21,0	
9. Government services	Education	cp10	ex	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0
	Hospital services	cp063	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Out-patient services	cp062	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Social protection	cp124	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	6,0	6,0	8,0		8,0	21,0	21,0	21,0	21,0		8,0	6,0	8,0	6,0	8,0	5,0	7,1	6,0	8
	Maintenance and repair of personal transport equi	cp0723 cp0444	6,0	6,0		6,0		21,0 21,0		21,0		6,0 6,0		6,0		6,0 6,0		5,0		6,0 6,0	
	Other services relating to the dwelling n.e.c. Repair and hire of footwear	cp0444 cp0322	6,0 6,0	6,0 6,0		6,0 6,0		21,0		21,0 21,0		6,0		6,0 6,0		6,0 6,0		5,0 5,0		6,0	
	Domestic services and household services	cp0522	6,0	6,0		6,0		21,0		21,0		6,0		6,0		6,0		5,0		6,0	
	Hairdressing salons and personal grooming establ		6,0	6,0		6,0		21,0		21,0		6.0		6,0		6,0		5,0		6,0	
	Materials for the maintenance and repair of the dw		21,0	21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0	
	Services for the maintenance and repair of the dwe	cp0432	6,0	6,0		6,0		21,0		21,0		6,0		6,0		6,0		5,0		6,0	
11.Post, tele and finansiel	Package holidays	cp096	21,0	21,0	10,6	21,0	10,6	21,0	10,6	21,0	10,6	21,0	10,6	21,0	10,6	6,0	6,2	21,0	10,6	21,0	10
services	Postal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Telephone and telefax equipment	cp082	21,0	21,0		21,0		21,0 21,0		21,0		21,0		21,0		21,0		21,0		21,0	
12 Electricity district bacting	Telephone and telefax services	cp083	21,0	21,0	40.4	21,0	10.4	= . , .	40.0	21,0	01.0	21,0	01.0	21,0	10.4	21,0	6.0	21,0	40.0	21,0	- 47
 Electricity, district heating, gas and water supplies 	Water supply Electricity	cp0441 cp0451	6,0 21,0	6,0 21,0	19,1	6,0 21.0	19,1	6,0 21,0	19,2	21,0 21,0	21,0	21,0 21,0	21,0	6,0 21,0	19,1	6,0 6.0	6,0	5,0 21,0	18,9	6,0 21,0	19
gas and water supplies	Gas	cp0451 cp0452	21,0	21,0		21,0		21,0		21,0		21,0		21,0		6,0		21,0		21,0	
	Heat energy	cp0452	21,0	21,0		21,0		21,0		21,0		21,0		21,0		6.0		21,0		21,0	
	Liquid fuels	cp0453	21,0	21,0		21,0		21,0		21,0		21,0		21,0		6.0		21,0		21,0	
						,.								1-		-,-				= . , .	
	Solid fuels	cp0454	12,0	12,0		12,0		21,0		21,0		21,0		12,0		6,0		5,0		6,0	

COICOP data and CEVM sector of	rouping, shares used to calculate CEWRR			Benchr		Scenar	tes	Scenari	o 1B	Scenari	0.10	Scenar	io 2A	Scena	rio 2B	Scena	rio 3	Scenar	io 44	Scenari	io 4R
SOLOF URLA AND DEVIN SECTOR D	Supring, Shares used to Calculate CEWRR		All VAT		nark		IJ IA				010		1J 2A		110 210				N 4A	Joendri	- +0
CEVM sector	COICOP category	Codes	rates applied	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRF
1. Food	Beer	cp0213	applieu 15.0	15.0	2.4	applied 15.0	6.6	15,0	2.4	applied 15,0	15.0	applied 15.0	15.0	applied 15,0	2.4	15.0	1.3	15.0	6.6	15.0	6.
	Spirits	cp0210	15,0	15,0	2, .	15,0	0,0	15,0	-,.	15,0	10,0	15,0	10,0	15,0	-, .	15,0	1,0	15,0	0,0	15,0	0
	Tobacco	cp022	15,0	15,0		15,0		15,0		15,0		15,0		15,0		5,0		15,0		15,0	
	Wine	cp0212	15,0	15,0		15,0		15,0		15,0		15,0		15,0		5,0		15,0		15,0	
	Bread and cereals Fish and seafood	cp0111 cp0113	0,0	0,0		5,0 5,0		0,0		15,0 15,0		15,0 15,0		0,0 0,0		0,0 0,0		5,0		5,0 5,0	
	Food products n.e.c.	cp0113 cp0119	0,0 0,0	0,0 0,0		5,0 5,0		0,0 0,0		15,0		15,0		0,0		0,0		5,0 5,0		5,0	
	Fruit	cp0116	0,0	0,0		5,0		0,0		15,0		15,0		0,0		0,0		5,0		5,0	
	Meat	cp0112	0,0	0,0		5,0		0,0		15,0		15,0		0,0		0,0		5,0		5,0	
	Milk, cheese and eggs	cp0114	0,0	0,0		5,0		0,0		15,0		15,0		0,0		0,0		5,0		5,0	
	Oils and fats Vegetables	cp0115 cp0117	0,0 0,0	0,0 0,0		5,0		0,0 0,0		15,0 15,0		15,0 15,0		0,0		0,0		5,0 5,0		5,0 5,0	
	Coffee, tea and cocoa	cp0117	0,0	0,0		5,0 5,0		0,0		15,0		15,0		0,0		0,0		5,0		5,0	
	Mineral waters, soft drinks, fruit and vegetable juice		0,0	0,0		5,0		0,0		15,0		15,0		0,0		0,0		5,0		5,0	
	Sugar, jam, honey, chocolate and confectionery	cp0118	0,0	0,0		5,0		0,0		15,0		15,0		0,0		0,0		5,0		5,0	
2. Personal transport Domestic	Combined passenger transport	cp0735	15,0	15,0	7,3	15,0	9,8	15,0	7,3	15,0	15,0	15,0	15,0	15,0	7,3		7,3	15,0	9,8	15,0	9
	Other services in respect of personal transport equ		15,0	15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0	
	Other purchased transport services Passenger transport by air	cp0736 cp0733	15,0 15,0	15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0	
	Passenger transport by railway	cp0731	15,0	15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0	
	Passenger transport by road	cp0732	15,0	15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0	
		cp0734	8,0	8,0		5,0		8,0		15,0		15,0		8,0		8,0		5,0		5,0	
International	Combined passenger transport	cp0735	0,0	0,0		5,0		0,0		15,0		15,0		0,0		0,0 0,0		5,0		5,0	
	Other services in respect of personal transport equ Other purchased transport services	cp0724 cp0736	0,0 0,0	0,0 0,0		5,0 5,0		0,0		15,0 15.0		15,0 15,0		0,0 0,0		0,0		5,0 5.0		5,0 5.0	
	Passenger transport by air	cp0733	0,0	0,0		5,0		0,0		15,0		15,0		0,0		0,0		5,0		5,0	
	Passenger transport by railway	cp0731	0,0	0,0		5,0		0,0		15,0		15,0		0,0		0,0		5,0		5,0	
	Passenger transport by road	cp0732	0,0	0,0		5,0		0,0		15,0		15,0		0,0		0,0		5,0		5,0	
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		5,0		0,0		15,0		15,0		0,0		0,0		5,0		5,0	
3. Hotels 4. Restaurants	Accommodation services Canteens	cp112 cp1112	8,0 8,0	8,0 8,0	8,0 8,0	5,0 15,0	5,0 15,0	8,0 8,0	8,0 8,0	15,0 15,0	15,0 15,0	5,0 5,0	5,0 5,0	5,0 5,0	<u>5,0</u> 5,0	8,0 5,0	8,0 5,0	5,0 5,0	5,0 5,0	5,0 5,0	5, 5,
4. Restaurants	Restaurants, cafés and the like	cp1112	8.0	8.0	0,0	15,0	15,0	8.0	0,0	15,0	13,0	5.0	5,0	5,0	5,0	5.0	5,0	5.0	5,0	5.0	Э,
5. Construction of social Housing	Materials for the maintenance and repair of the dw		15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	10,1	15,0	10,1	15,0	15,0	15,0	15,0	15,0	15
	Services for the maintenance and repair of the dwe		15,0	15,0		15,0		15,0		15,0		5,0		5,0		15,0		15,0		15,0	
6.Medical equip., books	Medical products, appliances and equipment	cp061	0,0	0,0	3,5	5,0	5,7	0,0	3,5	15,0	15,0	15,0	15,0	0,0	3,5		2,8	5,0	5,7	5,0	5
and newspaper	Newspapers, books and stationery Other articles of clothing and clothing accessories	cp095 cp0313	5,0 15,0	5,0 15,0		5,0 15,0		5,0 15,0		15,0 15,0		15,0 15,0		5,0 15,0		5,0 5,0		5,0 15,0		5,0 15,0	
	Shoes and other footwear	cp0313	15,0	15,0		15,0		15,0		15,0		15,0		15,0		5.0		15.0		15,0	
7. Culture and entertainment	Cultural services	cp0942	ex	ex	6,1	ex	6,1	ex	6,1	ex	6,1	ex	6,1	ex	6,1	ex	6,1	ex	6,1	ex	6
	Games of chance	cp0943	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Other services n.e.c.	cp127	15,0	15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0	
8. Street cleaning, refuse	Recreational and sporting services Refuse collection	cp0941 cp0442	15,0	15,0 5,0	5,0	15,0 5,0	5,0	15,0 5,0	5,0	15,0 15,0	15,0	15,0 15,0	15,0	15,0 5,0	5,0	15,0 5,0	5,0	15,0 5,0	5,0	15,0 5,0	5,
and sewerage services	Sewerage collection	cp0442 cp0443	5,0 5,0	5,0	5,0	5,0	5,0	5,0	5,0	15,0	15,0	15,0	15,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,
9. Government services	Education	cp10	ex	ex	0,0		0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,
	Hospital services	cp063	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Out-patient services	cp062	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
10. Locally supplied services	Social protection Cleaning, repair and hire of clothing	cp124 cp0314	ex 15,0	ex 15,0	15,0	ex 15,0	15,0	ex 15,0	15,0	ex 15,0	15,0	ex 5,0	6,3	ex 5,0	6,3	ex 5,0	6,3	ex 15,0	15,0	ex 15,0	15
To: Locally supplied services	Maintenance and repair of personal transport equip	cp0314 cp0723	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	5,0	0,3	5,0	0,3	5,0		15,0	15,0	15,0	15
	Other services relating to the dwelling n.e.c.	cp0444	15,0	15,0		15,0		15,0		15,0		5,0		5,0		5,0		15,0		15,0	
	Repair and hire of footwear	cp0322	15,0	15,0		15,0		15,0		15,0		5,0		5,0		5,0		15,0		15,0	
	Domestic services and household services	cp0562	15,0	15,0		15,0		15,0		15,0		5,0		5,0		5,0		15,0		15,0	
	Hairdressing salons and personal grooming establ		15,0 15,0	15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		5,0 15,0		5,0 15,0		5,0 15,0		15,0 15,0		15,0 15,0	
	Materials for the maintenance and repair of the dw Services for the maintenance and repair of the dwa		15,0	15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0	
11.Post, tele and finansiel	Package holidays	cp096	15,0	15,0	7,8	15,0	7,8	15,0	7,8	15,0	7,8	15,0	7,8	15,0	7,8	-,-	5,5	15,0	7,8	15,0	7
services	Postal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Insurance	cp125	ex 45 o	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Telephone and telefax equipment Telephone and telefax services	cp082 cp083	15,0 15,0	15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0	
12. Electricity, district heating,	Water supply	cp083 cp0441	5,0	15,0	11,8	5,0	13,8	5,0	11,8	15,0	15,0	15,0	15,0	5,0	11,8		5,0	5,0	11.8	5,0	11
gas and water supplies	Electricity	cp0441	15,0	15,0	11,0	15,0	10,0	15,0	11,0	15,0	10,0	15,0	10,0	15,0	11,0	5,0	5,0	15,0	11,0	15,0	
	Gas	cp0452	5,0	5,0		15,0		5,0		15,0		15,0		5,0		5,0		5,0		5,0	
	Heat energy	cp0455	15,0	15,0		15,0		15,0		15,0		15,0		15,0		5,0		15,0		15,0	
	Liquid fuels	cp0453	15,0	15,0		15,0		15,0		15,0		15,0		15,0		5,0		15,0		15,0	
13. Rest of economy	Solid fuels	cp0454	15,0 15,0	15,0 15,0	15,0	15,0 15,0	15,0	15,0 15,0	15,0	15,0 15,0	15,0	15,0 15,0	15,0	15,0 15,0	15,0	5,0 15,0	15,0	15,0 15,0	15,0	15,0 15,0	15
13. INESI UI ECUTIUTIY		1	15,0	13,0	13,0	13,0	13,0	15,0	15,0	13,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0		ade 141	

COICOP data and CEVM sector g	rouping, shares used to calculate CEWRR			Benchr	nark	Scenar	tes io 1A	Zero rates Scenar	o 1B	Exemption: Scenari		Scena	io 2A	Scena	rio 2B	Scena	ario 3	Scenar	io 4A	Scenar	io 4B
			All VAT rates	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates	
CEVM sector	COICOP category	Codes			CEWRR		CEWRR		CEWRR		CEWRR	applied	CEWRR		CEWRR		CEWRR	applied	CEWRR		CEWR
1. Food	Beer	cp0213	19,0	19,0	7,2	19,0	7,2	19,0	7,2	19,0	19,0	19,0	19,0	19,0	7,2	19,0	5,7	19,0	7,2	19,0	7
	Spirits	cp0211	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Tobacco Wine	cp022 cp0212	19,0 19,0	19,0 19,0		19,0 19,0		19,0 19,0		19,0 19,0		19,0 19,0		19,0 19,0		5,0 5,0		19,0 19,0		19,0 19,0	i
	Bread and cereals	cp0212	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Fish and seafood	cp0113	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Food products n.e.c.	cp0119	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Fruit	cp0116	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Meat	cp0112	5,0 5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Milk, cheese and eggs	cp0114	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Oils and fats	cp0115	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Vegetables	cp0117	5,0 5,0	5,0		5,0 5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Coffee, tea and cocoa Mineral waters, soft drinks, fruit and vegetable juic	cp0121 cp0122	5,0 5,0	5,0 5,0		5,0 5,0		5,0 5,0		19,0 19,0		19,0 19,0		5,0 5,0		5,0 5,0		5,0 5,0		5,0 5,0	i
	Sugar, jam, honey, chocolate and confectionery	cp0122	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
2. Personal transport Domestic		cp0735	5,0	5,0	2,5	5,0	5,0	5,0	2.5	19,0	19,0	19,0	19,0	5,0	2,5		2,5	5,0	5.0	5,0	5
	Other services in respect of personal transport equ	cp0724	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
1	Other purchased transport services	cp0736	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	
	Passenger transport by air	cp0733	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
1	Passenger transport by railway	cp0731	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	
	Passenger transport by road	cp0732	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Passenger transport by sea and inland waterway	cp0734	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	
International	Combined passenger transport Other services in respect of personal transport equ	cp0735 cp0724	0,0 0,0	0,0 0,0		5,0 5,0		0,0 0,0		19,0 19,0		19,0 19,0		0,0 0,0		0,0 0,0		5,0 5,0		5,0 5,0	i
	Other purchased transport services	cp0724	0,0	0,0		5,0 5,0		0,0		19,0		19,0		0,0		0,0		5,0		5,0 5,0	i
	Passenger transport by air	cp0733	0,0	0,0		5,0		0,0		19,0		19,0		0,0		0,0		5,0		5,0	i
	Passenger transport by railway	cp0731	0,0	0,0		5,0		0,0		19,0		19,0		0,0		0,0		5,0		5,0	i
	Passenger transport by road	cp0732	0,0	0,0		5,0		0,0		19,0		19,0		0,0		0,0		5,0		5,0	i
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		5,0		0,0		19,0		19,0		0,0		0,0		5,0		5,0	
3. Hotels	Accommodation services	cp112	5,0	5,0	5,0	5,0	5,0	5,0	5,0	19,0	19,0	5,0	5,0	5,0	5,0	5,0		5,0	5,0	5,0	5
4. Restaurants	Canteens	cp1112	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	5,0	5,0	5,0	5,0	5,0	5,0	19,0	19,0	19,0	19
	Restaurants, cafés and the like	cp1111	19,0	19,0		19,0		19,0		19,0		5,0		5,0		5,0		19,0		19,0	
5. Construction of social Housing	Materials for the maintenance and repair of the dw		19,0 5.0	19,0 5.0	11,7	19,0 5.0	11,7	19,0	11,7	19,0 19.0	19,0	19,0	11,7	19,0 5.0	11,7	19,0 5.0	11,7	19,0	11,7	19,0 5.0	11
6.Medical equip., books	Services for the maintenance and repair of the dwo Medical products, appliances and equipment	cp0432	5,0	5,0	6.0	5,0	6,0	5,0 5,0	6,0	19,0	19,0	5,0	19,0	5,0	6,0		5,0	5,0	6,0	5,0	6
and newspaper	Newspapers, books and stationery	cp081	5,0	5,0	6,0	5,0	6,0	5,0	6,0	19,0	19,0	19,0	19,0	5,0	6,0	5,0		5,0	6,0	5,0	0
and newspaper	Other articles of clothing and clothing accessories		19,0	19,0		19,0		19,0		19,0		19,0		19,0		5,0		19,0		19,0	i
	Shoes and other footwear	cp0321	19,0	19,0		19,0		19,0		19,0		19,0		19,0		5,0		19,0		19,0	i
7. Culture and entertainment	Cultural services	cp0942	5,0	5,0	5,0	5,0	5,0	5,0	5,0	19,0	19,0	19,0	19,0	5,0	5,0		5,0	5,0	5,0	5,0	5
	Games of chance	cp0943	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Other services n.e.c.	cp127	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0		5,0		5,0	i
	Recreational and sporting services	cp0941	5,0	5,0		5,0		5,0		19,0		19,0		5,0		5,0	1	5,0		5,0	
8. Street cleaning, refuse	Refuse collection	cp0442	5,0 5,0	5,0	5,0	5,0	5,0	5,0	5,0	19,0	19,0	19,0	19,0	5,0	5,0			5,0	5,0	5,0	5
and sewerage services	Sewerage collection	cp0443		5,0 ex	0.0	5,0 ex	0.0	5,0	0.0	19,0	0.0	19,0	0.0	5,0 ex	0.0	5,0		5,0	0.0	5,0	0
9. Government services	Education Hospital services	cp10 cp063	ex ex	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex	0,0	ex ex		ex ex	0,0	ex ex	0
	Out-patient services	cp063	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
	Social protection	cp124	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	19,0	19,0	15,5	19,0	19,0	19,0	15,5	19,0	19,0	5,0	6,8	5,0	6,8	5,0	6,8	19,0	15,5	19,0	15
	Maintenance and repair of personal transport equi	cp0723	19,0	19,0		19,0		19,0		19,0		5,0		5,0		5,0		19,0		19,0	
	Other services relating to the dwelling n.e.c.	cp0444	19,0	19,0		19,0		19,0		19,0		5,0		5,0		5,0		19,0		19,0	i
	Repair and hire of footwear	cp0322	19,0	19,0		19,0		19,0		19,0		5,0		5,0		5,0		19,0		19,0	i
	Domestic services and household services	cp0562	5,0	5,0		19,0		5,0		19,0		5,0		5,0		5,0		5,0		5,0	i
	Hairdressing salons and personal grooming establ		19,0	19,0		19,0		19,0		19,0		5,0		5,0		5,0		19,0		19,0	i i
	Materials for the maintenance and repair of the dw		19,0 5.0	19,0 5.0		19,0		19,0 5.0		19,0 19.0		19,0 5.0		19,0 5.0		19,0 5.0		19,0 5.0		19,0 5.0	i
11.Post, tele and finansiel	Services for the maintenance and repair of the dw	cp0432 cp096	5,0 19,0	5,0 19,0	9,7	19,0 19,0	9,7	5,0	9,7	19,0 19,0	9,7	5,0	9.7	5,0	9,7	5,0	6.5	5,0	9,7	5,0 19,0	ç
services	Package holidays Postal services	cp096 cp081	19,0 ex	19,0 ex	9,7	19,0 ex	9,7	19,0 ex	9,7	19,0 ex	9,7	19,0 ex	9,7	19,0 ex	9,7	5,0 ex	0,5	19,0 ex	9,7	19,0 ex	
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Telephone and telefax equipment	cp082	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Telephone and telefax services	cp083	19,0	19,0		19,0	L	19,0		19,0		19,0		19,0		19,0		19,0		19,0	
12. Electricity, district heating,	Water supply	cp0441	5,0	5,0	17,3	5,0	17,3	5,0	17,3	19,0	19,0	19,0	19,0	5,0	17,3	5,0	5,0	5,0	17,3	5,0	17
gas and water supplies	Electricity	cp0451	19,0	19,0		19,0		19,0		19,0		19,0		19,0		5,0		19,0		19,0	
	Gas	cp0452	19,0	19,0		19,0		19,0		19,0		19,0		19,0		5,0		19,0		19,0	
	Heat energy	cp0455	19,0	19,0		19,0		19,0		19,0		19,0		19,0		5,0		19,0		19,0	
	Liquid fuels	cp0453	19,0	19,0		19,0		19,0		19,0		19,0		19,0		5,0		19,0		19,0	
13. Rest of economy	Solid fuels	cp0454	19,0	19,0	40.0	19,0	40.0	19,0	40.0	19,0	40.0	19,0	19,0	19,0	40.0	5,0	19,0	19,0	40.0	19,0 19,0	
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dk Denmark COICOP data and CEVM sector gro	ouping, shares used to calculate CEWRR	Reduce		Super redu Bench		Scena		Zero rates Scenari	o 1B	Exemption Scenar		Scenar	io 2A	Scenar	io 2B	Scena	rio 3	Scenar	io 4A	Scenari	io 4B
			All VAT	VAT rates		VAT rates		VAT rates		VAT rates				VAT rates						VAT rates	
CEVM sector	COICOP category	Codes	rates applied	VAI rates applied	CEWRR	VAI rates applied	CEWRR		CEWRR	VAI rates applied	CEWRR	VAT rates applied	CEWRR		CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR		CEWRF
	Beer	cp0213	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
1	Spirits	cp0211	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
1	Tobacco Wine	cp022	25,0 25,0	25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0	
	Bread and cereals	cp0212 cp0111	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0 25,0		25,0		25,0 25,0	
	Fish and seafood	cp0113	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
1	Food products n.e.c.	cp0119	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Fruit	cp0116	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Meat	cp0112	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Milk, cheese and eggs Oils and fats	cp0114 cp0115	25,0 25,0	25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0	
1	Vegetables	cp0117	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
1	Coffee, tea and cocoa	cp0121	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
1	Mineral waters, soft drinks, fruit and vegetable juic	cp0122	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Sugar, jam, honey, chocolate and confectionery	cp0118	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Combined passenger transport Other services in respect of personal transport equ	cp0735	ex ex	ex ex	0,0	ex ex	0,0	ex ex	12,5	ex ex	12,5	ex ex	12,5	ex ex	0,0	ex ex	0,0	ex ex	2,5	ex ex	12,
	Other purchased transport services	cp0724	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Passenger transport by air	cp0733	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Passenger transport by railway	cp0731	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Passenger transport by road	cp0732	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Passenger transport by sea and inland waterway Combined passenger transport	cp0734 cp0735	ex 0,0	ex 0,0		ex 0.0		ex 25.0		ex 25.0		ex 25.0		ex 0.0		ex 0,0	— —	ex 5,0		ex 25.0	
		cp0735	0,0			0,0		25,0		25,0		25,0		0,0		0,0		5,0		25,0	
	Other purchased transport services	cp0736	0,0			0,0		25,0		25,0		25,0		0,0		0,0		5,0		25,0	
1	Passenger transport by air	cp0733	0,0	0,0		0,0		25,0		25,0		25,0		0,0		0,0		5,0		25,0	
	Passenger transport by railway	cp0731	0,0	0,0		0,0		25,0		25,0		25,0		0,0		0,0		5,0		25,0	
	Passenger transport by road	cp0732	0,0	0,0		0,0		25,0		25,0		25,0		0,0		0,0		5,0		25,0	
	Passenger transport by sea and inland waterway Accommodation services	cp0734 cp112	0,0 25,0	0,0 25,0		0,0 25,0	25,0	25,0 25,0	25,0	25,0 25,0	25,0	25,0 25,0	25,0	0,0 25,0	25,0	0,0 25,0	25,0	5,0 25,0	25,0	25,0 25,0	25,
4. Restaurants	Canteens	cp112	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
	Restaurants, cafés and the like	cp1111	25,0	25,0		25,0	-	25,0		25,0		25,0		25,0		25,0		25,0		25,0	
5. Construction of social Housing	Materials for the maintenance and repair of the dw	cp0431	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
	Services for the maintenance and repair of the dwe	cp0432	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	05.0	25,0	
	Medical products, appliances and equipment Newspapers, books and stationery	cp061 cp095	25,0 25,0	25,0 25,0	25,0	25,0 25,0	25,0	25,0 25,0	25,0	25,0 25,0	25,0	25,0 25.0	25,0	25,0 25,0	25,0	25,0 25,0	25,0	25,0 25,0	25,0	25,0 25,0	25,
	Other articles of clothing and clothing accessories	cp033 cp0313	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Shoes and other footwear	cp0321	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
7. Culture and entertainment	Cultural services	cp0942	25,0	25,0	17,8	25,0	17,8	25,0	17,8	25,0	17,8	25,0	17,8	25,0	17,8	25,0	17,8	25,0	17,8	25,0	17,
	Games of chance	cp0943	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Other services n.e.c.	cp127 cp0941	25,0 25.0	25,0 25.0		25,0 25,0		25,0 25.0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25.0	
	Recreational and sporting services Refuse collection	cp0941 cp0442	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
and sewerage services	Sewerage collection	cp0443	25,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,
9. Government services	Education	cp10	ex	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,
1	Hospital services	cp063	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
1	Out-patient services Social protection	cp062 cp124	ex	ex ex		ex ex		ex ex		ex		ex		ex		ex		ex		ex	
10. Locally supplied services	Cleaning, repair and hire of clothing	cp124 cp0314	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25.0	25,0	25,
	Maintenance and repair of personal transport equi	cp0723	25,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,
	Other services relating to the dwelling n.e.c.	cp0444	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Repair and hire of footwear	cp0322	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Domestic services and household services	cp0562	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Hairdressing salons and personal grooming establ Materials for the maintenance and repair of the dw	cp1211	25,0 25,0	25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0	
1	Services for the maintenance and repair of the dwa	cp0431	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
11.Post, tele and finansiel	Package holidays	cp096	ex	ex	5,6	ex	5,6	ex	5,6	ex	5,6	ex	5,6	ex	5,6	ex	5,6	ex	5,6	ex	5,
	Postal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Insurance Telephone and telefax equipment	cp125 cp082	ex 25.0	ex 25.0		ex 25.0		ex 25.0		ex 25.0		ex 25.0		ex 25.0		ex 25.0		ex 25.0		ex 25.0	
1	Telephone and telefax equipment Telephone and telefax services	cp082 cp083	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0 25,0		25,0		25,0 25,0	
			25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,
	Water supply	cp0441	25,0								1.										
12. Electricity, district heating,		cp0441 cp0451	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
12. Electricity, district heating, gas and water supplies	Water supply Electricity Gas	cp0451 cp0452	25,0 25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
12. Electricity, district heating, gas and water supplies	Water supply Electricity Gas Heat energy	cp0451 cp0452 cp0455	25,0 25,0 25,0	25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0	
12. Electricity, district heating, gas and water supplies	Water supply Electricity Gas	cp0451 cp0452	25,0 25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	

COICOP data and CEVM sector g	rouping, shares used to calculate CEWRR			Benchr	mark	Scenar	io 1A	Scenar	o 1B	Scenar	io 1C	Scenar	io 2A	Scena	rio 2B	Scena	rio 3	Scenar	io 4A	Scenar	io 4B
			All VAT rates	VAT rates		VAT rates		VAT rates		VAT rates											
CEVM sector	COICOP category	Codes			CEWRR	applied	CEWRR		CEWRR	applied	CEWRR		CEWR								
1. Food	Beer	cp0213	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	16,4	18,0	18,0	18,0	18
	Spirits	cp0211	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	1
	Tobacco	cp022	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	1
	Wine Bread and cereals	cp0212 cp0111	18,0 18,0	18,0 18,0		5,0 18,0		18,0 18,0		18,0 18,0	1										
	Fish and seafood	cp0113	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	J
	Food products n.e.c.	cp0119	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	J
	Fruit	cp0116	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	J
	Meat	cp0112	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	1
	Milk, cheese and eggs	cp0114	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	1
	Oils and fats	cp0115	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	1
	Vegetables	cp0117	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	1
	Coffee, tea and cocoa Mineral waters, soft drinks, fruit and vegetable juice	cp0121 cp0122	18,0 18,0	18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0	1										
	Sugar, jam, honey, chocolate and confectionery	cp0122	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	1
2. Personal transport Domestic		cp0735	18,0	18,0	9,0	18,0	11,5	18,0	9.0	18,0	18,0	18,0	18,0	18,0	9,0		9,0	18,0	11,5	18,0	1.
	Other services in respect of personal transport equ		18,0	18,0	2,0	18,0	,0	18,0	2,0	18,0		18,0	. 2,0	18,0	2,0	18,0	1,0	18,0	,0	18,0	1
I	Other purchased transport services	cp0736	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
1	Passenger transport by air	cp0733	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	ı
1	Passenger transport by railway	cp0731	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	ı
	Passenger transport by road	cp0732	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	1
International	Passenger transport by sea and inland waterway Combined passenger transport	cp0734 cp0735	18,0 0,0	18,0 0,0		18,0 5,0		18,0 0,0		18,0 18,0		18,0 18,0		18,0 0,0		18,0 0,0		18,0 5,0		18,0 5,0	
International	Other services in respect of personal transport equ		0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	1
	Other purchased transport services	cp0736	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	1
	Passenger transport by air	cp0733	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	1
	Passenger transport by railway	cp0731	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	1
	Passenger transport by road	cp0732	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	J
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
3. Hotels	Accommodation services	cp112	5,0	5,0	5,0	5,0	5,0	5,0	5,0	18,0	18,0	5,0	5,0	5,0		5,0	5,0	5,0	5,0	5,0	5
4. Restaurants	Canteens Restaurants, cafés and the like	cp1112 cp1111	18,0 18,0	18,0 18.0	18,0	18,0 18,0	18,0	18,0 18.0	18,0	18,0 18.0	18,0	5,0 5.0	5,0	5,0 5,0	5,0	5,0 5.0	5,0	18,0 18.0	18,0	18,0 18.0	18
5. Construction of social Housing	Materials for the maintenance and repair of the dw		18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	11,6	5,0	11,6		18,0	18,0	18,0	18,0	18
c. construction of coolar riedoning			18,0	18,0	10,0	18,0	10,0	18,0	10,0	18,0	10,0	5.0	,0	5,0	, 0	18,0	10,0	18,0	10,0	18,0	1
6.Medical equip., books	Medical products, appliances and equipment	cp061	5,0	5,0	6,0	5,0	6,0	5,0	6,0	18,0	18,0	18,0	18,0	5,0	6,0		5,0	5,0	6,0	5,0	6
and newspaper	Newspapers, books and stationery	cp095	5,0	5,0		5,0		5,0		18,0		18,0		5,0		5,0		5,0		5,0	1
		cp0313	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	1
	Shoes and other footwear	cp0321	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	·
Culture and entertainment	Cultural services Games of chance	cp0942	18,0 18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18
	Other services n.e.c.	cp0943 cp127	18,0	18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0	1										
	Recreational and sporting services	cp0941	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	1
8. Street cleaning, refuse	Refuse collection	cp0442	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18
and sewerage services	Sewerage collection	cp0443	18,0	18,0	- / -	18,0	- 1-	18,0	- / -	18,0	- ,-	18,0	- / -	18,0	- , -	18,0		18,0	- / -	18,0	
9. Government services	Education	cp10	ex	ex	0,0	ex	0,0	ex	0,0	ex	0										
	Hospital services	cp063	ex	ex		ex		ex		ex	1										
	Out-patient services	cp062	ex	ex		ex		ex		ex	1										
10. Leastly averaged area inco	Social protection	cp124	ex	ex	40.0	ex	40.0	ex	40.0	ex	40.0	ex	0.0	ex	0.0	ex		ex	40.0	ex	40
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314 cp0723	18,0 18,0	18,0 18,0	18,0	18,0 18,0	18,0	18,0 18,0	18,0	18,0 18,0	18,0	5,0 5,0	6,8	5,0 5,0	6,8	5,0 5,0	6,8	18,0 18,0	18,0	18,0 18,0	18
	Maintenance and repair of personal transport equip Other services relating to the dwelling n.e.c.	cp0723	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	1
	Repair and hire of footwear	cp0322	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5.0		18,0		18.0	1
	Domestic services and household services	cp0562	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	1
	Hairdressing salons and personal grooming establ	cp1211	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	1
	Materials for the maintenance and repair of the dw	cp0431	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Services for the maintenance and repair of the dwe		18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	
11.Post, tele and finansiel	Package holidays	cp096	18,0	18,0	9,2	18,0	9,2	18,0	9,2	18,0	9,2	18,0	9,2	18,0	9,2		6,2	18,0	9,2	18,0	ę
services	Postal services Financial services n.e.c.	cp081 cp126	ex ex	ex ex		ex ex		ex ex		ex ex		ex		ex ex		ex ex		ex ex		ex ex	i i
	Insurance	cp126 cp125	ex	ex ex		ex		ex		ex ev		ex ev		ex ex		ex ex		ex ex		ex	1
	Telephone and telefax equipment	cp082	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Telephone and telefax services	cp083	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
12. Electricity, district heating,	Water supply	cp0441	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	6,4	18,0	18,0	18,0	1
gas and water supplies	Electricity	cp0451	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	,
	Gas	cp0452	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	,
	Heat energy	cp0455	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	ı
	Liquid fuels	cp0453	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	ı
13. Rest of economy	Solid fuels	cp0454	18,0 18.0	18,0 18,0	18,0	18,0 18,0	18,0	18,0 18,0	18,0	18,0 18,0	18.0	18,0 18,0	18,0	18,0 18,0	18,0	5,0 18,0	18,0	18,0 18,0	18,0	18,0 18,0	14
ID. INCOLUTION CONTINUES	1	Î.	18,0	10,0	10,0	10,0	18,0	10,0	10,0	10,0	18,0	10,0	10,0	18,0	18,0	18,0	10,0	18,0	10,0	10,0	. 1

COICOP data and CEVM sector gr	rouping, shares used to calculate CEWRR			Benchr	mark	Scena	rio 1A	Scenar	rio 1B	Scenar	io 1C	Scenar	o 2A	Scena	ario 2B	Scena	rio 3	Scenar	io 4A	Scenar	rio 4E
			All VAT rates	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates	
CEVM sector	COICOP category	Codes	applied	applied	CEWRR	applied	CEWRR	applied	CEWRR		CEWRR		CEWRR	applied	CEWRR	applied	CEWRR	applied	CEWRR		CEV
. Food	Beer	cp0213	22,0	22,0	17,8	22,0	17,8	22,0	10,3	22,0	22,0	22,0	22,0	22,0	17,8	22,0	16,6	22,0	7,8	22,0	
	Spirits	cp0211	22,0	22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0	1
	Tobacco Wine	cp022	22,0 22,0	22,0		22,0 22,0		22,0		22,0 22,0		22,0		22,0 22,0		8,0 8,0		22,0		22,0	
	Bread and cereals	cp0212 cp0111		22,0 17,0		22,0		22,0 8,0		22,0		22,0 22,0		22,0		8,0 17,0		22,0 5,0		22,0 8,0	
	Fish and seafood	cp0111 cp0113	17,0 17,0	17,0		17,0		8,0		22,0		22,0		17,0		17,0		5,0		8,0 8,0	
	Food products n.e.c.	cp0113	17,0	17,0		17,0		8,0		22,0		22,0		17,0		17,0		5,0		8,0	
	Fruit	cp0116	17,0	17,0		17,0		8,0		22,0		22,0		17,0		17,0		5,0		8,0	
	Meat	cp0112	17,0	17,0		17,0		8.0		22,0		22,0		17,0		17,0		5,0		8,0	
	Milk, cheese and eggs	cp0114	17,0	17,0		17,0		8,0		22,0		22,0		17,0		17,0		5,0		8,0	
	Oils and fats	cp0115	17,0	17,0		17,0		8,0		22,0		22,0		17,0		17,0		5,0		8,0	
	Vegetables	cp0117	17,0	17,0		17,0		8,0		22,0		22,0		17,0		17,0		5,0		8,0	
	Coffee, tea and cocoa	cp0121	17,0	17,0		17,0		8,0		22,0		22,0		17,0		17,0		5,0		8,0)
	Mineral waters, soft drinks, fruit and vegetable juic	cp0122	17,0	17,0		17,0		8,0		22,0		22,0		17,0		17,0		5,0		8,0	,
	Sugar, jam, honey, chocolate and confectionery	cp0118	17,0	17,0		17,0		8,0		22,0		22,0		17,0		17,0		5,0		8,0	r.
. Personal transport Domestic	Combined passenger transport	cp0735	8,0	8,0	4,0	8,0	4,0	8,0	8,0	22,0	22,0	22,0	22,0	8,0	4,0	8,0	4,0	5,0	5,0	8,0	(
	Other services in respect of personal transport equ	cp0724	8,0	8,0		8,0		8,0		22,0		22,0		8,0		8,0		5,0		8,0	e i
	Other purchased transport services	cp0736	8,0	8,0		8,0		8,0		22,0		22,0		8,0		8,0		5,0		8,0	
	Passenger transport by air	cp0733	8,0	8,0		8,0		8,0		22,0		22,0		8,0		8,0		5,0		8,0	
	Passenger transport by railway	cp0731	8,0	8,0		8,0	1	8,0		22,0		22,0		8,0	1	8,0		5,0		8,0	
	Passenger transport by road	cp0732	8,0	8,0		8,0		8,0		22,0		22,0		8,0		8,0		5,0		8,0	
		cp0734	8,0	8,0		8,0		8,0		22,0		22,0		8,0		8,0		5,0		8,0	1
International	Combined passenger transport	cp0735	0,0	0,0		0,0	1	8,0		22,0		22,0		0,0	1	0,0		5,0		8,0	
	Other services in respect of personal transport equ		0,0	0,0		0,0		8,0		22,0		22,0		0,0		0,0		5,0		8,0	
	Other purchased transport services	cp0736	0,0	0,0		0,0		8,0		22,0		22,0		0,0		0,0		5,0		8,0	
	Passenger transport by air	cp0733	0,0	0,0		0,0		8,0		22,0		22,0		0,0		0,0		5,0		8,0	
	Passenger transport by railway	cp0731	0,0	0,0		0,0		8,0		22,0		22,0		0,0		0,0		5,0		8,0	
	Passenger transport by road Passenger transport by sea and inland waterway	cp0732 cp0734	0,0	0,0 0.0		0,0		8,0 8.0		22,0 22,0		22,0 22,0		0,0		0,0		5,0 5.0		8,0 8.0	
Hotels	Accommodation services	cp0734	8,0	8,0	8.0	8,0	8.0	8,0	8.0	22,0	22,0	8,0	8,0	8,0	8,0	8,0	8,0	5.0	5.0	8,0	-
. Restaurants	Canteens	cp112	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	8,0	8,0	8,0	8,0		8,0	22,0	22,0	22,0	
Roolaanano	Restaurants, cafés and the like	cp1111	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	8.0	0,0	8.0	0,0	8.0	0,0	22,0	22,0	22,0	,
. Construction of social Housing		cp0431	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	16,9	22,0	16,9		22,0	22,0	22,0	22,0	
	Services for the maintenance and repair of the dwe		22,0	22,0	,•	22,0	,*	22,0	,-	22,0	,•	8.0	,.	8,0	,.	22,0	,.	22,0	,•	22,0	,
Medical equip., books	Medical products, appliances and equipment	cp061	8,0	8,0	8,6	8,0	8,6	8,0	8,6	22,0	22,0	22,0	22,0	8,0	8,6		8,0		5,7	8,0	
and newspaper	Newspapers, books and stationery	cp095	8,0	8,0		8,0		8,0		22,0		22,0		8,0		8,0		5,0		8,0)
	Other articles of clothing and clothing accessories	cp0313	22,0	22,0		22,0		22,0		22,0		22,0		22,0		8,0		22,0		22,0)
	Shoes and other footwear	cp0321	22,0	22,0		22,0		22,0		22,0		22,0		22,0		8,0		22,0		22,0)
. Culture and entertainment	Cultural services	cp0942	8,0	8,0	8,0	8,0	8,0	8,0	8,0	22,0	22,0	22,0	22,0	8,0	8,0	8,0	8,0	5,0	5,0	8,0	
		cp0943	8,0	8,0		8,0		8,0		22,0		22,0		8,0		8,0		5,0		8,0	
	Other services n.e.c.	cp127	8,0	8,0		8,0		8,0		22,0		22,0		8,0		8,0		5,0		8,0	
	Recreational and sporting services	cp0941	8,0	8,0		8,0		8,0		22,0		22,0		8,0		8,0		5,0		8,0	
. Street cleaning, refuse	Refuse collection	cp0442	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0		22,0	22,0	22,0	22,0	e e
and sewerage services	Sewerage collection	cp0443	22,0	22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0	1
. Government services	Education	cp10	ex	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0		0,0	ex	0,0	ex	1
	Hospital services	cp063	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
	Out-patient services	cp062	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	2
	Social protection	cp124	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	-
0. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	8,0	8,7	8,0	8,7		8,7	22,0	22,0	22,0	
	Maintenance and repair of personal transport equip		22,0	22,0		22,0		22,0		22,0		8,0		8,0		8,0		22,0		22,0	
	Other services relating to the dwelling n.e.c. Repair and hire of footwear	cp0444 cp0322	22,0 22,0	22,0 22,0		22,0 22,0		22,0 22,0		22,0 22,0		8,0 8.0		8,0 8,0		8,0 8,0		22,0 22,0		22,0 22,0	
		cp0522	22,0	22,0		22,0		22,0		22,0		8,0		8,0		8,0		22,0		22,0	
	Domestic services and household services Hairdressing salons and personal grooming establ		22,0	22,0		22,0		22,0		22,0		8,0		8,0		8,0		22,0		22,0	
	Materials for the maintenance and repair of the dw		22,0	22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0	
	Services for the maintenance and repair of the dw		22,0	22,0		22,0		22,0		22,0		8.0		8,0		8.0		22,0		22,0	
I.Post, tele and finansiel	Package holidays	cp096	22,0	22,0	13,9	22,0	13,9	22,0	13,9	22,0	13,9	22,0	13,9	22,0	13,9	010	11,0		13,9	22,0	
ervices	Postal services	cp080	ex	ex	.5,5	22,0 ex	.5,5	22,0 ex	.5,5	ex	.0,0	ex	.0,0	ex	.0,5	ex	,0	ex	.0,0	22,0 ex	4
		cp126	ex	ex	1	ex	1	ex		ex		ex		ex	1	ex	l	ex		ex	4
		cp125	ex	ex	1	ex	1	ex		ex		ex		ex	1	ex	l	ex		ex	4
	Telephone and telefax equipment	cp082	22,0	22,0	1	22,0	1	22,0		22,0		22,0		22,0	1	22,0		22,0		22,0	
	Telephone and telefax services	cp083	22,0	22,0	1	22,0	1	22,0		22,0		22,0		22,0	1	22,0		22,0		22,0	
2. Electricity, district heating,	Water supply	cp0441	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0		8,7	22,0	22,0	22,0	
as and water supplies	Electricity	cp0451	22,0	22,0	.,.	22,0	-,-	22,0	.,.	22,0	.,=	22,0	10	22,0	_,.	8,0		22,0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	22,0	
	Gas	cp0452	22,0	22,0	1	22,0	1	22,0		22,0		22,0		22,0	1	8,0	l	22,0		22,0	4
	Heat energy	cp0455	22,0	22,0	1	22,0	1	22,0		22,0		22,0		22,0	1	8,0	l	22,0		22,0	
	Liquid fuels	cp0453	22,0	22,0	1	22,0	1	22,0		22,0		22,0		22,0	1	8,0	l	22,0		22,0	
	Solid fuels	cp0454	22,0	22,0		22,0		22,0		22,0		22,0		22,0		8,0		22,0		22,0	
			22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	1

cp095: 5.5 % for books

hich are covered by the social security legislation

13. Rest of economy Note:

cp061:	2.1%	5 for	med	licine	whi
cp095	559	% fo	r hoo	ks	

	19,6	19,6	19,6	

fr France	ouping, shares used to calculate CEWRR	Reduce	101005	Super reduce Benchr		Scenar		Zero rates Scenar	io 1B	Exemptions Scenarie		Scenar	io 24	Scena	rio 2B	Scena	rio 3	Scenar	io 4A	Scenario	io 4B
COICOF data and CEVM sector gr	ouping, shares used to carculate CEWRR	1	All VAT	Benchi	nark	Scena	IO TA	Scenar		Scenario	5 10		10 ZA	Scena	10 20	Scena		Scenar	IU 4A	Scenario	046
			rates	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates	
CEVM sector I. Food	COICOP category Beer	Codes cp0213	applied		CEWRR 8.2	applied	CEWRR 8.2		CEWRR 8.2	applied (19,6	19.6	applied 19,6	CEWRR 19.6	applied 19.6	CEWRR 8.2		CEWRR 6.7	applied 19.6	CEWRR	applied C 19.6	CEWR
	Spirits	cp0213	19,6 19,6	19,6 19,6	0,2	19,6 19,6	0,2	19,6 19,6	0,2	19,6	19,6	19,6	19,0	19,6	0,2	19,6 19,6	0,7	19,6	7,0	19,6	0,
	Tobacco	cp022	19.6	19.6		19.6		19.6		19,6		19.6		19.6		5,5		19.6		19.6	
	Wine	cp0212	19,6	19,6		19,6		19,6		19,6		19,6		19,6		5,5		19,6		19,6	i
	Bread and cereals	cp0111	5,5	5,5		5,5		5,5		19,6		19,6		5,5		5,5		5,0		5,5	
	Fish and seafood	cp0113	5,5	5,5		5,5		5,5		19,6		19,6		5,5		5,5		5,0		5,5	i
	Food products n.e.c.	cp0119	5,5	5,5		5,5		5,5		19,6		19,6		5,5		5,5		5,0		5,5	i
	Fruit Meat	cp0116 cp0112	5,5 5,5	5,5 5,5		5,5 5,5		5,5 5,5		19,6 19,6		19,6 19,6		5,5 5,5		5,5 5,5		5,0 5,0		5,5 5,5	i
	Milk, cheese and eggs	cp0112	5,5	5,5		5,5		5,5		19,6		19,6		5,5 5,5		5,5		5,0		5,5	i
	Oils and fats	cp0115	19,6	19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6	i
	Vegetables	cp0117	5,5	5,5		5,5		5,5		19,6		19,6		5,5		5,5		5,0		5,5	
	Coffee, tea and cocoa	cp0121	5,5	5,5		5,5		5,5		19,6		19,6		5,5		5,5		5,0		5,5	
	Mineral waters, soft drinks, fruit and vegetable juic	cp0122	5,5	5,5		5,5		5,5		19,6		19,6		5,5		5,5		5,0		5,5	
	Sugar, jam, honey, chocolate and confectionery	cp0118	19,6	19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6	
	Combined passenger transport	cp0735	5,5	5,5	3,0	5,5	3,0	5,5	5,5	19,6	19,6	19,6	19,6	5,5	3,0		3,0	5,0	5,0	5,5	5,
			5,5	5,5		5,5		5,5		19,6 19.6		19,6 19,6		5,5		5,5		5,0		5,5	
	Other purchased transport services Passenger transport by air	cp0736 cp0733	5,5 5,5	5,5 5,5		5,5 5,5		5,5 5,5		19,6 19,6		19,6 19,6		5,5 5,5		5,5 5,5		5,0 5.0		5,5 5,5	
	Passenger transport by railway	cp0733	5,5	5,5		5,5		5,5		19,6		19,6		5,5 5,5		5,5		5,0		5,5	
	Passenger transport by road	cp0732	5,5	5,5		5,5		5,5		19,6		19,6		5,5		5,5		5,0		5,5	
	Passenger transport by sea and inland waterway	cp0734	5,5	5,5		5,5		5,5		19,6		19,6		5,5		5,5		5,0		5,5	
	Combined passenger transport	cp0735	0,0	0,0		0,0		5,5		19,6		19,6		0,0		0,0		5,0		5,5	
	Other services in respect of personal transport equ		0,0	0,0		0,0		5,5		19,6		19,6		0,0		0,0		5,0		5,5	
	Other purchased transport services	cp0736	0,0	0,0		0,0		5,5		19,6		19,6		0,0		0,0		5,0		5,5	
	Passenger transport by air	cp0733	0,0	0,0		0,0		5,5		19,6		19,6		0,0		0,0		5,0		5,5	
	Passenger transport by railway	cp0731 cp0732	0,0 5,5	0,0 5,5		0,0 5,5		5,5 5,5		19,6 19,6		19,6 19,6		0,0 5,5		0,0 5,5		5,0 5,0		5,5 5,5	
	Passenger transport by road Passenger transport by sea and inland waterway	cp0732	5,5	5,5		0,0		5,5		19,6		19,6		5,5		5,5		5,0		5,5	
3. Hotels	Accommodation services	cp112	5.5	5,5	5.5	5,5	5.5	5.5	5.5	19,6	19,6	5,5	5,5	5.5	5.5	5,5	5.5	5.0	5.0	5.5	5.
4. Restaurants	Canteens	cp1112	5,5	5,5	14,1	5,5	14,1	19,6	19,6	19,6	19,6	5,5	5,5	5,5	5,5		5,5	5,0	13,9	5,5	14
	Restaurants, cafés and the like	cp1111	19,6	19,6	-	19,6		19,6		19,6		5,5		5,5		5,5		19,6		19,6	
5. Construction of social Housing	Materials for the maintenance and repair of the dw	cp0431	19,6	19,6	16,4	19,6	16,4	19,6	16,4	19,6	19,6	19,6	16,4	19,6	16,4		16,4	19,6	16,2	19,6	16
	Services for the maintenance and repair of the dwe	cp0432	5,5	5,5		5,5		5,5		19,6		5,5		5,5		5,5		5,0		5,5	
	Medical products, appliances and equipment	cp061	5,5	5,5	5,1	5,5	5,1	5,5	6,6	19,6	19,6	19,6	19,6	5,5 2,1	5,1	5,5	4,0	5,0	6,2	5,5	6
and newspaper	Newspapers, books and stationery Other articles of clothing and clothing accessories	cp095 cp0313	2,1 19,6	2,1 19,6		2,1 19,6		5,5 19,6		19,6 19,6		19,6 19,6		2,1		2,1 5,5		5,0 19,6		5,5 19,6	
	Shoes and other footwear	cp0321	19,6	19,6		19,6		19,6		19,6		19,6		19,6		5,5		19,6		19,6	
7. Culture and entertainment	Cultural services	cp0942	5,5	5,5	10,3	5,5	10,3	5,5	10,3	19,6	17,5	19,6	17,5	5,5	10,3	5,5	10,3	5,0	10,1	5,5	10.
	Games of chance	cp0943	ex	ex		ex		ex		ex		ex	-	ex		ex		ex		ex	
	Other services n.e.c.	cp127	19,6	19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6	
	Recreational and sporting services	cp0941	19,6	19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6	
5,	Refuse collection	cp0442	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19
and sewerage services	Sewerage collection	cp0443	19,6	19,6		19,6	10.7	19,6		19,6		19,6	10.7	19,6		19,6		19,6	10.7	19,6	
	Education Hospital services	cp10 cp063	ex ex	ex	16,7	ex ex	16,7	ex	16,7	ex ex	16,7	ex ex	16,7	ex ex	16,7	ex	14,7	ex ex	16,7	ex ex	16
	Out-patient services	cp063	19,6	19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6	
	Social protection	cp002 cp124	19,6	19,6		19,6		19,6		19,6		19,6		19,6		5,5		19,6		19,6	
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	19,6	19,6	16,8	19,6	16,8	19,6	19,6	19,6	19,6	5,5	7,7	5,5	7,7	5,5	7,7	19,6	16,7	19,6	16
	Maintenance and repair of personal transport equi	cp0723	19,6	19,6		19,6		19,6		19,6		5,5		5,5		5,5		19,6		19,6	
	Other services relating to the dwelling n.e.c.	cp0444	19,6	19,6		19,6		19,6		19,6		5,5		5,5		5,5		19,6		19,6	
	Repair and hire of footwear	cp0322	19,6	19,6		19,6		19,6		19,6		5,5		5,5		5,5		19,6		19,6	i
	Domestic services and household services	cp0562	5,5	5,5		5,5		19,6		19,6		5,5		5,5		5,5		5,0		5,5	i
	Hairdressing salons and personal grooming establ Materials for the maintenance and repair of the dw		19,6 19,6	19,6 19,6		19,6 19,6		19,6 19,6		19,6 19,6		5,5 19,6		5,5 19,6		5,5 19,6		19,6 19,6		19,6 19,6	
	Services for the maintenance and repair of the dwa		19,6	19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6	
	Package holidays	cp0432	19,6	19,6	5,7	19,6	5,7	19,6	5,7	19,6	5,7	19,6	5,7	19,6	5,7	5,5	4,7	19,6	5,7	19,6	5.
services	Postal services	cp081	ex	ex	-,,	ex	-,.	ex	-,.	ex	-,,	ex	2,7	ex	-,,	ex	.,,	ex	-,.	ex	
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
	Telephone and telefax equipment	cp082	19,6	19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6	
40 Electricity dist interview	Telephone and telefax services	cp083	19,6	19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6		19,6	-
	Water supply Electricity	cp0441 cp0451	5,5 5,5	5,5 5,5	8,8	5,5 5,5	8,8	5,5 19.6	17,7	19,6 19,6	19,6	19,6 19.6	19,6	5,5 5,5	8,8	5,5 5,5	5,5	5,0 5.0	8,5	5,5 5,5	8
	Gas	cp0451 cp0452	5,5 5,5	5,5 5,5		5,5 5,5		19,6		19,6		19,6		5,5 5,5		5,5 5,5		5,0		5,5 5,5	i
yas anu water supplies				5,5				13,0										5,0			
yas anu waler supplies				19.6		19.6		19.6		19.6		19.6	L	19.6		55		19.6		19.6	
yas anu waler supplies	Heat energy	cp0455	19,6	19,6 19.6		19,6 19.6		19,6 19.6		19,6 19,6		19,6 19.6		19,6 19.6		5,5 5,5		19,6 19.6		19,6 19,6	
yas anu water suµµ⊪es				19,6 19,6 19,6		19,6 19,6 19,6		19,6 19,6 19,6		19,6 19,6 19,6		19,6 19,6 19,6		19,6 19,6 19,6		5,5 5,5 5,5		19,6 19,6 19,6		19,6 19,6 19,6	

COICOP data and CEVM sector o	rouping, shares used to calculate CEWRR			Benchr	nark	Scenar	es io 1A	Zero rates Scenari	o 1B	Scenari	s io 1C	Scena	rio 2A	Scena	rio 2B	Scena	rio 3	Scenar	io 4A	Scenar	io 4B
general and and or the solid g			AII VAT																		<u></u>
CEVM sector	COICOP category	Codes	rates applied	VAT rates applied	CEWRR	VAT rates	CEWRR	VAT rates applied		VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates	CEWRR	VAT rates	CEWRF
1. Food	Beer	cp0213	applied 19.0	appileu 19.0	8.9	applied 19,0	89	19,0	89	applied 19,0	19.0	19,0	19.0	19,0	89	19.0	7.6	19.0	7.3	19.0	CEWKI 8
1.1000	Spirits	cp0210	19,0	19,0	0,5	19,0	0,5	19,0	0,5	19,0	10,0	19,0	15,0	19,0	0,5	19,0	7,0	19,0	7,0	19,0	1
	Tobacco	cp022	19,0	19,0		19,0		19,0		19,0		19,0		19,0		7,0		19,0		19,0	1
	Wine	cp0212	19,0	19,0		19,0		19,0		19,0		19,0		19,0		7,0		19,0		19,0	1
	Bread and cereals	cp0111	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	1
	Fish and seafood	cp0113	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	1
	Food products n.e.c.	cp0119	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0 7.0		5,0		7,0	1
	Fruit Meat	cp0116 cp0112	7,0	7,0 7,0		7,0 7,0		7,0 7.0		19,0 19.0		19,0 19.0		7,0 7.0		7,0		5,0 5,0		7,0 7,0	1
	Milk, cheese and eggs	cp0112 cp0114	7,0 7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	1
	Oils and fats	cp0115	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	1
	Vegetables	cp0117	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	1
	Coffee, tea and cocoa	cp0121	7,0 7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	1
	Mineral waters, soft drinks, fruit and vegetable juic	cp0122	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	1
	Sugar, jam, honey, chocolate and confectionery	cp0118	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	
2. Personal transport Domestic		cp0735	7,0 7,0	7,0	7,2	7,0	7,2	7,0	7,6	19,0	19,0	19,0	19,0	7,0	7,2		7,2	5,0	5,8	7,0	7
	Other services in respect of personal transport equ		7,0 7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0 5.0		7,0	1
	Other purchased transport services Passenger transport by air	cp0736 cp0733	7,0	7,0 19,0		7,0 19,0		7,0 19,0		19,0 19.0		19,0 19,0		7,0 19,0		7,0 19,0		5,0		7,0 19,0	1
	Passenger transport by railway	cp0733	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5.0		7,0	1
	Passenger transport by road	cp0732	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	ı
	Passenger transport by sea and inland waterway	cp0734	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	
International	Combined passenger transport	cp0735	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	
	Other services in respect of personal transport equ		7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	1
	Other purchased transport services	cp0736	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	1
	Passenger transport by air	cp0733	0,0	0,0		0,0		7,0		19,0		19,0		0,0		0,0		5,0		7,0	1
	Passenger transport by railway Passenger transport by road	cp0731 cp0732	7,0 7,0	7,0 7,0		7,0 7,0		7,0 7,0		19,0 19,0		19,0 19,0		7,0 7,0		7,0 7,0		5,0 5,0		7,0 7,0	1
	Passenger transport by sea and inland waterway	cp0732	7,0	0.0		0.0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	1
3. Hotels	Accommodation services	cp112	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	7,0	7,0	7,0	7,0	19,0	19,0	19,0	19,0	19,0	19
4. Restaurants	Canteens	cp1112	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	7,0	7,0	7,0	7,0	7,0	7,0	19,0	19,0	19,0	19,
	Restaurants, cafés and the like	cp1111	19,0	19,0		19,0		19,0		19,0		7,0		7,0		7,0		19,0		19,0	
5. Construction of social Housing	Materials for the maintenance and repair of the dw		19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	12,4	19,0	12,4		19,0	19,0	19,0	19,0	19
	Services for the maintenance and repair of the dwe		19,0	19,0		19,0		19,0		19,0		7,0		7,0		19,0		19,0		19,0	
6.Medical equip., books	Medical products, appliances and equipment	cp061	19,0	19,0	13,2	19,0	13,2	19,0	13,2	19,0	19,0	19,0	19,0	19,0	13,2		12,5	19,0	12,2	19,0	13,
and newspaper	Newspapers, books and stationery Other articles of clothing and clothing accessories	cp095 cp0313	7,0 19,0	7,0 19,0		7,0 19,0		7,0 19,0		19,0 19,0		19,0 19,0		7,0 19,0		7,0 7,0		5,0 19,0		7,0 19,0	1
	Shoes and other footwear	cp0313	19,0	19,0		19,0		19,0		19,0		19,0		19,0		7,0		19,0		19,0	1
7. Culture and entertainment	Cultural services	cp0942	ex	ex	7.9	ex	7,9	ex	7.9	ex	7.9	ex	7,9	ex	7,9			ex	7.9	ex	7
	Games of chance	cp0943	19,0	19,0	7-	19,0	1-	19,0		19,0	7 -	19,0		19,0		19,0		19,0	<i>,</i> -	19,0	1
	Other services n.e.c.	cp127	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	1
	Recreational and sporting services	cp0941	7,0	7,0		7,0		7,0		19,0		19,0		7,0		7,0		5,0		7,0	
Street cleaning, refuse	Refuse collection	cp0442	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0		19,0	19,0	19,0	19,0	19,
and sewerage services	Sewerage collection	cp0443	19,0	19,0		19,0		19,0		19,0	40.0	19,0	40.0	19,0		19,0	4.7	19,0		19,0	
9. Government services	Education Hospital services	cp10 cp063	ex ex	ex ex	4,7	ex ex	4,7	ex ex	6,4	ex	12,8	ex ex	12,8	ex ex	4,7	ex ex	4,7	ex ex	3,4	ex ex	4
	Out-patient services	cp063	7,0	7,0		7,0		7,0		19,0		19,0		7,0		ex 7,0		5,0		7,0	1
	Social protection	cp002	7,0	7,0		7,0		19,0		19,0		19,0		7,0		7,0		5.0		7,0	1
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	7,0	8,9	7,0	8,9	.].	8,9	19,0	19,0	19,0	19
	Maintenance and repair of personal transport equi		19,0	19,0	- /-	19,0	.,-	19,0	- ,-	19,0	.,.	7,0		7,0	.,-	7,0		19,0		19,0	-
	Other services relating to the dwelling n.e.c.	cp0444	19,0	19,0		19,0		19,0		19,0		7,0		7,0		7,0		19,0		19,0	1
	Repair and hire of footwear	cp0322	19,0	19,0		19,0		19,0		19,0		7,0		7,0		7,0		19,0		19,0	1
	Domestic services and household services	cp0562	19,0	19,0		19,0		19,0		19,0		7,0		7,0		7,0		19,0		19,0	1
	Hairdressing salons and personal grooming establ		19,0 19.0	19,0 19.0		19,0 19.0		19,0 19.0		19,0 19.0		7,0		7,0		7,0		19,0 19.0		19,0 19.0	1
	Materials for the maintenance and repair of the dw Services for the maintenance and repair of the dw		19,0 19.0	19,0 19.0		19,0 19.0		19,0 19.0		19,0 19.0		19,0 7.0		19,0 7.0		19,0 7.0		19,0 19.0		19,0 19.0	1
11.Post, tele and finansiel	Package holidays	cp0432	19,0	19,0	17,0	19,0	17,0	19,0	17,0	19,0	17,0	19,0	17,0	19,0	17.0	7,0	10,7	19,0	17,0	19,0	17
services	Postal services	cp098	19,0 ex	19,0 ex	17,0	19,0 ex	17,0	19,0 ex	17,0	19,0 ex	17,0	ex	17,0	19,0 ex	17,0	ex	10,7	19,0 ex	17,0	19,0 ex	1 1/
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i i
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i i
	Telephone and telefax equipment	cp082	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	ı
	Telephone and telefax services	cp083	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	I
12. Electricity, district heating,	Water supply	cp0441	7,0	7,0	16,0	7,0	16,0	7,0	16,0	19,0	19,0	19,0	19,0	7,0	16,0		7,0	5,0	15,5	7,0	16
gas and water supplies	Electricity	cp0451	19,0	19,0		19,0		19,0		19,0		19,0		19,0		7,0		19,0		19,0	i i
	Gas	cp0452	19,0	19,0		19,0		19,0		19,0		19,0		19,0		7,0		19,0		19,0	ı
	Heat energy	cp0455	19,0 19.0	19,0		19,0 19.0		19,0 19.0		19,0		19,0 19,0		19,0		7,0 7.0		19,0 19.0		19,0	ı
	Liquid fuels Solid fuels	cp0453 cp0454	19,0 19.0	19,0 19.0		19,0 19.0		19,0 19.0		19,0 19.0		19,0 19.0		19,0 19.0		7,0		19,0 19.0		19,0 19.0	ı
13. Rest of economy		upu454	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0		19,0		19.0	19,0	19
			15,0	13,0	13,0	13,0	15,0	13,0	10,0	13,0	15,0	13,0	15,0	10,0	13,0	13,0	13,0	13,0		ade 147	

 Construction of social Housing 	Materials for the maintenance and repair of the dw		19,0	19,0	14,6	19,0	14,6	19,0	14,6	19,0	19,0	19,0	14,6	19,0	14,6	19,0	14,6	19,0	12,8	19,0	14,
	Services for the maintenance and repair of the dwe		9,0	9,0		9,0		9,0		19,0		9,0		9,0		9,0		5,0		9,0	
.Medical equip., books	Medical products, appliances and equipment	cp061	9,0	9,0	8,2	9,0	8,2	9,0	10,3	19,0	19,0	19,0	19,0	9,0	8,2	9,0	6,8	5,0	6,9	9,0	10
and newspaper	Newspapers, books and stationery	cp095	4,5	4,5		4,5		9,0		19,0		19,0		4,5		4,5		5,0		9,0	
	Other articles of clothing and clothing accessories	cp0313	19,0	19,0		19,0		19,0		19,0		19,0		19,0		9,0		19,0		19,0	
	Shoes and other footwear	cp0321	19,0	19,0		19,0		19,0		19,0		19,0		19,0		9,0		19,0		19,0	
. Culture and entertainment	Cultural services	cp0942	9,0	9,0	9,7	9,0	9,7	9,0	9,7	19,0	14,1	19,0	14,1	9,0	9,7	9,0	9,7	5,0	7,9	9,0	9
	Games of chance	cp0943	ex	ex																	
	Other services n.e.c.	cp127	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Recreational and sporting services	cp0941	9,0	9,0		9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
. Street cleaning, refuse	Refuse collection	cp0442	9,0	9,0	9,0	9,0	9,0	9,0	9,0	19,0	19,0	19,0	19,0	9,0	9,0	9,0	9,0	5,0	5,0	9,0	9
and sewerage services	Sewerage collection	cp0443	9,0	9,0		9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
. Government services	Education	cp10	ex	ex	5,0	ex	5,0	ex	5,1	ex	10,6	ex	10,6	ex	5,0	ex	5,0	ex	2,8	ex	5
	Hospital services	cp063	ex	ex																	
	Out-patient services	cp062	9,0	9,0		9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Social protection	cp124	9,0	9,0		9,0		19,0		19,0		19,0		9,0		9,0		5,0		9,0	
0. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	9,0	9,0	14,2	9,0	14,2	19,0	19,0	19,0	19,0	9,0	9,0	9,0	9,0	9,0	9,0	5,0	12,3	9,0	14,
	Maintenance and repair of personal transport equi	cp0723	19,0	19,0		19,0		19,0		19,0		9,0		9,0		9,0		19,0		19,0	
	Other services relating to the dwelling n.e.c.	cp0444	19,0	19,0		19,0		19,0		19,0		9,0		9,0		9,0		19,0		19,0	
	Repair and hire of footwear	cp0322	19,0	19,0		19,0		19,0		19,0		9,0		9,0		9,0		19,0		19,0	
	Domestic services and household services	cp0562	9,0	9,0		9,0		19,0		19,0		9,0		9,0		9,0		5,0		9,0	
	Hairdressing salons and personal grooming establ	cp1211	19,0	19,0		19,0		19,0		19,0		9,0		9,0		9,0		19,0		19,0	
	Materials for the maintenance and repair of the dw	cp0431	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Services for the maintenance and repair of the dwe	cp0432	19,0	19,0		19,0		19,0		19,0		9,0		9,0		9,0		19,0		19,0	
1.Post, tele and finansiel	Package holidays	cp096	19,0	19,0	13,2	19,0	13,2	19,0	13,2	19,0	13,2	19,0	13,2	19,0	13,2	9,0	12,8	19,0	13,2	19,0	13
services	Postal services	cp081	ex	ex																	
	Financial services n.e.c.	cp126	ex	ex																	
	Insurance	cp125	ex	ex																	
	Telephone and telefax equipment	cp082	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Telephone and telefax services	cp083	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
2. Electricity, district heating,	Water supply	cp0441	9,0	9,0	13,0	9,0	13,0	9,0	17,7	19,0	19,0	19,0	19,0	9,0	13,0	9,0	9,0	5,0	10,6	9,0	13,
gas and water supplies	Electricity	cp0451	9,0	9,0		9,0		19,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Gas	cp0452	9,0	9,0		9,0		19,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Heat energy	cp0455	19,0	19,0		19,0		19,0		19,0		19,0		19,0		9,0		19,0		19,0	
	Liquid fuels	cp0453	19,0	19,0		19,0		19,0		19,0		19,0		19,0		9,0		19,0		19,0	
	Solid fuels	cp0454	19,0	19,0		19,0		19,0		19,0		19,0		19,0		9,0		19,0		19,0	
Rest of economy			19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19

el Greece		Reduce	d rates			Parking ra		Zero rates		Exemptions						1		-		-	<u> </u>
COICOP data and CEVM sector gr	ouping, shares used to calculate CEWRR	1	All VAT	Benchr	mark	Scena	rio 1A	Scenario) 1B	Scenario	o 1C	Scenar	io 2A	Scenar	io 2B	Scena	rio 3	Scenari	io 4A	Scenari	ა 4B
			rates	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates	
CEVM sector	COICOP category	Codes	applied	applied	CEWRR		CEWRR	applied C	EWRR		CEWRR		CEWRR		CEWRR	applied	CEWRR	applied	CEWRR		CEWF
1. Food	Beer	cp0213	19,0	19,0	10,6	19,0	10,6	19,0	10,6	19,0	19,0	19,0	19,0	19,0	10,6	19,0	9,2	19,0	7,3	19,0	1
	Spirits	cp0211	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Tobacco	cp022	19,0	19,0		19,0		19,0		19,0		19,0		19,0		9,0		19,0		19,0	
	Wine	cp0212	19,0	19,0		19,0		19,0		19,0		19,0		19,0		9,0		19,0		19,0	
	Bread and cereals Fish and seafood	cp0111 cp0113	9,0 9,0			9,0 9,0		9,0 9,0		19,0 19,0		19,0 19,0		9,0 9,0		9,0 9,0		5,0 5,0		9,0 9,0	
	Food products n.e.c.	cp0113	9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Fruit	cp0115	9,0			9.0		9.0		19,0		19,0		9,0		9,0		5.0		9.0	
	Meat	cp0112	9,0			9.0		9,0		19,0		19.0		9.0		9.0		5,0		9.0	
	Milk, cheese and eggs	cp0114	9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Oils and fats	cp0115	9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Vegetables	cp0117	9,0	9,0		9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Coffee, tea and cocoa	cp0121	9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Mineral waters, soft drinks, fruit and vegetable juic		9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Sugar, jam, honey, chocolate and confectionery	cp0118	9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
2. Personal transport Domestic	Combined passenger transport	cp0735	9,0		6,7		6,7	9,0	9,0		19,0	19,0	19,0	9,0	6,7		6,7	5,0	5,0	9,0	
	Other services in respect of personal transport equ		9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Other purchased transport services	cp0736	9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Passenger transport by air Passenger transport by railway	cp0733 cp0731	9,0 9,0			9,0 9,0		9,0 9,0		19,0 19,0		19,0 19,0		9,0 9,0		9,0 9,0		5,0 5,0		9,0 9,0	
	Passenger transport by raiway Passenger transport by road	cp0731	9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Passenger transport by sea and inland waterway	cp0732	9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
International	Combined passenger transport	cp0735	0,0			0,0		9,0		19,0		19,0		0,0		0,0		5,0		9,0	
international	Other services in respect of personal transport equ		0,0	0,0		0,0		9,0		19,0		19,0		0,0		0,0		5,0		9,0	
	Other purchased transport services	cp0736	0,0			0,0		9,0		19,0		19,0		0,0		0,0		5,0		9,0	
	Passenger transport by air	cp0733	0,0	0,0		0,0		9,0		19,0		19,0		0,0		0,0		5,0		9,0	
	Passenger transport by railway	cp0731	0,0	0,0		0,0		9,0		19,0		19,0		0,0		0,0		5,0		9,0	
	Passenger transport by road	cp0732	9,0	9,0		9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		0,0		9,0		19,0		19,0		0,0		0,0		5,0		9,0	
3. Hotels	Accommodation services	cp112	9,0	9,0	9,0	9,0		9,0	9,0	19,0	19,0	9,0	9,0	9,0	9,0		9,0	5,0	5,0	9,0	
4. Restaurants	Canteens	cp1112	9,0	9,0	9,0	9,0	9,0	19,0	19,0		19,0	9,0	9,0	9,0	9,0	9,0	9,0	5,0	5,0	9,0	
	Restaurants, cafés and the like	cp1111	9,0			9,0		19,0		19,0		9,0		9,0		9,0		5,0	10.0	9,0	
5. Construction of social Housing	Materials for the maintenance and repair of the dw Services for the maintenance and repair of the dw		19,0 9.0	19,0 9.0	14,6	19,0 9.0	14,6	19,0 9.0	14,6	19,0 19.0	19,0	19,0 9.0	14,6	19,0 9.0	14,6	19,0 9.0	14,6	19,0 5.0	12,8	19,0 9.0	
6.Medical equip., books	Medical products, appliances and equipment	cp0432	9,0	9,0	8,2	9,0	8.2	9,0	10,3	19,0	19,0	9,0	19,0	9,0	8,2		6.8	5,0	6,9	9,0	
and newspaper	Newspapers, books and stationery	cp095	4.5	4,5	0,2	4.5	0,2	9,0	10,0	19,0	15,0	19,0	15,0	4.5	0,2	4,5	0,0	5,0	0,5	9.0	
and nonopapor	Other articles of clothing and clothing accessories		19,0	19.0		19.0		19.0		19,0		19.0		19.0		9,0		19.0		19.0	
	Shoes and other footwear	cp0321	19.0	19,0		19,0		19.0		19.0		19,0		19.0		9,0		19,0		19,0	
7. Culture and entertainment	Cultural services	cp0942	9,0	9,0	9,7		9,7	9,0	9,7	19,0	14,1	19,0	14,1	9,0	9,7	9,0	9,7	5,0	7,9	9,0	
	Games of chance	cp0943	ex	ex ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Other services n.e.c.	cp127	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Recreational and sporting services	cp0941	9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
Street cleaning, refuse	Refuse collection	cp0442	9,0		9,0	9,0	9,0	9,0	9,0	19,0	19,0	19,0	19,0	9,0	9,0		9,0	5,0	5,0	9,0	
and sewerage services	Sewerage collection	cp0443	9,0			9,0		9,0		19,0		19,0		9,0		9,0		5,0		9,0	
9. Government services	Education	cp10	ex		5,0	ex	5,0	ex	5,1	ex	10,6	ex	10,6	ex	5,0		5,0	ex	2,8	ex	
	Hospital services	cp063	ex 9,0			ex		ex 9.0		ex		ex		ex 9.0		ex		ex		ex 9.0	
	Out-patient services Social protection	cp062 cp124	9,0 9,0			9,0 9,0		9,0		19,0 19,0		19,0 19,0		9,0 9,0		9,0 9,0		5,0 5.0		9,0	
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	9,0		14,2	9,0	14,2	19,0	19,0		19,0	9,0	9,0	9,0	9,0		9,0	5,0	12,3	9,0	1
To: Locally supplied services	Maintenance and repair of personal transport equi		19,0	19,0	14,2	19,0	14,2	19,0	19,0	19,0	19,0	9,0	5,0	9,0	5,0	9,0	5,0	19,0	12,3	19,0	
	Other services relating to the dwelling n.e.c.	cp0444	19,0	19,0		19,0		19,0		19,0		9,0		9,0		9,0		19,0		19,0	
	Repair and hire of footwear	cp0322	19,0	19,0		19,0		19,0		19,0		9,0		9,0		9,0		19,0		19,0	
	Domestic services and household services	cp0562	9,0	9,0		9,0		19,0		19,0		9,0		9,0		9,0		5,0		9,0	
	Hairdressing salons and personal grooming establ		19,0	19,0		19,0		19,0		19,0		9,0		9,0		9,0		19,0		19,0	
	Materials for the maintenance and repair of the dw	cp0431	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Services for the maintenance and repair of the dw		19,0	19,0		19,0		19,0		19,0		9,0		9,0		9,0		19,0		19,0	
11.Post, tele and finansiel	Package holidays	cp096	19,0	19,0	13,2	19,0	13,2	19,0	13,2	19,0	13,2	19,0	13,2	19,0	13,2	9,0	12,8	19,0	13,2	19,0	
services	Postal services	cp081	ex	ex ex	1	ex		ex		ex		ex		ex		ex		ex		ex	
	Financial services n.e.c.	cp126	ex	ex ex	1	ex		ex		ex		ex		ex		ex	1	ex		ex	
	Insurance	cp125	ex	ex ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Telephone and telefax equipment	cp082	19,0			19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Telephone and telefax services	cp083	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
12. Electricity, district heating,	Water supply	cp0441	9,0	9,0	13,0	9,0	13,0	9,0	17,7	19,0	19,0	19,0	19,0	9,0	13,0	9,0	9,0	5,0	10,6	9,0	
gas and water supplies	Electricity	cp0451	9,0		1	9,0		19,0		19,0		19,0		9,0		9,0	l	5,0		9,0	
	Gas	cp0452	9,0		1	9,0		19,0		19,0		19,0		9,0		9,0	l	5,0		9,0	
	Heat energy Liquid fuels	cp0455 cp0453	19,0 19.0	19,0 19.0	[19,0 19.0		19,0 19.0		19,0 19.0		19,0 19.0		19,0 19.0		9,0 9.0		19,0 19.0		19,0 19.0	
	Liquid idels	ICDU453	19.0	19.0		19.0		19.0		19.0		19.0		19.0		 9.0 		19.0		19.0	

COICOP data and CEVM sector or	rouping, shares used to calculate CEWRR	Reduce		Bench		Parking rat Scenar		Zero rates Scenar	io 1B	Exemption Scenar		Scena	rio 2A	Scena	rio 2B	Scena	rio 3	Scenar	io 4A	Scenari	io 4B
			AII VAT																		
CEVM sector	COICOP category	Codes	rates applied	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates	CEWR
1. Food	Beer	cp0213	20,0	20,0	15,8	20,0	7,5	20,0	15,8	20,0	20,0	20,0	20,0	20,0	15,8	20,0	14,1	20,0	7,5	20,0	7
	Spirits	cp0211	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	ł
	Tobacco	cp022	20,0	20,0		20,0		20,0		20,0		20,0		20,0		5,0		20,0		20,0	ł
	Wine	cp0212	20,0	20,0		20,0		20,0		20,0		20,0		20,0		5,0		20,0		20,0	ł
	Bread and cereals	cp0111	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	l l
	Fish and seafood Food products n.e.c.	cp0113 cp0119	15,0 15,0	15,0 15,0		5,0 5,0		15,0 15,0		20,0 20.0		20,0 20,0		15,0 15,0		15,0 15,0		5,0 5,0		5,0 5,0	1
	Fruit	cp0116	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	1
	Meat	cp0112	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	1
	Milk, cheese and eggs	cp0114	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	1
	Oils and fats	cp0115	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	ł
	Vegetables	cp0117	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	1
	Coffee, tea and cocoa	cp0121	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	1
	Mineral waters, soft drinks, fruit and vegetable juic	cp0122	15,0 15,0	15,0 15,0		5,0 5,0		15,0 15,0		20,0		20,0		15,0		15,0 15,0		5,0 5.0		5,0 5.0	1
2. Personal transport Domestic	Sugar, jam, honey, chocolate and confectionery Combined passenger transport	cp0118 cp0735	15,0	15,0	7.5	5,0	5,0	15,0	7.5	20,0 20,0	20,0	20,0 20,0	20,0	15,0 15,0	7,5		7,5	5,0	5,0	5,0	5
2. Personal transport Domestic	Other services in respect of personal transport equ		15,0	15,0	7,5	5,0	5,0	15,0	7,5	20,0	20,0	20,0	20,0	15,0	7,5	15,0	7,5	5,0	3,0	5,0	
	Other purchased transport services	cp0736	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	1
	Passenger transport by air	cp0733	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	ł
	Passenger transport by railway	cp0731	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	ł
	Passenger transport by road	cp0732	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	ł
	Passenger transport by sea and inland waterway	cp0734	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	
International	Combined passenger transport	cp0735	0,0	0,0		5,0		0,0		20,0		20,0		0,0		0,0		5,0		5,0	l l
	Other services in respect of personal transport equ Other purchased transport services	cp0724 cp0736	0,0 0,0	0,0 0,0		5,0 5,0		0,0 0,0		20,0 20,0		20,0 20,0		0,0 0,0		0,0 0,0		5,0 5,0		5,0 5,0	l l
	Passenger transport by air	cp0738	0,0	0,0		5,0		0,0		20,0		20,0		0,0		0,0		5,0		5,0	1
	Passenger transport by railway	cp0731	0,0	0,0		5,0		0,0		20,0		20,0		0,0		0,0		5,0		5,0	l l
	Passenger transport by road	cp0732	0,0	0,0		5,0		0,0		20,0		20,0		0,0		0,0		5,0		5,0	1
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		5,0		0,0		20,0		20,0		0,0		0,0		5,0		5,0	
3. Hotels	Accommodation services	cp112	15,0	15,0	15,0	5,0	5,0	15,0	15,0	20,0	20,0	5,0	5,0	5,0	5,0	15,0	15,0	5,0	5,0	5,0	5
4. Restaurants	Canteens	cp1112	15,0	15,0	15,0	20,0	20,0	15,0	15,0	20,0	20,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5
	Restaurants, cafés and the like	cp1111	15,0	15,0	00.0	20,0	00.0	15,0	00.0	20,0	00.0	5,0	40.7	5,0	40.7	5,0	00.0	5,0	00.0	5,0	
5. Construction of social Housing	Materials for the maintenance and repair of the dw Services for the maintenance and repair of the dw		20,0 20,0	20,0 20,0	20,0	20,0 20,0	20,0	20,0 20,0	20,0	20,0 20,0	20,0	20,0 5.0	12,7	20,0 5,0	12,7	20,0 20,0	20,0	20,0 20,0	20,0	20,0 20,0	20
6.Medical equip., books	Medical products, appliances and equipment	cp0432	20,0	20,0	6,1	20,0	6,1	20,0	6,1	20,0	20,0	20,0	20,0	5,0	6,1		5,0	20,0	6,1	20,0	6
and newspaper	Newspapers, books and stationery	cp095	5,0	5,0	0,1	5,0	0,1	5,0	0,1	20,0	20,0	20,0	20,0	5,0	0,1	5,0	5,0	5.0	0,1	5,0	Ŭ
	Other articles of clothing and clothing accessories		20,0	20,0		20,0		20,0		20,0		20,0		20,0		5,0		20,0		20,0	1
	Shoes and other footwear	cp0321	20,0	20,0		20,0		20,0		20,0		20,0		20,0		5,0		20,0		20,0	
Culture and entertainment	Cultural services	cp0942	15,0	15,0	11,6	5,0	3,9	15,0	11,6	20,0	15,5	20,0	15,5	15,0	11,6	15,0	11,6	5,0	3,9	5,0	3
	Games of chance	cp0943	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	l l
	Other services n.e.c.	cp127	15,0	15,0		5,0		15,0		20,0		20,0		15,0		15,0		5,0		5,0	l l
	Recreational and sporting services Refuse collection	cp0941	15,0 15,0	15,0	45.0	5,0	5.0	15,0 15,0	45.0	20,0	00.0	20,0	00.0	15,0	45.0	15,0	45.0	5,0	5.0	5,0	-
 Street cleaning, refuse and sewerage services 	Sewerage collection	cp0442 cp0443	15,0	15,0 15.0	15,0	5,0 5.0	5,0	15,0	15,0	20,0 20.0	20,0	20,0 20.0	20,0	15,0 15,0	15,0	15,0 15.0	15,0	5,0 5.0	5,0	5,0 5.0	5,
9. Government services	Education	cp10	ex	10,0 ex	0,0	0,0 ex	0,0	10,0 ex	0,0	20,0 ex	0.0	20,0 ex	0,0	10,0 ex	0,0	ex	0,0	0,0 ex	0,0	ex	0.
	Hospital services	cp063	ex	ex	-,-	ex	-,-	ex	-,-	ex	-,-	ex	-,-	ex	-,-	ex	-,-	ex	-,-	ex	1
	Out-patient services	cp062	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	l l
	Social protection	cp124	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	<u> </u>
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	5,0	7,0	5,0	7,0		7,0	20,0	20,0	20,0	20
	Maintenance and repair of personal transport equi		20,0	20,0		20,0		20,0		20,0		5,0		5,0		5,0		20,0		20,0	l l
	Other services relating to the dwelling n.e.c.	cp0444	20,0	20,0		20,0		20,0		20,0		5,0		5,0		5,0		20,0		20,0	1
	Repair and hire of footwear Domestic services and household services	cp0322 cp0562	20,0 20,0	20,0 20,0		20,0 20,0		20,0 20,0		20,0 20,0		5,0 5,0		5,0 5,0		5,0 5,0		20,0 20,0		20,0 20,0	1
	Hairdressing salons and personal grooming establ		20,0	20,0		20,0		20,0		20,0		5,0		5,0		5,0		20,0		20,0	1
	Materials for the maintenance and repair of the dw		20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	1
	Services for the maintenance and repair of the dw		20,0	20,0		20,0		20,0		20,0		5,0		5,0		5,0		20,0		20,0	1
11.Post, tele and finansiel	Package holidays	cp096	20,0	20,0	10,2	20,0	10,2	20,0	10,2	20,0	10,2	20,0	10,2	20,0	10,2	5,0	6,8	20,0	10,2	20,0	10
services	Postal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
	Telephone and telefax equipment	cp082	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	ł
12 Electricity district beating	Telephone and telefax services	cp083	20,0	20,0	46.0	20,0	18.3	20,0	46.0	20,0	20.0	20,0	20.0	20,0	46.0	20,0	6.4	20,0	86	20,0	8
12. Electricity, district heating, gas and water supplies	Water supply Electricity	cp0441 cp0451	15,0 15,0	15,0 15,0	16,2	5,0 20,0	18,3	15,0 15,0	16,2	20,0 20,0	20,0	20,0 20,0	20,0	15,0 15,0	16,2	15,0 5.0	6,1	5,0 5,0	8,6	5,0 5,0	٤
and mater subblies	Gas	cp0451 cp0452	15,0	15,0		20,0		15,0		20,0		20,0		15,0		5,0		5,0		5,0	i
	Heat energy	cp0452	20,0	20,0		20,0		20,0		20,0		20,0		20,0		5,0		20,0		20,0	ł
	Liquid fuels	cp0453	20,0	20,0		20,0		20,0		20,0		20,0		20,0		5,0		20,0		20,0	ł
		cp0454	20.0	20.0		20.0		20.0		20.0		20.0		20.0		5.0		20.0		20.0	ł
	Solid fuels	CDU454	20.0														20,0				

COICOP data and CEVM sector g	rouping, shares used to calculate CEWRR		ed rates	Benchr		Parking rat Scenar		Zero rates Scenar	o 1B	Scenar	io 1C	Scenar	io 2A	Scena	rio 2B	Scena	ario 3	Scenar	rio 4A	Scenar	io 4B
			All VAT rates	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates	
CEVM sector	COICOP category	Codes	applied		CEWRR		CEWRR		CEWRR		CEWRR		CEWRR	applied	CEWRR		CEWRR	applied	CEWRR		CEWR
1. Food	Beer	cp0213	21,0	21,0	8,4	21,0	8,4	21,0	16,5	21,0	21,0	21,0	21,0	21,0	8,4	21,0	7,6	21,0	11,4	21,0	16
	Spirits	cp0211	21,0	21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0	ı
	Tobacco Wine	cp022 cp0212	21,0 21,0	21,0 21,0		21,0 21,0		21,0 21,0		21,0 21,0		21,0 21,0		21,0 21,0		13,5 13,5		21,0 21,0		21,0 21,0	ı
	Bread and cereals	cp0212	0,0	21,0		21,0		13,5		21,0		21,0		21,0		0,0		21,0		13,5	1
	Fish and seafood	cp0113	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Food products n.e.c.	cp0119	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Fruit	cp0116	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Meat	cp0112	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Milk, cheese and eggs	cp0114	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Oils and fats	cp0115	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Vegetables	cp0117	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Coffee, tea and cocoa Mineral waters, soft drinks, fruit and vegetable juic	cp0121 cp0122	0,0 21,0	0,0 21,0		0,0 21,0		13,5 21,0		21,0 21,0		21,0 21,0		0,0 21,0		0,0 21,0		5,0 21,0		13,5 21,0	1
	Sugar, jam, honey, chocolate and confectionery	cp0122	21,0	21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0	1
2. Personal transport Domestic		cp0735	ex	ex	0,0		0,0	ex	6,8	ex	10,5	ex	10,5	ex	0,0			ex	2,5	ex	(
·	Other services in respect of personal transport equ		ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
	Other purchased transport services	cp0736	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	4
	Passenger transport by air	cp0733	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
	Passenger transport by railway	cp0731	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
1	Passenger transport by road	cp0732	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	ı
International	Passenger transport by sea and inland waterway Combined passenger transport	cp0734 cp0735	ex 0,0	ex 0,0		ex 0,0		ex 13,5		ex 21,0		ex 21,0		ex 0,0		ex 0,0		ex 5,0		ex 13,5	·
memational	Other services in respect of personal transport equ		0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	i i
	Other purchased transport services	cp0736	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Passenger transport by air	cp0733	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Passenger transport by railway	cp0731	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Passenger transport by road	cp0732	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	J
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	—
3. Hotels	Accommodation services	cp112	13,5	13,5	13,5	13,5	13,5	13,5	13,5	21,0	21,0	13,5	13,5	13,5	13,5	13,5	13,5	5,0	5,0	13,5	13
4. Restaurants	Canteens Restaurants, cafés and the like	cp1112 cp1111	13,5 13.5	13,5 13.5	13,5	13,5 13.5	13,5	21,0 21,0	21,0	21,0 21,0	21,0	13,5 13.5	13,5	13,5 13.5	13,5	i 13,5 13.5	13,5	5,0	5,0	13,5 13.5	13
5. Construction of social Housing	Materials for the maintenance and repair of the dw		21,0	21,0	16,4	21,0	16,4	21,0	16,4	21,0	21,0	21,0	16,4	21,0	16,4		16,4	21,0	11,1	21,0	16
o. Construction of social fieldsing	Services for the maintenance and repair of the dw		13,5	13,5	10,4	13,5	10,4	13,5	10,4	21,0	21,0	13,5	10,4	13,5	10,4	13,5	10,4	5.0		13.5	1
6.Medical equip., books	Medical products, appliances and equipment	cp061	0,0	0,0	0,0	0,0	0,0	13,5	14,2	21,0	21,0	21,0	21,0	0,0	0,0		1,3	5,0	5.0	13,5	13
and newspaper	Newspapers, books and stationery	cp095	0,0	0,0		0,0		13,5		21,0		21,0		0,0		0,0		5,0		13,5	1
	Other articles of clothing and clothing accessories		0,0	0,0		0,0		21,0		21,0		21,0		0,0		13,5		5,0		13,5	1
	Shoes and other footwear	cp0321	0,0	0,0		0,0		21,0		21,0		21,0		0,0		13,5		5,0		13,5	
7. Culture and entertainment	Cultural services	cp0942	13,5	13,5	9,5	13,5	9,5	13,5	9,5	21,0	14,7	21,0	14,7	13,5	9,5	-	9,5	5,0	3,5	13,5	9
	Games of chance	cp0943	ex 13,5	ex 13,5		ex 13,5		ex		ex		ex		ex		ex		ex 5,0		ex	1
	Other services n.e.c. Recreational and sporting services	cp127 cp0941	13,5	13,5		13,5		13,5 13,5		21,0 21,0		21,0 21,0		13,5 13,5		13,5 13,5		5,0		13,5 13,5	1
8. Street cleaning, refuse	Refuse collection	cp0941 cp0442	13,5 ex	13,5 ex	0,0	13,5 ex	0,0	13,5 ex	0,0	21,0 ex	0,0		0,0	13,5 ex	0,0		0,0	5,0 ex	0,0	13,5 ex	0
and sewerage services	Sewerage collection	cp0442	ex	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex		ex	0,0	ex	
9. Government services	Education	cp10	ex	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0
	Hospital services	cp063	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
	Out-patient services	cp062	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
	Social protection	cp124	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	13,5	13,5	13,6		13,6	21,0	19,6	21,0	19,6		13,6	13,5	13,6		13,6	5,0	6,9	13,5	13
	Maintenance and repair of personal transport equi		13,5 13,5	13,5		13,5		21,0		21,0		13,5		13,5		13,5		5,0		13,5	1
	Other services relating to the dwelling n.e.c. Repair and hire of footwear	cp0444 cp0322	13,5	13,5 13,5		13,5 13,5		21,0 21,0		21,0 21,0		13,5 13,5		13,5 13,5		13,5 13,5		5,0 5,0		13,5 13,5	1
	Domestic services and household services	cp0562	ex	ex		ex		21,0 ex		21,0 ex		ex		ex		ex		ex		ex	1
	Hairdressing salons and personal grooming establ		13,5	13,5		13,5		21,0		21.0		13,5		13,5		13,5		5,0		13,5	1
	Materials for the maintenance and repair of the dw		21,0	21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0	i i
	Services for the maintenance and repair of the dw	cp0432	13,5	13,5		13,5		21,0		21,0		13,5		13,5		13,5		5,0		13,5	ı
11.Post, tele and finansiel	Package holidays	cp096	21,0	21,0	12,8	21,0	12,8	21,0	12,8	21,0	12,8	21,0	12,8	21,0	12,8	13,5	11,0	21,0	12,8	21,0	12
services	Postal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i i
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
	Insurance	cp125	ex 21,0	ex 21,0		ex 21,0		ex 21,0		ex 21,0		ex 21,0		ex 21,0		ex 21.0		ex 21,0		ex 21,0	ı
	Telephone and telefax equipment Telephone and telefax services	cp082 cp083	21,0	21,0		21,0 21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0	ı
12. Electricity, district heating,	Water supply	cp083	21,0	21,0 ex	13,0	21,0 ex	13,0	21,0 ex	20,2	21,0 ex	20,2	21,0 ex	20,2	21,0 ex	13,0		13,0	21,0 ex	4.8	21,0 ex	1:
gas and water supplies	Electricity	cp0441 cp0451	13,5	13,5	10,0	13,5	10,0	21,0	20,2	21,0	20,2	21,0	20,2	13,5	10,0	13,5	10,0	5,0	4,0	13,5	
C	Gas	cp0452	13,5	13,5		13,5		21,0		21,0		21,0		13,5		13,5		5,0		13,5	i i
	Heat energy	cp0455	13,5	13,5		13,5		21,0		21,0		21,0		13,5		13,5		5,0		13,5	
	Liquid fuels	cp0453	13,5	13,5		13,5		21,0		21,0		21,0		13,5		13,5		5,0		13,5	i i
	Solid fuels	cp0454	13,5	13,5		13,5		21,0		21,0		21,0		13,5		13,5		5,0		13,5	ı
13. Rest of economy			21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	21,0	2

cp011: Bread 4%, cereals 10% cp0114: Butter, cheese and cp0115: Oils and margarines 4%, animal or vegetable oils and fats 10%

3. Rest of economy		20,0	20,0	20,0	20,0	20,0
Note:						
p011: Bread 4%, cereals 10% cp0114: Butter, cheese a	nd diary products	4%; Milk 10%	%, Egg 10%			
p0115: Oils and margarines 4%, animal or vegetable oils and fats 106	%	cp061: Medi	cines 10%,	medical	equipment	4%

it Italy COICOP data and CEVM sector gr	ouping, shares used to calculate CEWRR			Super reduce Benchm		Scenar		Zero rates Scenari	o 1B	Scenari	o 1C	Scenar	io 2A	Scenar	io 2B	Scena	rio 3	Scenari	o 4A	Scenari	rio 4B
			All VAT rates	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates	
CEVM sector	COICOP category	Codes	applied		EWRR		CEWRR						CEWRR		CEWRR		CEWRR		CEWRR		CEWR
	Beer Spirits	cp0213 cp0211	20,0 20,0	20,0 20,0	8,8	20,0 20,0	8,8	20,0 20,0	10,8	20,0 20,0	20,0	20,0 20,0	20,0	20,0 20,0	8,8	20,0 20,0	8,1	20,0 20,0	6,2	20,0 20,0	10
	Tobacco	cp0211 cp022	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	
	Wine	cp0212	20,0	20,0		20,0		20,0		20,0		20,0		20,0		10,0		20,0		20,0	,
	Bread and cereals	cp0111	4,0	4,0		4,0		10,0		20,0		20,0		4,0		4,0		5,0		10,0	
	Fish and seafood	cp0113	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Food products n.e.c.	cp0119	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Fruit	cp0116	4,0	4,0		4,0		10,0		20,0		20,0		4,0		4,0		5,0		10,0	
	Meat Milk, cheese and eggs	cp0112 cp0114	10,0 10,0	10,0 10,0		10,0 10,0		10,0 10,0		20,0 20,0		20,0 20,0		10,0 10,0		10,0 10,0		5,0 5,0		10,0 10,0	
	Oils and fats	cp0114	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Vegetables	cp0117	4.0	4.0		4.0		10,0		20,0		20,0		4.0		4.0		5,0		10,0	
	Coffee, tea and cocoa	cp0121	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Mineral waters, soft drinks, fruit and vegetable juic		10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Sugar, jam, honey, chocolate and confectionery	cp0118	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Combined passenger transport	cp0735	ex	ex	1,4	ex	1,4	ex	6,4	ex	12,7	ex	12,7	ex	1,4	ex	1,4	ex	3,2	ex	c 6
	Other services in respect of personal transport equ		ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
	Other purchased transport services Passenger transport by air	cp0736 cp0733	ex 10,0	ex 10,0		ex 10,0		ex 10,0		ex 20,0		ex 20,0		ex 10,0		ex 10,0		ex 5,0		ex 10,0	
	Passenger transport by air Passenger transport by railway	cp0733 cp0731	10,0 ex	10,0 ex		10,0 ex		10,0 ex		20,0 ex		20,0 ex		10,0 ex		10,0 ex		5,0 ex		10,0 ex	
	Passenger transport by road	cp0731	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Passenger transport by sea and inland waterway	cp0734	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	1
International	Combined passenger transport	cp0735	0,0	0,0		0,0		10,0		20,0		20,0		0,0		0,0		5,0		10,0	
	Other services in respect of personal transport equ	cp0724	0,0	0,0		0,0		10,0		20,0		20,0		0,0		0,0		5,0		10,0	1
	Other purchased transport services	cp0736	0,0	0,0		0,0		10,0		20,0		20,0		0,0		0,0		5,0		10,0	
	Passenger transport by air	cp0733	0,0	0,0		0,0		10,0		20,0		20,0		0,0		0,0		5,0		10,0	
	Passenger transport by railway	cp0731 cp0732	0,0 0,0	0,0		0,0		10,0 10.0		20,0 20.0		20,0 20.0		0,0 0,0		0,0 0,0		5,0 5,0		10,0 10.0	
	Passenger transport by road Passenger transport by sea and inland waterway	cp0732	0,0	0,0		0,0		10,0		20,0		20,0		0,0		0,0		5,0 5.0		10,0	
	Accommodation services	cp0734	10,0	10,0	10,0	10,0	10,0	10,0	10.0	20,0	20,0	10,0	10,0	10,0	10,0	10,0	10,0		5,0	10,0) 10
4. Restaurants	Canteens	cp1112	4,0	4,0	9,5	4,0	9,5	20,0	20,0	20,0	20,0	10,0	10,0	10,0	10,0	10,0	10,0	5,0	5,0	10,0	10
	Restaurants, cafés and the like	cp1111	10,0	10,0		10,0		20,0		20,0		10,0		10,0		10,0		5,0		10,0	
5. Construction of social Housing	Materials for the maintenance and repair of the dw		20,0	20,0	11,7	20,0	11,7	20,0	11,7	20,0	20,0	20,0	11,7	20,0	11,7	20,0	11,7		7,6	20,0) 11
	Services for the maintenance and repair of the dwe	cp0432	10,0	10,0		10,0		10,0		20,0		10,0		10,0		10,0		5,0		10,0	—
	Medical products, appliances and equipment	cp061	10,0	10,0	8,6	10,0	8,6	10,0	10,7	20,0	20,0	20,0	20,0	10,0	8,6	10,0	7,8		6,1	10,0	10
	Newspapers, books and stationery Other articles of clothing and clothing accessories	cp095 cp0313	4,0 20,0	4,0 20,0		4,0 20,0		10,0 20,0		20,0 20,0		20,0 20,0		4,0 20,0		4,0 10,0		5,0 20,0		10,0 20,0	
	Other articles of clothing and clothing accessories Shoes and other footwear	cp0313	20,0	20,0		20,0		20,0		20,0		20,0		20,0		10,0		20,0		20,0	
	Cultural services	cp0942	10,0	10,0	12,5	10,0	12,5	10,0	12,5	20,0	14,5	20,0	14,5	10,0	12,5	10,0	12,5		11,5	10,0) 12
	Games of chance	cp0943	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Other services n.e.c.	cp127	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	
	Recreational and sporting services	cp0941	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	
5,	Refuse collection	cp0442	10,0	10,0	10,0	10,0	10,0	10,0	10,0	20,0	20,0	20,0	20,0	10,0	10,0	10,0	10,0		5,0	10,0	0 10
and sewerage services	Sewerage collection	cp0443	10,0	10,0		10,0		10,0		20,0		20,0		10,0		10,0		5,0		10,0	<u> </u>
9. Government services	Education Hospital services	cp10 cp063	ex ex	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	
	Out-patient services	cp063	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	d and a second s
	Social protection	cp002 cp124	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	20,0	20,0	17,9	20,0	17,9	20,0	20,0	20,0	20,0	10,0	10,3	10,0	10,3	10,0	10,3	20,0	18,0	20,0	18
	Maintenance and repair of personal transport equi		20,0	20,0		20,0		20,0		20,0		10,0		10,0		10,0		20,0		20,0	4
	Other services relating to the dwelling n.e.c.	cp0444	20,0	20,0		20,0		20,0		20,0		10,0		10,0		10,0		20,0		20,0	1
	Repair and hire of footwear	cp0322	20,0	20,0		20,0		20,0		20,0		10,0		10,0		10,0		20,0		20,0	1
	Domestic services and household services	cp0562	20,0	20,0		20,0		20,0		20,0		10,0		10,0		10,0		20,0		20,0	
	Hairdressing salons and personal grooming establ Materials for the maintenance and repair of the dw	cp1211 cp0431	20,0 20,0	20,0 20,0		20,0 20,0		20,0 20,0		20,0 20,0		10,0 20,0		10,0 20,0		10,0 20,0		20,0 20,0		20,0 20,0	
	Services for the maintenance and repair of the dwa		20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	
1.Post, tele and finansiel	Package holidays	cp0432	20,0	20,0	10,0	20,0	10,0	20,0	10,0	20,0	10,0	20,0	10,0	20,0	10,0	10,0	8,4	20,0	10,0	20,0	10
	Postal services	cp081	ex	ex	. 2,0	ex	,0	ex	. 2,0	ex	,0	ex	. 1,0	ex	,0	ex	-,,	ex	, 0	ex	4
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	4
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	-
	Telephone and telefax equipment	cp082	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	1
	Telephone and telefax services	cp083	20,0	20,0	10.5	20,0	10-	20,0	10	20,0		20,0		20,0		20,0		20,0		20,0	<u> </u>
Electricity, district heating,	Water supply	cp0441	10,0	10,0	10,0	10,0	10,0	10,0	19,1	20,0	20,0	20,0	20,0	10,0	10,0	10,0	10,0	5,0	5,0	10,0	1
gas and water supplies	Electricity Gas	cp0451 cp0452	10,0 10,0	10,0 10,0		10,0 10,0		20,0 20,0		20,0 20,0		20,0 20,0		10,0 10,0		10,0 10,0		5,0 5,0		10,0 10,0	
	Heat energy	cp0452	10,0	10,0		10,0		20,0		20,0		20,0		10,0		10,0		5,0		10,0	
				10,0		10,0		20,0		20,0		20,0		10,0		10,0		5,0		10,0	
	Liquid fuels	cp0453																			
	Liquid fuels Solid fuels	cp0453 cp0454	10,0 10,0	10,0		10,0		20,0		20,0		20,0		10,0		10,0		5,0		10,0	

COICOP data and CEVM sector or	rouping, shares used to calculate CEWRR	Reduce		Benchr		Parking rat Scenar		Zero rates Scenar	io 1B	Exemption: Scenari		Scenar	io 2A	Scena	rio 2B	Scena	rio 3	Scenar	io 4A	Scenar	io 4B
CELECT data and CEVIN SCOLO y			AII VAT													1					
CEVM sector		Codes	rates applied	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR
1. Food	COICOP category Beer	cp0213	applied 18.0	applied 18.0	18,0	applied 18.0	18.0	18,0	18.0	18,0	18,0	applied 18.0	18,0	18,0	18.0	18.0	16,4	18.0	18.0	18.0	18.0
1.1000	Spirits	cp0210	18,0	18,0	10,0	18,0	10,0	18,0	10,0	18,0	10,0	18,0	10,0	18,0	10,0	18,0	10,4	18,0	10,0	18,0	10,
	Tobacco	cp022	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	i i
	Wine	cp0212	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	i i
	Bread and cereals	cp0111	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Fish and seafood	cp0113	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Food products n.e.c. Fruit	cp0119 cp0116	18,0 18,0	18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0	i i
	Meat	cp0118	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Milk, cheese and eggs	cp0112	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Oils and fats	cp0115	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Vegetables	cp0117	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Coffee, tea and cocoa	cp0121	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Mineral waters, soft drinks, fruit and vegetable juice	cp0122	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Sugar, jam, honey, chocolate and confectionery	cp0118	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	0.7	18,0	
2. Personal transport Domestic	Combined passenger transport Other services in respect of personal transport equ	cp0735	18,0 5,0	18,0 5,0	3,7	18,0 5,0	3,7	18,0 5,0	3,7	18,0 18,0	9,0	18,0 18,0	9,0	18,0 5,0	3,7	18,0 5,0	3,7	18,0 5.0	3,7	18,0 5,0	3,
	Other purchased transport services	cp0724	18,0	18,0		5,0 18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Passenger transport by air	cp0736	5,0	5,0		5,0		5,0		18,0		18,0		5,0		5,0		5,0		5,0	i
	Passenger transport by railway	cp0731	5,0	5,0		5,0		5,0		18,0		18,0		5,0		5,0		5,0		5,0	i
	Passenger transport by road	cp0732	5,0	5,0		5,0		5,0		18,0		18,0		5,0		5,0		5,0		5,0	i
	Passenger transport by sea and inland waterway	cp0734	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
International	Combined passenger transport	cp0735	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i i
	Other services in respect of personal transport equ		ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i i
	Other purchased transport services	cp0736 cp0733	ex ex	ex		ex		ex ex		ex ex		ex		ex ex		ex		ex ex		ex ex	i i
	Passenger transport by air Passenger transport by railway	cp0733 cp0731	ex	ex ex		ex		ex ex		ex ex		ex		ex		ex ex		ex ex		ex	i i
	Passenger transport by road	cp0731	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i i
	Passenger transport by sea and inland waterway	cp0734	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i i
3. Hotels	Accommodation services	cp112	5,0	5,0	5,0	5,0	5,0	5,0	5,0	18,0	18,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0
4. Restaurants	Canteens	cp1112	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	5,0	5,0	5,0	5,0	5,0	5,0	18,0	18,0	18,0	18,
	Restaurants, cafés and the like	cp1111	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	<u> </u>
5. Construction of social Housing	Materials for the maintenance and repair of the dw		18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	11,6	18,0	11,6		18,0	18,0	18,0	18,0	18,
C Madiaal annia - baalla		cp0432 cp061	18,0 5,0	18,0 5,0	6,0	18,0 5,0	6,0	18,0 5,0	6,0	18,0 18,0	18,0	5,0 18,0	18,0	5,0 5,0	6,0	18,0 5,0	5,0	18,0 5,0	6,0	18,0 5,0	6,0
Medical equip., books and newspaper	Medical products, appliances and equipment Newspapers, books and stationery	cp061 cp095	5,0 5,0	5,0 5,0	6,0	5,0 5,0	6,0	5,0	6,0	18,0	18,0	18,0	18,0	5,0 5,0	6,0	5,0	5,0	5,0	6,0	5,0 5,0	6,0
and newspaper	Other articles of clothing and clothing accessories		18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	i i
	Shoes and other footwear	cp0321	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	i i
7. Culture and entertainment	Cultural services	cp0942	ex	ex	5,1	ex	5,1	ex	5,1	ex	7,5	ex	7,5	ex	5,1	ex	5,1	ex	5,1	ex	5,
	Games of chance	cp0943	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i i
	Other services n.e.c.	cp127	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i i
	Recreational and sporting services	cp0941	5,0	5,0		5,0		5,0		18,0		18,0		5,0		5,0		5,0		5,0	
8. Street cleaning, refuse	Refuse collection Sewerage collection	cp0442 cp0443	5,0 5,0	5,0 5.0	5,0	5,0 5,0	5,0	5,0 5.0	5,0	18,0 18,0	18,0	18,0 18,0	18,0	5,0 5,0	5,0	5,0 5.0	5,0	5,0 5.0	5,0	5,0 5.0	5,0
and sewerage services 9. Government services	Education	cp0443 cp10	5,0 ex	5,0 ex	0.0	5,0 ex	0.0	5,0 ex	0.0	18,0 ex	0.0	18,0 ex	0,0	5,0 ex	0,0		0,0	5,0 ex	0,0	5,0 ex	0.0
3. Government services	Hospital services	cp063	ex	ex	0,0	ex	0,0	ex	0,0	ex	0,0	- CA - PX	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,
	Out-patient services	cp062	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i i
	Social protection	cp124	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	I
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	5,0	6,8	5,0	6,8	5,0	6,8	18,0	18,0	18,0	18,
	Maintenance and repair of personal transport equip	cp0723	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	i i
	Other services relating to the dwelling n.e.c.	cp0444	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	i i
	Repair and hire of footwear	cp0322	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	i i
	Domestic services and household services	cp0562	18,0 18,0	18,0		18,0 18,0		18,0		18,0		5,0		5,0 5,0		5,0		18,0		18,0	i i
	Hairdressing salons and personal grooming establ Materials for the maintenance and repair of the dw		18,0	18,0 18,0		18,0		18,0 18.0		18,0 18,0		5,0 18,0		18,0		5,0 18,0		18,0 18,0		18,0 18,0	i i
	Services for the maintenance and repair of the dwa		18.0	18.0		18,0		18.0		18.0		5.0		5.0		5.0		18,0		18.0	i i
11.Post, tele and finansiel	Package holidays	cp096	0,0	0,0	4,9	18,0	9,6	0,0	4,9	18,0	9,6	18,0	9,6	0,0	4,9		6,2	5,0	6,2	5,0	6,
services	Postal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
	Telephone and telefax equipment	cp082	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	i
12 Electricity district besting	Telephone and telefax services	cp083	18,0 18,0	18,0	40.0	18,0	40.0	18,0	10.0	18,0 18,0	10.0	18,0 18,0	40.0	18,0	40.0	18,0	6.4	18,0	49.0	18,0	40
 Electricity, district heating, gas and water supplies 	Water supply Electricity	cp0441 cp0451	18,0	18,0 18,0	18,0	18,0 18.0	18,0	18,0 18,0	18,0	18,0	18,0	18,0	18,0	18,0 18,0	18,0	18,0 5,0	6,4	18,0 18,0	18,0	18,0 18,0	18,
gao ana wator supplies	Gas	cp0451 cp0452	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	i
	Heat energy	cp0455	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	i
	Liquid fuels	cp0453	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	i
	Solid fuels	cp0454	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	 _
13. Rest of economy			18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,

COICOP data and CEVM sector g	rouping, shares used to calculate CEWRR		d rates	Bench		Parking ra Scenar		Zero rates Scenar	io 1B	Exemption Scenar		Scenar	io 2A	Scena	rio 2B	Scena	rio 3	Scenar	io 4A	Scenario	4B
			AII VAT	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates			
CEVM sector	COICOP category	Codes	rates applied		CEWRR		CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR		CEWRR		CEWRR		CEWRR		CEWRR	VAT rates applied C	EWR
1. Food	Beer	cp0213	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	16,4	18,0	18,0	18,0	18
	Spirits	cp0211	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Tobacco	cp022	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
	Wine	cp0212	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
	Bread and cereals	cp0111	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Fish and seafood Food products n.e.c.	cp0113 cp0119	18,0 18,0	18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0	
	Fruit	cp0115	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Meat	cp0112	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18.0		18,0	
	Milk, cheese and eggs	cp0114	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Oils and fats	cp0115	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Vegetables	cp0117	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Coffee, tea and cocoa	cp0121	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Mineral waters, soft drinks, fruit and vegetable juice	cp0122	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
2. Personal transport Domestic	Sugar, jam, honey, chocolate and confectionery Combined passenger transport	cp0118 cp0735	18,0 5,0	18,0 5,0	2,5	18,0 5,0	5,0	18,0 5,0	2,5	18,0 18,0	18,0	18,0 18,0	18,0	18,0 5,0	2,5	18,0 5,0	2,5	18,0 5,0	5,0	18,0 5,0	5
2. Personal transport Domestic	Other services in respect of personal transport equ	cp0735	5,0	5,0	2,5	5,0	5,0	5,0	2,5	18,0	10,0	18,0	10,0	5,0	2,0	5,0	2,5	5,0	5,0	5,0	0
	Other purchased transport services	cp0724	5.0	5,0		5,0		5,0		18,0		18,0		5,0		5,0		5,0		5,0	
	Passenger transport by air	cp0733	5,0 5,0	5,0		5,0		5,0		18,0		18,0		5,0		5,0		5,0		5,0	
	Passenger transport by railway	cp0731	5,0	5,0		5,0		5,0		18,0		18,0		5,0		5,0		5,0		5,0	
	Passenger transport by road	cp0732	5,0	5,0		5,0		5,0		18,0		18,0		5,0		5,0		5,0		5,0	
	Passenger transport by sea and inland waterway	cp0734	5,0	5,0		5,0		5,0		18,0		18,0		5,0		5,0		5,0		5,0	
International	I Combined passenger transport	cp0735	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Other services in respect of personal transport equ Other purchased transport services	cp0724 cp0736	0,0 0,0	0,0 0,0		5,0 5,0		0,0 0,0		18,0 18,0		18,0 18,0		0,0 0,0		0,0 0,0		5,0 5,0		5,0 5,0	
	Passenger transport by air	cp0738	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Passenger transport by railway	cp0731	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Passenger transport by road	cp0732	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
3. Hotels	Accommodation services	cp112	5,0	5,0	5,0	5,0	5,0	5,0	5,0	18,0	18,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5
4. Restaurants	Canteens	cp1112	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	5,0	5,0	5,0	5,0	5,0	5,0	18,0	18,0	18,0	18
5. Construction of an aid Union	Restaurants, cafés and the like	cp1111	18,0	18,0	40.4	18,0		18,0	40.4	18,0	40.0	5,0	44.4	5,0		5,0	40.4	18,0		18,0	
5. Construction of social Housing	Materials for the maintenance and repair of the dw Services for the maintenance and repair of the dwa	cp0431 cp0432	18,0 9.0	18,0 9,0	13,4	18,0	11,4	18,0 9.0	13,4	18,0 18,0	18,0	18,0 5.0	11,4	18,0 5.0	11,4	18,0	13,4	18,0 5.0	11,4	18,0 5.0	11
6.Medical equip., books	Medical products, appliances and equipment	cp0432	9,0 5,0	9,0	6,0	÷1•	6,0	9,0 5,0	6,0	18,0	18,0	18,0	18,0	5,0	6,0	9,0	5,0	5,0	6,0	5,0	6
and newspaper	Newspapers, books and stationery	cp095	5,0	5,0	0,0	5,0	0,0	5,0	0,0	18,0	10,0	18,0	10,0	5,0	0,0	5,0	5,0	5,0	0,0	5,0	
	Other articles of clothing and clothing accessories	cp0313	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
	Shoes and other footwear	cp0321	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
Culture and entertainment	Cultural services	cp0942	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18
	Games of chance	cp0943	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Other services n.e.c.	cp127	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Recreational and sporting services Refuse collection	cp0941 cp0442	18,0 18,0	18,0 18,0	18,0	18,0 18,0	18,0	18,0 18,0	40.0	18,0 18,0	18,0	18,0 18,0	18,0	18,0 18,0	18,0	18,0 18,0	18,0	18,0 18,0	18,0	18,0 18,0	18
 Street cleaning, refuse and sewerage services 	Sewerage collection	cp0442 cp0443	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18
9. Government services	Education	cp10	ex	ex	2,4		2,4	ex	2,4	ex	2,4	ex	2,4	ex	2,4	ex	0,7	ex	2,4	ex	2
	Hospital services	cp063	ex	ex	_,.	ex	_,.	ex	_,.	ex	_, .	ex	_, .	ex	_, .	ex	•,.	ex	_,.	ex	-
	Out-patient services	cp062	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Social protection	cp124	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	18,0	18,0	18,0		18,0	18,0	18,0	18,0	18,0	5,0	6,8	5,0	6,8	5,0	6,8	18,0	18,0	18,0	18
	Maintenance and repair of personal transport equip		18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	
	Other services relating to the dwelling n.e.c. Repair and hire of footwear	cp0444 cp0322	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	
	Domestic services and household services	cp0322 cp0562	18,0 18,0	18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		5,0 5,0		5,0 5,0		5,0 5,0		18,0 18,0		18,0 18,0	
	Hairdressing salons and personal grooming establ		18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	
	Materials for the maintenance and repair of the dw	cp0431	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Services for the maintenance and repair of the dwe		18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	
11.Post, tele and finansiel	Package holidays	cp096	18,0	18,0	9,2	18,0	9,2	18,0	9,2	18,0	9,2	18,0	9,2	18,0	9,2	5,0	6,2	18,0	9,2	18,0	9
services	Postal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Telephone and telefax equipment	cp082	18,0 18,0	18,0 18,0		18,0	1	18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0	1	18,0 18,0		18,0 18,0	
12. Electricity, district heating,	Telephone and telefax services Water supply	cp083 cp0441	18,0	18,0	18,0	18,0 18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	6,4	18,0	18.0	18,0	18
gas and water supplies	Electricity	cp0441 cp0451	18,0	18,0	13,0	18,0	10,0	18,0	10,0	18,0	10,0	18,0	10,0	18,0	10,0	5.0	0,4	18,0	10,0	18,0	10
0	Gas	cp0452	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
	Heat energy	cp0455	18,0	18,0		18,0	1	18,0		18,0		18,0		18,0		5,0	1	18,0		18,0	
	Liquid fuels	cp0453	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
	Solid fuels	cp0454	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
13. Rest of economy			18.0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18

	ouping, shares used to calculate CEWRR			Benchr	narĸ	Scenar	io 1A	Scenar	rio 1B	Scenario	D 1 C	Scenari	io 2A	Scena	ario 2B	Scena	irio 3	Scenar	io 4A	Scenari	io 4B
			All VAT rates	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates	
CEVM sector	COICOP category	Codes	applied	applied	CEWRR	applied	CEWRR	applied	CEWRR	applied (EWRR		CEWRR	applied	CEWRR	applied	CEWRR	applied	CEWRR		CEWRF
	Beer	cp0213	15,0	15,0	4,5	15,0	4,5	15,0	7,4	15,0	15,0	15,0	15,0	15,0	4,5	5 15,0	3,7	15,0	5,3	15,0	6,
	Spirits	cp0211	15,0	15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0	1
	Tobacco	cp022	12,0	12,0		12,0		15,0		15,0		15,0		12,0		6,0		5,0		6,0	1
	Wine	cp0212	12,0	12,0		12,0		15,0		15,0		15,0		12,0		6,0		5,0		6,0	1
	Bread and cereals Fish and seafood	cp0111 cp0113	3,0	3,0		3,0 3,0		6,0 6,0		15,0 15,0		15,0 15,0		3,0 3,0		3,0 3,0		5,0 5,0		6,0 6,0	1
	Food products n.e.c.	cp0113	3,0	3,0 3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
	Fruit	cp0115	3.0	3,0		3.0		6.0		15,0		15,0		3,0		3,0		5.0		6.0	1
	Meat	cp0112	3.0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
	Milk, cheese and eggs	cp0114	3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
	Dils and fats	cp0115	3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
· · · · · · · · · · · · · · · · · · ·	Vegetables	cp0117	3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
c	Coffee, tea and cocoa	cp0121	3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
	Mineral waters, soft drinks, fruit and vegetable juic		3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
	Sugar, jam, honey, chocolate and confectionery	cp0118	3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	
	Combined passenger transport	cp0735	3,0	3,0	1,5	3,0	1,5	6,0	6,0	15,0	15,0	15,0	15,0	3,0	1,5			5,0	5,0	6,0	6,0
	Other services in respect of personal transport equ		3,0	3,0		3,0		6,0		15,0		15,0		3,0	1	3,0		5,0		6,0	
	Other purchased transport services	cp0736	3,0	3,0		3,0		6,0		15,0		15,0		3,0	1	3,0		5,0		6,0	
	Passenger transport by air	cp0733	3,0	3,0		3,0		6,0	1	15,0		15,0		3,0	1	3,0		5,0		6,0	
	Passenger transport by railway	cp0731 cp0732	3,0 3,0	3,0 3,0		3,0 3,0		6,0 6,0		15,0 15,0		15,0 15,0		3,0 3,0	1	3,0 3,0		5,0 5,0		6,0 6,0	
	Passenger transport by road Passenger transport by sea and inland waterway	cp0732 cp0734	3,0	3,0		3,0		6,0 6,0		15,0 15,0		15,0 15,0		3,0		3,0		5,0		6,0 6,0	1
	Combined passenger transport	cp0734 cp0735	0,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	
	Other services in respect of personal transport equ		0,0	0,0		0,0		6,0		15,0		15,0		0,0	1	0,0		5,0		6,0	
	Other purchased transport services	cp0736	0,0	0,0		0,0		6,0		15,0		15,0		0,0		0.0		5,0		6,0	1
	Passenger transport by air	cp0733	0,0	0,0		0,0		6,0		15,0		15,0		0,0		0,0		5,0		6,0	1
	Passenger transport by railway	cp0731	0,0	0,0		0,0		6,0		15,0		15,0		0,0		0,0		5,0		6,0	1
F	Passenger transport by road	cp0732	0,0	0,0		0,0		6,0		15,0		15,0		0,0		0,0		5,0		6,0	1
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		0,0		6,0		15,0		15,0		0,0		0,0		5,0		6,0	
	Accommodation services	cp112	3,0	3,0	3,0	3,0	3,0	6,0		15,0	15,0	6,0	6,0	6,0	6,0			5,0	5,0	6,0	6,0
	Canteens	cp1112	3,0	3,0	3,0	3,0	3,0	15,0	15,0	15,0	15,0	6,0	6,0	6,0	6,0		6,0	5,0	5,0	6,0	6,0
	Restaurants, cafés and the like	cp1111	3,0	3,0		3,0		15,0		15,0		6,0		6,0		6,0		5,0		6,0	· · · ·
	Materials for the maintenance and repair of the dw		15,0	15,0	9,7	15,0	9,7	15,0	11,0	15,0	15,0	15,0	11,0	15,0	11,0		9,7	15,0	10,6	15,0	11,0
	Services for the maintenance and repair of the dw	cp0432	3,0	3,0		3,0		6,0		15,0	45.0	6,0	45.0	6,0		3,0		5,0		6,0	
	Medical products, appliances and equipment Newspapers, books and stationery	cp061 cp095	3,0	3,0 3.0	3,0	3,0 3,0	3,0	6,0 6,0	6,8	15,0 15,0	15,0	15,0 15,0	15,0	3,0 3,0	3,0	0 3,0 3,0	3,3	5,0 5.0	5,0	6,0 6,0	6,0
	Other articles of clothing and clothing accessories	cp095	3,0	3,0		3,0		15,0		15,0		15,0		3,0		5,0 6,0		5,0		6,0	1
	Shoes and other footwear	cp0313	3,0	3,0		3.0		15,0		15,0		15,0		3,0		6,0		5.0		6,0	1
	Cultural services	cp0942	3.0	3,0	4,4	3,0	4,4	6,0	7.1	15,0	15,0	15,0	15,0	3,0	4,4			5,0	6.2	6,0	7.1
	Games of chance	cp0943	15,0	15,0	.,.	15,0	.,.	15,0	.,.	15,0	,.	15,0		15,0	.,.	15,0		15,0	-,-	15,0	1
	Other services n.e.c.	cp127	3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
F	Recreational and sporting services	cp0941	3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
8. Street cleaning, refuse F	Refuse collection	cp0442	3,0	3,0	3,0	3,0	3,0	6,0	6,0	15,0	15,0	15,0	15,0	3,0	3,0	3,0	3,0	5,0	5,0	6,0	6,0
and sewerage services S	Sewerage collection	cp0443	3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	<u> </u>
	Education	cp10	e>	ex ex	2,7	ex	2,7	ex	7,2	ex	13,7	ex	13,7	ex	2,7			ex	4,6	ex	5,5
	Hospital services	cp063	3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
	Out-patient services	cp062	3,0	3,0		3,0		6,0		15,0		15,0		3,0		3,0		5,0		6,0	1
	Social protection	cp124	3,0	3,0	7.0	3,0	7.0	15,0	45.0	15,0	45.0	15,0		3,0		6,0		5,0	7.0	6,0	
	Cleaning, repair and hire of clothing	cp0314	6,0	6,0	7,9	6,0	7,9	15,0	15,0	15,0	15,0	6,0	6,2	6,0	6,2			5,0	7,2	6,0	8,0
	Maintenance and repair of personal transport equi		6,0 6,0			6,0 6.0		15,0 15,0		15,0 15,0		6,0		6,0	1	6,0 6.0		5,0		6,0	
	Other services relating to the dwelling n.e.c. Repair and hire of footwear	cp0444 cp0322	6,0	6,0 6,0		6,0 6,0		15,0 15,0		15,0 15,0		6,0 6,0		6,0 6,0		6,0 6.0		5,0 5,0		6,0 6,0	
	Domestic services and household services	cp0522	15,0	15,0		15,0		15,0		15,0		6,0		6,0		6,0		5,0 15,0		15,0	
	Hairdressing salons and personal grooming establ	cp0302	6.0	6,0		6.0		15,0		15,0		6.0		6,0		6.0		5.0		6.0	
	Materials for the maintenance and repair of the dw	cp0431	15,0	15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0	
	Services for the maintenance and repair of the dwo	cp0432	3,0	3,0		3,0		15,0		15,0		6,0		6,0		6,0		5,0		6,0	L
	Package holidays	cp096	12,0	12,0	6,7	12,0	6,7	15,0	7,4	15,0	7,4	15,0	7,4	12,0	6,7	6,0	5,4	5,0	5,1	6,0	5,4
services F	Postal services	cp081	e	ex ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Financial services n.e.c.	cp126	e>	ex ex		ex		ex		ex		ex		ex	1	ex		ex		ex	
	Insurance	cp125	e>	ex ex		ex		ex	r.	ex		ex		ex		ex		ex		ex	
	Telephone and telefax equipment	cp082	15,0			15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0	
	Telephone and telefax services	cp083	15,0	15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0		15,0	
	Water supply	cp0441	3,0	3,0	8,3	3,0	8,3	6,0	14,7	15,0	15,0	15,0	15,0	3,0	8,3	3 3,0 6.0	5,9	5,0 5.0	7,7	6,0 6,0	8,4
J	Electricity Gas	cp0451 cp0452	6,0	6,0 6.0		6,0 6,0		15,0 15.0		15,0 15.0		15,0 15.0		6,0 6,0		6,0 6.0		5,0 5.0		6,0 6,0	
	Gas Heat energy	cp0452 cp0455	6,0	6,0 15,0		6,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		6,0 15,0		6,0 6,0		5,0 15,0		6,0 15,0	
	Heat energy Liquid fuels	cp0455 cp0453	15,0	15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0	1	6,0 6,0		15,0 15,0		15,0 15,0	
	Liquid fuels Solid fuels	cp0453 cp0454	15,0	15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		15,0 15,0		6,0 6.0		15,0 15,0		15,0 15,0	1
						I 10.0		10.0		10.0		10.0		10,01		0.0				15.0	
	Solid fuels	CD0434	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15 (

COICOP data and CEVM sector gr	rouping, shares used to calculate CEWRR		d rates	Benchi		Parking ra Scenar		Zero rates Scenar		Exemption Scenar		Scena	rio 2A	Scenari	o 2B	Scena	rio 3	Scenari	io 4A	Scenario	5 4B
			All VAT												-						
CEVM sector	COICOP category	Codes	rates applied	VAT rates applied	CEWRR	VAT rates applied C	EWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied C	CEWR								
1. Food	Beer	cp0213	18,0	18,0	3,9	18,0	7,8	18,0	3,9	18,0	18,0	18,0	18,0	18,0	3,9	18,0	2,4	18,0	7,8	18,0	7
	Spirits	cp0211	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Tobacco	cp022	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
	Wine	cp0212	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
	Bread and cereals	cp0111	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Fish and seafood Food products n.e.c.	cp0113 cp0119	0,0 0,0	0,0 0,0		5,0 5,0		0,0		18,0 18,0		18,0 18,0		0,0 0,0		0,0		5,0 5.0		5,0 5.0	
	Fruit	cp0116	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5.0		5,0	
	Meat	cp0112	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Milk, cheese and eggs	cp0114	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Oils and fats	cp0115	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Vegetables	cp0117	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Coffee, tea and cocoa	cp0121	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Mineral waters, soft drinks, fruit and vegetable juice	cp0122	18,0 0,0	18,0		18,0 5,0		18,0		18,0		18,0		18,0		18,0 0.0		18,0 5.0		18,0 5.0	
2. Personal transport Domestic	Sugar, jam, honey, chocolate and confectionery Combined passenger transport	cp0118 cp0735	0,0	0,0	0,0		5,0	0,0	0.0	18,0 18,0	18.0	18,0 18,0	18,0	0,0 0,0	0,0	0,0	0,0	5,0	5.0	5,0	5
2. Personal transport Domestic	Other services in respect of personal transport equ	cp0733	0,0	0,0	0,0	5,0	5,0	0,0	0,0	18,0	10,0	18,0	10,0	0,0	0,0	0,0	0,0	5,0	3,0	5,0	
	Other purchased transport services	cp0724	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Passenger transport by air	cp0733	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Passenger transport by railway	cp0731	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
1	Passenger transport by road	cp0732	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
International	Combined passenger transport	cp0735	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Other services in respect of personal transport equ Other purchased transport services	cp0724 cp0736	0,0 0,0	0,0 0,0		5,0 5,0		0,0 0,0		18,0 18,0		18,0 18,0		0,0 0,0		0,0 0,0		5,0 5,0		5,0 5,0	
	Passenger transport by air	cp0738	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Passenger transport by railway	cp0731	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Passenger transport by road	cp0732	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		5,0		0,0		18,0		18,0		0,0		0,0		5,0		5,0	
3. Hotels	Accommodation services	cp112	5,0	5,0	5,0	5,0	5,0	5,0	5,0	18,0	18,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5
4. Restaurants	Canteens	cp1112	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	5,0	5,0	5,0	5,0	5,0	5,0	18,0	18,0	18,0	18
	Restaurants, cafés and the like	cp1111	18,0	18,0	0.4	18,0		18,0	0.4	18,0	0.4	5,0	0.4	5,0	0.4	5,0	0.4	18,0	0.4	18,0	
5. Construction of social Housing	Materials for the maintenance and repair of the dw Services for the maintenance and repair of the dwa	cp0431 cp0432	18,0	18,0 ex	8,4	18,0 ex	8,4	18,0 ex	8,4	18,0	8,4	18,0	8,4	18,0 ex	8,4	18,0	8,4	18,0	8,4	18,0 ex	8
6.Medical equip., books	Medical products, appliances and equipment	cp0432	0,0	0,0	3,7		5,9	0,0	3,7	18,0	18,0	18,0	18,0	0,0	3,7	0,0	2,8	5,0	5,9	5,0	5
and newspaper	Newspapers, books and stationery	cp095	5.0	5,0	0,1	5,0	0,0	5.0	0,1	18,0	10,0	18,0	10,0	5,0	0,1	5,0	2,0	5,0	0,5	5,0	
	Other articles of clothing and clothing accessories	cp0313	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
	Shoes and other footwear	cp0321	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
Culture and entertainment	Cultural services	cp0942	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18
	Games of chance	cp0943	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Other services n.e.c.	cp127	18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Recreational and sporting services Refuse collection	cp0941 cp0442	18,0 18,0	18,0	18,0	18,0	40.0	18,0 18,0	40.0	18,0 18,0	40.0	18,0	40.0	18,0	18,0	18,0	18,0	18,0	40.0	18,0 18,0	
 Street cleaning, refuse and sewerage services 	Sewerage collection	cp0442 cp0443	18,0	18,0 18.0	18,0	18,0 18.0	18,0	18,0	18,0	18,0	18,0	18,0 18.0	18,0	18,0 18.0	18,0	18,0 18.0	18,0	18,0 18.0	18,0	18,0	18
9. Government services	Education	cp10	ex	ex	0,0		0,0	ex	0,0	ex	0.0	ex	0,0	ex	0,0	10,0 ex	0,0	ex	0.0	0,0	0.
	Hospital services	cp063	ex	ex	-,-	ex	-,-	ex	-,-	ex	-,-	0,0									
	Out-patient services	cp062	ex	ex		ex		ex		ex		0,0									
	Social protection	cp124	ex	ex		ex		ex		ex		0,0									
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	18,0	18,0	18,0		18,0	18,0	18,0	18,0	18,0		6,8	5,0	6,8	5,0	6,8	18,0	18,0	18,0	18
	Maintenance and repair of personal transport equip		18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	
	Other services relating to the dwelling n.e.c.	cp0444	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	
	Repair and hire of footwear Domestic services and household services	cp0322 cp0562	18,0 18,0	18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		5,0 5,0		5,0 5,0		5,0 5,0		18,0 18,0		18,0 18,0	
	Hairdressing salons and personal grooming establ		18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	
	Materials for the maintenance and repair of the dw		18,0	18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0		18,0	
	Services for the maintenance and repair of the dwe	cp0432	18,0	18,0		18,0		18,0		18,0		5,0		5,0		5,0		18,0		18,0	
11.Post, tele and finansiel	Package holidays	cp096	18,0	18,0	9,2	18,0	9,2	18,0	9,2	18,0	9,2	18,0	9,2	18,0	9,2	5,0	6,2	18,0	9,2	18,0	9
services	Postal services	cp081	ex	ex		ex		ex		ex		ex									
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex									
	Insurance	cp125	ex	ex		ex	1	ex	1	ex		ex		ex		ex		ex		ex	
	Telephone and telefax equipment Telephone and telefax services	cp082 cp083	18,0 18,0	18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0		18,0 18,0									
12. Electricity, district heating,	Water supply	cp083 cp0441	0,0	0,0	9.2		16,4	0,0	9.2	18,0	18.0	18,0	18,0	0,0	9.2	0,0	4.4	5,0	8.0	5,0	8
gas and water supplies	Electricity	cp0441 cp0451	5,0	5,0	5,2	18,0	10,4	5,0	3,2	18,0	10,0	18,0	10,0	5,0	5,2	5,0	-4,4	5,0	0,0	5,0	
	Gas	cp0452	15,0	15,0		18,0		15,0		18,0		18,0		15,0		5,0		5,0		5,0	
	Heat energy	cp0455	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
	Liquid fuels	cp0453	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
	Solid fuels	cp0454	18,0	18,0		18,0		18,0		18,0		18,0		18,0		5,0		18,0		18,0	
13. Rest of economy			18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18

COICOP data and CEVM sector o	rouping, shares used to calculate CEWRR		d rates	Benchr		Parking rat Scenar		Zero rates Scenari	o 1B	Exemption Scenari		Scenar	io 2A	Scena	rio 2B	Scena	rio 3	Scenar	io 4A	Scenar	io 4B
<u></u>			All VAT													1					<u></u>
CEVM sector	COICOP category	Codes	rates applied	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWR
1. Food	Beer	cp0213	appneu 19.0	appileu 19.0	7.9	appried 19.0	7.9	19,0	7.9	appileu 19,0	19,0	applied 19.0	19.0	19,0	7.9	19.0	6.7	appried 19.0	7.1	appileu 19.0	7
	Spirits	cp0211	19,0	19,0	.,.	19,0	.,.	19,0	.,.	19,0	,.	19,0		19,0	.,.	19,0	•,•	19,0	.,.	19,0	
	Tobacco	cp022	19,0	19,0		19,0		19,0		19,0		19,0		19,0		6,0		19,0		19,0	i
	Wine	cp0212	19,0	19,0		19,0		19,0		19,0		19,0		19,0		6,0		19,0		19,0	i
	Bread and cereals	cp0111	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	i
	Fish and seafood	cp0113	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	i
	Food products n.e.c.	cp0119	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
	Fruit	cp0116	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
	Meat	cp0112 cp0114	6,0	6,0		6,0		6,0 6.0		19,0		19,0		6,0		6,0 6.0		5,0		6,0	i
	Milk, cheese and eggs Oils and fats	cp0114 cp0115	6,0 6,0	6,0 6,0		6,0 6,0		6,0 6,0		19,0 19,0		19,0 19,0		6,0 6,0		6,0 6.0		5,0 5,0		6,0 6,0	i
	Vegetables	cp0115	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	i
	Coffee, tea and cocoa	cp0117	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	i
	Mineral waters, soft drinks, fruit and vegetable juic		6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
	Sugar, jam, honey, chocolate and confectionery	cp0118	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
2. Personal transport Domestic		cp0735	6,0	6,0	6,0	6,0	6,0	6,0	6.0	19,0	19,0	19,0	19,0	6,0	6,0		6,0	5,0	5.0	6,0	6
	Other services in respect of personal transport equ		6,0	6,0	0,0	6,0	-,-	6,0	-,-	19,0	,.	19,0		6,0	-,-	6,0		5,0	-,-	6,0	
	Other purchased transport services	cp0736	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
	Passenger transport by air	cp0733	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	i
	Passenger transport by railway	cp0731	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	i
	Passenger transport by road	cp0732	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
	Passenger transport by sea and inland waterway	cp0734	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
International	Combined passenger transport	cp0735	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
	Other services in respect of personal transport equ		6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
	Other purchased transport services	cp0736	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
	Passenger transport by air	cp0733	0,0	0,0		0,0		6,0		19,0		19,0		0,0		0,0		5,0		6,0	
	Passenger transport by railway	cp0731	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
	Passenger transport by road	cp0732	6,0 0,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
3. Hotels	Passenger transport by sea and inland waterway	cp0734	6,0	0,0	6.0	0,0 6,0	6.0	6,0 6,0	6.0	19,0 19,0	19,0	19,0 6,0	6,0	0,0 6,0	6,0	0,0	6.0	5,0 5.0	5,0	6,0 6,0	-
4. Restaurants	Accommodation services	cp112 cp1112	6,0	6,0	6,0	6,0	6,0	6,0	19,0	19,0	19,0	6,0	6,0	6,0	6,0	6,0	6,0	5,0	5,0	6,0	6, 6,
4. Nestaurants	Restaurants, cafés and the like	cp1112	6.0	6.0	0,0	6.0	0,0	19,0	15,0	19,0	15,0	6.0	0,0	6.0	0,0	6.0	0,0	5.0	5,0	6.0	. 0,
5. Construction of social Housing	Materials for the maintenance and repair of the dw	SP	19.0	19.0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19.0	15,3	19,0	15,3		19,0	19.0	19.0	19,0	19
5. Construction of Social Floasing	Services for the maintenance and repair of the dw		19,0	19.0	15,0	19,0	10,0	19,0	15,0	19,0	15,0	6.0	10,0	6.0	10,0	19,0	13,0	19,0	15,0	19,0	15,
6.Medical equip., books	Medical products, appliances and equipment	cp061	6,0	6,0	7,0	6,0	7.0	6,0	7.0	19,0	19,0	19,0	19,0	6,0	7,0		6,0	5,0	6,1	6,0	7
and newspaper	Newspapers, books and stationery	cp095	6,0	6,0	.,.	6,0	.,.	6,0	.,.	19,0	,.	19,0	,.	6,0	.,.	6,0		5,0	•,.	6,0	
	Other articles of clothing and clothing accessories		19,0	19,0		19,0		19,0		19,0		19,0		19,0		6,0		19,0		19,0	
	Shoes and other footwear	cp0321	19,0	19,0		19,0		19,0		19,0		19,0		19,0		6,0		19,0		19,0	
Culture and entertainment	Cultural services	cp0942	6,0	6,0	4,3	6,0	4,3	6,0	4,3	19,0	13,7	19,0	13,7	6,0	4,3	6,0	4,3	5,0	3,6	6,0	4
	Games of chance	cp0943	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Other services n.e.c.	cp127	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Recreational and sporting services	cp0941	6,0	6,0		6,0		6,0		19,0		19,0		6,0		6,0		5,0		6,0	
Street cleaning, refuse	Refuse collection	cp0442	ex	ex	0,0	ex	0,0	ex	0,0	ex	0,0		0,0	ex	0,0		0,0	ex	0,0	ex	0,
and sewerage services	Sewerage collection	cp0443	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
9. Government services	Education	cp10	ex	ex	4,6	ex	4,6	ex	4,6	ex	4,6	ex	4,6	ex	4,6		1,4	ex	4,6	ex	4
	Hospital services	cp063	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Out-patient services	cp062	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
10. Locally supplied services	Social protection Cleaning, repair and hire of clothing	cp124 cp0314	19,0 6,0	19,0 6,0	13,6	<u>19,0</u> 6,0	13,6	19,0 19,0	19,0	<u>19,0</u> 19,0	19,0	19,0 6,0	8,8	19,0 6,0	8,8	6,0 6,0	8,8	19,0 5,0	13,2	19,0 6,0	13
To: Locally supplied services	Maintenance and repair of personal transport equi		19,0	19,0	13,0	19,0	13,0	19,0	19,0	19,0	19,0	6,0	0,0	6,0	0,0	6,0	0,0	5,0 19,0	13,2	19,0	13
	Other services relating to the dwelling n.e.c.	cp0723	6,0	6,0		6,0		19,0		19,0		6,0		6,0		6,0		5,0		6,0	
	Repair and hire of footwear	cp0444 cp0322	6,0	6,0		6,0		19,0		19,0		6,0		6,0		6,0		5,0		6,0	
	Domestic services and household services	cp0562	19,0	19,0		19,0		19,0		19,0		6,0		6,0		6,0		19,0		19,0	
	Hairdressing salons and personal grooming establ		6,0	6,0		6,0		19,0		19,0		6,0		6,0		6,0		5,0		6,0	
	Materials for the maintenance and repair of the dw		19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Services for the maintenance and repair of the dw		6,0	6,0		6,0		19,0		19,0		6,0		6,0		6,0		5,0		6,0	
11.Post, tele and finansiel	Package holidays	cp096	ex	ex	2,2	ex	2,2	ex	2,2	ex	2,2	ex	2,2	ex	2,2	ex	2,2	ex	2,2	ex	2
services	Postal services	cp081	ex	ex		ex	,	ex	-	ex		ex		ex		ex	l .	ex		ex	i
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	i
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Telephone and telefax equipment	cp082	19,0	19,0		19,0	1	19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Telephone and telefax services	cp083	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
12. Electricity, district heating,	Water supply	cp0441	6,0	6,0	16,9	6,0	16,9	6,0	16,9	19,0	19,0	19,0	19,0	6,0	16,9	6,0	6,0	5,0	16,7	6,0	16
gas and water supplies	Electricity	cp0451	19,0	19,0		19,0		19,0		19,0		19,0		19,0		6,0		19,0		19,0	i
	Gas	cp0452	19,0	19,0		19,0		19,0		19,0		19,0		19,0		6,0		19,0		19,0	
	Heat energy	cp0455	19,0	19,0		19,0		19,0		19,0		19,0		19,0		6,0		19,0		19,0	
	Liquid fuels	cp0453	19,0	19,0		19,0		19,0		19,0		19,0		19,0		6,0		19,0		19,0	i
12. Post of conners:	Solid fuels	cp0454	19,0	19,0	40.0	19,0	40.0	19,0	40.0	19,0	40.0	19,0	19,0	19,0	40.0	6,0	19,0	19,0	40.0	19,0	
Rest of economy		1	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19

COICOP data and CEVM sector g	rouping, shares used to calculate CEWRR			Benchr	mark	Scenar	io 1A	Scenari	o 1B	Scenar	io 1C	Scena	rio 2A	Scena	rio 2B	Scena	rio 3	Scenar	io 4A	Scenario	94B
			All VAT rates	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates	
CEVM sector	COICOP category	Codes	applied	applied	CEWRR		CEWRR		CEWRR		CEWRR	applied	CEWRR		CEWRR		CEWRR		CEWRR		EWR
1. Food	Beer	cp0213	22,0	22,0	7,4	22,0	9,3	22,0	7,4	22,0	22,0	22,0	22,0	22,0	7,4	22,0	5,8	22,0	7,6	22,0	g
	Spirits	cp0211	22,0	22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0	
	Tobacco	cp022	22,0	22,0		22,0		22,0		22,0		22,0		22,0		7,0		22,0		22,0	
	Wine	cp0212	22,0	22,0		22,0		22,0		22,0		22,0		22,0		7,0		22,0		22,0	
	Bread and cereals	cp0111	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Fish and seafood Food products n.e.c.	cp0113 cp0119	7,0	3,0 7,0		7,0 7,0		3,0 7,0		22,0 22,0		22,0 22,0		3,0 7,0		3,0 7,0		5,0 5,0		7,0 7,0	
	Fruit	cp0115	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Meat	cp0110	7,0	3,0		7,0		3,0		22,0		22,0		3,0		3.0		5,0		7,0	
	Milk, cheese and eggs	cp0112	3,0	3,0		7,0		3,0		22,0		22,0		3,0		3,0		5,0		7,0	
	Oils and fats	cp0115	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Vegetables	cp0117	3.0	3,0		7,0		3,0		22,0		22,0		3,0		3,0		5,0		7,0	
	Coffee, tea and cocoa	cp0121	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Mineral waters, soft drinks, fruit and vegetable juic		7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Sugar, jam, honey, chocolate and confectionery	cp0118	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
2. Personal transport Domestic		cp0735	7,0	7,0	3,5	7,0	7,0	7,0	3,5	22,0	22,0	22,0	22,0	7,0	3,5	7,0	3,5	5,0	5,0	7,0	7
	Other services in respect of personal transport equ	cp0724	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Other purchased transport services	cp0736	7,0 7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Passenger transport by air	cp0733	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Passenger transport by railway	cp0731	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Passenger transport by road	cp0732	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Passenger transport by sea and inland waterway	cp0734	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	_
International	Combined passenger transport	cp0735	0,0	0,0		7,0		0,0		22,0		22,0		0,0		0,0		5,0		7,0	
	Other services in respect of personal transport equ		0,0	0,0		7,0		0,0		22,0		22,0		0,0		0,0		5,0		7,0	
	Other purchased transport services	cp0736	0,0	0,0		7,0		0,0		22,0		22,0		0,0		0,0		5,0		7,0	
	Passenger transport by air	cp0733	0,0	0,0		7,0		0,0		22,0		22,0		0,0		0,0		5,0		7,0	
	Passenger transport by railway	cp0731	0,0	0,0		7,0		0,0		22,0		22,0		0,0		0,0		5,0		7,0	
	Passenger transport by road	cp0732	0,0	0,0		7,0 7,0		0,0		22,0 22,0		22,0 22,0		0,0		0,0		5,0 5,0		7,0 7.0	
3 Hotels	Passenger transport by sea and inland waterway Accommodation services	cp0734 cp112	7,0	7,0	7.0	7,0	7.0	7,0	7.0	22,0	22,0	7,0	7,0	7,0	7,0	7,0	7,0	5,0	5,0	7,0	7
4. Restaurants	Canteens	cp1112	7,0	7,0	7,0	22,0	22,0	7,0	7,0	22,0	22,0	7,0	7,0	7,0	7,0	7,0	7,0	5,0	5,0	7,0	7
10380010113	Restaurants, cafés and the like	cp1111	7,0	7,0	7,0	22,0	22,0	7,0	1,0	22,0	22,0	7,0	7,0	7,0	7,0	7,0	7,0	5.0	5,0	7,0	'
5. Construction of social Housing	Materials for the maintenance and repair of the dw		22,0	22,0	14,2	22,0	14,2	22,0	14,2	22,0	22,0	22,0	14,2	22,0	14,2		14,2	22,0	13,1	22,0	14
	Services for the maintenance and repair of the dwe		7.0	7.0	,=	7,0	,=	7.0	,=	22,0	,•	7.0	,=	7,0	,=	7.0	,=	5.0	,.	7.0	
6.Medical equip., books	Medical products, appliances and equipment	cp061	7,0	7,0	7,0		8,2	7,0	7.0	22,0	22,0	22,0	22,0	7,0	7,0	7,0	7,0	5,0	5.0	7,0	7
and newspaper	Newspapers, books and stationery	cp095	7,0	7,0		7,0	- /	7,0		22,0		22,0		7,0		7,0		5,0	- / -	7,0	
	Other articles of clothing and clothing accessories	cp0313	7,0	7,0		22,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Shoes and other footwear	cp0321	7,0	7,0		22,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
Culture and entertainment	Cultural services	cp0942	7,0	7,0	7,0	7,0	7,0	7,0	7,0	22,0	22,0	22,0	22,0	7,0	7,0	7,0	7,0	5,0	5,0	7,0	7
	Games of chance	cp0943	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Other services n.e.c.	cp127	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
	Recreational and sporting services	cp0941	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
Street cleaning, refuse	Refuse collection	cp0442	7,0 7,0	7,0	7,0	7,0	7,0	7,0	7,0	22,0	22,0	22,0	22,0	7,0	7,0		7,0	5,0	5,0	7,0	7
and sewerage services	Sewerage collection	cp0443		7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
9. Government services	Education	cp10	ex	ex	4,6	ex	6,8	ex	4,6	ex	14,4	ex	14,4	ex	4,6		4,6	ex	3,3	ex	4
	Hospital services	cp063	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Out-patient services	cp062	7,0	7,0		7,0		7,0		22,0		22,0		7,0		7,0		5,0		7,0	
40 Laardhu susadia daar iyoo	Social protection	cp124	7,0	7,0	40.4	22,0	22,0	7,0 7,0	13,4	22,0	22,0	22,0	8,9	7,0	8,9	7,0		5,0	40.0	7,0	13
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314 cp0723	7,0 7,0	7,0	13,4	22,0 22,0	22,0	7,0	13,4	22,0 22,0	22,0	7,0 7,0	8,9	7,0 7,0	8,9	7,0 7,0	8,9	5,0 5,0	12,3	7,0 7,0	13
	Maintenance and repair of personal transport equi Other services relating to the dwelling n.e.c.	cp0723 cp0444	7,0	7,0		22,0				22,0				7,0		7,0		5,0			
	Repair and hire of footwear	cp0444 cp0322	7,0 7,0	7,0 7,0		22,0		7,0 7,0		22,0		7,0 7,0		7,0		7,0		5,0		7,0 7,0	
	Domestic services and household services	cp0522	22,0	22,0		22,0		22,0		22,0		7,0		7,0		7,0		22,0		22,0	
	Hairdressing salons and personal grooming establ		22,0	22,0		22,0		22,0		22,0		7,0		7,0		7,0		22,0		22,0	
	Materials for the maintenance and repair of the dw		22,0	22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0	
	Services for the maintenance and repair of the dw		7.0	7.0		22,0		7,0		22,0		7.0		7,0		7,0		5.0		7.0	
11.Post, tele and finansiel	Package holidays	cp096	22,0	22,0	11,1	22,0	11,1	22,0	11,1	22,0	11,1	22,0	11,1	22,0	11,1	7,0	7,7	22,0	11,1	22,0	11
services	Postal services	cp081	ex	ex	,.	ex	,.	ex	,.	ex	,.	ex	,.	ex	,.	ex	.,.	ex	,.	ex	
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Telephone and telefax equipment	cp082	22,0	22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0	
	Telephone and telefax services	cp083	22,0	22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0		22,0	
12. Electricity, district heating,	Water supply	cp0441	7,0	7,0	20,1	7,0	20,1	7,0	20,1	22,0	22,0	22,0	22,0	7,0	20,1	7,0	7,0	5,0	19,9	7,0	20
gas and water supplies	Electricity	cp0451	22,0	22,0		22,0		22,0		22,0		22,0		22,0		7,0		22,0		22,0	
	Gas	cp0452	22,0	22,0		22,0		22,0		22,0		22,0		22,0		7,0		22,0		22,0	
	Heat energy	cp0455	22,0	22,0		22,0		22,0		22,0		22,0		22,0		7,0		22,0		22,0	
	Liquid fuels	cp0453	22,0	22,0		22,0		22,0		22,0		22,0		22,0		7,0		22,0		22,0	
	Solid fuels	cp0454	22,0	22,0		22,0		22,0		22,0		22,0		22,0		7,0		22,0		22,0	
Rest of economy		1	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22,0	22

COICOP data and CEVM sector or	rouping, shares used to calculate CEWRR	rioduce	d rates	Benchi		Parking ra Scenar		Zero rates Scenar	io 1B	Exemption Scenar		Scena	rio 2A	Scena	rio 2B	Scena	ario 3	Scenar	io 4A	Scenar	io 4B
			AII VAT																		
CEVM sector	COICOP category	Codes	rates applied	VAT rates applied	CEWRR	VAT rates	CEWRR	VAT rates applied	CEWRR	VAT rates	CEWRF										
1. Food	Beer	cp0213	21,0	21.0	12,7	21.0	12.7	21,0	13.1	21,0	21.0	21,0	21.0	21,0	12.7	21,0	12,1	21.0	6 2	21,0	12
1.1000	Spirits	cp0210	21,0	21,0	12,7	21,0	12,7	21,0	10,1	21,0	21,0	21,0	21,0	21,0	12,1	21,0	12,1	21,0	0,2	21,0	1 12
	Tobacco	cp022	21,0	21,0		21,0		21,0		21,0		21,0		21,0		12,0		21,0		21,0	1
	Wine	cp0212	12,0	12,0		12,0		21,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Bread and cereals	cp0111	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Fish and seafood	cp0113	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Food products n.e.c. Fruit	cp0119	12,0 12,0	12,0 12,0		12,0 12,0		12,0 12,0		21,0 21.0		21,0 21.0		12,0 12,0		12,0 12,0		5,0		12,0 12.0	1
	Meat	cp0116 cp0112	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0 5,0		12,0	1
	Milk, cheese and eggs	cp0112 cp0114	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Oils and fats	cp0115	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Vegetables	cp0117	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Coffee, tea and cocoa	cp0121	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Mineral waters, soft drinks, fruit and vegetable juic	cp0122	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Sugar, jam, honey, chocolate and confectionery	cp0118	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0		12,0	I
2. Personal transport Domestic		cp0735	5,0	5,0	2,5	5,0	2,5	12,0	12,0	21,0	21,0	21,0	21,0	5,0	2,5			5,0	5,0	12,0	12
	Other services in respect of personal transport equ		5,0	5,0		5,0		12,0		21,0		21,0		5,0		5,0		5,0		12,0	1
	Other purchased transport services	cp0736 cp0733	5,0 5,0	5,0 5,0		5,0 5,0		12,0 12,0		21,0 21.0		21,0 21,0		5,0 5,0		5,0 5.0		5,0 5,0		12,0 12,0	1
	Passenger transport by air Passenger transport by railway	cp0733	5,0	5,0		5,0		12,0		21,0		21,0		5,0		5,0		5,0		12,0	1
	Passenger transport by road	cp0731	5.0	5,0		5,0		12,0		21,0		21,0		5,0		5.0		5.0		12,0	1
	Passenger transport by sea and inland waterway	cp0734	5.0	5.0		5.0		12.0		21.0		21,0		5.0		5.0		5.0		12,0	1
International	Combined passenger transport	cp0735	0,0	0,0		0,0		12,0		21,0		21,0		0,0		0,0		5,0		12,0	1
	Other services in respect of personal transport equ	cp0724	0,0	0,0		0,0		12,0		21,0		21,0		0,0		0,0		5,0		12,0	1
	Other purchased transport services	cp0736	0,0	0,0		0,0		12,0		21,0		21,0		0,0		0,0		5,0		12,0	1
	Passenger transport by air	cp0733	0,0	0,0		0,0		12,0		21,0		21,0		0,0		0,0		5,0		12,0	1
	Passenger transport by railway	cp0731	0,0	0,0		0,0		12,0		21,0		21,0		0,0		0,0		5,0		12,0	1
	Passenger transport by road	cp0732	0,0	0,0		0,0		12,0		21,0		21,0		0,0		0,0		5,0		12,0	1
3 Hotels	Passenger transport by sea and inland waterway	cp0734	0,0	0,0	10.0	0,0		12,0	10.0	21,0		21,0	40.0	0,0	10.0	0,0	10.0	5,0	5.0	12,0	
 Hotels Restaurants 	Accommodation services	cp112	12,0	12,0	12,0 10,6	12,0	12,0 10,6	12,0	12,0 18,6	21,0 ex	21,0 18,6	0 12,0	12,0 10,6	12,0	12,0 10,6	12,0	12,0 10,6	-,-	5,0	12,0	12 10
4. Restaurants	Canteens Restaurants, cafés and the like	cp1112 cp1111	12.0	ex 12.0	10,6	ex 12.0	10,6	ex 21.0	18,6	ex 21.0	18,0	12.0	10,6	ex 12.0	10,6	ex 12.0	10,6	ex 5.0	4,4	ex 12.0	10,
5. Construction of social Housing	Materials for the maintenance and repair of the dw		21,0	21,0	16,3	21,0	16,3	21,0	16,3	21,0	21,0		16,3	21,0	16,3	21,0	16,3	21,0	12,6	21,0	16
5. Construction of Social Flousing	Services for the maintenance and repair of the dw		12,0	12,0	10,0	12,0	10,0	12,0	10,0	21,0	21,0	12,0	10,0	12,0	10,0	12,0	10,5	5.0	12,0	12,0	10,
6.Medical equip., books	Medical products, appliances and equipment	cp061	12,0	12,0	12,6	12,0	12,6	12,0	12,6	21,0	21,0	21,0	21,0	12,0	12,6		12,0	5,0	6,1	12,0	12
and newspaper	Newspapers, books and stationery	cp095	12,0	12,0	,.	12,0	,.	12,0	,.	21,0	,.	21,0	,.	12,0	,.	12,0		5,0	.,.	12,0	
	Other articles of clothing and clothing accessories	cp0313	21,0	21,0		21,0		21,0		21,0		21,0		21,0		12,0		21,0		21,0	1
	Shoes and other footwear	cp0321	21,0	21,0		21,0		21,0		21,0		21,0		21,0		12,0		21,0		21,0	
Culture and entertainment	Cultural services	cp0942	12,0	12,0	8,1	12,0	8,1	12,0	8,1	21,0	14,1	21,0	14,1	12,0	8,1	12,0	8,1	5,0	3,4	12,0	8
	Games of chance	cp0943	ex	ex		ex		ex	1												
	Other services n.e.c.	cp127	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Recreational and sporting services	cp0941	ex	ex	10.0	ex	40.0	ex	10.0	ex		ex		ex	10.0	ex	40.0	ex	5.0	ex	10
 Street cleaning, refuse and sewerage services 	Refuse collection Sewerage collection	cp0442 cp0443	12,0 12.0	12,0 12.0	12,0	12,0 12.0	12,0	12,0 12.0	12,0	21,0 21.0	21,0	21,0	21,0	12,0 12.0	12,0	12,0 12.0	12,0	5,0 5.0	5,0	12,0 12.0	12,
9. Government services	Education	cp10	12,0 ex	12,0 ex	5,7	12,0 ex	5,7	12,0 ex	5,7	21,0 ex	10,0	21,0 ex	10,0	12,0 ex	5,7	12,0 ex		5,0 ex	2,4	12,0 ex	5
5. Government services	Hospital services	cp063	ex	ex	0,1	ex	0,1	ex	0,1	ex	10,0	ex	10,0	ex	0,7	ex	5,1	ex	2,4	ex	
	Out-patient services	cp062	12,0	12,0		12,0		12,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Social protection	cp124	ex	ex		ex		ex	1												
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	21,0	21,0	17,1	21,0	17,1	21,0	21,0	21,0	21,0	12,0	12,6	12,0	12,6	12,0	12,6	21,0	14,0	21,0	17
	Maintenance and repair of personal transport equi	cp0723	21,0	21,0		21,0		21,0		21,0		12,0		12,0		12,0		21,0		21,0	1
	Other services relating to the dwelling n.e.c.	cp0444	21,0	21,0		21,0		21,0		21,0		12,0		12,0		12,0		21,0		21,0	1
	Repair and hire of footwear	cp0322	21,0	21,0		21,0		21,0		21,0		12,0		12,0		12,0		21,0		21,0	1
	Domestic services and household services	cp0562	12,0	12,0		12,0		21,0		21,0		12,0		12,0		12,0		5,0		12,0	1
	Hairdressing salons and personal grooming establ Materials for the maintenance and repair of the dw		21,0 21,0	21,0 21,0		21,0 21.0		21,0 21,0		21,0 21.0		12,0 21.0		12,0 21,0		12,0 21,0		21,0 21.0		21,0 21.0	1
	Services for the maintenance and repair of the dw		21,0	21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0 12.0	1
11.Post, tele and finansiel	Package holidays	cp0432	21,0	21,0	12,4	21,0	12,4	21,0	12,4	21,0	12,4		12,4	21,0	12,4	12,0	11,6	21,0	12,4	21,0	12
services	Postal services	cp030	ex	21,0 ex	12,4	21,0 ex	12,4	21,0 ex	12,4	21,0 ex	12,7	ex	12,7	21,0 ex	12,4	ex	11,0	21,0 ex	12,4	21,0 ex	1 12
	Financial services n.e.c.	cp126	ex	ex		ex		ex	1												
	Insurance	cp125	ex	ex		ex		ex	1												
	Telephone and telefax equipment	cp082	21,0	21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0	1
	Telephone and telefax services	cp083	21,0	21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0		21,0	
12. Electricity, district heating,	Water supply	cp0441	12,0	12,0	12,4	12,0	12,4	12,0	19,6	21,0	21,0	21,0	21,0	12,0	12,4		12,0	5,0	5,7	12,0	12
gas and water supplies	Electricity	cp0451	12,0	12,0		12,0		21,0		21,0		21,0		12,0		12,0	1	5,0		12,0	1
	Gas	cp0452	12,0	12,0		12,0		21,0		21,0		21,0		12,0		12,0	1	5,0		12,0	1
	Heat energy	cp0455	12,0	12,0		12,0		21,0		21,0		21,0		12,0		12,0		5,0		12,0	1
	Liquid fuels	cp0453	21,0	21,0		21,0		21,0		21,0		21,0		21,0		12,0	1	21,0		21,0	1
13. Rest of economy	Solid fuels	cp0454	21,0 21,0	21,0 21,0	21,0	12,0 21,0	21,0	21,0 21,0	21,0	21,0 21,0	0.4										
IS. INEST OF ECONOMY	1	1	∠1,0	∠1,0	∠1,0	∠1,0	21,0	∠1,0	21,0	21,0	21,0	21,0	∠1,0	21,0	21,0	21,0	∠1,0	21,0	21,0	ade 158	21

COICOP data and CEVM sector g	rouping, shares used to calculate CEWRR			Benchr	mark	Scenar	io 1A	Scenar	io 1B	Scenar	io 1C	Scenar	io 2A	Scena	ario 2B	Scena	rio 3	Scenar	io 4A	Scenar	rio 4B
			All VAT rates	VAT rates		VAT rates		VAT rates		VAT rates											
CEVM sector	COICOP category	Codes	applied	applied	CEWRR	applied	CEWRR	applied	CEWRR	applied	CEW										
. Food	Beer	cp0213	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	17,9	19,0	19,0	19,0	
	Spirits	cp0211	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Tobacco Wine	cp022	19,0 19,0	19,0 19,0		10,0 10,0		19,0 19,0		19,0 19,0											
	Bread and cereals	cp0212 cp0111	19,0	19,0		19,0		19,0		19,0		19,0		19,0		10,0		19,0		19,0	
	Fish and seafood	cp0111 cp0113	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Food products n.e.c.	cp0113	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Fruit	cp0116	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Meat	cp0112	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Milk, cheese and eggs	cp0114	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Oils and fats	cp0115	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Vegetables	cp0117	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	,
	Coffee, tea and cocoa	cp0121	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	,
	Mineral waters, soft drinks, fruit and vegetable juic	cp0122	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0)
	Sugar, jam, honey, chocolate and confectionery	cp0118	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	r
Personal transport Domestic	Combined passenger transport	cp0735	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	1
	Other services in respect of personal transport equ	cp0724	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	e in the second s
	Other purchased transport services	cp0736	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Passenger transport by air	cp0733	19,0	19,0		19,0		19,0		19,0		19,0		19,0	1	19,0	1	19,0		19,0	
	Passenger transport by railway	cp0731	19,0	19,0		19,0		19,0		19,0		19,0		19,0	1	19,0	1	19,0		19,0	
	Passenger transport by road	cp0732	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
		cp0734	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0	<u> </u>	19,0		19,0	<u>+</u>
International	Combined passenger transport	cp0735	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Other services in respect of personal transport equ		19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Other purchased transport services	cp0736 cp0733	19,0 19,0	19,0 19,0		19,0		19,0 19,0		19,0 19,0		19,0 19,0		19,0 19,0		19,0 19,0		19,0 19,0		19,0 19,0	
	Passenger transport by air	cp0733 cp0731	19,0	19,0		19,0 19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Passenger transport by railway Passenger transport by road	cp0731	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Passenger transport by sea and inland waterway	cp0732	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
Hotels	Accommodation services	cp112	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	10,0	10,0	10,0	10,0	19,0	19,0	19,0	19,0	19,0	<u> </u>
Restaurants	Canteens	cp1112	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	10,0	10,0	10,0	10,0	10,0	10,0	19,0	19,0	19,0	
	Restaurants, cafés and the like	cp1111	19,0	19,0		19,0	,.	19,0		19,0	,.	10.0		10,0	,.	10,0	,.	19.0	,.	19.0	,
Construction of social Housing		cp0431	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	14,6	19,0	14,6		19,0	19,0	19,0	19,0	
0	Services for the maintenance and repair of the dwe	cp0432	19,0	19,0		19,0		19,0		19,0		10,0		10,0		19,0		19,0		19,0	,
Medical equip., books	Medical products, appliances and equipment	cp061	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	18,3	19,0	19,0	19,0	
and newspaper	Newspapers, books and stationery	cp095	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	r.
	Other articles of clothing and clothing accessories	cp0313	19,0	19,0		19,0		19,0		19,0		19,0		19,0		10,0		19,0		19,0	
	Shoes and other footwear	cp0321	19,0	19,0		19,0		19,0		19,0		19,0		19,0		10,0		19,0		19,0	1
. Culture and entertainment	Cultural services	cp0942	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	
	Games of chance	cp0943	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
		cp127	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	1
	Recreational and sporting services	cp0941	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
. Street cleaning, refuse		cp0442	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	
and sewerage services	Sewerage collection	cp0443	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	_
. Government services	Education	cp10	ex	ex	2,5	ex	1,3	ex	2,5	ex											
	Hospital services	cp063	ex	ex		ex		ex		ex											
	Out-patient services Social protection	cp062 cp124	ex 19,0	ex 19,0		ex 10,0		ex 19,0		ex 19,0											
0. Locally supplied services	Cleaning, repair and hire of clothing	cp124 cp0314	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	11,2	19,0	11,2		11,2	19,0	19,0	19,0	<u> </u>
o. Locally supplied services	Maintenance and repair of personal transport equi		19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	10,0	11,2	10,0	11,2	10,0	11,2	19,0	19,0	19,0	
	Other services relating to the dwelling n.e.c.	cp0/23	19,0	19,0		19,0		19,0		19,0		10,0		10,0		10,0		19,0		19,0	
	Repair and hire of footwear	cp0444	19,0	19,0		19,0		19,0		19,0		10,0		10,0		10,0		19,0		19,0	
	Domestic services and household services	cp0562	19,0	19,0		19,0		19,0		19,0		10,0		10,0		10,0		19,0		19,0	
	Hairdressing salons and personal grooming establ		19,0	19,0		19,0		19,0		19,0		10,0		10,0		10,0		19,0		19,0	
	Materials for the maintenance and repair of the dw		19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Services for the maintenance and repair of the dwe		19,0	19,0		19,0		19,0		19,0		10,0		10,0		10,0		19,0		19,0	,
.Post, tele and finansiel	Package holidays	cp096	19,0	19,0	10,0	19,0	10,0	19,0	10,0	19,0	10,0	19,0	10,0	19,0	10,0	10,0	7,9	19,0	10,0	19,0	
ervices	Postal services	cp081	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex	6										
		cp125	ex	ex		ex	1	ex	1	ex		ex	c								
	Telephone and telefax equipment	cp082	19,0	19,0		19,0		19,0		19,0		19,0		19,0	1	19,0	1	19,0		19,0	
	Telephone and telefax services	cp083	19,0	19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0		19,0	
2. Electricity, district heating,	Water supply	cp0441	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	11,0	19,0	19,0	19,0	1
as and water supplies	Electricity	cp0451	19,0	19,0		19,0		19,0		19,0		19,0		19,0	1	10,0	1	19,0		19,0)
	Gas	cp0452	19,0	19,0		19,0		19,0		19,0		19,0		19,0		10,0		19,0		19,0	
	Heat energy	cp0455	19,0	19,0		19,0		19,0		19,0		19,0		19,0	1	10,0	1	19,0		19,0	
	Liquid fuels	cp0453	19,0	19,0		19,0		19,0		19,0		19,0		19,0	1	10,0	1	19,0		19,0	4
	Solid fuels	cp0454	19,0	19,0		19,0		19,0		19,0		19,0		19,0		10,0		19,0		19,0	4
 Rest of economy 			19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	19,0	4

COICOP data and CEVM sector or	rouping, shares used to calculate CEWRR		d rates	Benchr		Parking rat Scenar		Zero rates Scenari	o 1B	Exemption Scenar	-	Scena	rio 2A	Scenar	io 2B	Scena	rio 3	Scenar	io 4A	Scenari	io 4R
Sector data and of the sector g	Supring, shares used to calculate CLWAR		AII VAT						- L												
CEVM sector	COICOP category	Codes	rates applied	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWR
1. Food	Beer	cp0213	20.0	20.0	10.4	20,0	10.4	20,0	10.4	20,0	20,0	20,0	20,0	20,0	10.4	20,0	9.1	20.0	7.4	20,0	10.
	Spirits	cp0211	20,0	20,0		20,0		20,0	,.	20,0	,	20,0		20,0	,.	20,0	•, ·	20,0	.,.	20,0	,
	Tobacco	cp022	20,0	20,0		20,0		20,0		20,0		20,0		20,0		8,5		20,0		20,0	i
	Wine	cp0212	20,0	20,0		20,0		20,0		20,0		20,0		20,0		8,5		20,0		20,0	i
	Bread and cereals	cp0111	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i.
	Fish and seafood	cp0113	8,5 8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5 8,5		5,0		8,5 8,5	i.
	Food products n.e.c. Fruit	cp0119 cp0116	8,5	8,5 8,5		8,5 8,5		8,5 8,5		20,0 20,0		20,0 20,0		8,5 8,5		8,5 8,5		5,0 5,0		8,5	i.
	Meat	cp0112	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8.5		5,0		8,5	i
	Milk, cheese and eggs	cp0114	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i
	Oils and fats	cp0115	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i
	Vegetables	cp0117	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i
	Coffee, tea and cocoa	cp0121	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i
	Mineral waters, soft drinks, fruit and vegetable juice	cp0122	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i
2 Demonstrate Demonstra	Sugar, jam, honey, chocolate and confectionery	cp0118	8,5 8,5	8,5	5.0	8,5	0.5	8,5	5.0	20,0	00.0	20,0	00.0	8,5	5.0	8,5	5.0	5,0	5.0	8,5	
2. Personal transport Domestic	Combined passenger transport Other services in respect of personal transport equ	cp0735	8,5 8,5	8,5 8,5	5,2	8,5 8,5	8,5	8,5 8,5	5,2	20,0 20,0	20,0	20,0 20,0	20,0	8,5 8,5	5,2	8,5 8,5	5,2	5,0 5,0	5,0	8,5 8,5	8
	Other purchased transport services	cp0724	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i
	Passenger transport by air	cp0730	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	
	Passenger transport by railway	cp0731	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	
	Passenger transport by road	cp0732	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i
	Passenger transport by sea and inland waterway	cp0734	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	
International	Combined passenger transport	cp0735	0,0	0,0		8,5		0,0		20,0		20,0		0,0		0,0		5,0		8,5	
	Other services in respect of personal transport equ	cp0724	0,0	0,0		8,5		0,0		20,0		20,0		0,0		0,0		5,0		8,5	i
	Other purchased transport services Passenger transport by air	cp0736 cp0733	0,0 0,0	0,0 0,0		8,5 8,5		0,0 0.0		20,0 20,0		20,0 20,0		0,0 0,0		0,0 0,0		5,0 5,0		8,5 8,5	i
	Passenger transport by ail	cp0733	0,0	0,0		8,5		0,0		20,0		20,0		0,0		0,0		5,0		8,5	i
	Passenger transport by road	cp0732	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		8,5		0,0		20,0		20,0		0,0		0,0		5,0		8,5	
3. Hotels	Accommodation services	cp112	8,5	8,5	8,5	8,5	8,5	8,5	8,5	20,0	20,0	8,5	8,5	8,5	8,5	8,5	8,5	5,0	5,0	8,5	8,
4. Restaurants	Canteens	cp1112	8,5	8,5	8,5	20,0	20,0	8,5	8,5	20,0	20,0	8,5	8,5	8,5	8,5	8,5	8,5	5,0	5,0	8,5	8,
	Restaurants, cafés and the like	cp1111	8,5	8,5		20,0		8,5		20,0		8,5		8,5		8,5		5,0		8,5	
Construction of social Housing	Materials for the maintenance and repair of the dw		20,0 8.5	20,0 8.5	14,1	20,0 8.5	14,1	20,0 8.5	14,1	20,0 20,0	20,0	20,0	14,1	20,0 8,5	14,1	20,0	14,1	20,0	12,3	20,0	14
6.Medical equip., books	Services for the maintenance and repair of the dwa Medical products, appliances and equipment	cp0432 cp061	8,5	8,5	9,4	8,5	9,4	8,5 8,5	9,4	20,0	20,0	8,5	20,0	8,5	9,4	8,5	8,5	5,0	6,1	8,5	9
and newspaper	Newspapers, books and stationery	cp095	8,5	8,5 8,5	9,4	8,5 8,5	9,4	8,5	9,4	20,0	20,0	20,0	20,0	8,5	9,4	8,5 8,5	0,0	5,0	0,1	8,5	9
and nonopapor	Other articles of clothing and clothing accessories		20,0	20,0		20,0		20,0		20,0		20,0		20,0		8,5		20,0		20,0	i
	Shoes and other footwear	cp0321	20,0	20,0		20,0		20,0		20,0		20,0		20,0		8,5		20,0		20,0	i
Culture and entertainment	Cultural services	cp0942	8,5	8,5	8,5	8,5	8,5	8,5	8,5	20,0	20,0	20,0	20,0	8,5	8,5	8,5	8,5	5,0	5,0	8,5	8
	Games of chance	cp0943	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i.
	Other services n.e.c.	cp127	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	
	Recreational and sporting services	cp0941	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	
 Street cleaning, refuse and sewerage services 	Refuse collection Sewerage collection	cp0442 cp0443	8,5 8,5	8,5 8,5	8,5	8,5 8,5	8,5	8,5 8,5	8,5	20,0 20,0	20,0	20,0 20,0	20,0	8,5 8,5	8,5	8,5 8,5	8,5	5,0 5.0	5,0	8,5 8,5	8,
9. Government services	Education	cp0443	ex	0,5 ex	5.5	0,5 ex	7,2	0,5 ex	5,5	20,0 ex	13.1	20,0 ex	13,1	ex	5,5	0,5 ex	5,5	5,0 ex	3.3	0,5 ex	5,
	Hospital services	cp063	ex	ex	0,0	ex	· ,=	ex	0,0	ex	10,1	ex	10,1	ex	0,0	ex	0,0	ex	0,0	ex	
	Out-patient services	cp062	8,5	8,5		8,5		8,5		20,0		20,0		8,5		8,5		5,0		8,5	i
	Social protection	cp124	8,5	8,5		20,0		8,5		20,0		20,0		8,5		8,5		5,0		8,5	
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	20,0	20,0	18,9	20,0	20,0	20,0	18,9	20,0	20,0	8,5	10,0	8,5	10,0	8,5	10,0	20,0	18,6	20,0	18
	Maintenance and repair of personal transport equip	cp0723	20,0	20,0		20,0		20,0		20,0		8,5		8,5		8,5		20,0		20,0	
	Other services relating to the dwelling n.e.c.	cp0444	20,0	20,0		20,0		20,0		20,0		8,5		8,5		8,5		20,0		20,0	i
	Repair and hire of footwear	cp0322	20,0 20,0	20,0		20,0		20,0		20,0		8,5		8,5		8,5		20,0		20,0	i
	Domestic services and household services Hairdressing salons and personal grooming establ	cp0562	20,0	20,0 20,0		20,0 20,0		20,0 20,0		20,0 20,0		8,5 8,5		8,5 8,5		8,5 8,5		20,0 20,0		20,0 20,0	i
	Materials for the maintenance and repair of the dw		20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	
	Services for the maintenance and repair of the dwa		8.5	8.5		20,0		8.5		20,0		8.5		8.5		8.5		5.0		8.5	i
11.Post, tele and finansiel	Package holidays	cp096	20,0	20,0	10,4	20,0	10,4	20,0	10,4	20,0	10,4	20,0	10,4	20,0	10,4	8,5	7,8	20,0	10,4	20,0	10
services	Postal services	cp081	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Insurance	cp125	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Telephone and telefax equipment	cp082	20,0	20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0		20,0	
12 Electricity district beating	Telephone and telefax services	cp083	20,0	20,0	40.0	20,0	40.0	20,0	40.0	20,0	00.0	20,0	00.0	20,0	40.0	20,0	0.5	20,0	18.2	20,0	4.5
 Electricity, district heating, gas and water supplies 	Water supply Electricity	cp0441 cp0451	8,5 20,0	8,5 20,0	18,6	8,5 20,0	18,6	8,5 20,0	18,6	20,0 20,0	20,0	20,0 20,0	20,0	8,5 20,0	18,6	8,5 8,5	8,5	5,0 20,0	18,2	8,5 20,0	18
gas and water supplies	Gas	cp0451 cp0452	20,0	20,0		20,0		20,0		20,0		20,0		20,0		8,5 8,5		20,0		20,0	
	Heat energy	cp0452	20,0	20,0		20,0		20,0		20,0		20,0		20,0		8,5		20,0		20,0	i
	Liquid fuels	cp0453	20,0	20,0		20,0		20,0		20,0		20,0		20,0		8,5		20,0		20,0	
	Solid fuels	cp0454	20,0	20,0		20,0		20,0		20,0		20,0		20,0		8,5		20,0		20,0	
					20,0	20,0				20,0	20,0			20,0	20,0		20,0		20,0	20,0	20

COICOP data and CEVM sector grou	uping, shares used to calculate CEWRR	Reduce		Super reduce Benchr		Scena		Zero rates Scenar	io 1B	Exemptions Scenari		Scenar	io 2A	Scenario	2B	Scena	rio 3	Scenari	o 4A	Scenario	4B
	· · · · · · · · · · · · · · · · · · ·		All VAT																		
CEVM sector	COICOP category	Codes	rates applied	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied C	EWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied C	EWR
	eer	cp0213	16.0	16.0	6.8	applied 16,0	6.8	16,0	8.1	16,0	16.0	16,0	16.0	16.0	6.8	16,0	5.8	16.0	6.3	16,0	8
	pirits	cp0211	16,0	16,0	- , -	16,0	- / -	16,0	- ,	16,0	- / -	16,0	- / -	16,0		16,0		16,0	- , -	16,0	
Tc	obacco	cp022	16,0	16,0		16,0		16,0		16,0		16,0		16,0		7,0		16,0		16,0	
w	/ine	cp0212	16,0	16,0		16,0		16,0		16,0		16,0		16,0		7,0		16,0		16,0	
Br	read and cereals	cp0111	4,0	4,0		4,0		7,0		16,0		16,0		4,0		4,0		5,0		7,0	
	ish and seafood	cp0113	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	ood products n.e.c.	cp0119	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	ruit	cp0116	4,0	4,0		4,0		7,0		16,0		16,0		4,0		4,0		5,0		7,0	
	leat lilk, cheese and eggs	cp0112 cp0114	7,0	7,0 4,0		7,0 4,0		7,0 7,0		16,0 16,0		16,0 16,0		7,0 4,0		7,0 4,0		5,0 5,0		7,0 7,0	
	hik, cheese and eggs vils and fats	cp0114 cp0115	4,0	4,0 4,0		4,0		7,0		16,0		16,0		4,0		4,0 4,0		5,0 5,0		7,0	
	egetables	cp0115 cp0117	4,0	4,0		4,0		7,0		16,0		16,0		4,0		4,0		5,0		7,0	
	offee, tea and cocoa	cp0121	7,0	4,0		4,0		7,0		16,0		16,0		7,0		4,0		5,0		7,0	
	lineral waters, soft drinks, fruit and vegetable juic		7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	ugar, jam, honey, chocolate and confectionery	cp0118	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7.0		5.0		7,0	
	combined passenger transport	cp0735		7,0	6,6		6,6	7,0	7,0	16,0	16,0	16,0	16,0	7,0	6,6	7,0	6,6	5,0	5,0	7,0	7
	ther services in respect of personal transport equ		7,0 7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	ther purchased transport services	cp0736	7,0 7,0	7,0		7,0	1	7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	assenger transport by air	cp0733	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	assenger transport by railway	cp0731	7,0	7,0		7,0	1	7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	assenger transport by road	cp0732	7,0	7,0		7,0	1	7,0		16,0		16,0		7,0		7,0		5,0		7,0	
Pr	assenger transport by sea and inland waterway	cp0734	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	ombined passenger transport	cp0735	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	ther services in respect of personal transport equ		7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	ther purchased transport services	cp0736	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	assenger transport by air	cp0733	0,0	0,0		0,0		7,0		16,0		16,0		0,0		0,0		5,0		7,0	
	assenger transport by railway	cp0731	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	assenger transport by road	cp0732 cp0734	7,0	7,0 0.0		7,0		7,0 7,0		16,0 16,0		16,0 16,0		7,0 0,0		7,0 0,0		5,0 5,0		7,0	
	assenger transport by sea and inland waterway ccommodation services	cp0734	7,0	7,0	7,0	*,*	7.0	7,0	7.0	16,0	16,0	7,0	7,0	7,0	7,0	7,0	7.0	5,0	5,0	7,0	7
0.1101010	anteens	cp112	7,0	7,0	7,0		7,0	16,0	16,0	16,0	16,0	7,0	7,0	7,0	7,0	7,0	7,0	5,0	5,0	7,0	7
	estaurants, cafés and the like	cp1111	7,0	7.0	1,0	7.0	1,0	16.0	.0,0	16,0	10,0	7.0	7,0	7.0	.,0	7.0	7,0	5.0	0,0	7.0	
	laterials for the maintenance and repair of the dw		16,0	16,0	8,4	16,0	8,4	16,0	8,4	16,0	16,0	16,0	8,4	16,0	8,4	16,0	8,4	16,0	6,7	16,0	8
	ervices for the maintenance and repair of the dw	cp0432	7,0	7,0		7,0		7,0		16,0		7,0		7,0		7,0		5,0		7,0	
6.Medical equip., books M	ledical products, appliances and equipment	cp061	4,0	4,0	5,0	4,0	5,0	7,0	7,8	16,0	16,0	16,0	16,0	4,0	5,0	4,0	4,3	5,0	5,9	7,0	7
and newspaper Ne	lewspapers, books and stationery	cp095	4,0	4,0		4,0		7,0		16,0		16,0		4,0		4,0		5,0		7,0	
O	ther articles of clothing and clothing accessories	cp0313	16,0	16,0		16,0		16,0		16,0		16,0		16,0		7,0		16,0		16,0	
SI	hoes and other footwear	cp0321	16,0	16,0		16,0		16,0		16,0		16,0		16,0		7,0		16,0		16,0	
	ultural services	cp0942	7,0	7,0	4,1	7,0	4,1	7,0	4,1	16,0	9,3	16,0	9,3	7,0	4,1	7,0	4,1	5,0	2,9	7,0	4
	ames of chance	cp0943	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	other services n.e.c.	cp127	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	ecreational and sporting services	cp0941	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
	efuse collection	cp0442 cp0443	7,0 7,0	7,0 7.0	7,0	0 7,0 7,0	7,0	7,0 7.0	7,0	16,0	16,0	16,0 16,0	16,0	7,0 7.0	7,0	7,0 7.0	7,0	5,0 5.0	5,0	7,0 7.0	7,
	ewerage collection ducation	cp0443 cp10		7-	2,9		2,9	1.	3,6	16,0 ex	6,7	16,0 ex	6,7	1.	2,9	7,0 ex	2,9	- / -	0.4	7,0 ex	2,
	lospital services	cp10 cp063	ex ex	ex ex	2,9	ex ex	2,9	ex ex	3,6	ex	6,7	ex ex	6,7	ex ex	2,9	ex ex	2,9	ex ex	2,1	ex	2
	out-patient services	cp063	7,0	7,0		7,0		7,0		16,0		16,0		7,0		7,0		5,0		7,0	
-	ocial protection	cp002 cp124	7,0	7,0		7,0		16,0		16,0		16,0		7,0		7,0		5.0		7,0	
	leaning, repair and hire of clothing	cp0314	16,0	16,0	13,8		13,8	16,0	16,0	16,0	16,0	7,0	7,1	7,0	7,1	7,0	7,1	16,0	13,3	16,0	13
	laintenance and repair of personal transport equi		16,0	16,0	10,0	16,0	10,0	16,0	.0,0	16,0	10,0	7,0	.,.	7,0	.,.	7,0	.,.	16,0	10,0	16,0	
	ther services relating to the dwelling n.e.c.	cp0444	16,0	16,0		16,0		16,0		16,0		7,0		7,0		7,0		16,0		16,0	
	epair and hire of footwear	cp0322	16,0	16,0		16,0		16,0		16,0		7,0		7,0		7,0		16,0		16,0	
Dr	omestic services and household services	cp0562	16,0	16,0		16,0		16,0		16,0		7,0		7,0		7,0		16,0		16,0	
H:	lairdressing salons and personal grooming establ	cp1211	7,0	7,0		7,0		16,0		16,0		7,0		7,0		7,0		5,0		7,0	
	laterials for the maintenance and repair of the dw		16,0	16,0		16,0		16,0		16,0		16,0		16,0		16,0		16,0		16,0	
	ervices for the maintenance and repair of the dw	cp0432	7,0	7,0		7,0		16,0		16,0		7,0		7,0		7,0		5,0		7,0	
	ackage holidays	cp096	16,0	16,0	7,5		7,5	16,0	7,5	16,0	7,5	16,0	7,5	16,0	7,5	7,0	6,3	16,0	7,5	16,0	7
	ostal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	inancial services n.e.c.	cp126	ex	ex		ex	1	ex		ex		ex		ex		ex		ex		ex	
	nsurance	cp125	ex	ex		ex	1	ex		ex		ex		ex		ex		ex		ex	
Te	elephone and telefax equipment	cp082	16,0	16,0		16,0	1	16,0		16,0		16,0		16,0		16,0		16,0		16,0	
	elephone and telefax services	cp083	16,0	16,0	45.0	16,0	45.0	16,0	45.0	16,0	40.0	16,0	40.0	16,0	45.0	16,0	7.0	16,0	45.0	16,0	
Te	/ater supply	cp0441 cp0451	7,0 16,0	7,0 16,0	15,9	9 7,0 16,0	15,9	7,0 16,0	15,9	16,0 16,0	16,0	16,0 16,0	16,0	7,0 16,0	15,9	7,0 7.0	7,0	5,0 16,0	15,9	7,0 16,0	15
Te 12. Electricity, district heating, W		0P0401				16,0	1	16,0		16,0		16,0		16,0						16,0	
Te 12. Electricity, district heating, W gas and water supplies El	lectricity	cn0452	16.0																		
12. Electricity, district heating, W gas and water supplies El Ga	ias	cp0452	16,0 16.0	16,0 16.0						- 7 -		- 7 -				7,0 7.0		16,0 16,0		- 7 -	
12. Electricity, district heating, W gas and water supplies El Gr He	leat energy	cp0455	16,0	16,0		16,0		16,0		16,0		16,0		16,0		7,0		16,0		16,0	
Te 12. Electricity, district heating, W gas and water supplies El Gi Ht Lit	ias									- 7 -		- 7 -								- 7 -	

COICOP data and CEVM sector g	rouping, shares used to calculate CEWRR		d rates	Benchr		Parking ra Scenar		Zero rates Scenar	io 1B	Exemption: Scenari		Scena	rio 2A	Scenar	io 2B	Scena	rio 3	Scenar	io 4A	Scenario	4B
			All VAT rates	VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates		VAT rates	
CEVM sector	COICOP category	Codes			CEWRR		CEWRR	vAI rates applied	CEWRR	VAI rates applied	CEWRR	vA1 rates applied	CEWRR		CEWRR		CEWRR		CEWRR		EWR
1. Food	Beer	cp0213	25,0	25,0	14,1	25,0	14,1	25,0	9,1	25,0	25,0	25,0	25,0	25,0	14,1	25,0	12,0	25,0	8,2	25,0	9
	Spirits	cp0211	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Tobacco	cp022	25,0	25,0		25,0		25,0		25,0		25,0		25,0		6,0		25,0		25,0	
	Wine	cp0212	25,0	25,0		25,0		25,0		25,0		25,0		25,0		6,0		25,0		25,0	
	Bread and cereals Fish and seafood	cp0111 cp0113	12,0 12,0	12,0 12,0		12,0 12,0		6,0 6,0		25,0 25,0		25,0 25,0		12,0 12,0		12,0 12,0		5,0 5,0		6,0 6,0	
	Food products n.e.c.	cp0113	12,0	12,0		12,0		6,0		25,0		25,0		12,0		12,0		5,0		6,0	
	Fruit	cp0116	12,0	12,0		12,0		6.0		25,0		25,0		12,0		12,0		5,0		6,0	
	Meat	cp0112	12,0	12,0		12,0		6,0		25,0		25,0		12,0		12,0		5,0		6,0	
	Milk, cheese and eggs	cp0114	12,0	12,0		12,0		6,0		25,0		25,0		12,0		12,0		5,0		6,0	
	Oils and fats	cp0115	12,0	12,0		12,0		6,0		25,0		25,0		12,0		12,0		5,0		6,0	
	Vegetables	cp0117	12,0	12,0		12,0		6,0		25,0		25,0		12,0		12,0		5,0		6,0	
	Coffee, tea and cocoa	cp0121	12,0	12,0		12,0		6,0		25,0		25,0		12,0		12,0		5,0		6,0	
	Mineral waters, soft drinks, fruit and vegetable juice	cp0122 cp0118	12,0 12,0	12,0 12,0		12,0 12,0		6,0 6,0		25,0 25,0		25,0 25,0		12,0 12,0		12,0 12,0		5,0 5,0		6,0 6,0	
2. Personal transport Domestic	Sugar, jam, honey, chocolate and confectionery Combined passenger transport	cp0735	6,0	6,0	3,0		3,0	6,0	6.0	25,0	25,0	25,0	25,0	6,0	3,0	6,0	3,0	5,0	5,0	6,0	6
	Other services in respect of personal transport equ	cp0733	6,0	6,0	0,0	6,0	0,0	6,0	0,0	25,0	20,0	25,0	20,0	6,0	0,0	6,0	0,0	5,0	0,0	6,0	``
	Other purchased transport services	cp0724		6,0		6,0		6,0		25,0		25,0		6,0		6,0		5,0		6,0	
	Passenger transport by air	cp0733	6,0 6,0	6,0		6,0		6,0		25,0		25,0		6,0		6,0		5,0		6,0	
	Passenger transport by railway	cp0731	6,0	6,0		6,0		6,0		25,0		25,0		6,0		6,0		5,0		6,0	
	Passenger transport by road	cp0732	6,0	6,0		6,0		6,0		25,0		25,0		6,0		6,0		5,0		6,0	
	Passenger transport by sea and inland waterway	cp0734	6,0	6,0		6,0		6,0		25,0		25,0		6,0		6,0		5,0		6,0	
International	Combined passenger transport	cp0735 cp0724	0,0	0,0 0,0		0,0 0,0		6,0 6,0		25,0 25,0		25,0 25,0		0,0 0,0		0,0 0,0		5,0 5,0		6,0 6,0	
	Other services in respect of personal transport equ Other purchased transport services	cp0724 cp0736	0,0 0,0	0,0		0,0		6,0		25,0		25,0		0,0		0,0		5,0		6,0	
	Passenger transport by air	cp0733	0,0	0,0		0,0		6.0		25,0		25,0		0,0		0,0		5,0		6.0	
	Passenger transport by railway	cp0731	0,0	0,0		0,0		6,0		25,0		25,0		0,0		0,0		5,0		6,0	
	Passenger transport by road	cp0732	0,0	0,0		0,0		6,0		25,0		25,0		0,0		0,0		5,0		6,0	
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		0,0		6,0		25,0		25,0		0,0		0,0		5,0		6,0	
3. Hotels	Accommodation services	cp112	12,0	12,0	12,0	12,0	12,0	6,0	6,0	25,0	25,0	6,0	6,0	6,0	6,0	12,0	12,0	5,0	5,0	6,0	6
4. Restaurants	Canteens	cp1112	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	6,0	6,0	6,0	6,0	6,0	6,0	25,0	25,0	25,0	25
5. Construction of social Housing	Restaurants, cafés and the like Materials for the maintenance and repair of the dw	cp1111 cp0431	25,0 25,0	25,0 25,0	25,0	25,0 25,0	25,0	25,0 25,0	25,0	25,0 25,0	25,0	6,0 25,0	25,0	6,0 25,0	25,0	6,0 25,0	25,0	25,0 25,0	25,0	25,0 25,0	25
5. Construction of social Housing			25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	6.0	25,0	25,0	20,0	25,0	25,0	25,0	25,0	25,0	20
6.Medical equip., books	Medical products, appliances and equipment	cp0432	25,0	25,0	12,5		12,5	25,0	12,5	25,0	25,0	25,0	25,0	25,0	12,5	25,0	11,3	25,0	11,9	25,0	12
and newspaper	Newspapers, books and stationery	cp095	6,0	6,0	,.	6,0	,.	6,0	,.	25,0	,	25,0	,-	6,0	,.	6,0	,.	5,0	,=	6,0	
	Other articles of clothing and clothing accessories	cp0313	25,0	25,0		25,0		25,0		25,0		25,0		25,0		6,0		25,0		25,0	
	Shoes and other footwear	cp0321	25,0	25,0		25,0		25,0		25,0		25,0		25,0		6,0		25,0		25,0	
Culture and entertainment	Cultural services	cp0942	6,0	6,0	6,0	6,0	6,0	6,0	6,0	25,0	25,0	25,0	25,0	6,0	6,0	6,0		5,0	5,0	6,0	e
	Games of chance	cp0943	6,0	6,0		6,0		6,0		25,0		25,0		6,0		6,0		5,0		6,0	
	Other services n.e.c.	cp127	6,0 6.0	6,0		6,0		6,0 6.0		25,0		25,0		6,0		6,0 6.0		5,0		6,0 6.0	
8. Street cleaning, refuse	Recreational and sporting services Refuse collection	cp0941 cp0442	6,0 25,0	6,0 25,0	25,0	6,0 25,0	25,0	6,0 25,0	25,0	25,0 25,0	25,0	25,0 25,0	25,0	6,0 25,0	25,0	6,0	25,0	5,0 25,0	25,0	6,0	25
and sewerage services	Sewerage collection	cp0442 cp0443	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	20,0	25,0	25,0	25,0	25,0	25,0	25
9. Government services	Education	cp10	ex	ex	0,0		0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0,0	ex	0
	Hospital services	cp063	ex	ex		ex	- / -	ex	- / -	ex		ex	- / -	ex		ex		ex	- , -	ex	
	Out-patient services	cp062	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Social protection	cp124	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	25,0	25,0	25,0		25,0	25,0	25,0	25,0	25,0		12,1	6,0	12,1	6,0	12,1	25,0	25,0	25,0	25
	Maintenance and repair of personal transport equip		25,0	25,0		25,0		25,0		25,0		6,0		6,0		6,0		25,0		25,0	
	Other services relating to the dwelling n.e.c. Repair and hire of footwear	cp0444 cp0322	25,0 25,0	25,0 25,0		25,0 25,0		25,0 25,0		25,0 25,0		6,0 6,0		6,0 6,0		6,0 6,0		25,0 25,0		25,0 25,0	
	Domestic services and household services	cp0522	25,0	25,0		25,0		25,0		25,0		6,0		6,0		6,0		25,0		25,0	
	Hairdressing salons and personal grooming establ		25,0	25,0		25,0		25,0		25,0		6.0		6,0		6.0		25,0		25,0	
	Materials for the maintenance and repair of the dw	cp0431	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
	Services for the maintenance and repair of the dwe	cp0432	25,0	25,0	-	25,0		25,0	-	25,0	-	6,0		6,0		6,0		25,0		25,0	
11.Post, tele and finansiel	Package holidays	cp096	6,0	6,0	8,0	6,0	8,0	25,0	15,7	25,0	15,7	25,0	15,7	6,0	8,0	6,0	8,0	5,0	7,6	6,0	8
services	Postal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Financial services n.e.c.	cp126	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	
	Insurance Telephone and telefax equipment	cp125 cp082	ex 25,0	ex 25,0		ex 25,0		ex 25,0		ex 25,0		ex 25,0		ex 25,0		ex 25,0		ex 25,0		ex 25,0	
	Telephone and telefax services	cp082	25,0	25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0		25,0	
12. Electricity, district heating,	Water supply	cp003 cp0441	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	12,2	25,0	25,0	25,0	2
gas and water supplies	Electricity	cp0451	25,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	25,0	20,0	6,0	,2	25,0	20,0	25,0	-
	Gas	cp0452	25,0	25,0		25,0		25,0		25,0		25,0		25,0		6,0		25,0		25,0	
	Heat energy	cp0455	25,0	25,0		25,0		25,0		25,0		25,0		25,0		6,0		25,0		25,0	
	Liquid fuels	cp0453	25,0	25,0		25,0		25,0		25,0		25,0		25,0		6,0		25,0		25,0	
	Solid fuels	cp0454	25,0 25,0	25,0		25,0		25,0		25,0		25,0 25,0	25,0	25,0		6,0 25,0	25,0	25,0 25,0		25,0	
Rest of economy				25,0	25,0	25,0	25.0	25,0	25,0	25,0	25,0			25.0	25,0				25,0	25,0	2

COICOP data and CEVM sector o	rouping, shares used to calculate CEWRR		d rates	Benchr	ced rates mark	Scenar		Zero rates Scenar	io 1B	Scenar	io 1C	Scena	rio 2A	Scena	io 2B	Scena	rio 3	Scenar	io 4A	Scenari	io 4B
			AII VAT																		
CEVM sector	COICOP category	Codes	rates applied	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates applied	CEWRR	VAT rates	CEWR
1. Food	Beer	cp0213	17,5	17,5	3,4	17,5	3,4	17,5	7,4	17,5	17,5	17,5	17,5	17,5	3,4	17,5	1,6	17,5	7,4	17,5	7
	Spirits	cp0211	17,5	17,5		17,5		17,5		17,5		17,5		17,5		17,5		17,5		17,5	ı
	Tobacco	cp022	17,5	17,5		17,5		17,5		17,5		17,5		17,5		5,0		17,5		17,5	ı
	Wine Bread and cereals	cp0212 cp0111	17,5	17,5 0,0		17,5 0,0		17,5 5,0		17,5 17,5		17,5 17,5		17,5 0,0		5,0 0,0		17,5 5,0		17,5 5,0	ı
	Fish and seafood	cp0113	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	ı
	Food products n.e.c.	cp0119	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	1
	Fruit	cp0116	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	1
	Meat	cp0112	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	ı
	Milk, cheese and eggs Oils and fats	cp0114 cp0115	0,0 0,0	0,0 0,0		0,0 0,0		5,0 5,0		17,5 17,5		17,5 17,5		0,0 0,0		0,0 0,0		5,0 5,0		5,0 5,0	ı
	Vegetables	cp0113	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	ı
	Coffee, tea and cocoa	cp0121	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	ı
	Mineral waters, soft drinks, fruit and vegetable juic	cp0122	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	ı
	Sugar, jam, honey, chocolate and confectionery	cp0118	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	
2. Personal transport Domestic		cp0735	0,0	0,0	0,0	0,0	0,0	5,0	5,0	17,5	17,5	17,5	17,5	0,0	0,0		0,0	5,0	5,0	5,0	5
	Other services in respect of personal transport equ Other purchased transport services	cp0724 cp0736	0,0 0,0	0,0 0,0		0,0 0,0		5,0 5,0		17,5 17,5		17,5 17,5		0,0 0,0		0,0 0,0		5,0 5,0		5,0 5,0	ı
	Passenger transport by air	cp0738	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	i i
	Passenger transport by railway	cp0731	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	1
	Passenger transport by road	cp0732	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	ı
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	
International	Combined passenger transport Other services in respect of personal transport equ	cp0735 cp0724	0,0 0,0	0,0 0,0		0,0 0,0		5,0 5,0		17,5 17,5		17,5 17,5		0,0 0,0		0,0 0,0		5,0 5,0		5,0 5,0	ı
	Other purchased transport services	cp0724	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0 5,0	ı
	Passenger transport by air	cp0733	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	1
	Passenger transport by railway	cp0731	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	1
	Passenger transport by road	cp0732	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	1
	Passenger transport by sea and inland waterway	cp0734	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	
3. Hotels 4. Restaurants	Accommodation services	cp112 cp1112	17,5 17,5	17,5 17,5	17,5 17,5	17,5 17,5	17,5 17,5	17,5 17,5	17,5 17,5	17,5 17,5	17,5 17,5	5,0	5,0 5,0	5,0 5,0	5,0 5,0	17,5 5,0	17,5 5,0	17,5 17,5	17,5 17,5	17,5 17,5	17
4. Restaurants	Restaurants, cafés and the like	cp1112	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	5,0	5,0	5,0	5,0	5,0	5,0	17,5	17,5	17,5	17,
5. Construction of social Housing	Materials for the maintenance and repair of the dw		17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	10,3	17,5	10,3		17,5	17,5	17,5	17,5	17
g	Services for the maintenance and repair of the dw		17,5	17,5	,.	17,5	,.	17,5	,.	17,5	,.	5,0		5,0		17,5	,.	17,5	,.	17,5	1
6.Medical equip., books	Medical products, appliances and equipment	cp061	0,0	0,0	0,0	0,0	0,0	5,0	6,2	17,5	17,5	17,5	17,5	0,0	0,0	0,0	0,5	5,0	5,0	5,0	5
and newspaper	Newspapers, books and stationery	cp095	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	1
	Other articles of clothing and clothing accessories		0,0	0,0		0,0		17,5		17,5		17,5		0,0		5,0		5,0		5,0	1
7. Culture and entertainment	Shoes and other footwear Cultural services	cp0321 cp0942	0,0 17,5	0,0 17,5	17,5	0,0 17,5	17,5	17,5 17,5	17,5	17,5 17,5	17,5	17,5 17,5	17,5	0,0 17,5	17,5	5,0 17,5	17,5	5,0 17,5	17,5	5,0 17,5	17
7. Guildre and entertainment	Games of chance	cp0942	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5		17,5	17,5	17,5	1 17
	Other services n.e.c.	cp127	17,5	17,5		17,5		17,5		17,5		17,5		17,5		17,5		17,5		17,5	1
	Recreational and sporting services	cp0941	17,5	17,5		17,5		17,5		17,5		17,5		17,5		17,5		17,5		17,5	
8. Street cleaning, refuse	Refuse collection	cp0442	0,0	0,0	0,0	0,0	0,0	5,0	5,0	17,5	17,5	17,5	17,5	0,0	0,0		0,0	5,0	5,0	5,0	5,
and sewerage services	Sewerage collection	cp0443	0,0	0,0		0,0		5,0		17,5		17,5		0,0		0,0		5,0		5,0	
9. Government services	Education Hospital services	cp10 cp063	ex ex	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex	0,0	ex ex		ex ex	0,0	ex ex	0
	Out-patient services	cp063	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
	Social protection	cp124	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
10. Locally supplied services	Cleaning, repair and hire of clothing	cp0314	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	5,0	6,8	5,0	6,8	5,0	6,8	17,5	17,5	17,5	17
	Maintenance and repair of personal transport equi		17,5	17,5		17,5		17,5		17,5		5,0		5,0		5,0		17,5		17,5	1
	Other services relating to the dwelling n.e.c.	cp0444	17,5	17,5		17,5		17,5		17,5		5,0		5,0		5,0		17,5		17,5	1
	Repair and hire of footwear	cp0322 cp0562	17,5 17,5	17,5 17,5		17,5 17,5		17,5 17,5		17,5 17,5		5,0		5,0 5,0		5,0		17,5 17,5		17,5 17,5	1
	Domestic services and household services Hairdressing salons and personal grooming establ		17,5	17,5		17,5		17,5		17,5		5,0 5,0		5,0 5,0		5,0 5,0		17,5		17,5	1
	Materials for the maintenance and repair of the dw		17,5	17,5		17,5		17,5		17,5		17,5		17,5		17,5		17,5		17,5	1
	Services for the maintenance and repair of the dw	cp0432	17,5	17,5		17,5		17,5		17,5		5,0		5,0		5,0		17,5		17,5	
11.Post, tele and finansiel	Package holidays	cp096	17,5	17,5	11,6	17,5	11,6	17,5	11,6	17,5	11,6	17,5	11,6	17,5	11,6	5,0	6,3	17,5	11,6	17,5	11
services	Postal services	cp081	ex	ex		ex		ex		ex		ex		ex		ex		ex		ex	1
	Financial services n.e.c. Insurance	cp126 cp125	ex	ex		ex ex		ex ex		ex ex		ex ex		ex ex		ex ex		ex ex		ex ex	i i
	Telephone and telefax equipment	cp125 cp082	17,5	ex 17,5		ex 17,5		ex 17,5		ex 17,5		ex 17,5		ex 17,5		ex 17,5		ex 17,5		ex 17,5	i i
	Telephone and telefax services	cp083	17,5	17,5		17,5		17,5		17,5		17,5		17,5		17,5		17,5		17,5	i i
12. Electricity, district heating,	Water supply	cp0441	0,0	0,0	5,4	0,0	5,4	5,0	16,9	17,5	17,5	17,5	17,5	0,0	5,4		4,7	5,0	5,6	5,0	Ę
gas and water supplies	Electricity	cp0451	5,0	5,0		5,0		17,5		17,5		17,5		5,0		5,0		5,0		5,0	i i
	Gas	cp0452	5,0	5,0		5,0		17,5		17,5		17,5		5,0		5,0		5,0		5,0	i i
	Heat energy	cp0455	17,5	17,5		17,5 17,5		17,5 17.5		17,5		17,5		17,5		5,0		17,5 17,5		17,5	i i
	Liquid fuels Solid fuels	cp0453 cp0454	17,5 17,5	17,5 17,5		17,5 17,5		17,5 17,5		17,5 17,5		17,5 17.5		17,5 17,5		5,0 5.0		17,5 17.5		17,5 17,5	i i
13. Rest of economy		CP0404	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	-,-	17,5	17,5	17,5	17,5	17
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