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Cost accounting and VAT:

How can cost allocation methods be used for VAT purposes?

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Abstract: For all entities simultaneously active in sectors subject to VAT and exempted from VAT (e.g. banking industry), the recovery of the VAT charged by their suppliers on investments and others expenses (input VAT) is a very important financial issue. Indeed, the VAT system allows a company to recover input VAT when it is linked to turnover (product or services) that is subject to VAT. However, input VAT linked to exempted supplies can not be claimed back. Indeed, for all investments and expenses that cannot be allocated to a taxable activity, a pro rata has to be applied. The allocation of costs to a taxable activity can therefore allow significant tax-savings compared to a situation in which the input VAT is simply not claimed back or in which the pro rata is computed based on a lump sum method like those frequently proposed by the tax authorities. As VAT represents a significant amount of the value of the expenses - reaching up to 20% in certain countries - the savings generated by an accurate costing method can also be significant.

In this context, this paper shows how different costing methods can be used as an instrument for a VAT-efficient cost allocation. Building upon a case from the service industry it demonstrates how the appropriate use of costing methods can improve the recovery ratio of input VAT by optimising the allocation of costs to taxable supplies. The paper concludes on the necessity to reinforce the cooperation between cost accounting, tax academics and practitioners.

Cost accounting and VAT

How can cost allocation methods be used for VAT purposes?

"Our bottom line is that tax research done in an accounting context has a valid claim to be recognized as a significant part of the wider field of accounting research. Overall, the volume of European tax research published in English-language accounting journals remains too small. To change this position, individuals must try to meet the challenges of tax research. The accounting community must also encourage its growth by signalling the acceptability of tax research done well as accounting research and by offering positive suggestions of how to tailor this particular interdisciplinary subject to make valuable contributions to the wider field."

(Lamb and Lymer, 1999, p.767)

1 Introduction

Since the seminal 1999 article by Lamb and Lymer, we know that the cooperation between tax and accounting research is under-represented within the accounting academic community. However, their rich literature review has shown that some tax-accounting research does exist and can be summarized into 8 areas:

- (a) reporting tax costs in published accounts (EAR Supplement, 1996;⁶ Holland, 1998);
- (b) tax influence on financial reporting and degrees of conformity between profit measurement for tax purposes and for financial reporting (EAR Supplement, 1996; Freedman, 1995; Green, 1995; Lamb, 1995; Lamb *et al.*, 1998; Macdonald, 1995; McMahon and Weetman, 1997; Whittington, 1995);
- (c) comparative international studies of tax cost reporting and tax influence on financial reporting (EAR Supplement, 1996; Lamb *et al.*, 1998);
- (d) interrelationships between taxation and accounting in broader social and political contexts and practice (Boden, 1999; Boden *et al.*, 1995);
- (e) the implications of tax legislation for corporate decision-making and management (Casson, 1998; Elliott, 1995);
- (f) the organization and management of tax practice, compliance and planning (Porter, 1999a, 1999b);
- (g) tax education and training (Craner and Lymer, 1999; James and Evans, 1996); and
- (h) tax influence on individual and corporate financial behaviour researched in analytical and empirical studies (Acker *et al.*, 1997; Lasfer, 1995; Walsh and Ryan, 1997).

(Lamb and Lymer, p.756, 1999)

Among many different considerations that could result from this review, one of the first that can be observed is that VAT does not seem to be a major issue of common research between accounting and tax. Secondly, it appears that cost accounting is also not considered as an important topic of accounting-tax research. Therefore, in this paper we will try to demonstrate both the possibility and the potentiality of the common research between these two themes.

Relativizing Lamb and Lymer's review, it must be said that there is quite a large corpus of research associating VAT and accounting that is nested in tax research and journals. The lack of publications concerning this issue of VAT is therefore more in the accounting field than in the tax field.

In addition, the link between cost accounting and tax has been investigated but attention has been focused on a limited numbers of topics, particularly inventory costing and transfer pricing. That said, the volume of scientific publications associating tax and cost accounting remains limited and, if we look specifically at publications associating VAT and cost accounting, as far as our literature review can tell us, there is not a single publication.

In the light of the above, it is all the more surprising that VAT seems to present at least two very strong potentialities of cooperation with cost accounting. Firstly, the VAT mechanism is largely based on cost computations; secondly, VAT rates reach up to 20% according to the country. Hence, VAT-based cost allocations may represent a key factor of success for a cost-price leadership strategy.

This paper therefore aims to propose a framework for a possible cooperation between cost accounting and tax academics,. In order to do so, we have organized this article as follows: Section 1 is this introduction. Section 2 will present the VAT mechanisms. Section 3 will present the potential contribution of cost accounting techniques for the elaboration of VAT-driven costing as well as an illustration of a VAT-driven allocation scheme. Section 4 will conclude on the necessity to improve collaboration between accountants and tax research.

We will build on the Swiss and European example in this paper as this is our cultural background. However, due to the large number of shared elements between these two systems and the other VAT systems, our analysis should be of relevance for all fiscal environment using VAT. Non VAT-using countries like the US may find some interesting insights for their multinational companies operating in different tax-environments.

2 The VAT problematic for cost accounting

Value-added-tax (VAT) was introduced in Switzerland in 1995. Although the Swiss Federal Law on VAT (VATL)¹ is a national bill, it relies strongly on the EU VATlegislation². Moreover, EU law and jurisprudence are, in Switzerland, considered as very important interpretation instruments for VAT purposes (Reich, 1995, p. 329 ; Oberson, 2000, [commentary of art. 1, note 12 and following]). As the systems in the different jurisdictions rely on the same principles and mechanisms, the analysis under Swiss VAT law is of direct interest for EU countries.

¹ Loi fédérale régissant la taxe sur la valeur ajoutée (LTVA) of 2 September 1999 (this bill replaces an ordinance that was used as of the introduction of VAT in Switzerland in 1995).

² Sixth Council Directive of 17 May 1977 on the harmonization of the laws of the Member States relating to turnover taxes – Common system of value added tax: uniform basis of assessment (77/388/EEC). As of January 1st, 2007 the “Sixth Directive” was replaced by the Council Directive 2006/112 CE of 28 November 2006 on the common system of value added tax. (hereinafter: “EU VAT Directive”).

VAT is often considered, both in Switzerland as well as in the EU, as an issue of secondary importance that belongs to the accounting process of the firm and may even be seen as a mere task for compliance (Newark, 2006, p. 3). Companies should however become aware that, by using proper planning and / or management accounting instruments, they could avoid or mitigate VAT becoming an important cost factor. Keeping in mind that the VAT rate in the EU is at least 15%³ and can reach 25%⁴, the impact of strategies allowing companies to avoid having VAT as a cost for expenses and investments can be significant. Hence, VAT can even be seen as an instrument to obtain a strategic advantage over the competitors (Newark, 2006, p.3).

To better understand how management accounting can be used to improve the VAT position of a company, we will start by recalling the mechanism of this tax, in particular the concept of *input VAT* deduction.

2.1 Description of the VAT mechanism : general concept

VAT is a general consumption tax on good and services⁵. As a “general tax” it applies, in principle, to all transactions in which a VAT tax payer is involved⁶; as a “consumption tax” it is supposed to be ultimately paid and borne by the final consumer and not by the company (Kogels, 2006, p. 375). VAT is due along the entire production chain however, to avoid levying tax on the tax itself, the concept of VAT relies on the right for the taxpayer to recover VAT charged on its expenses and investments (so-called *input VAT*).

This is how it works: a company delivering services and goods to a client is liable to pay VAT on its sales (i.e. on its turnover). However, this tax burden is usually transferred to the customer who receives an invoice showing the value of the transaction and the VAT due on it⁷. The tax paying company therefore does not generally bear the burden of the tax itself; the latter’s role is in fact to collect VAT from its customers and to transfer it to the authorities.

While a business pays VAT to its suppliers for expenses and investments, it is, subject to certain conditions, entitled to recover from the tax authorities – or more precisely to deduct from its own VAT tax return - the VAT paid to its suppliers. We will come back on the conditions for the refund of input VAT, but as a main rule, it requires that the company be a registered VAT payer and that the expenses or the investments for which VAT is invoiced by the suppliers are part of the tax payer’s own production process. Hence, as long as VAT can be fully recovered from the tax authorities, it does not represent a cost factor and does not even impact the P&L statement. However, when companies are not entitled to claim for input VAT refund of the tax paid for goods and services, VAT invoiced by the suppliers becomes a cost element that reduces the margin of the company or needs to be included in the cost basis and may therefore increase the price of the products. The right to obtain refund of input VAT is in particular denied for all persons that are not registered as VAT payers (e.g. all individual

³ Art. 97 EU VAT Directive.

⁴ The standard rate in Sweden amounts to 25% ; the minimum standard rate in the EU is 15%. The standard rate in Switzerland is currently 7,6%.

⁵ See for a general overview : « How VAT works » on :

http://ec.europa.eu/taxation_customs/vat/how_vat_works/index_en.htm.

⁶ In order to reduce the administrative burden at the level of the VAT authorities, Switzerland only registers as VAT tax payers companies with a taxable turnover of more than CHF 75'000.

⁷ Note that in Switzerland, this transfer of tax is not compulsory and remains a contractual issue between the parties.

consumers or very small companies whose turnovers do not exceed the threshold to become VAT tax payers) and for companies that acquire goods and services outside their business activity (see here below 2.2). In addition, the right to input VAT deduction is also refused if the goods and services are used to generate VAT-exempted turnover, i.e. if they exit the VAT production chain.

Indeed, under Swiss law⁸ as well as under the EU VAT Directive⁹, certain type of turnovers are exempted of VAT. Various activities – like health care, education, etc. – benefit from an exemption in order to take into consideration the fact that VAT is levied at a flat rate not taking into account the income and wealth situation of the final consumers (Oberson, 2000, [commentary of art. 1, note 48]). Other turnovers, in particular certain banking – credit - and insurance services, are exempted for practical reasons, namely because the determination of the assessment basis would be too complex and too burdensome from an administrative point of view¹⁰. Other reasons, like social, political, cultural reasons can be found to explain the numerous exemption to VAT (Camenzind et. al., 2003, 235 and following). In all cases where a VAT tax payer delivers VAT-exempted goods and services, they do not have to pay the corresponding amount of tax to the authorities and logically do not invoice the same amount to its clients. Consequently, because these activities are “outside the scope of VAT”, they do not entitle the company to recover the input VAT linked to the exempted turnovers.

To the extent that the company cannot deduct input VAT, it suffers an additional cost on its expenses and investments. To mitigate this effect, both Swiss law¹¹ and EU law¹² allow, when specific requirements are met, the possibility for the tax payer to voluntarily opt for taxation of some of the exempted turnovers and hence create the right to recover input VAT.

In connection with the above, the following must be specified for the sake of clarity:

- VAT is only applied on the sale of goods and services that are rendered against consideration. Certain transactions however do not involve payment and consequently do not fall within the scope of VAT since they do not represent consumption of goods or services. This is the case for instance for capital contributions, subsidies or gifts received by a company: no VAT is due at the level of the receiving company. However, as far as subsidies and gifts are concerned, Swiss VAT¹³ considers that the company benefiting from such turnover has a limited right to deduct input VAT.
- Another method to reduce the social impact of VAT is to apply special reduced rates for certain goods like food, medication, certain cultural products, etc.¹⁴ Such privileged turnovers however are not considered as being exempted and allow a full refund of input VAT.

⁸ Art. 18 VATL.

⁹ Art. 131 et seq. EU VAT Directive.

¹⁰ see European Commission, *Consultation Paper on modernizing Value Added Tax obligations for financial services and insurances*, 2006,

http://ec.europa.eu/taxation_customs/resources/documents/common/consultations/tax/modernising_VAT_en.pdf

; Report P. Spori, Expert for the Reform of Swiss VAT, Bern May 12, 2006, p. 19 et seq.

¹¹ Art. 26 VATL.

¹² Art. 137 EU VAT Directive.

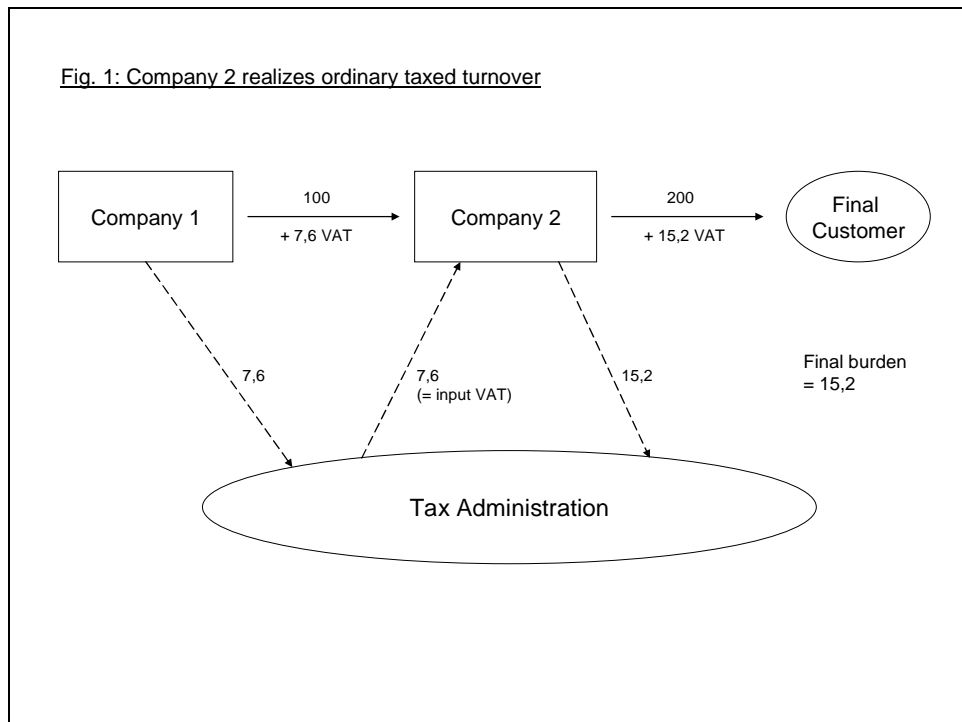
¹³ Art. 38 para. 8 VATL ; the same applies under EU VAT, see art. 174 (1), para. 2 EU VAT Directive.

¹⁴ According to art. 36 VATL, the reduced rate for food, medications, etc. in Switzerland corresponds to 2,4% instead of the standard rate of 7,6%.

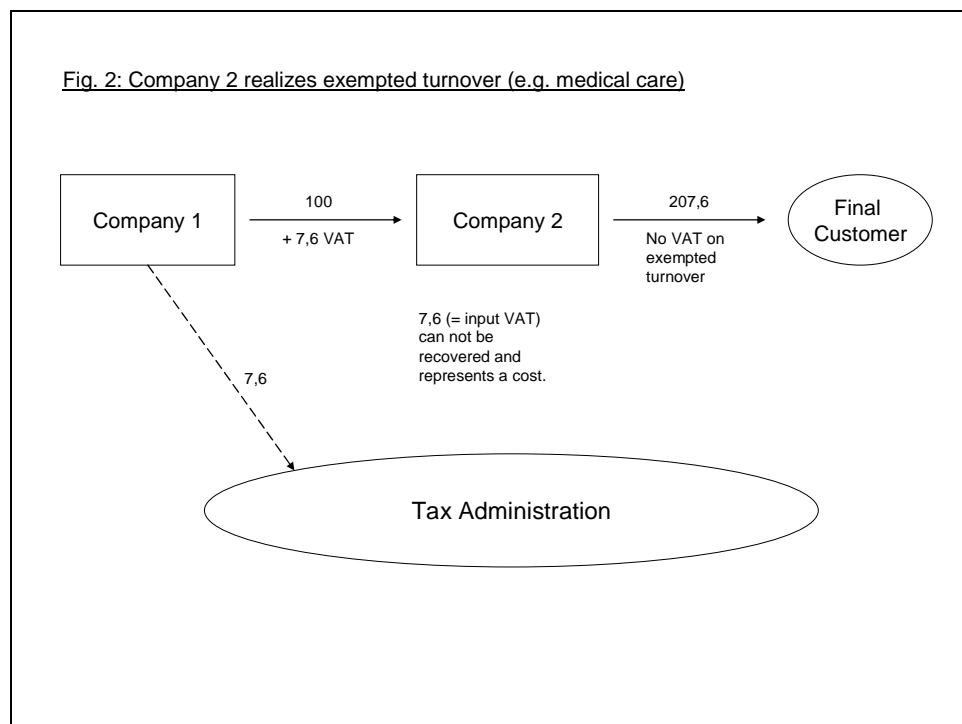
- Finally, in international transactions, goods and services are generally taxed at the place of consumption. This means that exports are taxed at a rate of zero percent when exported (so-called “zero-rating”) and imports are taxed upon importation. Turnover that is zero-rated still however allows a full refund of input VAT.

The mechanism of VAT can be summarized as follows:

Figure 1 shows a situation where a company (company 2) realizes a turnover taxed ordinarily and can recover the full input VAT. Consequently, the tax is not a cost factor for company 2.



In figure 2, Company 2 realizes an exempted turnover (e.g. medical care) on which no VAT is due. Accordingly, company 2 is not entitled to deduct input VAT on its expenses and costs. VAT paid to its suppliers (7,6) is a cost that either reduces its margin or increases its prices. In figure 2, company 2 chose the latter solution.



2.2 Input VAT deduction

As already mentioned here above, input VAT deduction is only possible if certain conditions are met:

1. The company needs to be a registered VAT payer¹⁵, i.e. it has to generate a turnover that is subject to tax exceeds the threshold for registration.
2. The goods and services for which input VAT is paid are used in the business process and not for private purposes¹⁶.
3. The company can prove the amount of input VAT that it paid on the basis of an invoice meeting precise formal requirements¹⁷.
4. The goods and services for which input VAT deduction is claimed are used for the purpose of taxable transactions opening the right to input VAT deduction¹⁸.

We will not expand here on conditions (1) to (3) that do not relate to the topic of the present article but will focus instead on condition (4). Indeed, both Swiss and EU law list the type of turnovers for which the company has the right to deduct input VAT. It concerns turnovers that are taxable or that are localized in another country but would be taxable had they occurred in the territory of the home country¹⁹. However, as mentioned above, exempted turnovers do not allow input VAT deduction.

If a company generates only taxable turnover (see figure 1), it has a full right to the refund of input VAT. The situation is also quite clear if an entity realizes exclusively exempted

¹⁵ This proves true in Switzerland (art. 38 VATL) as well as in the EU (art. 168 et seq. EU VAT Directive).

¹⁶ Art. 38 para. 1 VATL and art. 176 EU VAT Directive.

¹⁷ Art. 37 and 38 VATL ; art. 178 EU VAT Directive.

¹⁸ Art. 38 para. 1 VATL ; art. 168 and seq. EU VAT Directive.

¹⁹ This means that turnover localized outside the relevant country (e.g. sale of a machine localized in another jurisdiction) is not subject to VAT but allows to recover input VAT ; the same applies to zero-rated transactions (exports).

turnover (like on figure 2); the company then has no possibility to obtain the refund of its input VAT. In many cases, however, companies generate simultaneously taxable and exempted turnover. In these cases, the possibility to obtain the refund of input VAT will depend essentially on how the allocation of the goods and services for which input VAT is claimed can be done among the taxable and exempted activity.

2.3 Input VAT allocation under Swiss law

Swiss law states as a general principle that input VAT must be allocated on various types of activities and on different turnovers²⁰ but does not provide for a specific and precise allocation method (Clavadetscher, 2000, [Commentary of art. 41, n. 37]; Camenzind, Honauer, Vallender, 2003, p. 513). The law²¹ only refers to the “concrete use of the goods and services”, thus leaving a broad room for interpretation. The tax administration²², as well as scholars (Rochat, 1997, p. 79 and seq.; Riedo, 1999, p. 256; Clavadetscher, 2000, [Commentary of art. 41, n.38]; Camenzind et al 2003, p. 513 and seq.) and the Swiss Supreme Court (Decision Swiss Supreme Court dated 1.12.2004 (2A.349/2004), s 4.3.2) agree on the fact that taxpayers must rely on objective economic criteria. Input VAT is refunded provided it can be demonstrated that the expense for which VAT is paid is part of the costs included into the price of the taxable product sold by the tax payer (Riedo, 1999, p. 256). Although a direct and immediate link between the expenses paid by the tax payer (input) and its taxable supplies (output) is generally requested, the VAT refund is also possible if an indirect link can be demonstrated, provided the expenses for which input VAT is requested are cost components of the taxable transactions made by the tax payer (Decision Swiss Supreme Court dated 1.12.2004 (2A.349/2004), s. 4.3.2). This is a very important point for our cost approach as it insists on the fact that, if an “objective economic criteria”, i.e. a justifiable cost driver, can be proposed, different overhead allocations are possible.

Where possible, *direct allocation*²³ is recommended. Input VAT, computed for the purchase of goods or services directly used (in the common cost accounting sense) to produce taxable goods or services, is then fully recoverable and input VAT linked to exempted turnover is entirely lost. If a direct allocation is not possible, because the goods and services for which input VAT is paid are used for both taxable and exempted turnover (so-called input VAT with mixed utilization or, in cost accounting terminology, indirect or overhead costs), the Swiss VAT administration recommends to use allocation keys based on “*objective business criteria*”²⁴, like for instance number of employees, salaries, turnover, utilization time of equipment, square meters, etc.²⁵

Due to the fact that Swiss law entitles the tax payer to freely choose the allocation method that is most appropriate to reflect economic reality (Clavadetscher, 2000, [Commentary of art. 41, n. 60]; Camenzind et. al., 2003, p. 515²⁶), management accounting can represent an ideal tool to perform the cost allocation among the various types of turnover for VAT purposes. The FTA special guideline 6²⁷ even states that «*in practice, if it exists, management*

²⁰ Art. 38 VATL.

²¹ Art. 41 VATL.

²² Special Guideline no 6 (610.530-06) issued by the Swiss Federal Tax Administration, VAT Division - , chapter 2 (hereinafter: FTA special guideline 6).

²³ FTA special guideline 6, ch.2.1. and 2.3.

²⁴ FTA special guideline 6, ch. 2.4

²⁵ FTA special guideline 6, ch. 2.4.

²⁶ see also FTA special guideline 6, ch. 1.5.4.2

²⁷ FTA special guideline 6, ch. 2.2.

accounting is the ideal tool to allocate costs on the basis of their use (cost accounting) ». Our illustration, in section 3 will show that this cost accounting opportunity is twofold: it allows the cost driver to be chosen and overhead to be pooled.

Because not every entity has a management accounting system and because the allocation of costs and investments on various activities can be very complex and may trigger important administrative costs, the tax authorities offer the possibility²⁸ for the tax payer to apply lump sum methods for allocating input VAT between the various turnovers of the business. The VAT authorities propose several such methods²⁹, like, for instance, the “*lump sum solution 2*”³⁰. According to this allocation method, the total input VAT is allocated to the various activities according to the pro rata of the turnover of each activity. The percentage of the total input VAT corresponding to the ratio of exempted turnover to total turnover can then not be deducted. Needless to say, this method, although simple to apply, may lead to unfavorable solution for the tax payer. The tax authorities also propose other special lump sum methods, namely for cultural and sport institutions³¹ and for banks³².

In addition to the above lump sum methods to allocate the input VAT among the various turnovers, the tax authorities also provide simplified solutions to deal with ancillary exempted turnovers, in particular financial income (interest payments) and rental revenues³³. Indeed, even if a company has a business that is fully taxable for VAT purposes, it is likely that it receives some exempted revenues, e.g. interest payments on its cash deposits, non taxable rental income on leased real estate, etc. In this case, the tax paying company should not have the right to a full refund of input VAT on overheads that are partly used to generate the exempted turnovers. Nevertheless, subject to certain requirements³⁴, the process has been simplified and the tax payer can deduct input VAT on its overheads³⁵ but then needs to pay a lump sum amount calculated on the exempted ancillary turnover (0,02% of financial interests or 0,07% of rental income).

2.4 Input VAT allocation under EU law

Under EU law, the right to recover input VAT is also granted for investments and expenses with an objective link³⁶ to taxable turnovers; it is denied in case of utilization for exempted turnovers (Terra/Kajus, 2006, p. 943 et seq.). The taxable person is hence entitled to claim for input VAT refund “in so far as the goods and services are used for the purposes of the taxed transactions [...]” of its business (art. 168 EU VAT Directive).

“According to settled case law, the existence of a direct and immediate link between a particular input transaction and a particular output transaction or transactions giving rise to

²⁸ FTA special guideline 6, ch. 1.5. ; Decision of Swiss Federal Appeal Court, Decision dated June 8, 2004, in : JAAC 68.101, no 2c.

²⁹ See FTA special guideline 6, ch. 1.5. and ch. 4 to 6.

³⁰ See FTA special guideline 6, ch. 5.

³¹ See FTA special guideline 6, ch. 6.

³² See FTA guideline 14 (610.540-14) « Finance », ch. 7 ; the guideline 14 is applicable to banks and other financial institutions.

³³ Interest income is exempted in any case and rental income is exempted, except if the tax payer has opted to tax it.

³⁴ See FTA guideline 6, ch. 1.2.2.3. and 1.3.

³⁵ Provided of course that its business activity is fully taxable for VAT purposes.

³⁶ European Court of Justice (ECJ), Decisions of April 6, 1995 in the case BLP Group plc v. Commissioners of Custom and Excise (C-4/94), s. 24 and of February 7, 2007 in the case Investrand BV v. Staatssecretaris van Financiën (C-435/05), s. 22 and following..

entitlement to deduct is, in principle, necessary before the taxable person is entitled to deduct input VAT and in order to determine the extent of such entitlement. [...] The right to deduct VAT charged on the acquisition of input goods or services presupposes that the expenditure incurred in acquiring them was a component of the cost of the output transactions that gave rise to the right to deduct” (Decision ECJ, February 7, 2007 Investrand BV [C-435/05], s. 23). It is however also generally accepted and confirmed by case law that despite the lack of a direct and immediate link between input and output, the entitlement to VAT refund is opened “[...] where the costs of the services in question are part of his [i.e. the tax payer’s] general costs and are, as such, components of the price of the goods or services which he supplies” (Decision ECJ, February 7, 2007 Investrand BV [C-435/05], s. 24; this is also explicitly mentioned in art. 1(2) EU VAT Directive).

The EU VAT Directive also provides for a specific rule for input VAT linked to expenses and investments used for both taxable and exempted turnovers. As a general principle, art. 173 EU VAT Directive provides that “*in the case of goods or services used by a taxable person both for transactions in respect of which VAT is deductible [...] and for transactions in respect of which VAT is not deductible, only such proportion of the VAT as is attributable to the former transactions shall be deductible. The deductible proportion shall be determined, in accordance with Articles 174 and 175, for all the transactions carried out by the taxable person*”. Art. 174 states that “*The deductible proportion shall be made up of a fraction comprising the following amounts: (a) as numerator, the total amount, exclusive of VAT, of turnover per year attributable to transactions in respect of which VAT is deductible [...]; (b) as denominator, the total amount, exclusive of VAT, of turnover per year attributable to transactions included in the numerator and to transactions in respect of which VAT is not deductible*”. However, the EU VAT Directive allows the Member States to adopt another, more precise allocation scheme, in particular to “*(a) authorise the taxable person to determine a proportion for each sector of his business, provided that separate accounts are kept for each sector; (b) require the taxable person to determine a proportion for each sector of his business and to keep separate accounts for each sector; (c) authorise or require the taxable person to make the deduction on the basis of the use made of all or part of the goods and services*” (art. 173 (2) lit. a to c EU VAT Directive).

Under the EU VAT Directive, the main rule for the allocation of input VAT with mixed utilization therefore corresponds to the Swiss “*lump sum solution 2*”, i.e. an allocation key based on turnover. However, the directive allows the Member States to provide for the possibility or even to require a more accurate economical allocation of input VAT, provided the company keeps “*separate account for each sector*”.

We shall illustrate now the application of this directive with the German and French applications of it. In Germany, the law (Birkenfeld, 1998, V., n. 560 ; Rochat, 1997, p. 92 and seq.) prohibits the use of a general pro rata. Input VAT is entirely recoverable if linked to taxable activities and fully lost if connected to exempted turnover. Regarding input VAT with mixed utilization, German VAT law, like in Switzerland, foresees an allocation based on economic and business criteria (Birkenfeld, 1998, V., n. 576 and n. 583 and following). In addition in Germany, management accounting is considered as an instrument that can be used directly for VAT purposes (Birkenfeld 1998, V., n. 585).

In France, the use of the pro rata method plays a more important role than in Germany. Tax paying companies generating simultaneously taxable and exempted turnovers³⁷ generally have to apply a pro rata on their input VAT. However, even there, a more precise allocation of expenses and investments to the various activities is possible (or even legally required) in

³⁷ So-called : « *redevables partiels* ».

some situations in which management accounting can be of great help. Firstly, French law and jurisprudence allow for the separate treatment of input VAT connected solely to taxable or exempted turnovers, the former being entirely deductible, the latter not refundable (Francis Lefebvre, 2006, §5074 and following). Hence, the pro rata only applies to input VAT with mixed utilization. Secondly, according to French VAT, tax paying companies simultaneously exercising various types of activities with different VAT treatment are compelled to hold separate sets of accounts, to treat each activity separately for VAT purposes (Francis Lefebvre, 2006, §5100 and following) and to apply different pro ratas for each activity. Thirdly, an economical allocation of input VAT based on the effective use or on the application of keys is possible for goods and services linked simultaneously to taxable turnovers and to activities outside the scope of VAT (Francis Lefebvre, 2006, §5063 and following).

3 A VAT driven overhead allocation system

As we have seen, both in Switzerland and in the EU but more generally in every VAT-using country, management accounting can be of great help to allocate input VAT linked to expenses and investments for the various types of turnovers. It allows one to identify the input VAT that is entirely linked to taxable activities and thus fully refundable. Moreover it can be used to allocate input VAT with mixed utilization, i.e. input VAT for overheads shared between various activities, and to improve its recovery ratio. It permits a more precise tracing of the link between input and output VAT than do the lump sum and general pro rata methods. Consequently, the company can reduce the portion of input VAT that is not refunded and that represents a cost for the company. Management accounting therefore allows for the reduction of the business's tax burden by means of the choice of more accurate drivers of overhead.

When cost accountants take a closer look at this issue, they will recognize the classic problem of cost distortion (see, for instance, Hilton, 2008, pp. 182-185) due to oversimplified cost drivers. This section will analyze the link between this issue and VAT issues.

3.1 The classic cost accounting issue of overhead tracing and allocation...

3.1.1 VAT as a cost reimbursement system: fair allocation

The translation of this input VAT recovery issue into cost accounting terms has two main aspects. The first feature is that the input VAT recovery is based on the full cost computation of the product cost. The VAT is reimbursed according to a calculation of direct costs plus an allocation of overhead costs for VAT with mixed utilization. The second feature concerns the fact that many firms have both exempted and non-exempted activities.

The issue here is very similar to the one faced in regulated industries where cost-based reimbursement systems are used. In regulated industries there are in general two kinds of activities, one using cost-plus pricing and the other competitive pricing. With their two different activities, these industries generate overheads that have to be allocated to each activity. Being as accurate as possible in the cost allocation process in order to correctly price the outcome of these activities can hence be a top priority.

Indeed, its importance could well explain the rapid development of research in cost accounting in these fields. This research has identified firms and sectors using both reimbursement pricing and classic competitive pricing. More importantly, it has demonstrated

the importance of a complex allocation scheme; plus, it has highlighted the potential of a cost allocation strategy as well as identifying the risks of unethical cost shifting. We believe that this research can be a great inspiration for a VAT-driven cost allocation where the objective is, through *a fair allocation of overheads*, to optimize VAT recovery. This fair allocation means, in our view, a more accurate allocation, i.e. a more realistic scheme to describe the “concrete use” of the overheads (see footnote 28), while remaining a legal and ethical allocation. This dual requirement is the basis for the utilization of cost accounting for VAT purposes.

3.1.2 VAT cross-subsidization and the “relevance lost” of allocation systems for VAT purposes

When facing the VAT issue, firms have a strong incentive to apply an allocation scheme that will minimize the risk of allocating overheads to exempted activities. Using an oversimplified overhead allocation scheme, some of the input costs that are consumed to generate taxable products, could in fact be allocated to exempted activities. The consequence is a loss in terms of VAT recovery. As such, this issue can be called a “*VAT-related cross-subsidization phenomenon*³⁸”: some activities “pay” for others or diminish the reimbursement that should be received if cost allocation is more accurate. Using over-simplified or wrong cost drivers, could lead firms to incorrectly allocate overhead cost to activities that justify VAT recovery, thus increasing the full cost of these activities. This incorrect allocation is due to the seminal cost distortion induced by a non-representative choice of cost driver(s).

VAT provides a new logic for allocation plans. Yet as demonstrated in section 2, the allocations systems provided for by VAT legislation are often either over-simplified or under-prescribed. Oversimplification occurs through the use of the general pro-rata methodologies proposed by the EU VAT Directive and by most European countries. This costing method translates into an allocation scheme using a single cost driver based on turnover. Cost accounting literature focusing on cost distortions (see for instance Hilton 2008) has shown that this type of oversimplification raises many difficulties, mostly due to the fact that overheads are very heterogeneous and therefore are not consumed identically by the various activities of a single company. The use of a single driver relies on the opposite assumption and tends to hide the differences and to generate the well-known risk of cross-subsidization. This leads to situations where some activities pay for overheads that should in fact be traced to others. Such cost allocation schemes present a distorted picture of the product cost. Amongst other reasons, Johnson and Kaplan based their famous criticism of traditional cost accounting practices, i.e. practices using a single cost driver, on the fact that companies using false cost information can make irrelevant decisions. The VAT legislation proposing a general pro rata allocation is running the same risk of loss of relevance. As a consequence of such inappropriate allocation schemes for VAT purposes, the company may suffer from a recovery ratio of its input VAT that is too low or alternatively the national tax authorities may be compelled to refund an excessive amount of tax.

In order to avoid the “relevance-lost” risk, cost accountants have developed more accurate allocations schemes through a finer categorization of overheads (*sections homogènes*) and an analysis of the relevant cost drivers. ABC (Johnson and Kaplan 1987) is one of the most well known manifestations of this trend.

The risk of sub-optimizing VAT recovery opens the door to a constructive contribution from cost accounting, as the allocation models developed by cost accountants could be used to

³⁸ Cross-subsidization is used here in its cost accounting sense and not in the fiscal one.

improve the recovery ratio of input VAT. We are going to focus particularly on the possible contribution of cost accounting to the quest for fair cost drivers (diverse and nested in an economical analysis of the uses of overheads in the production and commercialization process) and cost pools.

In order to do so, we will present a short, classical example of cost allocation that we have adapted to VAT in order to illustrate the potentiality linked to this cost driver creativity.

3.1.3 Example of a VAT driven cost allocation scheme

To illustrate the scope of a VAT-driven allocation scheme, we have built the fictive case of a business school, “BUS”. This school provides management courses to its students together with other products like catering and housing services. In addition, it also offers consulting services to companies. We assume that the business school locates all its activities in a single building. The most important feature of this mini-case lies in the fact that the teaching activity is VAT exempted (art. 18 (11) VATL³⁹; art. 132 lit. i EU VAT Directive), the other services being subject to VAT.

As in most firms, BUS has overhead costs (e.g. heating, computing facilities, depreciation,...). To keep the example as simple as possible, we assume that BUS has three main activities, i.e. teaching, consulting and others (catering and housing) and we focus only on three categories of overheads (purchase, heating and general administration), applying a VAT rate of 7,6% (the Swiss rate)

BUS has different possibilities for dealing with VAT. The first solution for the school is to “choose” to have its whole activity, including teaching, VAT-taxed. This could be done by “opting” to submit tuition fees to VAT. In this case, overhead allocation for VAT purposes can be ignored because the entire turnover would be subject to VAT recovery leading to a full refund of input VAT. Yet at the same time the price of teaching would increase by the amount of VAT charged on the tuition fees at the legal rate (output VAT). This simple solution is often implemented in practice. One element leading firms to “opt” for voluntarily taxation is the will to reduce the complexity of computing the recovery of input VAT and the absence of associated cost for accounting. Indeed, implementing an efficient cost accounting system for VAT purposes generates costs that can be easily avoided by voluntarily taxing the exempted turnover. However, this solution is only possible if the market allows for the transfer of the additional tax burden to the consumers. If BUS decides not to opt for taxation of tuition fees but rather to keep teaching as an exempted activity, a different solution needs to be applied and an allocation strategy needs to be decided. Classically, BUS can choose between a single cost pool or a multiple cost pool system. The pro-rata method, proposed by the EU and Switzerland (*lump sum solution 2*) for instance, is based on the single pool approach, using sales as unique cost driver. However, as cost accountants know, turnover (sales) can be a poor predictor (or cause) of the overhead consumption, as its use as an allocation key relies on two assumptions: first that the overheads consumption is proportionate to sales generation and, second, that all overheads are consumed in a homogeneous way.

As the Swiss legislator authorizes the switching of cost drivers as long as companies can “prove” its rational economic justification (see here above Section 2.3.), another cost driver could be more relevant. As we have seen before, over-simplification can generate cost distortions and, in our case, VAT cross-subsidization. In our illustration we therefore compare VAT recovery using sales and using square metres of production surface as a cost driver

³⁹ We assume here that BUS has not opted to voluntarily submit its tuition fees to VAT.

(making the assumption that overheads are linked to the utilization of facilities rather than to the generation of sales).

The following table shows the calculations of input VAT recovery depending on two different allocation schemes, namely the two cited above.

VAT rate	7.6%
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		Teaching	Consulting	Others	
		Allocation scheme			
Sales		75%	15%	10%	
m2		50%	5%	45%	
					Overheads
Supply Purchase costs		20%	5%	80%	€1'364
Heating, electricity, fluids,...		60%	5%	40%	€840
General administration		60%	30%	10%	€525
Total					€2'729

Computation of Input VAT recovery							
Single cost pool						Input VAT recovery ratio (in % of OH)	Tax saving opportunity (in % of OH)
Pro rata (sales)	Total VAT recovery	€0.00	€31.11	€20.74	€51.85	2%	
m2	Total VAT recovery	€0.00	€10.37	€93.33	€103.70	4%	2%
Multiple cost pools						Input VAT recovery ratio (in % of OH)	Tax saving opportunity (in % of OH)
Supply Purchase costs		€0.00	€5.18	€82.93	€88.11	6%	
Heating, electricity, fluids,...		€0.00	€3.19	€25.54	€28.73	3%	
General administration		€0.00	€11.97	€3.99	€15.96	3%	
	Total VAT recovery	€0.00	€20.35	€112.46	€132.80	5%	3%

The computation of input VAT recovery in this case, that of a single cost pool, demonstrates that using a different cost driver than sales can make a significant difference in VAT recovery. In our example it allows BUS to increase the recovery ratio of VAT from 2% to 4% of the overheads considered.

This difference materializes what we called VAT cross-subsidization where, through the choice of an inaccurate cost driver, some activities do not generate as much VAT recovery as they should.

In order to avoid this problem, a more complex allocation scheme using multiple cost pools, such as the one illustrated in the table, can be used. This method is based on a classic double-stage allocation process, separating overheads into three “homogeneous” cost pools (supply, heating, administration). It decreases the risk of distortion through a more “accurate” pooling of costs. For each pool it is then possible to find specific cost drivers that describe the consumption of the cost pool’s overheads with greater precision. For sake of clarity, we did

not include the cost drivers considered (price of input, direct labour,...) but only their ventilation (in %) for each activity. The last section of the table shows the impact of this allocation scheme on VAT recovery.

In this very simple example, the total amount of input VAT recovery, as compared to the single pool method using sales as allocation key, is increased significantly, allowing to save costs up to 3% of the total overheads considered. If the legal VAT tax rate is increased to 15% (which represents the minimum European tax rate), the recovery ratio rises to 10% of overheads and represents a tax saving of 6% of total overheads!

This demonstrates, in our view, the potential of a more complex approach of costing for VAT purposes.

3.2 Risks linked to a VAT-driven cost allocation system

After emphasising the potential of a VAT-driven cost allocation system, we now need to look at some of the important risks and limitations linked to this system. We can put the risks into two categories: “going back from cost management to cost accounting” and “unethical cost shifting”. Both risks are present in situations where the potential of cost reduction through VAT-driven cost accounting is high. The likelihood of the occurrence of such risks will of course depend on the nature of the activities (tax-exempted or not) performed by the company as well as on its cost structure, and therefore on the amount of input VAT paid to the suppliers.

3.2.1 From cost management to cost accounting: relevance re-lost

A VAT-driven cost allocation scheme aims for a more accurate measurement of costs. Costing is therefore essentially considered as a reporting system that can be used to provide firms with strong arguments for their discussions with the VAT authorities. As such, this VAT-driven cost accounting is less concerned about the minimization of cost consumption than about optimization of the allocation of existing costs. Johnson and Kaplan (1987, chap. 6, pp125-151), among others, have shown the risks inherent in this type of costing approach based on external reporting where there is a shift from a cost management system to a cost accounting system, a system that is more concerned about an accurate measurement of costs than about providing leverages to manage these costs (Johnson and Kaplan (1987), Lebas (1999)).

The risk is then that cost accounting - when used to address the VAT issue and when it gains its relevance from its contribution to improving the recovery of tax - may lose (part of) its usefulness for managerial operational decisions. It may even lead to inappropriate business decisions especially if linked to an inappropriate incentive system for managers. Focussing on an optimization of VAT recovery, companies may build an allocation schemes that would distort their economic analysis and lead them to make sub-optimal decisions. In dealing with VAT, it is therefore important to make sure that the applied costing method does not prevent managers from determining the total amount of overheads depending on the value-creation potential and to insure that they refrain from only considering the VAT impact. Keeping in mind the fact that input VAT represents a percentage of the overheads (i.e. the VAT tax rate applicable in the local jurisdiction), it will always be cheaper to avoid large overheads, than to recover input VAT! VAT recovery is therefore to be considered as an issue of optimization and not a strategic one.

3.2.2 From cost allocation to cost manipulation

Given the possibility of cost minimization due to a VAT optimization, the incentive for managers to distort allocation between exempted and non-exempted activities may be strong. This risk is magnified by the fact that auditors are usually not in a position to determine the legitimacy of allocation rules (Rogerson, 1992, p. 672). Research on defence contracting with cost-plus reimbursement shows that un-ethical cost-shifting practices are quite often used (Thomas J.K. and Tung S., 1992). Research on regulated industries like the health-care sector (see for instance Foster, 1985; Dranove, 1988) or the government contracting sector (Rogerson, 1992; Thomas and Tung, 1992, McGowan and Vandrzyk, 2002) also brings to light cost-shifting practices. Cavaluzzo, Ittner and Larcker (1998, p.2), give the example of the Federal Reserve System in the U.S. This agency provides private banks with services like check clearing, wire transfers and currency processing (Zimmerman, 2006, p.349) for which they charge the banks full-cost-based fees. Yet some of these services, like check clearing, are also provided by competitors. Cavaluzzo, Ittner and Larcker explained that the incentive for the Fed. was then to allocate overhead costs to less competitive services in order to price the competitive services at a lower level. They conclude on the fact that "organizations modify their allocation methods in response to regulatory restrictions on pricing" (p.29).

The economic justification of the choice for a cost driver can be artificially created with ease in the absence of available statistical data directly correlating outputs and overheads. Even the overhead pooling can be subject to manipulation.

4 CONCLUSION: INFERENCES ABOUT THE TAX-COST ACCOUNTING COOPERATION

To summarize, the aim of this paper was to demonstrate the potential, both on a theoretical and a practical level, for cooperation between cost accounting and the recovery of VAT. It also emphasized the fact that a profitable collaboration can take place between academics in the accounting and tax fields. The practical consequences of such a cooperation is, in our view, very obvious for firms, given the high number of different VAT rates.

The article went on to highlight the potential of complex cost allocation schemes in the creation of a strategic advantage in a cost and reimbursement based system. Even a very simple example such as the one we used here leads to a 6% reduction of overhead costs. Is there many other field of research that could open such an opportunity for cost cutting? In the light of this potential, we become aware of the importance of linking cost accounting and tax courses and of the importance of studying of company practice. Considering the huge cost optimization incentive, it is likely that some companies have already started to investigate the possibility of VAT-driven cost accounting. In a positive approach to accounting science, it would therefore be interesting to investigate the range and the predictors of these practices.

Furthermore, it seems obvious that VAT has been neglected for too long from a costing point of view. This means that VAT in firms can be shifted from the financial accounting, department where it is located most of the time, to the cost accounting department. Or, at the very least, a close cooperation between these two sectors can be put in place. That said, the paper does however point out the risks of cost allocation scheme focusing only on VAT.

From a theoretical point of view, the paper raises what seem to us to more complex issues. The first one concerns the explanation for the current lack of cooperation between cost accounting and tax academics. Lamb and Lymer have already provided us with some explanations for the lack of cooperation between accountants and tax specialists but they did not investigate the cost-accounting issue. We believe that there are at least three levels of explanation for this relative absence of cooperation: an ontological level, an epistemological level and a semantic one.

The ontological level looks at the themes, the issues addressed by disciplines (Hottois, 1998). We can ask ourselves about the subjects that could possibly interest both tax and cost accounting academics. Are they structurally different and does this therefore justify the fact that there is so little common research? One could argue that tax academics are more concerned about the firm in its entirety than about specific activities and products than cost accountants. This assumption is put into perspective by the existence of indirect taxes like VAT. Furthermore, cost accounting cannot be limited to product costing. We therefore believe in the necessity to investigate and list the common fields of research for these two fields.

On an epistemological level, the lack of cooperation between cost accounting and tax is somehow more surprising than for financial accounting and tax. Summarizing Lamb and Lymer's point of view, we could say that on one hand financial accounting research has moved towards a very positive trend, aiming more towards general hypothesis generation and testing by specialized researchers. While on the other hand, tax academics often find their scientific legitimacy in the construction of efficient interpretations of laws and official texts. Their epistemology is therefore more normative than positive, and deeply linked to hermeneutics and clinical sciences. Their tradition of scientific publications is therefore sometimes quite different from the "dominant" accounting ones. Yet, as far as cost accounting is concerned, the opposition is less clear. The hermeneutical, normative and clinical tradition is very present in the field of cost accounting (for a review of this issue, see for instance Chapman C., Hopwood A. and Shields M., 2006). So present, in fact, that Zimmerman - advocating for a positive approach for accounting - was able to say that that cost accounting has, so far, not been able to build a truly scientific corpus (Zimmermann, 2001). It is interesting to note that the same argument is often also addressed to tax academics by accounting ones, particularly in business schools. In the light of the above, it would be interesting to explore why it is that there has not been more common research between these two fields, sharing common epistemological traditions.

Lastly we have the semantic level. The two fields of cost accounting and tax have developed separately, building specific vocabularies that have not been confronted with one another. For instance, the word *activity*, central to both disciplines, has very different meanings in tax and in cost accounting. The fact that these two disciplines use often the same words but with different meanings could, paradoxically, reinforce the lack of cooperation due to the fact that they could give rise to quick but unconscious misunderstandings as well as a kind of political struggle between the two disciplines regarding the choice of definition to use (who's definition are we going to keep for activity?).

Despite these theoretical considerations, if we regard this exploratory paper as clinical material, it brings to light the large number of issues shared by the two authors, one being a cost accounting researcher and the other a tax researcher, and, in addition, regardless whether this has an epistemological value or not, the pleasure generated by this cooperation.

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