

| COLOPHON

Author: **Project Team:**

Copenhagen Economics:

Sigurd Næss-Schmidt, Partner

Christian Jervelund, Partner

Ph.D. Svend Torp Jespersen, Senior Economist

Ph.D. Christian Dahl Winther, Economist

Ph.D. Eske Stig Hansen, Economist

Marcin Winiarczyk, Economist

Holger Nikolai Jensen, Analyst

Daniel Mekonnen Ali, Analyst

KPMG AG:

Martin Schmitz, Partner

Dr. Andreas Erdbrügger, Senior Manager

Client: DG Taxud

Date: 1 March 2011

ISBN:

Contact: SANKT ANNÆ PLADS 13, 2nd FLOOR | DK-1250 COPENHAGEN
PHONE: +45 2333 1810 | FAX: +45 7027 0741
WWW.COPENHAGENECONOMICS.COM

PREFACE

The European Commission has asked Copenhagen Economics and KPMG AG in collaboration to study the VAT rules applied to the public sector in EU member states, and make a comparison with the VAT/GST rules applied in key OECD countries outside the EU.

The study collects and analyses relevant studies already carried out at international, EU or national level. The study describes the problems that arise from current VAT rules applied in the public sector. We analyse what the drivers and underlying causes of such problems are. We investigate the impact from differential VAT treatment between public and private entities on the input side in public entities and on the output side where competition between private sector entities and public sector entities are distorted. We have not looked at the postal sector in this study, however, because of the existing Commission proposal.

Having identified problems and causes, we present main policy options, which has been defined in co-operation with the Commission services. These options are analysed and quantified using among others, a computable general equilibrium (CGE) model of the EU-economy. Discussions of costs of compliance are included in the analysis. In our economic model, we specifically model the so-called ‘core’ services waste disposal, cultural services, education, hospital services and broadcasting in agreement with the EU Commission. Hence, the modelling scenarios produce changes in output in these public activities which make up the results regarding the changes in public sector output.

In order to model the quantitative effects from the policy options we needed to assess the baseline scenario as precisely as possible. To do this, we constructed a legal and an economic questionnaire and submitted them to our network in the majority of Member States.

The legal questionnaires we designed to give detailed insight into current VAT systems and rates applied to our modelled sectors. We got information for most Member States. See appendix.

The economic questionnaire we designed to give us detailed insight into the structure of the public sector use of support services (how much is own production and how much is procured from private services) and core services (how much is produced by public entities and how much by private entities). However the economic questionnaire did not return the information we hoped for. It would have provided novel information on a very detailed level, and it would have made the economic analysis and modelling more precise. Instead we have, in addition to economic theory and literature studies, used data from the GTAP database, Eurostat and the Amadeus database. Moreover, we have had to apply a number of assumptions. More information and explanations are given in chapters 3 and 4 and the model appendix.

The report includes a number of case studies complementing the macroeconomic analysis.

EXECUTIVE SUMMARY

The essential piece of European legislation establishing the common system of VAT is the Common VAT System Directive (CVSD). It is designed in a manner, that VAT should only be a burden on final consumption. When incurred during the process of production and distribution of goods and services, VAT should be deducted.

Public and private activities may be taxed differently in Member States. Often public activities will be tax exempt or non-taxable whereas private activities will be taxable. However, there are many exceptions to this 'rule'. For example, private hospital services are not taxed, whereas public waste management activities are sometimes taxed and sometime not depending on industry specific circumstances. In many of the cases where differential VAT treatment exists between public activities and private activities, there is a risk of distortion of competition between the public and private activities. The distortion will reduce economic efficiency and welfare.

Distorted competition may primarily show itself in two ways:

First, the distortion may affect the input side as a reduced incentive of public entities to outsource support services/back office-services, such as cleaning services, IT-service, accountancy and facility management. The reason is that if the public entity carries out the support service in-house with own staff, no VAT is added to the value of this in-house produced service. This is not the case if the public entity decides to outsource the same support service to a private provider, as the private provider will add VAT to its invoice; VAT that the public entity cannot recover.

Second, the distortion may affect the output side through reduced competitiveness of private entities vis-à-vis public entities. The reason is that if a public and a private provider of a service compete in the same market, the public provider will have the advantage of not charging its clients VAT. However, the private provider will have to add VAT to its clients. Hence, the public provider may have a competitive advantage over the private provider of the same service. This is of course only the case when public and private providers actually compete.

We find that these distortions do indeed exist as a result of differential VAT treatment. So how best to eliminate them?

A number of EU Member States, eight in total, already have refund schemes in place that allow public entities to recover input VAT when outsourcing support services. This eliminates the first distortion. Inspired by these existing schemes, we have estimated the potential economic gains if the remaining EU Member States adopted similar schemes. We find an EU wide potential economic gain of 0.01 percent of Gross Domestic Product (GDP) corresponding to a little more than 1 billion euro. The gain comes from increased efficiency in production of sup-

port services as public entities begin to outsource a larger share of in-house produced input service to private providers who are able to produce the services more efficiently due to e.g. economies of scale and competitive pressure. The gain may be larger, if public entities also start to consider outsourcing support services beyond the ‘traditional’ ones such as cleaning and IT-services. We estimate public sector cost savings of around 0.3 percent of consumption cost, equivalent to around 5 billion euro. Implementing refund schemes across the EU would imply a redistribution of funds from the state to the VAT paying public entities of approximately 100 billion euro.

However, refund schemes do not eliminate the second distortion on the output side. Furthermore, we find evidence that refund schemes may imply higher compliance costs arising from additional public administrative resources required to administer such schemes and additional costs for public entities from complying with them. We do not know the exact size of compliance costs from refund schemes, but they do ultimately reduce the initial economic gain, and possibly they may be so large as to neutralise the initial economic gain.

Given these drawbacks of a refund type scheme we recommend to look towards a full taxation solution. In this solution, VAT is applied to public entities’ output, and at the same time the solution allows for public entities to fully deduct its incoming VAT. In this way, public and private entities are treated equally regarding VAT. This eliminates the input and output distortions.

We find potential economic gains in our economic model of 0.04 percent of GDP *up to* 0.19 percent of GDP, the latter corresponding to almost euro 21 billion from a full taxation solution for all Member States in the covered sectors. The lower estimate corresponds to a situation with little current competition between public and private providers of the core services covered. For instance, there is no actual alternative to the public providers. In this situation, it matters less that the distortion caused by differential VAT is removed. The upper estimate assumes significant distortion of competition in the current situation, which is then removed when public and private produced are taxed equally: By removing a significant distortion in the economy, we end up utilising resources better, thus spurring growth.

These are large numbers compared to the 0.01 percent from eliminating the first distortion alone. On the one hand, it should be interpreted as a maximum for potential gains, because effective competition between private and public suppliers may be hindered by other barriers than VAT. On the other hand our modelling does not cover the entire public sector. The full taxation solution is in many ways similar to the current system in place in New Zealand, which is often mentioned as a best practice case in literature.

The EU27-wide impact on VAT revenue of the full taxation model for the covered sectors could be an increase of up to 195 billion euro, which could then be offset by a proportional decrease of 19 percent for *all* (standard and reduced) VAT rates; e.g. the Germany standard rate would drop from 19 percent to 15.4 percent. This revenue increase assumes that the entire values of the five covered public core services (broadcasting, waste management, hospital, education and cultural services) are taxed with output VAT. If that is not the case, the increased VAT revenue will be correspondingly smaller.

On a final note, a full taxation solution where the public and private services are taxed identically is ‘future proof’, in the sense that whatever developments may occur in how public and private entities compete, this solution automatically ensures a level playing field between them. This, however, presupposes that public entities cannot fully escape the VAT.

MAIN FINDINGS

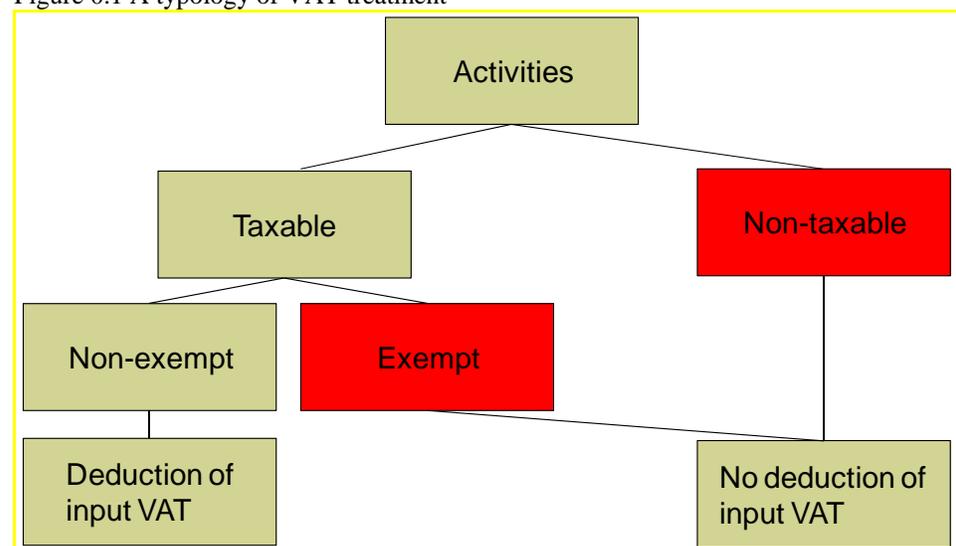
In order to ensure the establishment and the functioning of the internal European market, Article 113 Treaty on the Functioning of the European Union allows the harmonisation of VAT Law.

The essential piece of European legislation establishing the common system of VAT is the Common VAT System Directive (CVSD). Designed as a general tax on consumption exactly proportional to the price of goods and services, the European VAT System allows the deduction of the amount of VAT borne directly by the various cost components of the production and distribution process before final consumption (deduction of input VAT). This mechanism exists in order to ensure the fiscal neutrality of VAT system despite the length of the production chain. In other words, VAT should only be a burden on final consumption. When incurred during the process of production and distribution of goods and services, VAT should be deducted.

However, public and private activities may be taxed differently in Member States. As public activities are often non-taxable and private activities are taxable, there is a risk that the VAT system may distort the competition between private and public activities.

The distortion of competition may either come from a public sector activity being taxable but exempt, or it may come from a public sector activity being non-taxable, cf. the marked boxes in Figure 0.1.

Figure 0.1 A typology of VAT treatment



Source: KPMG AG.

The distortion may affect the input side as a reduced incentive of public sector bodies to outsource support activities, such as cleaning services, IT-service, accountancy and facility management. The reason is that if the public body carries out the support service in-house with own staff, no VAT, which the public body cannot recover, is added to the value of this in-house produced service. This is not the case if the public body decides to outsource the same support service to a private provider, as this provider will add VAT to its invoice; VAT that the public body cannot recover, cf. Figure 0.2

Figure 0.2 Choice between outsourcing and self supply

Premises: VAT rate applicable – 20 %

	Net price	VAT	Input costs
Outsourcing	100 EUR	20 EUR	120 EUR
Self-supply	110 EUR	0 EUR	110 EUR

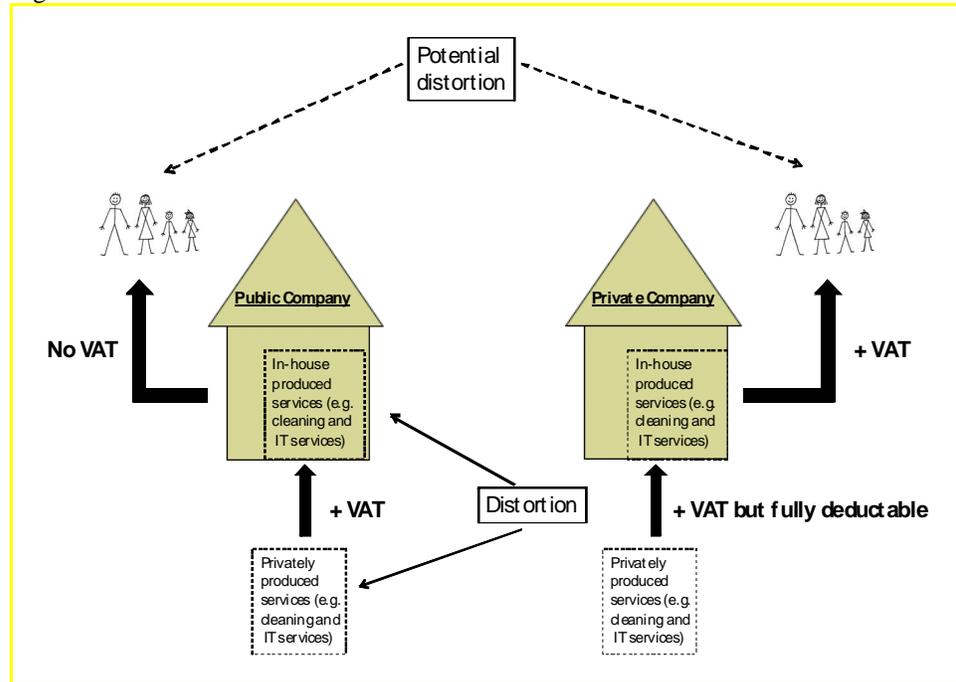
Preference of public body

Public body prefers less efficient alternative because of lower total input costs.
The self-supply will always be preferred over outsourcing until the increased costs due to inefficiency of self-supply exceed the total price of outsourced supply (i.e. 120 EUR)

Source: KPMG AG

The input side distortion is illustrated in the bottom part of Figure 0.3 showing that for the public sector a distortion exists between in-house public produced support services and outsourced private produced support services. For the private sector (right half of the figure depicting the flows in a private company), we assume that this distortion is not present, as the private company is able to deduct the incoming VAT.

Figure 0.3: Illustration of current distortions



Note: The figure illustrates where distortions may arise in a given Member State without compensation schemes in place which serve to eliminate the distortions. The figure does not, however, depict an actual Member State or industry.

Source: Copenhagen Economics

The distortion may also affect the output side through reduced competitiveness of private sector entities vis-à-vis public competitors. This is illustrated in the top half of the figure. The reason is that if e.g. a public and a private provider of waste management services compete in the same market, the public provider will have the advantage of not adding VAT to its clients. The private provider of waste management service will, on the other hand, have to add VAT to its clients. Hence, the public provider of waste management service may have a competitiveness advantage over the private provider of the same service. This is of course only the case when public and private providers compete on the same market.

To what extent does this differential treatment reduce economic efficiency? And what are the available solutions and their potential impact on economic efficiency?

These are questions that we try to answer in this report. We start out with identifying the legal issues arising from the current treatment of public entities in regarding VAT (1.1). We then proceed with discussing how differential VAT treatment may create a loss of efficiency from lack of public outsourcing of input services such as cleaning services to private providers (1.2),

and from lack of outsourcing of output services such as waste collection (1.3). In subchapter 1.4, we discuss the importance of compliance costs. Finally, in subchapter 1.5, we present concrete solutions that may allow Member States to reap economic gains from less distortion between public and private entities, and we quantify these potential economic gains.

1.1. LEGAL CHALLENGES

The comparison of the adoption of the CVSD regarding the public sector among the Member States has shown a large variety in the adoption of EU provisions as well as the application of the national law. In this respect a major problem proved to be the different understanding of the terms ‘public body’ and ‘public law’ among the Member States. As a result the same activity may for example be considered to be non-taxable in one Member State whereas it would be treated as taxable in another Member State. In addition to these interpretative differences, a lack of harmonisation is caused by the various stand still clauses applicable only to some Member States and provisions of the CVSD which leave the adoption at the discretion of the respective Member State such as Article 133 CVSD. Consequently, the detailed analysis of the VAT treatment of waste disposal, cultural services, education, hospital services, homes for the elderly, sports and broadcasting has identified differences among the Member States¹.

According to our assessment based on the legal and economic analysis the major problems of the current VAT treatment are its high complexity and legal uncertainty as well as its distortive effects in relation to economic decisions of the public sector bodies and the competition with the private sector.

As regards the legal uncertainty of the system, it must be noted that it aggravates many of the aforementioned problems. A lack of certainty about the tax consequences of specific transactions will make economic operators reluctant to undertake new investments or extending and adapting existing activities². Furthermore, it creates additional entry costs for private actors when trying to challenge established public incumbents, creates compliance costs as well as administration costs and encourages the use of complex structures or tax schemes³.

In order to counter the distortions caused by the current VAT treatment, some Member States have introduced a system designed to compensate public bodies for their non-deductable input VAT. However, the legal analysis has shown that the compensation systems in practice vary

¹ In chapter 2 we present overview tables of the results of the legal analysis for each sector and Member State.

² C. Amand (2006), ‘VAT for Public Entities and Charities – Should the Sixth Directive be Renegotiated?’, *International VAT Monitor*: 433-443, at 435.

³ C. Amand (2006), ‘VAT for Public Entities and Charities – Should the Sixth Directive be Renegotiated?’, *International VAT Monitor*: 433-443, at 435.

considerably from Member States to Member State and sometimes even cause additional distortions.

The legal comparison of the EU VAT treatment of the public sector with selected OECD countries has shown different approaches in order to deal with public sector bodies. The Canadian rebate system basically follows the same approach as the Member States with a compensation system by granting rebates to public bodies which cannot deduct input VAT. The most radical approach to taxation of the public sector is present in New Zealand and Australia, which virtually treat all activities of the public sector as taxable with the right to deduct input VAT. Unlike Australia, the New Zealand system grants extremely few exemptions for public sector bodies and consequently comes very close to a full taxation of the public sector. Therefore it has frequently been advocated as remarkably neutral and favourable system of VAT taxation of the public sector. However, the legal analysis showed that the full taxation approach also involves conceptual difficulties, particularly the identification of explicit consideration for public supplies.

1.2. OUTSOURCING SUPPORT SERVICES

Public entities that are either taxable but exempt or non-taxable may have economic incentives to keep production of back office or support services in-house solely due to their status as either exempt or non-taxable. This could for example be cleaning services, IT-services and HR-management. The reason is that if a public entity produces support services in-house, it is not paying any VAT on the value of the support function. But if the same public entity chooses to outsource the same support services to a private entity, the private entity will add VAT, which the public entity must pay but cannot deduct.

Hence, for a public entity to outsource support functions, expected monetary gains must be so large as to offset the added cost from VAT. As this is not always the case, differential VAT treatment works to reduce economic efficiency through ‘too little’ outsourcing.

The same logic applies to labour saving investment decisions: A public entity will choose *not* to invest in new technology that could substitute in-house labour even if the expected gains from e.g. lower labour costs are larger than the investment. The reason is that the public entity must pay VAT on the investment which it cannot deduct, whereas VAT is not added to in-house labour. The consequence is too little investment leading to lower growth in public productivity than without the differential VAT treatment.

Moreover, public entities may choose suboptimal organisational structures. For example, the forming of shared services centres between public entities may allow these entities to reap efficiency gains due to e.g. economies of scale. But they may nevertheless choose not to form a

shared services centre if the services of the shared centre are taxable. Examples of these mechanisms are given in Box 0.1.

Box 0.1 Case of less outsourcing due to tax exemption

In Germany, hospitals are tax-exempt, meaning that if a hospital takes part in the public funding system and, as a consequence, accepts to treat all patients which approach it, they will not have to pay VAT of 19 percent, but cannot deduct input VAT either.

We have looked into a concrete case of a German non-profit hospital group with a church background. The group consists of several hospitals and several homes for the elderly. It has more than 4,000 employees and sales of more than EUR 250 million. The group is organised in a management holding company, several hospital-operating companies (running one hospital each) and several shared service centre companies with supportive functions like catering or central purchasing for the group.

VAT is influencing the hospital group on different levels. For example, VAT currently plays a major role for choosing the legal form of the group structure. For most of the supportive services rendered by the shared service centre companies (e.g. catering) as well as for the management service rendered by the management holding company (e.g. management of group, accounting, human resources) 19% VAT would become due as the VAT exemption in Art. 132(1)(b) CVSD is not applicable concerning the shared service companies. The hospital-operating companies would not be able to deduct input VAT insofar they are using the services rendered to them for tax-exempt hospital services. As a consequence it is – from an economic point of view – usually not possible to form shared service centres in a hospital group as a separate legal entity. Further it is not possible to divide a hospital group into different legal entities if supportive functions shall be concentrated in one company. Finally it is not possible to concentrate management activities in a separate holding company. In our case study the formation of a shared service company is only possible because of the German rule about tax grouping.

Once an outsourcing decision seems to be advantageous the costs have to be so low that the non-deductable VAT can be compensated as a self-supply is not taxed with VAT but the supply by a third party is taxed. This leads to the consequence that often there is only an outsourcing within the VAT group (shared service centres). The only chance for third party suppliers to have a competitive offer is to cut the personnel costs by paying lower wages or by saving material costs, e.g. through economies of scale.

VAT also has an influence on investment decisions, e.g. often goods are leased because the VAT (non-deductable input VAT) becomes due on a pro-rate basis and not at once in the beginning of the useful life of the good. Also the non-deductable input VAT has to be amortised. However, it was not considered that the VAT has a material effect for investment decisions.

Another case is that of one of the major Danish private hospitals with a turnover of more than Euro 15 million. In Denmark hospital services are tax-exempt (except for certain cosmetic procedures provided by private hospitals, which will be liable to VAT from 1 January 2011). A compensation scheme exists, which means that input VAT might be recovered. However, not for private hospitals. They cannot recover their input VAT. The hospital estimates that it has costs of input services such as cleaning services, call centres or catering services at around 5-8 percent of its turnover. It produces by far the majority of these services in-house, as the VAT of 25 percent most often exceeds the expected monetary gains from outsourcing. However, the hospital regularly makes business cases for outsourcing the input services. It reckons that it would outsource the majority of its input services if the input VAT was compensated for.

Source: KPMG for the Germany case. Copenhagen Economics for the Danish case.

It should be noted, that the currently existing Art. 132 (1) f CVSD offers a partial solution for the VAT induced disadvantages to outsourcing, since under certain conditions it allows an exempt supply of services within a so-called cost sharing group of persons, who are carrying on exempt activities or are not regarded as taxable. However, Art. 132 (1) f CVSD is only applicable under specific circumstances; the basic problem remains where Art. 132 (1) f CVSD is not applicable. Furthermore, the initial costs incurred by the cost sharing group would nevertheless

still include non deductible VAT. Even if Art. 132 (1) f CVSD is applicable, a disadvantage for outsourcing of services would remain. As a consequence, Art. 132 (1) f CVSD cannot be regarded as a sufficient solution. A significant improvement of the VAT treatment of the public sector requires a reform of the VAT treatment of the public sector.

Studies indicate that in-house produced support services share of total public sector expenditure may be in the area of 8-20 percent, cf. Table 0.1.

Table 0.1 Support services share of public sector expenditure

	UK	Denmark	France
Support services share (pct)	8	20	19
Share definition	Pct. of total public sector running cost	Pct. of municipality running cost.	Pct. of total state running cost

Source: HM Treasury (2009), Statistics Denmark (2010), Direction du Budget (2010).

In our economic modelling later, we apply an estimate of 10 percent, cf. Table 0.2. Private business services' input to public production, which is the relevant substitute for most in-house produced support services, account for around 3 percent.

Table 0.2 Public and private support services share of public production costs

	Share of public production costs
Public support services input to public production (own production)	10%
Private business services input to public production	3%
Total input of business services (own public + private) to public production	13%

Source: Copenhagen Economics

In our economic modelling, these 13 percent support services are provided as input to the five modelled public core services and public administration, making up 28.4 percent of EU27 GDP, cf. Table 0.3.

Table 0.3 The public services and administration modelled for distortion on the input side

Services	Share of EU27 GDP, percent
Broadcasting, public	0.2
Education, public	2.9
Hospitals, public	2.2
Cultural services, public	1.8
Waste disposal, public	0.5
Public administration	20.9
Total	28.4

Source: Copenhagen Economics, based on GTAP database.

Note: The sectoral shares of the economy do not exactly correspond to those one would obtain using data with a NACE classification as this classification does not exactly correspond to the GTAP classification.

1.3. OUTSOURCING CORE SERVICES

If one considers outsourcing actual public core services to the private sector, the potential gains could be even larger. By core services we mean the entire public entity. For example, a municipality could choose to outsource its entire waste management responsibility to a private entity instead of having the municipality owned waste management entity to perform the service.

Waste management and broadcasting services may be obvious candidates for eliminating any possible differential VAT treatment and allowing for competition as differential VAT treatment occurs in many Member States. The reason is that these sectors, from a legal point of view, are characterised by differential VAT treatment. In the economic analysis we investigate the impact of differential VAT treatment for output in the 5 sectors in Table 0.4. Together they represent 13.6 percent of the EU27 GDP.

Table 0.4 The five core services modelled for distortion on the output side

Services	Share of EU27 GDP, percent
Broadcasting, public and private	0.3
Education, public and private	3.6
Hospitals, public and private	2.7
Cultural services, public and private	6.0
Waste disposal, public and private	1.0
Total	13.6

Source: Copenhagen Economics, based on GTAP database.

Note: The sectoral shares of the economy do not exactly correspond to those one would obtain using data with a NACE classification as this classification does not exactly correspond to the GTAP classification.

There may also be gains from outsourcing more ‘advanced’ support services. The simpler support services such as cleaning services, IT-services and HR-management that we looked at in the previous subchapter, will often produce gains of a static nature: Since competitive private markets for e.g. cleaning services and IT-services already exist, more outsourcing from public entities are not likely to spur dynamic effects through increased competition and innovation within these services. The gains emerge, as the private producers are able to produce more efficiently than public producers.

Dynamic effects through new markets, business models and innovation could come from outsourcing more ‘advanced’ support services closer to core functions. For example monitoring of patients in hospitals, which could take place from a distance using communications technology, cf. Box 0.2.

Box 0.2 Outsourcing other support services

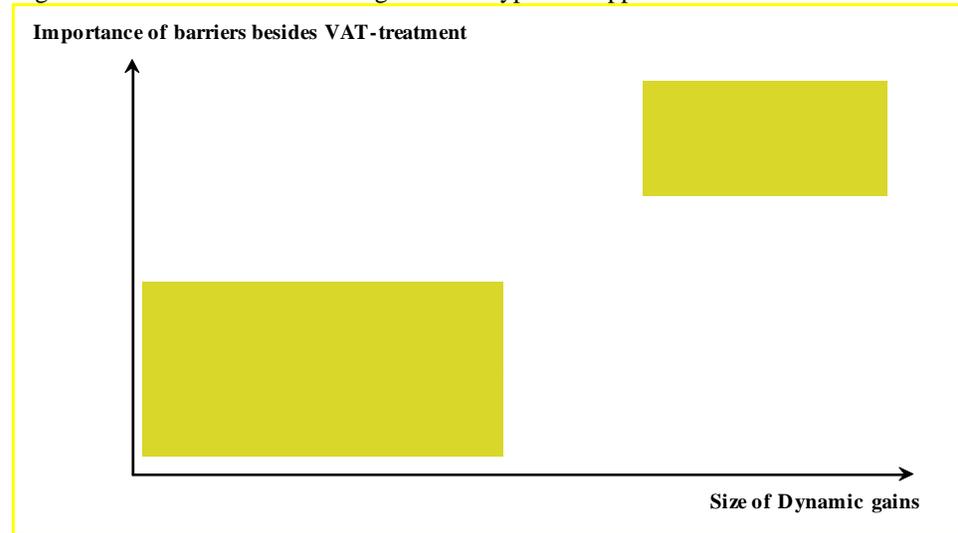
The hospital from Box 0.1 said that it believed that with input VAT compensated for, it would start to look into outsourcing or making investments in new technology not even considered today. For example, monitoring of patients and in general the types of services where trained nurses are not necessary.

Source: Copenhagen Economics.

The gains from outsourcing such other support services could therefore be even bigger than outsourcing the more traditional support services. However, outsourcing other services could also to a larger extent be hampered by barriers other than differential VAT treatment; for example immature technology or licensing requirements. Hence, these services may be less affected right now by lack of a level playing field with respect to VAT, and it may require a larger set of public reforms to reap them.

Figure 0.4 illustrates this idea that outsourcing other services may bring about more dynamic gains than outsourcing the more traditional support services, but that more barriers are likely to be present as well.

Figure 0.4: Gains from outsourcing different types of support services



Source: Copenhagen Economics.

1.4. COMPLIANCE COST

We have now discussed some rough potential gains from eliminating the VAT bias between public and private providers of support services and core services. However, these gains depend very much on two factors.

- That differential VAT treatment is actually the decisive barrier
- That compliance costs from a system designed to eliminate the VAT bias does not erode the initial economic gains

First, that biased VAT treatment is actually the decisive barrier. If that is not the case, eliminating this bias alone is not going to have any major impact on public entity's outsourcing decisions.

On the one hand, we believe that there are costs to be saved from outsourcing a number of support services such as cleaning services, catering services and IT-services, where few other legal and attitudinal barriers exist. We base this on the clear economic incentive for saving costs as well as the literature and case studies we have collected.

On the other hand, a number of core services may be more difficult to outsource due to quality and safety standards, regulatory barriers or attitudinal barriers. This is supported by a recent

Danish study⁴, which finds that these concerns are important for a decision maker about to decide whether or not to outsource a public service, c.f. Table 0.5.

Table 0.5 Perceived barriers to outsourcing in Danish municipalities

Barrier	Assessment of the effect on outsourcing
Attitudinal	Significant
Economical	Significant
Regulatory	Medium
Organisational	Medium

Note: "Attitudinal" describes barriers, where the decision maker chooses not to outsource a service, as they have a negative attitude toward outsourcing that particular service. The analysis emphasise that this is in general more based on personal bad experiences than ideology.

Source: Udbudsrådet (2010a).

Second, that the compliance costs implied by a system designed to eliminate the VAT bias does not erode the initial economic gains.

On the one hand, estimates could suggest significant compliance costs associated with a *refund system*. We are not aware of the existence of studies aiming specifically at quantifying the compliance costs associated with having a refund system in place. But a recent OECD review on the size of public and private compliance costs associated with complying with the *general* VAT systems in Europe, reports losses in the area of 0.0-0.5 percent of GDP, cf. Table 0.6⁵.

Table 0.6: Estimates of administrative costs from systems of consumption taxation

Country	Year	Pct of GDP
Austria	2007	0.1%
Denmark	2004	0.1%
Germany	2007	0.5%
Netherlands	2002	0.3%
Norway	2007	0.0%
UK	2007	0.1%

Source: OECD (2008). Eurostat GDP figures have been used to convert OECD monetary estimates into comparable shares of GDP.

These are potentially large costs. But the numbers of course only relate to compliance with the general VAT system, not a refund system. Our interviews with public authorities in the eight

⁴ Udbudsrådet (2010a).

⁵ We are not aware of the existence of studies that have attempted to quantify the compliance costs associated with having a system in place designed to eliminate the VAT bias.

Member States that actually do have refund systems in place seem to indicate that administrative costs are small to medium cf. Table 0.7. So they do exist, but are probably not huge.

Table 0.7 Size of administrative costs from refund systems in 8 EU Member States

Size of administrative costs	Number of EU Member States
High	0
Medium	2
Low	5
No answer	1

Source: Legal questionnaire, filled out by KPMG experts.

Based on these considerations, we conclude that barriers to outsourcing exist in addition to differential VAT treatment. This reduces the immediate economic gains from eliminating the differential VAT treatment. Furthermore, we conclude that compliance costs from a refund system exist but are not huge.

The conclusion that other barriers may exist and that refund systems may imply compliance costs fits well with the observation that only 8 out of 27 EU Member States currently have refund schemes in place, cf. Table 0.8. One could expect more Member States to have refund systems in place, if they perceived economic gains to far outweigh e.g. higher compliance costs.

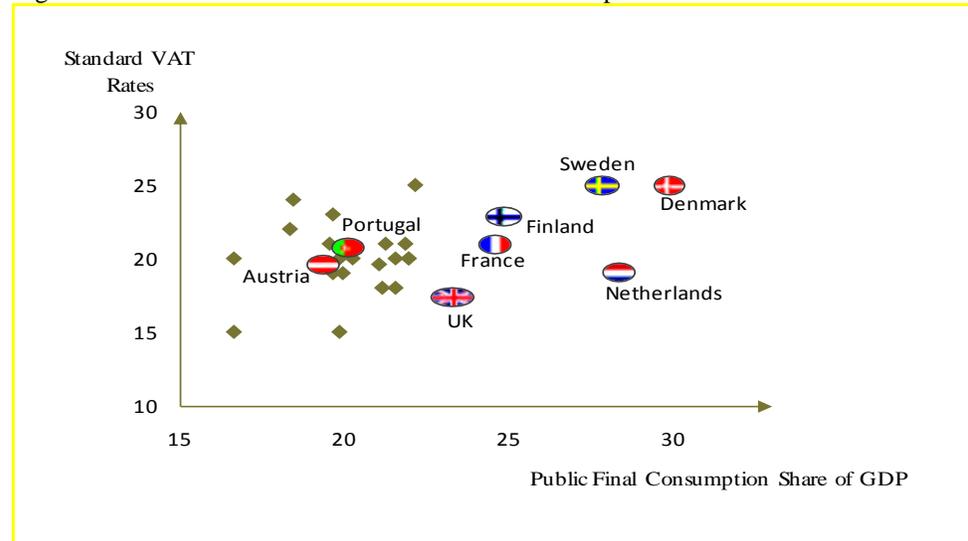
Table 0.8: Countries with and without compensation mechanisms

Countries with refund schemes	Countries without refund schemes		
Austria	Belgium	Greece	Malta
Denmark	Bulgaria	Hungary	Poland
Finland	Cyprus	Ireland	Romania
France	Czech Republic	Italy	Slovakia
Netherlands	Estonia	Latvia	Slovenia
Portugal	Lithuania	Spain	Germany
Sweden	Luxembourg		
United Kingdom			

Source: KPMG survey

The Member States with schemes in place also tend to be the ones with relatively large public consumption shares (relative to GDP), cf. Figure 0.5. The flags in the figure represent the presence of a refund scheme in that particular Member State. The rationale for this is that the larger the public sector is, the larger will be the potential inefficiencies caused by differential VAT treatment simply because a larger part of the economy is potentially experiencing inefficiencies on this account. In contrast, it does not seem that Member States with a high standard VAT rate are more likely to have a refund scheme in place.

Figure 0.5: EU27 Member States with and without compensation schemes



Note: A flag indicates that the particular Member State has a compensation scheme in place.

Source: Eurostat.

1.5. SOLUTION MODELS FOR CREATING A LEVEL PLAYING FIELD

There are several sources of inspiration to reform the VAT treatment of public entities. In Australia and New Zealand all activities – public or private – are basically taxed at the same rate, removing distortions of input decisions and distortions in the output market of private and public sector activities. In Canada and several EU Member States, public bodies are compensated for their VAT expenditure when they buy inputs for non-taxable or exempt activities.

We present four solution models for reducing the distortions caused by the current differential treatment of VAT.

- Full taxation
- Refund system
- Treated as taxable persons (public bodies treated as taxable persons as a rule, with certain exemptions)
- Treated as taxable persons with an option to tax (public bodies treated as taxable persons as a rule, with certain exemptions and an option to tax for exempt taxable persons)

Full taxation

The main change introduced with a full taxation system would be a fundamental alteration of the taxation of output supplies. In the public sector, all supplies, which are currently treated as non-taxable (Art. 13 CVSD) or tax-exempt (Art. 132 CVSD) would be treated as taxable and non-exempt. Special rules leaving discretionary power to the Member States (e.g. Art. 133, 371 ff. CVSD) would be deleted if they were concerning the public sector. The taxation of the output supplies leads to the possibility to deduct input VAT pursuant to Article 168 CVSD.

Generally, the full taxation model can be introduced in two basic modifications. In the first one, all supplies of public entities are taxed regardless whether a consideration is provided or not (e.g. also on supplies of police, fire brigades or charities which are only receiving donations). In the second one, output VAT is applied to supplies only if an explicit fee is charged. Supplies funded e.g. from taxation or other comparable sources thus remain outside the scope of the VAT.

We choose to focus on the second one because a shift towards taxation of supplies with no consideration would be a fundamental change in the entire EU VAT system, which would lead to types of costs to the private and public sectors which we are not able to quantify within the scope of this analysis (costs of legal uncertainty and other costs of adjustment). However, it should be noted, that taxing public output only when a fee is charged for it (for consideration), may provide incentive to finance public entities through subsidies instead in order to escape VAT.

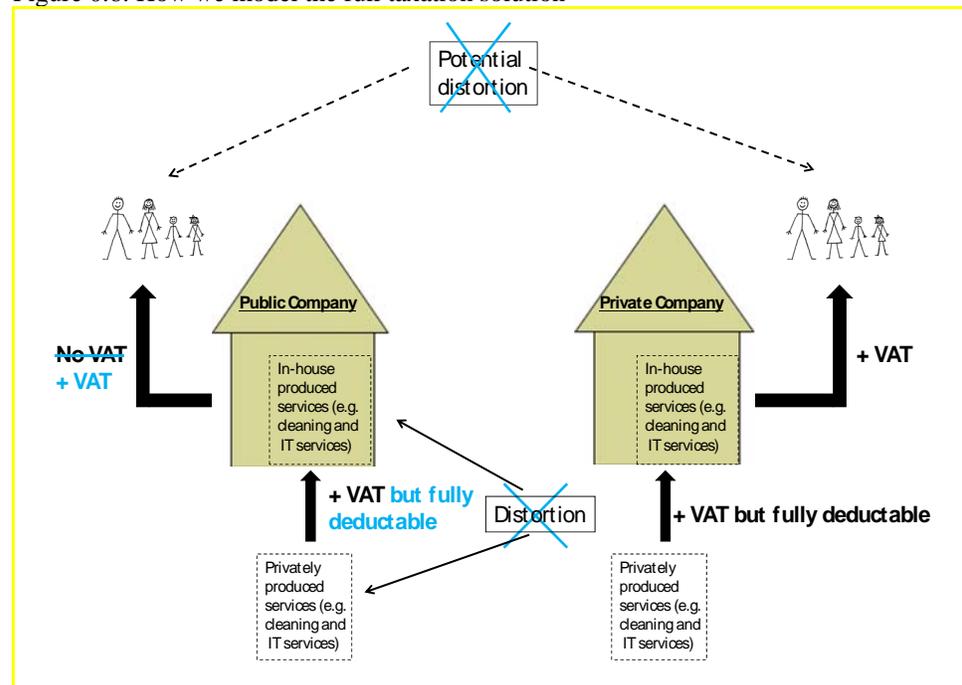
We do not have precise information about the share of output from our five modelled core services that are provided for consideration and not for consideration. We therefore need to make assumptions about this split. For the five private produced services covered in this study, we assume that they are predominantly provided at a consideration. The basic intuition is that if a fee cannot be charged, they would not be provided by a private supplier. For the equivalent public produced services, we assume that hospital and waste management services are provided for a consideration, whereas broadcasting, education and cultural services are provided with only a small charge and the rest is financed through subsidies. This is an important assumption: if even a minor fee is charged, taxing this fee with the VAT rate applicable to the similar private output removes a distortion and economic efficiency is increased. If on the other hand, no fee is charged at all, there is nothing to tax and hence no distortion to eliminate, and hence no increased economic efficiency.

In our economic modelling, we model the economic impact of allowing taxation of output supplies (for the five modelled sectors) and deductibility of input supplies (for the five modelled sectors and public administration). In the economic modelling we do not consider the

postal sector, because of the existing Commission proposal. Hence, in our modelling, this solution effectively removes the distortions on the input side and the output side in all Member States, cf.

Figure 0.6.

Figure 0.6: How we model the full taxation solution



Source: Copenhagen Economics

The current VAT system does not impact services and Member States in the same way. For example, private hospital services are not taxed, whereas public waste management activities are sometimes taxed depending on whether a potential distortion is deemed to actually exist. Some Member States by definition do not allow competition between public and private waste management providers. In other Member States, that is not the case, and a distortion may or may not de facto exist.

In our modelling of the full taxation solution, we therefore model two scenarios. In the one scenario called 'without competition', we assume that competition does actually *not* exist between public and private providers in the five modelled activities, or that the current differential VAT treatment does not give rise to a distortion. In the other scenario, called 'with competition', we assume that competition does in fact exist between the public and private providers in

the five modelled activities, or that the current differential VAT treatment does give rise to a distortion.

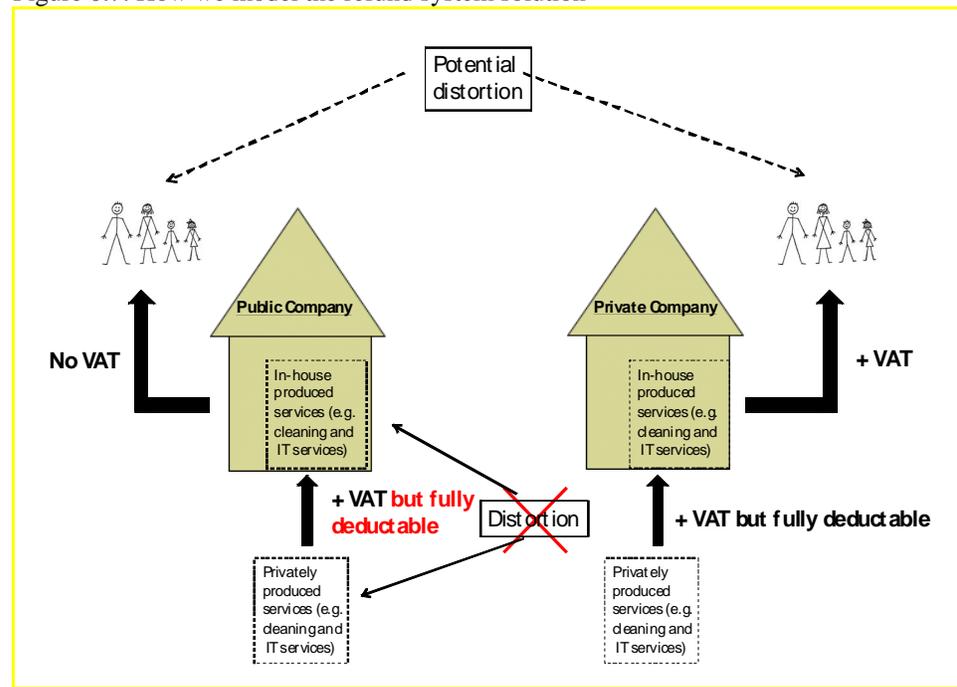
We do not model compliance costs when introducing a full taxation solution compared to the current system of differentiated VAT. There might, in fact, be significant compliance *gains* compared to the current system of differentiated VAT, but we do not model these explicitly in the economic model.

Refund system

This solution extends the type of refund systems currently in place in eight Member States.

In our economic model, we assume full compensation of public sector input VAT (for the five modelled sectors and public administration). This equalises VAT treatment between public and private sector on the input side but leaves behind the current potential distortion on the output side, cf. Figure 0.7. As this the type of solution currently applied in eight EU Member States, we do not model any change in these eight Member States. We therefore implicitly assume that any EU wide refund system will have no impact compared to their current refund schemes.

Figure 0.7: How we model the refund system solution



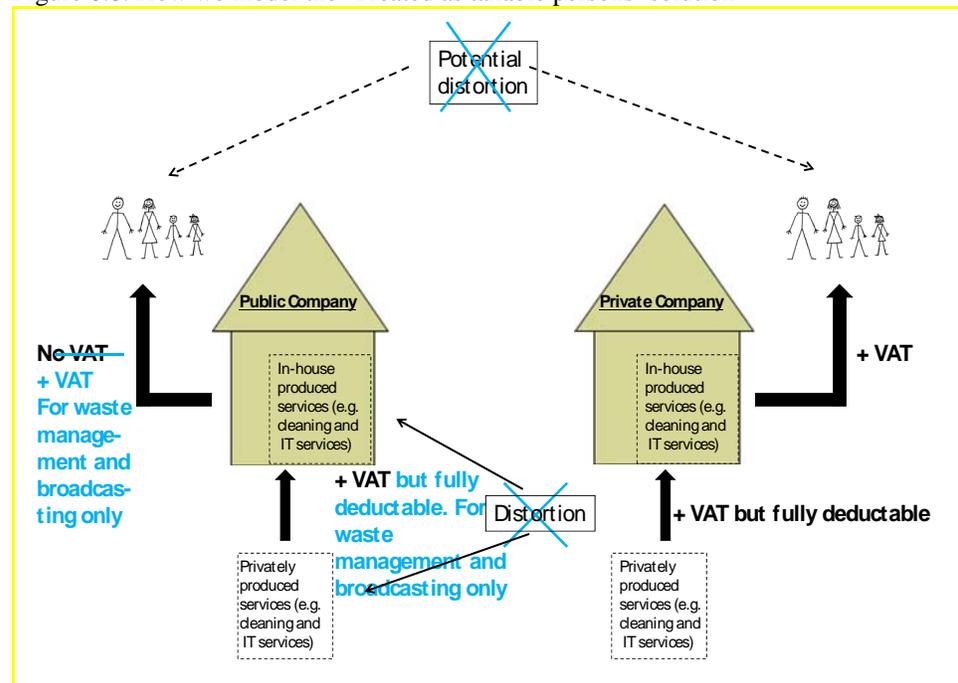
Source: Copenhagen Economics

In our model, we also discuss the impact of compliance costs in the refund system solution, as this new way of recovering VAT for public entities is expected to add administrative burdens compared to the current situation where most Member States do not have a refund system in place. One could discuss whether or not the current system with differential VAT produces high compliance costs similar to those of a refund system. However, our discussion above suggests that a refund system adds further compliance costs.

Treated as taxable persons

This solution adds VAT to public entities' output which is currently non-taxable and allows public entities to deduct VAT for services such as waste management, broadcasting, sewage, air traffic control, parking and road tolls and crematoriums. In our economic modelling we introduce this 'full taxation' however, only for waste management and broadcasting services as these services are the only one we can model, cf. Figure 0.8. Distortions on both input and output side will be eliminated in the two sectors, but only in these two sectors.

Figure 0.8: How we model the 'Treated as taxable persons' solution



Note: Distortions on input and output side will be eliminated only for waste management and broadcasting services as explained in the text.

Source: Copenhagen Economics

Treated as taxable persons with an option to tax

This is similar to the ‘treated as taxable persons’ solution model, but it adds an option to tax additional public entities. Hence, this solution model will only have a larger economy wide impact if this option to tax is applied to more public entities than in solution three. We do not explicitly simulate this option in the economic model as its characteristics are not possible to interpret into the model.

Economic modelling results

Our modelling for the first two solutions (full taxation and refund system) show GDP effects of 0.01 percent to 0.19 percent of EU Gross Domestic Product (GDP), cf. Table 0.9.

Table 0.9: Model results, percentage change from baseline of differentiated VAT treatment of public and private sector

	Solution 1: Full taxation		Solution 2: Refund system**	
	without competition	with competition	with compliance costs	without compliance costs
Change in GDP	0.04% (€4.8 billion)	0.19% (€20.9 billion)	Potentially zero	0.013% (€1.4 billion)
Change in public core services share of total output, pct.-points	-0.02	-0.09	-	0.01
Change in private core services share of total output, pct.-points	-0.06	0.03	-	-0.01
Change in private business services input share to public sector, pct.-points	1.50	1.42	-	1.43
Change in public business services input share to public sectors, pct.-points	-1.81	-1.74	-	-1.74
Change in public sector employment	-0.40 % (164,400 persons)	-1.10 % (452,100 persons)	-	-0.14 % (57,540 persons)
Change in total employment	0	0	-	0
Change in wages	0.02%	0.10 %	-	0.00%
Potential cost savings for public sector, pct.of public consumption/absolute	At least 0.3 percent of government consumption / €5.2 billion from more efficient use of support services. More costs savings when taking into account shift in core services. We do not estimate this due to impact of other mechanism in the model, making it difficult to isolate a relevant measure for cost saving		-	0.3 percent of government consumption / €5.2 billion

Initial cost from re-funding incoming VAT	€100 billion**	€100 billion**
Initial change in VAT revenue due to output VAT alone /proportional VAT percent change in entire economy to offset change	195 billion euro / -19 percent If entire value of public output is taxed	_* *_

Note: * - No correction in VAT rates, as revenue remains constant due to no change in output VAT rates.

**Government costs from refunding incoming VAT to public entities can be considered an internal government transfer from one public entity (the state) to another (e.g. a public hospital now being allowed to recover VAT). Without competition means that no competition exists between the private and public core services covered. With competition means that competition does exist. With compliance means that taking compliance costs into account reduces the GDP effect. We do not have information about the size of compliance costs caused by a refund system, hence, we cannot specifically estimate the net effect of the positive efficiency gains and negative compliance costs from the refund system. Without compliance means that estimate does not include assumptions on compliance costs. In general see more on these numbers in chapter 4. The results do not cover the postal sector.

Source: Copenhagen Economics

The driving mechanisms

In general, the increase in GDP is driven by more efficient use of resources through less distortions. This is brought about by removing the distortion due to differential VAT treatment. Furthermore, we have assumed that private production of the five covered core services is 15% more efficient than the similar public production. The same goes for private production of support services compared with public own produced support services. This is due to e.g. economies of scale and more incentive to innovate due to competition.

To provide an initial overview of the driving mechanisms behind the solutions, we start by looking at the GDP increase of 0.01 percent of GDP for solution 2: Refund system. This increase is driven by a substitution of support services in the five modelled public services and public administration, from own produced support services to private produced support services.

Next we turn to solution 1: full taxation without competition, with a GDP increase of around 0.04 percent. Without competition, means that we assume that the five modelled public and private core services do not compete with each other. So the relative demand between the public and private core services does not change even when we equalise their output VAT and thereby create new relative prices facing the consumer. This implies that the difference between the 0.04 percent of GDP in this solution and the 0.01 percent in the refund solution is driven by less distortion between the five core services and rest of the economy. Hence, this effect is driven by the consumers choosing to shift consumption away from public and private core services, to other goods and services.

The full taxation model with competition indicates a GDP increase of 0.19 percent. ‘With competition’ means that we assume that the five public and private core services compete with each other. And when the distortion caused by differential VAT is removed demand changes from public to private services. As we assume a high degree of substitution between public and private core services in this scenario (the equivalent to our concept of with competition), the consumers reduce their demand for the public core services significantly substituting towards private core services and also towards other goods and services.

Solution 2: Refund system

The spread in the refund system solution is caused by the existence of compliance costs, or non-existence of compliance costs. Notice, that we have not actually modelled the scenario with compliance cost. The reason is that we have no credible estimate for its size. However, we have previously concluded that we believe that a refund system entails compliance costs. This is the reason for writing ‘potentially zero’ for the GDP effect in the column with compliance: If in fact compliance costs amount to the GDP effect of 0.013 percent in the scenario without compliance costs it will cancel out this gain. We therefore believe that care should be taken, should one favour a refund system solution, to create a solution as transparent and easy to administer as possible. Otherwise there is a risk that the economic gains from elimination of the distortions could be neutralised (or even be negative).

The GDP increase of estimated 0.013 percent of GDP is caused by elimination of the distortion on the input side. We find an increase of 1.43 percent of the share of public sector use of private produced support services, and a drop of 1.74 percent in share of public in-house produced support services. This is the shift from in-house produced support services to private produced – outsourced – support services that we expect from eliminating the distortion on the input: private produced support services become relatively cheaper than public in-house produced support services. Because we assume that private support services are produced more efficiently than public in-house produced services, we get the positive impact on overall GDP.

This more efficient use of resources also may approximately be interpreted as a public cost saving of 0.3 percent or around 5 billion euro.

We estimate that a refund system solution would ‘cost’ 100 billion euro from allowing public entities to recover incoming VAT. However, in the model we interpret this cost merely as a transfer from one public entity to another. E.g. from the state to a public hospital, who can now get its incoming VAT refunded from the state. Hence, this ‘cost’ does not influence on our GDP results or our public cost savings estimate. The only exception is for charities, which may also recover VAT in this solution model. Naturally, this does not constitute a transfer between government entities. We do not model the charities.

Solution 1: Full taxation – without competition

The first assumption ‘without competition’ generates an increase in GDP of around 0.04 percent, cf. the first results row. The assumption is that public and private services that are currently not equally taxed do *not* compete with each other. This is in line with the general idea in the CVSD (the ‘VAT directive’) that differentiated VAT should in general not cause distortions between public and private entities. This is reflected in the rows ‘Change in public core services share of total output’ and the corresponding ‘Change in private core services share of the economy’, which both drop as a consequence of higher taxes, but they do not shift between themselves.

Consequently, the GDP effect is driven by the fact that we lower distortions in the rest of the economy. Introducing a full taxation system would lead to a VAT revenue gain. This revenue gain comes from taxing public sector output. To re-balance the public budget in the model, we have reduced the VAT rate proportionally on all goods and services in the economy. The results table show that taxing the entire output in the five modelled sectors could increase VAT revenue up to 184 billion euro, and that this is directed back to consumers through an 18 percent proportional reduction in all VAT rates, seen across the entire EU (there would be differences between the Member States). For example, if Denmark were to reduce its standard VAT rate by 18 percent, it would go down from currently 25 percent to 20.5 percent.

The revenue gain assumes that the entire value of public core services output is taxed. This may not be the case since only the value of e.g. public output corresponding to the consideration is taxed, and if the consideration does not reflect the entire output value. However, we do not know how large a share of the output value that may be financed through a consideration in a future full taxation solution. So we are only able to provide this upper bound for revenue increase.

The fourth and fifth results rows show the effect of elimination of the distortion on the input side. We find an increase of 1.50 percent of the share of public sector use of private produced support services, and a drop of 1.81 percent in share of public in-house produced support services. This is the shift from in-house produced support services to private produced – out-sourced – support services that we expect from eliminating the distortion on the input: private produced support services become relatively cheaper than public in-house produced support services. Because we assume that private support services are produced more efficiently than public in-house produced services, we get the positive impact on overall GDP.

Public sector employment falls in this solution-scenario by -0.40 percent. Private sector job creation rises, by definition, by the same absolute amount: In a new long run equilibrium with unchanged overall labour supply, we always find a drop in public jobs is compensated for by an

increase of private sector jobs. Notice, that the model does not take into account short run labour market rigidities.

Finally, we see that effects on overall wages are small as calculated in the model. The model does not, however, take into account potential higher wages in certain public activities. In general, public employees that, under the current regime of differential VAT treatment, are experiencing higher wages compared to similar jobs in the private sector, may experience a drop in wages, as the full taxation model makes it easier to substitute expensive own production of public support services with cheaper private production. This will tend to add pressure on any ‘mark-up’ on public wages.

Solution 1: Full taxation – with competition

Here the assumption is that all public and private services that are currently not equally taxed do in fact compete with each other, and that the differential VAT therefore in general creates a distortion in favour of the public services. Eliminating the distortion on the output side (and of course also on the input side) under this assumption, results in economics gains of 0.19 percent of GDP. This is a significantly larger gain compared to the 0.04 percent in the ‘without competition’ scenario. The difference of 0.15 percent of GDP may thus be attributed to elimination of the distortion on the output side.

Hence, in Member States where competition on the output side exists between public and private service providers, but differential VAT treatment is a key factor in distorting competition, there may be significant economic gains from a full taxation solution. The reason is that we reduce overall distortions in the economy by equalising taxation between services that are close substitutes. It must be kept in mind, however, that barriers to distortion of competition may still exist, so that elimination of differential VAT treatment may not bring about economic gains.

We find a shift towards private produced core services share of total output (up 0.03 percentage points) from public produced core services share of total output (down 0.09 percentage points).

The solutions are qualitatively compared in the table below.

Table 0.10: Comparing the solution models

Category	Full taxation	Refund system	Treated as taxable persons	Treated as taxable persons, with an option to tax
Distortion of competition	No distortion	Distortions on output side	No distortion in waste and broadcasting	No distortion depending on execution of option

Barriers to market entry	No	Possible barriers	No barriers in those sectors	No barriers depending on execution of option
Level and structure of investment	Investments and outsourcing are encouraged	Investments and outsourcing on support services are encouraged	Investments and outsourcing are encouraged	Investments and outsourcing are encouraged. Incentive for public entities to opt in and out of tax. This could distort investment decisions.
Level and structure of employment	Shift from public to private sector	Shift from public to private sector	Shift from public to private sector in these sectors	Shift from public to private sector
Efficiency of public services	More efficiency	More efficiency	More efficiency	More efficiency, but risk that own choice of whether or not to be taxable may imply distortions
Consumer prices (level not inflation)	Go up as a first round effect because taxes are added to public output.*	May go down as public production is carried out more efficient and thereby cheaper.	No detectable impact on the overall price level.	No detectable impact on the overall price level.
Wages	Go up as efficiency increases in the overall economy. This is primarily because of more production taking place in the more efficient private sector. Could be a negative wage pressure in public entities if a wage premium exists for certain public entity jobs	Go up as efficiency increases in the overall economy. This is primarily because of more production taking place in the more efficient private sector. Could be a negative wage pressure in public entities if a wage premium exists for certain public entity jobs	No detectable impact on the overall wage level. Could be a negative wage pressure on public production in covered sectors.	No detectable impact on the overall wage level. Could be a negative wage pressure on public production in covered sectors.
Impact on tax revenues	Increased revenues initially as taxes are levied on public output, but neutralised in our modelling scenarios.	Neutral to small loss. The latter due to loss to charities.	Increased revenues initially as taxes are levied on waste and broadcasting output, but neutralised in our modelling scenarios.	Increased revenues initially as taxes are levied on waste and broadcasting output and maybe more sectors depending on execution of option to tax
Welfare gains	Positive	Positive	Overall small- but could	Overall small - but could

			be significant in covered services	be significant in covered services
Tax compliance costs	Low	Medium	Low	Low to medium, depending on discussions and compliance costs caused by option to tax

Note: * The full taxation will also have implications for the financing flows between the government, those paying social security contributions, and the social security institutions owing to higher final prices for medicines and health care.

Source: KPMG AG and Copenhagen Economics.

Impact on employment

The shift away from public production naturally, reduces demand for labour. The model results indicate a change in public employment from -0.14 percent to -1.10 percent. This roughly corresponds to from -450,000 jobs to -55,000 jobs in the public sector, cf. Table 0.11.

Table 0.11: Shift of jobs away from public sector

Coverage	Public sector employment, millions	Change in public sector employment, percent	Change in public sector employment
EU27	41.1	-1.10	-450,000
		-0.14	-55,000

Note: Public sector employment is for 2008 except for six countries-Belgium(2000) France(2006) Lithuania (2007) Malta (2006) Poland(2007) and Sweden (2007). Public sector employment consists of general government sector, which is the sum of three sectors (government units, social security funds and other non-profit institution) and publicly owned enterprises. See <http://laborsta.ilo.org/applv8/data/sectore.html>. The employment effects in absolute numbers do not exactly correspond to the modeling results above. The reason is that our modeling does not cover the entire public sector but only the five modeled sectors and public administration, which makes up around 70 percent of total public sector.

Source: OECD based on ILO-Labour statistics database for public sector employment. Change in public sector employment is from the economic modeling results presented above.

The reduction of public sector jobs is due to two forces working in opposite direction. The first force reduces public sector jobs as in-house public produced support services and core services are outsourced to private sector. The other force increases public sector jobs as the outsourcing makes public production more efficient thereby increasing public production and therefore demand for employees.

However, it is important to note that this drop in public sector employment is offset by a similar increase in private sector job creation. As the solution models do not impact structural labour supply, we would not expect a net gain nor a net loss of jobs in the economy in the longer run. In the longer run, all experience tells us that additional unemployment is absorbed into new jobs elsewhere in the economy.

In the short run this may not be the case for everyone, especially in a situation of economic slowdown. And it is not automatically so that the people losing public jobs are the ones that gain jobs in the private sector.

The literature suggests that in the short run there will be a negative effect on employment from outsourcing and in general opening up monopoly type institutions on employment. But in the medium to long run (5+ years) the employment in the opened sectors as a total will have increased. This may be due to strong private job creation, not necessarily public jobs, cf. Table 0.12.

Certain groups may have more difficulty finding a new job once they have lost their current one. Literature suggests that this applies to older people and people with shorter experience in the labour market.

Table 0.12: Select literature analysing the impact on employment

Study	Research question	Findings
Jacob R.M. (2010)- "Whose Job goes Abroad?- International outsourcing and individual job separation", Scandinavian. J. of Economics 112(2), 339-360, 2010	The study attempts to test the fact that outsourcing at most gives rise to short-run adjustment costs in the form of spells of unemployment following job displacement, however; in the long run the level of unemployment is unaffected, although some workers may suffer lower wages. The study uses the data for Danish manufacturing sector from 1990-2003	The paper concludes that outsourcing may induce long-run productivity gains from cost savings and reallocation of workers to new firms and industries, but in the short run there may be individual losses in terms of unemployment and lower reemployment earnings.
Bachmann R. and Braun S.(2010),"The impact of international outsourcing on labour market Dynamics in Germany", Scottish Journal of Political Economy, Vol. 58, No. 1, February 2011	Using an administrative data set containing daily information on individual workers' employment histories, they investigate how workers' labour market transitions are affected by international outsourcing	Outsourcing has a positive but small impact on overall job stability in the manufacturing sector, and considerably increases job stability in the service sector. However, the effect of outsourcing varies strongly across skill levels and age groups, with negative effects for some workers.
Egger, H. and Egger, P. (2006), "International outsourcing and the productivity of low-skilled in the EU", JEL Vol. 44, No. 1, January 2006, 98-108	The article presents insights into the role of outsourcing on the productivity of low-skilled workers in EU manufacturing.	The study confirms that the short run international outsourcing exhibits a negative marginal effect on real value added per low-skilled worker, however; the long-run parameter estimates reveal a positive impact.
EC, DG for Economic and Financial Affairs (1999), "Liberalisation of networking industries: Economic implications and main policy issues".	The publication studies the economic implications of the liberalisation of the networking industries and the main policy issues. Relevant analyses are carried out with a focus on the telecommunications industry.	The study finds that employment in the short run (1-2 years) will decrease due to the liberalisation, but in the long run the number of jobs in the industry will increase above the initial level.
Ugur (2007), "Liberalisation in network industries in the European Union: Evidence on market integration and performance".	The paper examines the extent of liberalisation and the nature of market performance in a group of European network industries. The paper is based on data from, among others, Copenhagen Economics.	The paper find that in the short run (1-5 years) the employment in the liberalised industries has fallen gradually. At the same time, the overall industrial employment has been gradually increasing indicating relatively fast re-employment.
Sewin C. and Stevens.A.F (2008), " Job Loss and Employment Patterns of Older Workers" Journal of Labor Economics, Vol.19, No. 2.(Apr., 2001), pp. 484-521.	The study explores the employment patterns of workers aged 50 and above who have experienced involuntary job loss.	The study stresses the large and lasting effects of job loss on future employment probability of older workers once they involuntary lose their job due to plant closing or layoff. The study also indicates that this result is in line with the literatures in related studies.
Joanna N. Lahey (2005), "Do older workers face discrimination" Centre for retirement research at Boston college, No.33	The paper focus on assessing the existence of age discrimination against older people in labour market.	The study concludes that even if older people would like to work more in their later age, they face discrimination from the employer. Hence, those who have lost jobs and those with little work experience who unexpectedly need to enter the labour market, such as widows, divorcees, will have less probability of joining the labour market.

Source: Stated sources in the table.

Summary of case studies

Throughout the analysis, we have carried out a number of interviews with representatives from private and public and charity entities, in order to gain hands on insight into their perception of the consequences of differential VAT.

Below we summarise select case studies on hospitals.

Table 0.13 Select Case studies on hospitals

Case studies	Impact of VAT on legal form	Administration Cost of VAT	Impact of VAT on outsourcing decision	Impact of VAT on Investment decision
Full taxation (Australia)	The choice of legal form doesn't depend on VAT treatment	Relatively low administration cost of VAT	Outsourcing is made purely on the basis of non-VAT criteria	VAT has no influence on investment decision
Countries with compensation scheme (UK)	VAT does not influence the choice of legal form	Involves admin. cost of VAT as there is a need for advisors in VAT compliance	VAT does not have impact on outsourcing decision as most input VAT is recoverable	VAT has influence on investment decision
Countries without Compensation Scheme (Germany)	VAT plays a major role on the choice of legal form, see e.g. case in Box 0.1	Involves admin. cost of VAT but it varies across private and public sectors	VAT is considered as an important factor for outsourcing decision	VAT has influence on investment decision

Source: Based on interviews. See all case studies in appendix

1.6. RECOMMENDATIONS

Based on the above results, we believe that the most attractive solution to eliminating the distortions caused by differential VAT treatment of public and private entities is a full taxation model. It promises greater potential economic gain than the kind of refund systems currently in place around the EU. Furthermore, it is likely to reduce compliance costs compared to the current differential VAT treatment, where refund systems will add compliance costs. Finally, a full taxation solution is 'future proof', in the sense that whatever developments may occur in how public and private entities compete, the full taxation model automatically ensures a level playing field.

However, taxing only the consideration part of public output may provide incentive to finance public entities through e.g. global subsidies instead in order to escape VAT. That could reduce the positive economic impact of the full taxation solution. Hence, one could consider a full taxation solution which taxes the entire value of the public produced services regardless of how they are financed, i.e. also taxing e.g. global subsidies.