Is VAT a simple tax?[1]

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Abstract

The purpose of this paper is to highlight several sources of complexity in VAT application. Firstly, I will focus on the problems raised - when the tax is applied under a multiple rate structure - by the need to establish what types of goods and services are subject to different VAT rates. Secondly, the fact that in every European Union (EU) country VAT rules apply to, at least, three broad sets of transactions of goods and services (inside the country, with other EU members, and with non EU members) raises difficult questions of where to apply the tax. This is especially tricky in the taxation of services, where a complex set of "rules", "exceptions" and "exceptions to the exceptions" apply; but it is also common in the transactions of goods. Finally, for firms with multiple activities, the compliance costs can be significantly increased if some activities are VAT exempt, particularly in the type of "non complete" exemption.

Resumo

O objectivo deste artigo é o de analisar algumas das fontes de complexidade na aplicação do IVA. O texto discute três das principais fontes de complexidade. A existência de taxas múltiplas, as regras de localização das prestações de serviços, e as questões decorrentes das isenções incompletas.

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Is VAT a simple tax?

1. Introduction

The textbook analysis of the Value Added Tax (VAT) usually presents as advantages of this tax its self enforcement, simplicity (at least when compared to the income tax) and, because it is usually included in the price of goods and services, taxpayers are less resistant prone.

In the US, the sole major economy without VAT, it is usually discussed as an alternative way of raising revenue (eventually replacing income taxation) or, in the European way, as a tax that can be combined with income taxation of individuals and corporations. (See Slemrod and Bakija, 2004; The Report of the President´s Advisory Panel on Tax Reform, 2005).

Although US tax experts point to the fact that, in practice, the simplicity of the VAT is not as clear cut as its textbook version (Gale 1997), an European perspective can be helpful in highlighting some of the main the sources of VAT´s complexity. That is the purpose of this paper, where several sources of complexity will be analysed from a conceptual point of view and also with some examples.

Firstly, I will focus on the problems raised - when the tax is applied under a multiple rate structure - by the need to establish what types of goods and services are subject to different VAT rates. Given a multiple rate structure, usual in the EU member states, lobbies try to extract from tax authorities especial treatment for specific economic activities, by pointing to the unique merits of some good or service. And, for taxpayers, the task of assigning a reduced rate to a newly introduced good or service can be quite complex. A lot of controversies and lawsuits arise on the correct qualification of many items for tax purposes.

Secondly, the fact that in every European Union (EU) country VAT rules apply to, at least, three broad sets of transactions of goods and services (inside the country, with other EU members, and with non EU members) raises difficult questions of where to apply the tax. This is especially tricky in the taxation of services, where a complex set of "rules", "exceptions" and "exceptions to the exceptions" apply; but it is also common in the transactions of goods, because of especial regimes (v.g, the especial regime for second hand goods). All situations combined, they produce a remarkably high number of "service location rules".There are plenty of disputes between companies regarding the proper jurisdiction where VAT should be charged, mainly in the area of intra- EU service transactions.

Thirdly, for firms with multiple activities, the compliance costs can be significantly increased if some activities are VAT exempt, particularly in the type of "non complete" exemption. (In a "complete" or "zero rate" exemption the firm does not charge the VAT to its customers but can deduct the VAT from the inputs and obtain a refund; in a "non complete" exemption the firm does not charge the VAT to its customers and can not deduct the VAT from the inputs).

Thus, for example, a firm with two activities (one taxed and the other under the non complete exemption) can face significant problems in the deduction of the VAT included in the so-called "miscellaneous" inputs. When these are used simultaneously in exempt and non exempt activities, a *pro rata* (or percentage of deduction) method is generally applied, under which a percentage of deduction is used during year n based on the percentage of deductible VAT in year n-1, and then corrected, *ex post,* based on the observed share of revenues from both types of activities in the year n. This problem is also observed when the *pro rata* is applied to fixed assets. In this case, the *ex post* correction can be made only in certain circumstances.

Also regarding deduction of VAT paid in inputs, there are limitations to this basic feature of the tax. Many tax codes forbid deduction in what are deemed "non business expenses", thus adding an extra layer of complexity in the interpretation of such dispositions. The list of these expenses is not yet harmonized under the EU common system of the VAT.

Another topic that merits discussion is tax fraud. VAT rules applying in the intra- EU commerce of goods (under which the seller of a good to another EU firm does not charge VAT and maintains the right of deduction of input tax, and therefeore can ask for a refund in its home country) originated an increasingly common type of tax fraud known by "*caroussel fraud*". In short, the scheme consists in setting up several firms in different EU countries, arranging fake sales and then ask for refunds. Only a very close cooperation between EU tax administrations, which sometimes is not easy, can help them track down these fraudulent schemes, which will be exemplified in the body of the paper.

Another area of complaints for VAT taxpayers is the fact that it can create problems with the financial management of firms. Two examples illustrate this potential source of difficulties. First, if the average collection period of a firm is significantly higher that its period for VAT payment, it becomes a forced lender to the tax administration; secondly, in times of high investments – where firms are usually on a VAT credit position against the State because of VAT deduction in acquired fixed assets – if the tax authorities are not diligent in refunding firms their liquidity can be squeezed.

In conclusion, the potential for complexity in the VAT is quite significant. This paper will focus on some common sources of complexity observed in Europe. I venture that the analysis and exemplification of some sources of complexity is a contribution to a better perspective on the questions arising from the use of VAT.
The paper is organized as follows: section 2 presents a brief characterization of the VAT functioning in EU; section 3 deals with the problems caused by a multiple rate structure; section 4 explores the sources of complexity emerging from exempt activities, the partial right of deduction and the *pro rata* mechanism; section 5 analyzes the rules concerning location of services; section 6 concludes by presenting some tentative reflections on the EU experience apllying the VAT and what can US learn from this system.

2. The value added tax in the EU: a brief characterization

The adoption of the VAT in the EU has its roots in article 99 of the Treaty of Rome. It reads as follows:

The Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament and the Economic and Social Committee, adopt provisions for the harmonisation of legislation concerning turnover taxes, excise duties and other forms of indirect taxation to the extent that such harmonisation is necessary to ensure the establishment and the functioning of the internal market ...

Tax harmonization in the area of indirect taxation was thus an important goal at the very beginning of the European project. But the unanimity rule put some strain on the final agreements to be reached on this matter.

The legal instrument used to implement tax harmonization in EU has been the Directive[2]. Using this instrument, the European Council issued the First Directive[3], in 1967, concerning turnover taxes, which established the VAT as a replacement to the then existing systems of turnover taxes.

The VAT enacted in the First Directive had the following characteristics:

- It involved the application of a general tax on consumption of goods and services proportional to their price.
- The number of transactions taking place in the production and distribution process did not affect the tax burden. This was achieved by the credit mechanism, which allows the deduction of VAT included in the purchase price of inputs (credit method or indirect subtractive method).

[2] Directives, as it is well known, lay down the objectives to be achieved, and leave to the national governments the choice of legal instruments to promote them. Regulations, on the other hand, are binding to Member states in their entirety.
[3] Directive 227/67

- Each taxpayer is a collector of the VAT. Tax due is the difference between charged VAT and deductible VAT. The final consumer ultimately bears the full amount of the VAT.
- The VAT would be charged on imports, and exports would be zero rated, thus giving exporters a refund of the supported VAT in inputs (destination principle).

A new impetus to harmonize indirect taxation (mainly the VAT) came in the Sixth Directive[4], in 1977. This Directive refined some unsolved issues left by the First and Second[5] Directives, mainly in the areas of service taxation, exemptions, property and financial transactions, and also built up the so-called "uniform basis of assessment". (Farmer and Lyal, 1994)

As the European project evolved, the White Paper on the Internal Market (1985) established an agenda for the creation of an European Single Market. In this new setting, goods would circulate in a unified tax jurisdiction. The concept of exports and imports between EU countries was abolished for VAT purposes, giving rise to the concept of intra-communitary transactions. The European Commission proposed a switch to a system under which operations would be taxed in their country of origin, but the VAT revenues would be redistributed between member states, to preserve the existing pattern of VAT receipts.

After complex negotiations, Directives 680/91 and 111/92 were issued, creating a "transitory system", where the destination system, but without custom tax controls, was maintained for a certain period. (This supposed "transitory system" is still in place, although it was meant to be changed to an origin system in 1996).

These are, in a very rough and synthetic way, the cornerstones of the European VAT system.However lengthy and complex the process of harmonizing the VAT in EU countries may have been, it is undeniable that the VAT has been a "revenue machine" for most governments[6].

[4] Directive 388/77
[5] Directive 228/57
[6] The fear that VAT becomes a financial support for " big government" is often mentioned by some US politicians as a factor against VAT introduction.

Table 1

Tax revenues of major taxes as a percentage of total tax revenue in some OECD countries, 2002

	Personal income	Corporate income	Social security and other payroll	Property	Goods and services	Of which: General consumption
Denmark	53,2	5,8	3,9	3,5	33,1	19,9
Finland	31,2	9,3	26,6	2,4	30,2	18,2
France	17,3	6,6	39,5	7,5	25,4	16,7
Germany	25,1	2,9	40,3	2,3	29,2	18,0
Italy	25,5	7,6	29,4	5,1	26,9	15,0
Portugal	17,9	10,8	27,0	3,1	40,0	24,0
Spain	19,4	9,1	35,3	6,6	28,6	16,6
UK	29,8	8,1	17,0	12,0	32,7	19,4
Japan	18,4	12,2	38,3	10,8	20,1	9,5
U.S.A.	37,7	6,7	26,1	11,9	17,6	8,2
OECD Total Unweighted	25,7	9,4	26,3	5,5	31,9	18,9

Source: OECD (2005:17)

As table 1 shows, in some EU countries, like France or Spain, general consumption taxation of under the VAT generates revenues similar to the personal income tax, and, in Portugal, the VAT is the most important source of tax revenues, after social security and other payroll taxes. The significant difference of EU countries relatively to US and Japan in terms of general consumption tax revenues is also clear in table 1.

Given the legislative history and importance of VAT in EU as a source of revenue, I will now focus on the following topics:

i. How does VAT operate?

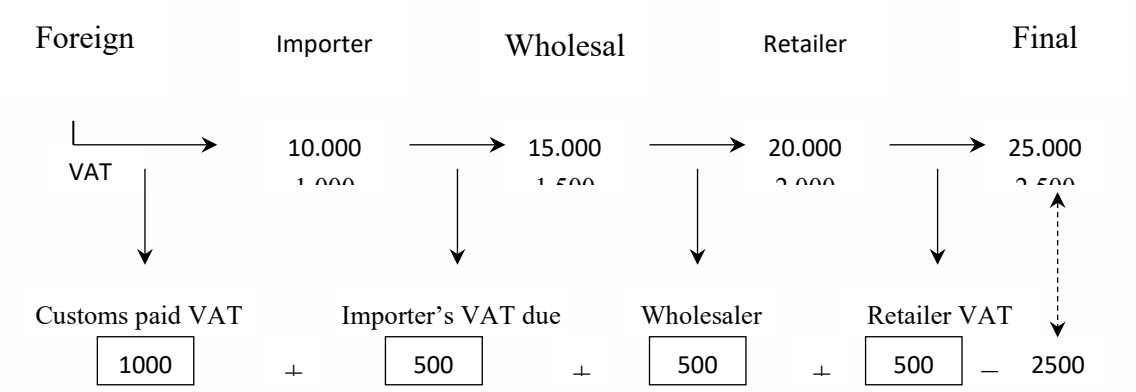
ii. Given the conceptual attractiveness of VAT in terms of neutrality, self-enforcement and simplicity, what factors do render its application complex?

How VAT operates can be seen in the following example, assuming a tax rate of 10%.

(Exhibit 1)

Exhibit 1

VAT and the economic circuit



Supposing that an imported good enters an economic circuit that spans from the importer to the final consumer, after going through a wholesaler and a retailer, the VAT is collected at every stage, and the sum of partial collections is equal to the amount of VAT included in the price paid by the final consumer. As shown in this very simplified example, businesses do not support the VAT – they just collect it along the way and send it to the government -, and consumers do bear the full amount of tax[7].

What are the advantages of applying VAT in this manner?

Firstly, the deduction mechanism ensures that the number of stages in the production of a good or a service has no impact in the tax burden. This feature is a clear advantage over sales taxes operating in cascade, where the tax burden is dependent on the organization of the production and distributions processes. This non distorting feature of the VAT at domestic level is also very important to ensure neutrality in international trade. By exempting exports (with reimbursement of VAT included in inputs), and by taxing imports at customs entry, the VAT ensured a tax levelled playing field for international trade by European countries, which was (and still is) a sensitive issue in economic policy.

Another often mentioned advantage of the VAT is its self-enforcement nature. By allowing deduction of the supported VAT, each taxpayer would be interested in asking for proper invoicing from its

[7] See Slemrod and Bakijia (2004) and The Report of the President's Advisory Panel on tax Reform (2005) for a US analysis of VAT. An European analysis can be seen in, among others, Basto (1991) and Farmer and Lyal (1994).

suppliers. This has also obvious advantages from the income tax perspective, but its observed importance should not be exaggerated…

Finally, simplicity is also pointed as a characteristic of the VAT. One of the reasons contributing to the simplicity of VAT – at least in comparison to the usual application of the income tax – is the fact that exemption for small businesses takes a significant number of agents out of VAT. In this case, exempt businesses act as final consumers. They do not charge VAT, but they also do not deduct it. And, as the value added by this group of taxpayers is not high, the effect in tax receipts is marginal, in comparison to the gains from simplicity in its application.

Theoretically, the tax base in a VAT is also easier to compute than in an income tax. Depreciation, provisions, accruals – complex topics in income taxation – do not affect the VAT in the same sensitive way they can influence the income tax base. In short, the VAT is no more than a sales tax with tax credit for inputs.

At a conceptual level, the VAT has a self enforcement nature, promotes neutrality in trade and it is simpler than the income tax. And it raises a high amount of revenue, given that it is a general consumption tax. In practice, however, the real world VAT used in the EU is far from conforming to this model. What are then the main causes that complicate the VAT operation in EU countries?

Generally speaking, the main distorting factor is the number of deviations from the "ideal" VAT that legislation in each country usually includes. Slemrod and Bakija (2004: 251/2) present an incisive view about the potential simplicity of VAT:

"… the experience from other countries is not encouraging about the possibility of realizing the simplification potential of a VAT. For the most part, the European countries do not levy the kind of broad-base, uniform – rate VAT we have been discussing or perhaps fantasizing about. Instead, the European VATs have multiple rates and numerous exemptions, features that require difficult-to-make distinctions, invite abuse, and call for close monitoring."

And they add:

"… this lack of simplicity is a warning that if the United States were to adopt a VAT, it would be well advised to keep it simple, and in particular to levy a uniform rate on all goods and services."

This advice was not lost to the authors of the report of the President Advisory Panel on Tax Reform (2005), which discuss and propose the introduction of the VAT in the U.S. with the following characteristics:

- Use a single rate
- Tax all domestic consumption, except non-commercial government services
- Use the credit invoice method and be border adjusted

These statements offer a first view to some sources of complexity in the EU value added tax systems. They are, accordingly:

i. The existence of multiple rates

ii. The existence of several exemptions and its effect on taxpayers with exempt and subject operations – "mixed operations"

On top of these, other sources can be highlighted:

iii. Exclusions to the right of deduction

iv. Transitional rules, mainly in the area of intra-EU trade

v. The taxation of services, given the immaterial nature of them, and the difficulties of assigning its fulfillment to a certain tax jurisdiction.

In the next sections of the paper I will focus on these topics.

3. Multiple rates

The existence of multiple rates is a major factor that creates complexity in the application of the VAT. As I will discuss later, the difficulties arising from the definition of lists of goods and services that are subject to VAT rates lower than the standard rate are considerable. Technical details regarding the inclusion or exclusion of goods and services in the set of transactions taxable by reduced rates, and the political lobbying for some preferential treatment for certain goods and services, are at the root of potential complexity in the application of the tax.

And, in the EU, reduced rates are usually a feature of the VAT operation. Rates applying in some EU countries are presented in table 2.

Table 2

VAT rates in some EU countries, 2006-09-01

	Standard rate	Reduced rates
Denmark	25 %	-
Finland	22 %	8 %; 17 %
France	19,6 %	2 %; 5,5 %
Germany	16 %	7 %
Italy	20 %	4 %; 10 %
Portugal	21 %	5 %; 12 %
Spain	16 %	4 %; 7 %
UK	17,5 %	5 %

Source: OECD

With the exception of Denmark – and Slovakia - multiple rates exist in every other country in the EU. In many cases there are two rates lower then the standard one.

Three points are worth discussing concerning reduced rates. What are the reasons for the existence of reduced rates, given that a single rate VAT is usually presented as the "ideal model"; what rules do EU Directives establish on the possibility of multiple VAT rates; and what type of complexities do arise from multiple VAT rates.

The existence of reduced VAT rates is usually grounded in socio-economic motives (Farmer and Lyal, 1994). At the social level, there is the objective of reducing the tax burden on goods and services deemed basic or essential. This rests on the assumption that certain essential items, such as food, represent, for lower income persons, a higher share of consumption expenses. The use of a reduced rate would thus avoid the regressiveness that a standard rate would entail.

In other cases, such as the reduced rate for books or newspapers, a social interest in promoting (or at least, not hindering by taxation) these merit goods is seen as a strong enough motive for applying a reduced tax. Still, in other goods or services, economic considerations prevail to apply a reduced rate. It is, for example, the case of services with a "*high labor component*", such as some building or repairing services. Here, the reduced tax is seen as a tool to fight unemployment. Tourism can also explain some reduced rates (for example, hotels).

As far as EU Directives on reduced taxes in the VAT are concerned, a long legislative history exists, as in many other VAT topics[8].

The sixth Directive contained few provisions on tax rates. It did not establish a standard rate, and also did not lay down guidelines about reduced rates. Member states had a significant degree of freedom in establishing standard and reduced rates. Naturally that a high variation in standard or reduced rates between geographically close Member states could distort trade patterns. This would, in principle, act as a deterrent to significant differences in tax rates among Member states. However, the practice has not conformed to this supposition. Looking to table 1, and comparing, for example, rates in Germany and Denmark, or Spain and Portugal, they appear to diverge enough to induce a lot of tax motivated cross border trade[9]. Apparently, the fact that several EU reports found no conclusive evidence of distortions in trade and competition between Member States seems to be the main reason for the prevalence of this state of affairs regarding VAT tax differentials.

Directive 77/92 amended the sixth Directive dispositions´ in terms of tax rates. It established a minimum standard rate of 15%[10]; the possibility that member states have one or two reduced rates higher than 5%

[8] See Cunha (2004) for a synthesis
[9] I the case of Germany and Denmark, special arrangements were agreed to prevent this. Cross border controls still happen.
[10] But this minimum rate was established when no member state had a VAT rate lower than 15%

for goods and services listed in annex H of the Directive; and prohibits the aggravated rate that existed for certain luxury goods.

More recently, few, if any, advances have been made to move forward to an ideal model of a single, uniform, VAT rate. In 1995 the EU Commission drafted a Directive Proposal where a maximum VAT rate of 25% was introduced. It was rejected by the EU council, which decided to take efforts to guarantee that the 10 percent points existing between the highest and lowest EU VAT standard rates would not be increased.

In 2003, a proposal was presented to modify the set of reduced rates, introducing some degree of harmonization. To this day, no visible result has been achieved. Multiple rates of VAT are a fact that taxable persons have to live with. What complexities arise from their application?Two main sources of complexity can arise.

Firstly, the legal battles and lawsuits resulting from the fact that the Member States legislation on reduced VAT rates is sometimes not in accordance with the (amended) Sixth Directive. Member States, sometimes trying to ease the tax burden on certain goods or services, include in the reduced rate lists goods or services that violate EU legislation. Two examples illustrate this point.

The European Court of Justice ruled that Spanish Government was not complying with the Sixth Directive rules when highway tolls were taxed a 5%[11]. Those rules stated that the 5% could be applied to a "service consisting of the transportation of people and their luggage". The Court ruled that a highway toll does not constitute payment for that type of service, but rather "allowing people who already have transportation means to travel with increased convenience and safety". The 5% rate applied to that service was not in accordance with EU rules, and had to be changed.

In another case, the court ruled that the Portuguese government was not complying with the Sixth Directive when table wines (*vinhos comuns*) were taxed a 5%[12]. Articles 12 and 28 of the Sixth Directive forbid a rate lower than 12%. The Portuguese government, with the inevitable protest of some wine growers, had to change the rate to 12%.

[11] Process C-83/99
[12] Process C-276/98

The second source of complexity arise from the doubts that happen when a taxpayer (or a tax inspector) have to decide if a certain good or a service is included in the legal lists of goods/services taxed at reduced rates.

An example illustrates the potential sources of uncertainty in applying reduced rate. The Portuguese VAT code has two lists of goods/services to which the rates of 5% and 12% are applicable. List I (5%) has an item (1.12) that is defined as:

"*Fruit juices, fruit nectars or juices of horticultural products, including juice sirops, and concentrated juices*".

Given this definition, is a soya bean based drink taxed at 5%?

In 2005, and after some difficult questions presented by taxpayers who were in the business of selling soft drinks, a ruling (*oficio circulado*) issued by the Portugueses tax administration said that the 5% rate was apliable to soya bean juice. These rulings are mandatory to the tax authority officials, but they can by challenged by taxpayers. If the conclusion had been the opposite, it is easily conceivable that a soya bean based drink producer and the tax authorities could be locked into a legal battle dragging on for years.

Looking into the lists of goods and services to which reduced rates are appliable, a great room for confrontation between taxpayers and tax authorities can surely be found, especially when tax authorities try to forbid some "broad interpretation" by taxpayers of goods and services subject to reduced rates.

As the inventiveness of firms knows no boundaries, and some preferential tax treatment, in the form of a reduced VAT rate, is an advantage relatively to potential product competition taxed at a standard rate, it is easily imaginable the amount of complex questions that taxpayers, tax authorities, tax consultants and courts have to deal with, regarding multiple rates of VAT.

4. The right of deduction and firms with multiple activities

As shown in section 2, the application of the VAT is straightforward in the case of a taxable person developing an activity subject to the tax. In this case, provided that no particular problems related to the right of deduction arise from the fact that inputs are used for non-business purposes, the computation of VAT due is simple.

But considerable complexities can be found in situations where a taxpayer develops multiple activities. To analyse this point, I will firstly mention the legal framework put in place by the European Directives, and then illustrate its application with an example[13].

The right of deduction – a crucial feature of the VAT neutrality, as previously shown – is regulated in detail in articles 17 to 20 of the Sixth Directive.

Article 17 main rules concerning the right of deduction of the VAT included in inputs are:

i. When the inputs are used to produce taxable goods or services, the VAT is fully deductible – art. 17, nº 2.

ii. When the inputs are used to produce goods or services under a complete exemption – usually related to international trade, where the seller's exemption (zero rate) coexists with the right of deduction – the VAT is also fully deductible – art. 17, nº 3.

iii. When an input is miscellaneously used in taxable and exempt operations – i.e. non complete exemption which, as it is well known, preclude the right of deduction – VAT is deductible proportionally to the use of input in taxable operations – art. 17, nº 5.

In this latter case, the algorithm of a *pro rata* (percentage of deduction) is established in article 19 of the Sixth Directive. The *pro rata* is obtained by dividing the amount of operations that allow VAT deduction by the total amount of operations of a taxpayer[14].

To sum up, if a taxpayer develops two activities – one subject to VAT, the other a non complete exemption – three stages must be followed regarding the appropriate use of the right of deduction:

[13] See Farmer and Lyal (1994) and Basto and Oliveira (2001) for extensive treatment of this topic.
[14] As I will point latter, there are some qualifications to the components of this formula.

firstly, to identify the inputs used to produce taxable operations and fully deduct the corresponding VAT; then, forgo the right of deduction in the inputs used in the exempt activity; after, and concerning the miscellaneous inputs, use the *pro rata* of deduction, applying the formula established by the VAT code, which is derived from article 19 of the Sixth Directive.

Three aspects are here worth noting. The first is that the use of *pro rata* is not dependent on the taxpayer carrying out taxable and (non complete) exempt operations. A VAT taxpayer can carry both types of activities and, by being able to separate precisely what inputs are used in each activity, fully deduct the VAT included in the price of the inputs used in the taxable operations, and forgo the right of deduction of the VAT included in the price of the inputs used in the exempt operations. Therefore, the *pro rata* method is not subjectively dependent on the characteristics of the taxpayer's mix of activities. It is an objective mechanism to sort out the (sometimes rather complex) task of imputation of VAT charged by suppliers to taxable and exempt operations. In this respect, some European VAT codes are not in accordance with the Sixth Directive. In particular, the Portuguese solution, by adopting the subjective approach can cause some distortions in the competitive conditions of firms[15] (I will turn to this later).

The second aspect is closely related to the one just mentioned. The *pro rata* is a "residual option", and its use is dependent on the impossibility of a clear identification of the use of inputs between different operations. Even then, EU legislators, fearing that the use of *pro rata* could result in significant distortions of competition, provided, in the Sixth Directive, other imputation mechanisms, such as "real imputation" a "sectoral *pro rata*".

Finally, it must be explained why the indiscriminated or non disciplined use of the *pro rata* could produce significant distortions in economic activity. Before analysing the economic distortions potentially arising from the use of *pro rata*, it must be stressed that this is part of a general problem resulting from VAT non complete exemptions. When a taxpayer carries out operations under this type of exemptions, he is placed in the position of a final consumer. The deduction chain is broken, and double taxation may arise. It thus represents a break from the normal operation of VAT. An example is useful to clarify this point.

[15] See Ministério das Finanças*, 2006*, A *simplificação do sistema fiscal português,* polic, especially the chapter on the VAT

Suppose that a hardware lessor buys 100 000 euro of equipment, the VAT rate is 20% and the annual rent charged to the lessee is 10% of the lessor purchase price. Suppose, also, that the lessee is a VAT registred taxpayer that uses the leased hardware to make taxable operations.

If the Lessor is a taxable person, then:

- Lessor

Purchase Price	100 000
VAT (20%)	20 000
Deductible VAT	- 20 000
Total purchase price	100 000

- Lessee

Rent	10 000
VAT (20%)	2 000
Deductible VAT	- 2 000
Total rent	10 000

Let us now suppose that the lessor is exempt[16]. The same example is then presented as:

- Lessor

Purchase Price	100 000
VAT (20%)	20 000
Total purchase price	120 000

- Lessee

Rent 10% × 120 000 = 12 000

It can be seen that if the lessee wants to make the same profit in both situations, the 2000 € of the lessor´s non recoverable VAT is part of the tax base when he charges VAT to its customers. The non recovered VAT of the lessor is passed on to the rent charged to the lessee, which in turn uses it a component of

[16] The exemption may happen because it is a small trader with an annual revenue under the legal threshold.

the cost base to compute the selling price of its services. This example illustrates the disrupting economic effects of suppressing the right of deduction.

Thus, a non complete exempted operation, placed in the middle of an economic circuit, has disruptive effects. The elimination of the right of deduction at that point has important repercussions, changing the price of goods or services relatively to a situation where full deduction applies[17].

Having illustrated the general economic problem created by the elimination of the right of deduction, let us now focus again on the *pro rata* mechanism and it limitations.

To show the potential pitfalls of the *pro rata*, let us suppose that a bank purchases a computer for 1 million euro, plus 20% VAT. The bank has a 720 million exempt turnover, and 80 million taxable turnover[18]. Under a *pro rata* method – which can be used when the bank is not able to clearly separate the computer utilization in exempt and subject activities - the deductible VAT in the purchase of the computer is $\left(\frac{80}{720+80}\right) \times 200\,000 = 20\,000.$

Supposing that the real use of the computer is 3% in taxable operations and 97% in non taxable operations, it should deduct only 3% × 200 000 = 6 000. Other scenarios (advantageous to the bank or to the state) can be imagined, depending on the effective use of the computer.

For firms with multiple activities and big turnover, a small variation in the *pro rata* can have serious consequences in terms of deductible VAT. Companies are tempted to use every possible way to increase the *pro rata*. Understandably, this is an area where disagreements can frequently happen between firms and tax authorities.

A classical case of conflict between companies and tax authorities across EU concerns the right of deduction in holding companies[19].

[17] Note that the tax yield increases if the exemption is previous to the final step of the economic circuit.
[18] In banking and financial services the core business is usually exempt, but some some activities (e.g. wealth management) are subject to VAT. The VAT treatment of the financial services is a complex question in every contry that applies the tax. See Gendron (2006)
[19] See Basto and Oliveira (2001) and Cozian (2001)

To illustrate how it can happen, imagine a holding company (H) that performs two functions: receives dividend income of its subsidiaries (H_1 and H_2), and also performs management related activities, such as financial and tax advice to them.

A first question arising from this business arrangement concerns the status of the dividend receiving activity regarding the VAT. Is it a taxable activity, an exempt activity, or does it fall outside the scope of VAT? The Sixth Directive is not clear cut on the issue. Based on article 4, nº 1 and 2, the European Court of Justice (ECJ) ruled, in two famous cases,[20] that share dividends received by a holding company do not constitute an economic activity in terms of the VAT. If dividend receiving activities fall outside the scope of VAT, then no right of deduction arises for the tax included in inputs directly used for that activity.

But given that the *pro rata* is computed as a fraction that includes in the numerator the amount of operations that allow VAT deduction, and the amount of all operations in the denominator, the ECJ had to clarify some issues, especially concerning what is to be included in the denominator.

For the aforementioned type of holding companies wether dividends are included or not in the *pro rata´s* denominator is very important. If they are, the *pro rata* is reduced, and the non deductible VAT is a borned cost by the holding company. The problem is quite relevant for holdings that perform (taxable) management related activities to its subsidiaries, and the amount of deductible tax they can subtract from charged VAT.

The ECJ ruled that the logical consequence of dividends falling outside the scope of tax is that they are not included in the *pro rata´s* denominator[21].

Naturally that a strict application of the *pro rata* rule as a residual mechanism to compute deductible VAT can be quite complex. The previous operations of separating what inputs are clearly related to taxable and exempt operations, and the consequent identification of the miscellaneous inputs must rely, especially in big organizations with several activities, in management accounting systems. It is easily imagined the "fine tuning" that is need for a strictly correct application of the *pro rata*. In this sense, it

[20] Case C-60/90 (Polysar Investments) and case C-333/91 (Satam SA)
[21] However, article 19 of the Sixth Directive allows the inclusion in the *pro rata* denominator of an operation outside VAT scope: non taxable subsidies that are not related to fixed assets.

could be argued that the Portuguese actual legislative solution, although not in harmony with EU legislation, can be seen in the light of a choice between efficiency and simplicity. The objective use of *pro rata* – using it related to the type of operations as a residual mechanism to regulate the right of deduction in the case of miscellaneous inputs – minimizes economic distortions caused by the interruption of the deduction right; but the subjective use of VAT – the Portuguese solution -, by relating it to the taxpayer conditions of a mix operator with taxable and exempt operations, although less efficient, is simpler in its application.

One last point about some effects of the *pro rata* method. As previously stated, the *pro rata* is computed as a fraction that uses the amount of annual operations (taxable, exempt and the amount of some subsidies that fall outside the scope of VAT). During year n, companies using *pro rata* must rely on a "provisional *pro rata*" based on year n-1 amounts. When, at the end of year n, the total amounts of operation are known, a regularization is made. If the provisional *pro rata* is higher than the true one, the firm was deducting in excess and must compensate the state, and vice-versa.

The use of the provisional *pro rata* can be quite complex in the case of fixed asset purchases[22]. In this situation, article 20 of the Sixth Directive establishes the solution. I will illustrate it with an example. Suppose that ALFA, Ltd – a VAT taxpayer using the *pro rata* – bought a piece of equipment in 2000, for 100 000 euro, and began using it immediately for its operations. Suppose, additionally, that VAT rate is 20% and the *pro rata* used was 50%. Deductible VAT was, then, 10 000.

EU legislation, adopted in national VAT codes, establishes that if in the four subquent years after the acquisition of the good the annual definitive *pro rata* diverges in more than five percentual points, a regularization of the deductible amount has to be made. To see how it is done, suppose that, in the aforementioned example, the true *pro rata* is:

2001 - 52%
2002 – 48%
2003 – 60%

[22] Although I refer in this text only to equipment, similar problems arise when dealing with buildings.

2004 – 50%

Then, in 2003, a regularization must be made. It will naturally benefit the taxpayer, since the *pro rata* of 2003 is higher than the one used in 2000. The amount to be regularized is obtained by, firstly, calculating the amount of deductible VAT under a 60% *pro rata,* which, in this case, is 12 000. Then, the difference between 12 000 and 10 000 (the originally deductible VAT) is divided by 5 (which is the regularization period stated in the Directive for fixed assets other than buildings). In this case 2000/5=400, which is the additional deductible VAT that ALFA Ltd can insert in its declaration form[23].

Still concerning the right of deduction, but independently of the *pro rata* mechanism, another issue related to the complexity in applying VAT can be highlighted: the exclusion of the right of deduction to certain inputs[24].

As previously underlined, the right of deduction is a cornerstone of the functioning of VAT, especially to guarantee that, according to article 2 of the Sixth Directive, the tax is *"exactly proportional to the price of goods and services, whatever the number of transactions which take place in the production and marketing process…"*

However, in business life it is well known that certain categories of paid expenses are not business related but have a luxury, amusement or entertainment nature. In this case the firm supporting these expenses is treated like a final consumer, and the right of deduction is disallowed. Such an important matter is regulated in article 17, nº 6 of the Sixth Directive. It establishes that expenses that do not have a strictly business nature, such as sumptuary, recreative or representation expenses, will not allow the right of VAT deduction.

Each national VAT code has to enumerate more precisely what type of expenses do not give rise to the right of deduction. And, in this process of adaption or article 17, nº 6, some problems may arise[25].

[23] A further complication arises with the regularization process when fixed assets or immovable property are sold during the period of regularization.
[24] See Farmer and Lyal (1994); Palma (2004) and Cunha (2004)
[25] None of the Directive proposals to regulate the right of deduction across EU has obtained agreement of the member states.

In the Ampafrance case[26] the ECJ was confronted with a situation where the French tax authorities denied (under the French VAT rules) the deduction of supported VAT by the Ampafrance company in receptions, restaurants and shows.

The French government argued that it was impossible to distinguish the business or private nature of these expenses. The exclusion of the right of deduction was thus, in the view of the French state, an important instrument against tax evasion. The company argued that the business nature of the expenses was clear and proved. The court ruled that the right of deduction could not be denied when it could be objectively demonstrated that the expenses had a business purpose. Therefore, not the type of expense but its business or private nature should govern the exercise to the right of deduction.

Recently, an oficial report[27] sugested to the Portuguese government a solution that consists of accepting the right of deduction in travel, restaurant and hotel expenses when they are tax deductible costs for corporate income tax purposes, which happens to be the Spanish solution.

But it is quite complex, in some cases, to clearly separate the business or non-business purpose of certain expenses; and, accordingly, to settle for the deduction or non-deduction of the VAT supported in such items.

[26] Process C-177/99
[27] See Ministério das Finanças (2006)

5. VAT and intra-european trade of goods and services

The application of the VAT in the European trade of goods and services is widely seen as a source of complexity[28]. In this section I will briefly present the basic rules about the location of transactions of goods and services, highlight some of the several complexities arising from these rules, mainly in the service area, and also illustrate some fraud schemes that have emerged in EU related to VAT in intra-european trade.

The present rules of taxation of trade in goods and services between EU Member States, under the VAT, were laid down in Directives 91/680 and 92/111. The Sixth Directive was thus amended to integrate new dispositions.

The reason for such changes was the abolition of tax frontiers within the then European Community, because they were deemed incompatible with the Single Market.

The European Commission proposed to replace the system in place at that time – where trade between Member States was treated as exports and imports – with a system based in the "origin principle". In this new proposed system trade of goods between member states would originate a new taxable operation, called "intra-communitary transaction". VAT would cease to be refunded on "exports" – which would, afterwards, be VAT subject intra-communitary sales – and buyers who were taxable persons would be allowed to deduct the tax supported in these acquisitions. With this mechanism, intra-EU trade was to be treated as single state transactions.

In typical political compromising, the Commission also proposed a compensation mechanism that ensured that, although the tax would be changed under a "origin based" system, the tax revenue would still be distributed according the final consumption – i.e., destination-principle. This would, supposedly, soften the importing countries resistance to such a change in the VAT operation across EU.

Following complex negotiations, a "transitory regime" was put in place by the two previously mentioned Directives.

The system can be characterized as follows[29]:

[28] See Martyn and Reck (2003); Farmer and Lyal (1994); Basto (1997) and Palma (2002)
[29] See Farmer and Lyal (1994) and Basto (1997)

i. Trade of goods between taxable persons in Member States continues to be taxed in the destination country. The seller has a complete exemption, and is refunded of VAT deductible from inputs. The buyer registers the acquisition in his VAT return, and is liable to VAT. This amount is, consequently, deductible tax for the buyer, unless it is subject to the *pro rata* rule.

ii. Final consumers have, in principle, freedom to buy from other EU countries, paying VAT at the origin. But important exceptions apply, such as:

- new means of transportation
- distance salles
- purchases made by exempt persons and by non taxable legal entities

These exceptions – also subject to some qualifications in form of thresholds - mean that the destination principle still applies, when final consumers make such acquisitions.

To guarantee a significant degree of control, intra-EU transactions must be made with fiscal identification numbers, and intensive cooperation between tax authorities is needed. A system of information exchange (VIES - VAT information exchange system) is in place, which is based on an European network of VAT central computer systems.

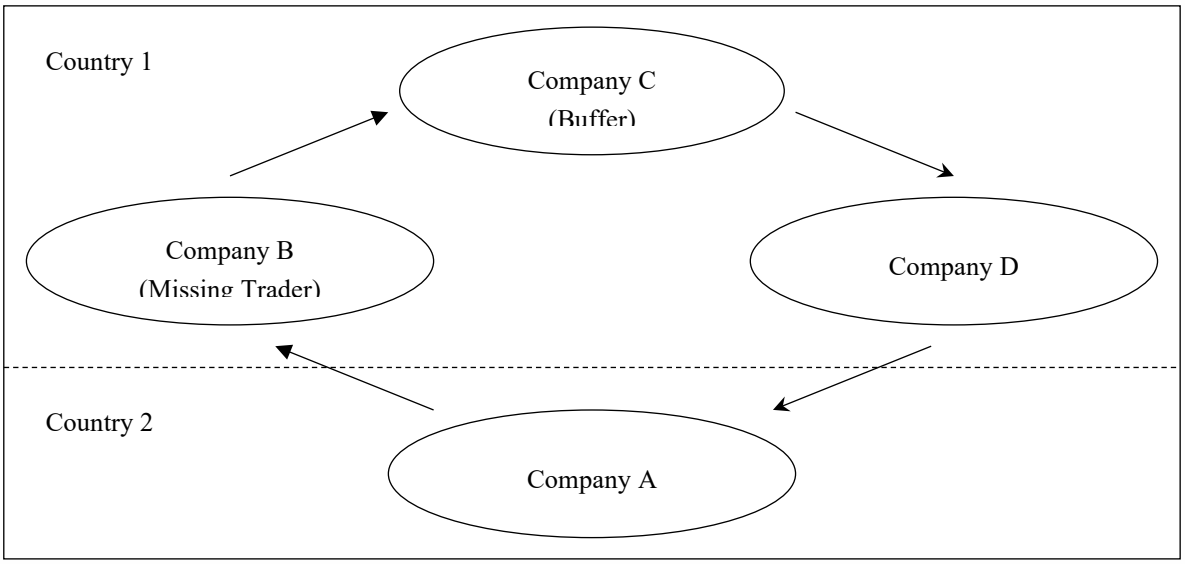
Compared with a pure based "origin system", like the one initially proposed by the commission, the system briefly described is cleary more cumbersome. Its administrative, compliance costs and legal complexity are significantly higher, and it has been prone to schemes of tax fraud.

One of the most notorious is the so-called "carousel fraud". To illustrate how it works and how it is related to the intra-EU taxation of goods and the VAT, exhibit 3 presents a hypothetical example[30].

[30] Adopted from Pereira (2005:411)

Exhibit 3

A trade circuit and the "carousel fraud"



The scheme begins when company A, located in country 2, sells a good to company B, located in country 1. As described before, A does not charge VAT to B, and B charges and deducts VAT itself. B then selles to C, and, as it is an internal operation (in country 1), B charges VAT to C. At this point, B should pay to the state the amount of VAT charged to C. But B is a missing trader, that is usually a fictictious company, or one with a minimal structure, and eventually has no mail adress, appearing and disapearing at will. Therefore, no VAT due is paid to the state, because B pleaces itself outside the legal circuit of VAT operations.

Then C deducts the VAT that B charged; and, subsequently, charges VAT to D, paying the difference to the State. Then D makes an intra-EU transaction to A, and asks for the refund of the VAT that C charged. Then A does another intra-EU transaction to B or to an operator with similar characteristics. The fraud is again in motion like a carousel. Only when the tax authorities uncover it can the scheme be stopped. The fraud implies a loss to the state, equal to the VAT that B receives and does not pay .[31]

[31] As the companies involved are usually linked by personal and economic ties, one way that tax authorities in EU have been uncovering this type of fraud is when in a competitive market – say, personal computer sales – an operator places a significant price discount. This can be an indication that the VAT received, and not paid, by B was used to undercut competition.

Looking now to the taxation of services, the rules applying can be summarized as follows:

i. As a general rule, for VAT purposes, services are located, and taxed, where the supplier has established his business or has a permanent establishment from which the service is rendered.

However, this general rule has to give way to many especial treatments of several types of service transactions. In practice, thus, the general rule is applied only when the specific service is not singled out for special treatment under any of the exceptions. The rule has to give way to the exceptions, and has a residual application.

ii. A set of exceptions refers to the following services:

- Services connected with immovable property are taxed where the property is located.
- Transport services are located where the transport takes place[32].
- Services connected with cultural, artistic, sport, educational, a similar, are located where they are rendered.
- Works on movable tangible goods and ancillary transport services are taxed where they are performed.

Thus, if in the general rule the place of establishment of the seller is the defining factor, in the exceptions just mentioned the place of execution is singled out as the relevant nexus for the tax.

iii. Another important set of rules concerning the taxation services is applied to the following operations:

- Advertising
- Transfers and assignments of intellectual and commercial property rights
- Professional and consulting services (like those from economists, lawyers, engineers), data processing and information

[32] This rule was however changed by transitional arrangements. Directive 91/680 created a different solution, which consists of considering the place of supply a transport services in intra-Communitary trade the place of departure. However, if the acquirer is a VAT registered person, a reverse charge mechanism applies, and the acquirer is responsible for the VAT.

- Temporary work
- Banking, financing and insurance operations
- Refraining of exercising on activity of the above list
- The leasing of movable assets, with the exception of transportation equipment
- Telecomunications and e-commerce

In the case of the services just mentioned, if the acquirer is a final consumer, located in a EU country, the VAT is charged by the supplier, because the general rule applies. If, on the other hand, the acquirer is a VAT registered person, a reverse charge mechanism applies and the acquirer is the taxable person, which has also the right to deduct the VAT.

Why such a detailed and complex set of rules? The legislative process that produced these solutions helps to understand some of the arrangements. According to Farmer and Lyal (1984:155), the original proposal of the Directive had a rule (taxation at the supplier country) with the only exception being services related to immovable property. It was argued that simplicity of procedure and the advantages of avoiding the application of concepts like "place of utilization" favoured such a solution. But the proposed Directive itself contained already an important exception: in the case of services similar to the ones listed in the above iii) a zero rate, with VAT refund, was granted if the customer was a taxable person. The Commission stated that, in the case of services which are very commonly object of international trade, a pure origin based taxation would produce an undesirable effect: it would place EU firms on a disadvantage against non member suppliers and, inside EU, would had to competitive distortions given the disparities between VAT rates.

The final text of the Directive thus enacted the rules mentioned in i) to iii)[33].

To the non familiar reader, some examples help to clarify the application of these rules.

[33] It must be said that these rules are far from being an exaustive characterization of location of services for VAT purposes in EU. To give an example, the Portuguese VAT code where, in article 6, where the service location rules are established has, presently, 23 paragraphs, running for several pages.

Example 1:

A Paris based agent is paid a comission for his services in selling a property in France to a French based customer. The rule i) applies, and the service is taxed in France.

Example 2:

A Paris based agent is paid a comission for his services in selling a property in Germany to an American customer based in Boston. Although the supplier of the service is located in France, under the set of exceptions mentioned in ii) it is located, and taxed, in Germany.

Example 3:

A Lisbon based conference organizer arranges a two day conference in Madrid. Again, under exception mentioned in ii) the service is located in Madrid.

Example 4:

A London based firm advertising firm sells services to an Amsterdam based agent.

Under the rules mentioned in iii), if the Dutch customer is a final consumer, the service is located in England; if the customer is VAT registered taxpayer a reverse charge mechanism applies and the service is taxed in the Netherlands.

Example 5:

A Chicago based firm sells is legal services to an Amsterdam based customer.

Again, under the rules mentioned in example 4, if the consumer is a VAT registered taxpayer, the operation is deemed to be located in the Netherlands and a mechanism equivalent to the reverse charge applies. If the customer is a final consumer, than the American firm must name a legal representative in the Netherlands to take care of VAT payment procedure.

As it is easily conceivable, examples could be innumerable. The complexity of some situations is not hard to imagine[34].

[34] I could vouch for the difficulties in getting graduate and under graduate students to know the main rules, even without entering details. At a practical level, the difficulties of Tax and Accounting professionals dealing with VAT charging in service transactions have also been witnessed. But, somehow, it seems that most of the rules have been

Besides the complexities arising from the application of those rules and exceptions to real would operations, legal conflicts can arise between EU states and the taxpayers. The ECJ has been producing some rulings on cases where the complexity of VAT taxation of services are quite illustrative of the problems arising from the application of these rules and exceptions.

In process C-429/97 the court was presented with the following case. Should a garbage collection service firm be taxed under the general rule – according to which it is taxed when the supplier is located -, or is it an exception under the set ii) previously presented, because the service can be classified as a "work an movable tangible goods"?

The court, dully recognizing the complexity of the case, (Cunha, 2004:159) decided in favour of the first alternative.

In another case, the ECJ was presented with a situation that involved the services of a professor from a German University to the International Chamber of Commerce, located in Paris. The service related to an arbitrage in a dispute between two agents.

As lawyer's services are included in the set of exceptions iii) the court had to decide if an arbitrage service is included in the definition (which would imply that if the customer is a VAT taxable person the reverse charge mechanism must be used), or if that kind of service is not included in a lawyer activities, in which case the general rule – taxation in the place of the seller's location – applies. The court ruled in favour of the second alternative.

The difficulties arising from services have a great contribution from the fact that services are immaterial, and therefore less controllable than goods. The political compromises in the area of service taxation under the VAT, by trying to combine the origin rule with the ever growing international trade in services between taxable persons, produced some delicate solutions that constitute, undoubtedly, one of the complex areas of VAT application in the EU.

digested by the taxpayers.

6. Conclusion: the EU experience and its lessons for the potential adoption of the VAT in the US

Based on the EU experience, what are, in my view, the main lessons that can be draw for a potential future introduction of the VAT in a country like the USA?

Firstly, the definition of the architecture of the tax will be easier than in EU, given that the unanimity rule is not the overwhelming factor it is in the EU tax deliberations. On the other hand, some spill overs of the US legislative process can also affect the outcome of tax design.

The single or multiple rate structure is one of the more "lobbying prone" basic tenets of a VAT code. Even if social or political reasons prevent the goal of a single tax, the number of goods and services subject to reduced rates should be kept to a minimum.

As fas as incomplete exemptions are concerned, the same objective should apply: they should be minimized, because they introduce complexity and are sources of inefficiency. When they exist, the *pro rata* mechanism can be applied under a personal or activity based rule. The activity based rule is more in accordance with the logic of the VAT, but probably a personal based rule creates less dificulties for taxpayers, because they do not have to identify miscellaneous inputs and deduct their VAT according to the *pro rata* of the taxpayer.

Regarding the the right of deduction for specific tipes of non business related expenses, the solution of allowing VAT deduction when expenses are accepted for income tax purposes looks a sensible one.

Reimboursement ot the VAT to exporters or to high investment firms is also a sensitive area: they should be processed without long delays, and audits to check its true nature should be frequent. Also, cross checking sales and purchases for income tax purposes with VAT records on deductible and charged values is a crucial aspect of fraud preventing by tax authorities.

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