ISSN 1684-9434
N° 31
JUNE 2011

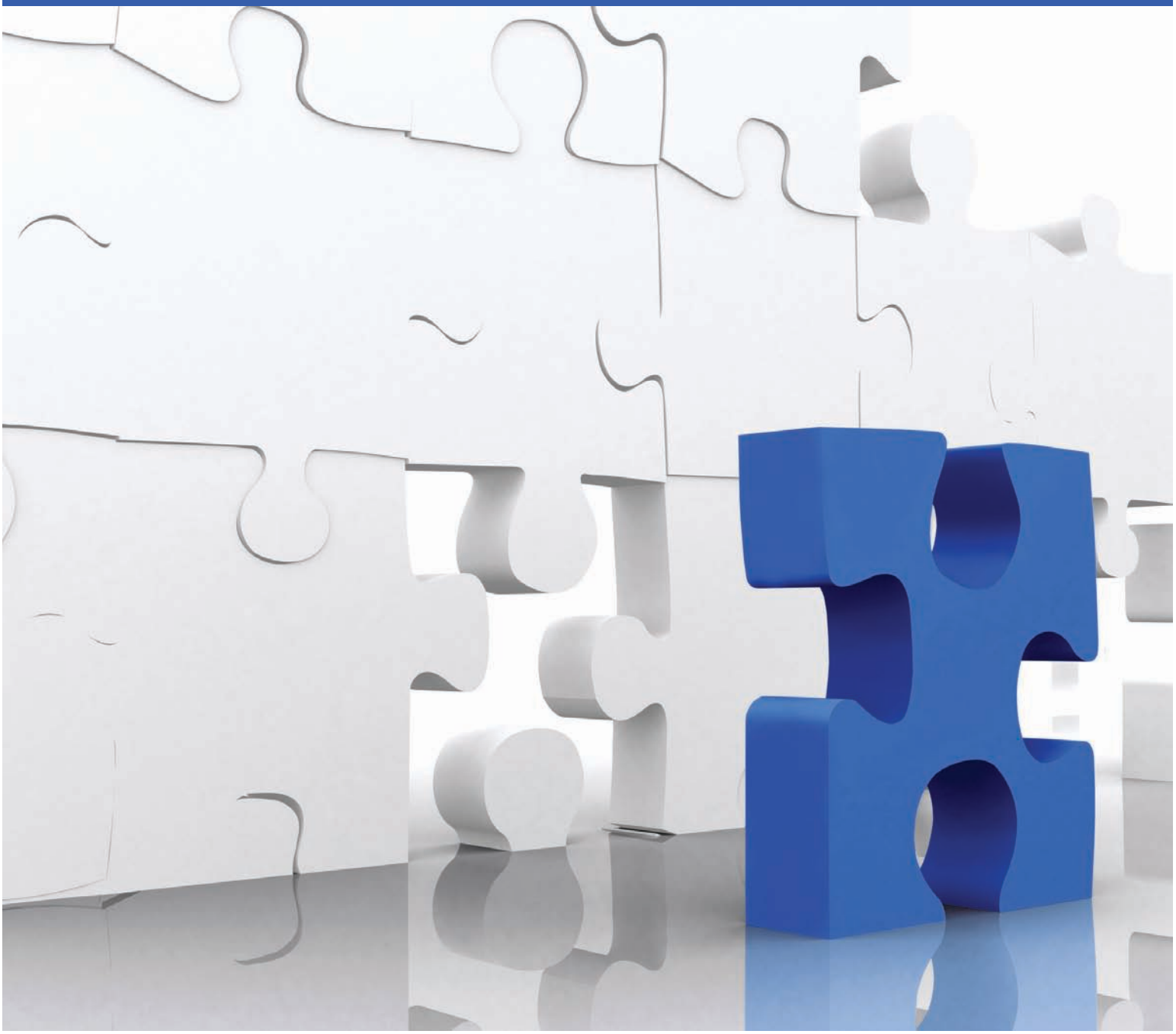
Inter-American Center
of Tax Administrations

Generating synergy

Managing knowledge

Best practices

Tax administration review



CIAT/AEAT/IEF
Tax Administration Review

No. 31
June 2011

Sponsoring Organizations

Inter-American Center of Tax Administrations - CIAT

State Agency of Tax Administration - AEAT

Institute of Fiscal Studies - IEF
Ministry of Economy and Finance of Spain

Editorial Policy

The Technical Cooperation Agreement signed by CIAT and the State Secretariat of Finance and Budgets, the State Agency of Tax Administration (AEAT) and the Institute of Fiscal Studies (IEF) of Spain, provided for the commitment of editing a review that would serve to disseminate the different tax approaches in force in Latin America and Europe.

An Editorial Council formed by CIAT officials (the Executive Secretary, the Director of Studies and Training and the Tax Studies and Research Manager) and the Heads of the Spanish and French Missions, are responsible for determining the topics to be considered in each edition of the review.

The articles are selected by the Editorial Council from a public announcement made by the CIAT Executive Secretariat for each edition of the review. Participation is open to all tax administration officials from the CIAT member and associate member countries and, following evaluation by the Editorial Council, to other members of the My CIAT Community.

Correspondence

Every communication must be addressed to:
revista@ciat.org or to P.O. Box 0834-02129, Panama, Republic of Panama.

Author's Responsibility

The opinions expressed by the authors do not represent those of the institutions for whom they work or those of the CIAT Executive Secretariat.

Copyright

CIAT/AEAT/IEF
Tax Administration Review

Table of Contents

No. 31
June 2011

Editorial

Dear Readers:

As with the past edition, first of all, I wish to express my appreciation for the great interest shown in presenting articles for the Nº 31 edition of our renewed review. It is indeed a pleasure to confirm that there is abundant talent among the tax administration officials of our member and associate member countries and, in general, among all members of the MyCiat Community.

This edition includes eight (8) articles covering tax design and management aspects, at the local as well as international levels, in Latin America and Europe.

WIth respect to tax policy issues, an evaluation is made of the effect of Individual Income Tax in Italy, as well as an analysis of financial operations, with emphasis on the derived instruments and/or contracts and recent empirical evidence on gender policies in relation to VAT in Ecuador.

Two articles deal with local tax management as regards examination strategies in two (2) evasion risk sectors in Peru; namely: the poultry sector and the exporting sector which benefits from VAT refunds.

In this same line of control, although at the international level, an article discusses the transfer pricing rules in Germany, while another proposes the use of new technologies for the automatic exchange of tax information among the countries.

This edition closes with an article on tax morale, topic recently considered at our 45th General Assembly held in Quito last April.

Once again, I wish to reiterate our firm commitment to disseminate information of interest to all the members of the MyCiat Community, which may contribute to learning and may as well be a point of reference for improvements in the design and management of tax systems.

Director of the Review
Márcio Ferreira Verdi

Personal Values Alone Do Not Explain Tax Awareness: Peruvian Experience

Felicia Bravo Salas

Summary

This article provides a new theoretical framework to deal with the aspects where the deterrence theory has shown little explanatory power. It explores the importance of elements which are not associated to economic rationality in predicting voluntary tax compliance: tax awareness defined as “the intrinsic motivation to pay taxes”, where there is a role to be played by the creation of citizens’ political culture relative to appropriation of public assets.

The author: *Specialized teacher in Social Sciences and Educational Research graduated from Universidad Nacional Mayor de San Marcos – UNMSM in Lima and candidate for a Master’s Degree in Political Sciences from Pontificia Universidad Católica del Perú – PUCP; professor and researcher at the Tax and Customs Administration Institute – IATA at SUNAT, Peru.*

INTRODUCCIÓN

CONTENT

This document endeavors to show that the classical voluntary tax compliance model, wherein tax morale consists of a single variable known as tolerance to fraud and is found within the dimension of the internal values and motivations of the individual, is insufficient to justify the results achieved through these policies in countries like Peru, where the high risk perceptions generated by the Tax Administrations and sensitivity to increased sanctions are not in keeping with the great magnitude of noncompliance with tax obligations.

To this end, a brief analysis is made of the compliance and tax evasion situation, as well as the research works that have been carried out in the Americas. The dissuasion theory is likewise presented. Then, in the light of preliminary results obtained in Peru through an Exploratory Study on Tax Awareness in individuals, whose main tool was a home survey applied at the national level, a new approach is presented. It served to formulate a new theoretical and analytical framework regarding the tax morale of Peruvians, where it was proven that the personal values and even the citizen's vision in relation to his role and his State contribute poorly since the internalization process of the legal system is not concluded. It is rather incipient in most of the Peruvian territory where there is a prevalence of the social norm generated by an imperfect democracy that has not allowed compliance with the social contract and generates significant tax inequities.

1. THE CURRENT STATUS

While in most first world countries a growing number of audits increases the risk of detection and leads to tax compliance, and in second world countries compliance seems to be driven by the government's organizational performance and public service provision, in the countries of our region these reasons are not enough to explain tax evasion.

Although the perception of higher risk of detection or further sensitivity to stepped up penalties result in more compliance, there is no evidence of the strength of this link, although we do know that the same people who recognize that tax evasion is an act of corruption and that taxes should be paid because it is a way of meeting their civic duties and redistributing wealth, among other reasons, are tolerant of evasion

and think that if they will not be detected they should seize the opportunity to pay lower taxes or not demand payment receipts when making purchases, in the belief that they would be paying less because the general sales tax would not be charged.

On the other hand, studies undertaken in different parts of the world have used the classic questions asked by tax administrations or those included in barometers (Afrobarometer, Latinobarómetro, etc.).

Across Africa, former Soviet Union countries, Europe and the successful Asian countries, studies have indicated control variables such as the social and economic standard, as well as variables relative to tolerance of tax fraud, satisfaction with the tax system or the services provided by the government. Furthermore, profiles have been established and the target population has been citizens in general, taxpayers only, and taxpayers who are subject to a specific tax norm.

The common denominator of these studies has been the use of a heterogeneous method and target population and an inadequate theoretical framework which is limited to economic reasons or aspects of procedural law.

This document proposes to combine these factors which undoubtedly influence citizens' attitudes and values relative to their acceptance or rejection of the tax obligation with others which have been excluded from the theoretical construct which derives in the variables organizing all studies.

2. A FEW EXPERIENCES IN LATIN AMERICA

To date, the best understanding of the reasons underlying tax behavior was achieved by the study on attitudes and social representations regarding taxation undertaken by FLACSO in Costa Rica[1]. This report states that attitudes toward taxation are determined by the degree of interest people have on the use of collected funds by the government. The study showed that Costa Ricans built their image of taxation based on three basic positions which are not mutually exclusive, although a few similarities may be pointed out among different groups – those **indifferent** toward the management and use of funds, which translates into more inclination to and tolerance of evasion; those **hostile** toward taxes, not very much interested in the use of funds and mainly concerned about the quality of management and handling of the funds; those who are **distributive** and thus understand their relationship to taxation based on a greater concern about their social use, especially if earmarked to fund social programs for vulnerable groups. A predominant social and economic profile was found for each group above.

The study concluded that the difference between the groups arose mainly from greater/lesser acceptance of the political system and legitimation/non-legitimation of the role of government. Consequently, it was found that the existing unease is not against those responsible for collecting taxes but against those who avoid their duty of paying them and those who spend tax revenues inappropriately.

1. *Rivera, R y Sojo, C. Tax Culture. The Costa Rican Tax System: contributions to the national discussion / Contraloría General de la República: edited by Fernando Herrero Acosta. – 1. ed. – San José, C.R.: Publicaciones Contraloría General de la República, 2002. p. 619.*

Another interesting proposition has been offered by Vásquez Caro[2], consisting of an exercise where the starting point is a negative state of mind determined by a set of answers to the question: Why am I not willing to pay? The answers to the exercise were as follows:

- I do not pay because I do not benefit
- I do not pay because the rest do not pay
- I do not pay because it is too much
- I do not pay because the money gets stolen
- I do not pay because I do not know how
- I do not pay because nothing happens if I don't.

Its analysis concludes that taxpayers fail to provide a single answer, and identifies a set of possibilities for determining individual tax awareness, pointing out that because taxes are of a social nature, we should approach the issue of tax awareness as a collective category.

3. THE DETERRENCE THEORY

The traditional reply to what determines tax compliance had been guided by the deterrence theory, based on the fear of detection and punishment of fraud[3]. This theory proposes that the compliance decision originates mainly in the cost-benefit analysis whereby people weigh the benefits of non-compliance with economic rationality vis-à-vis the risk of detection and penalty costs.

However, the studies mentioned here in addition to others mentioned in Annex 1 show that this theory has limited explanatory power and that traditional coercive methods by audits and penalties account for only part of voluntary tax compliance. This has led to exploring the importance of elements which are not linked to economic rationality in the prediction of voluntary tax compliance. Thus, theoreticians and researchers have recently attached great importance to the so-called tax awareness or "the intrinsic motivation to pay taxes", where there is a role to be played by the building of a civic political culture relative to appropriation of public assets.

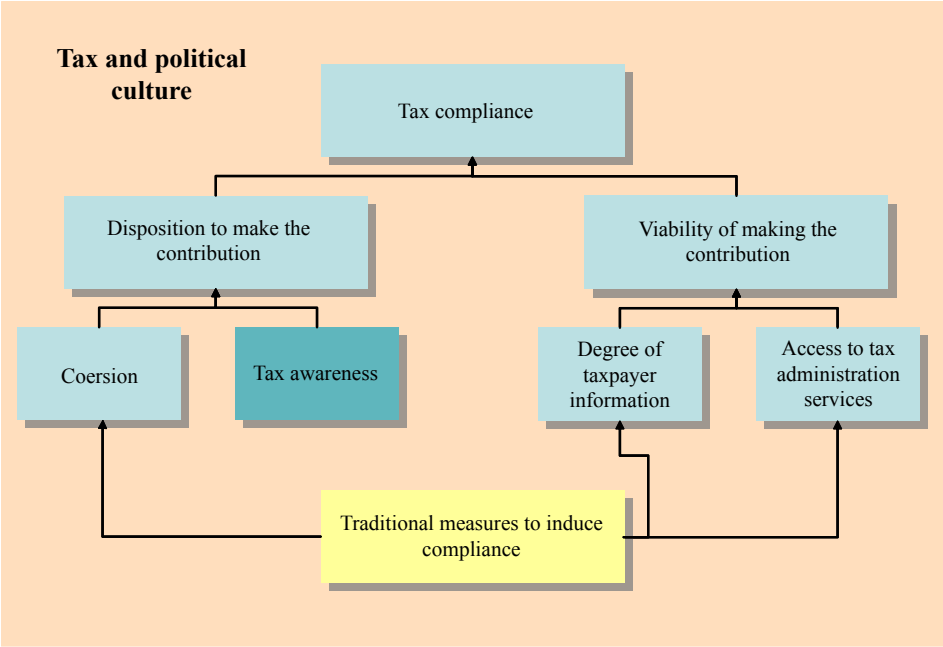
From a broader perspective, we could say that tax compliance is a result of two conditions: (i) the willingness to make the contribution ("*agents want to contribute")* and (ii) the viability of making the contribution ("*agents know and can contribute*"). The first condition is determined, on the one hand, by effective coercive measures, the calculation agents make by economic rationality, their degree of aversion to penalties; and on the other hand, by the agent's tax awareness, which determines their willingness to pay[4] and which is the result of the processes of legitimation, socialization and internalization of tax obligations.

2. *Vasquez, C. "How to influence taxpayer's tax awareness to improve their behavior", document submitted to CIAT's General Assembly in Chile in 1993.*

3. *Alligham, M., A. Sandmo, 1972. Income Tax Evasion: A theoretical Analysis" Journal of Public Economics, 323-338*

4. *Willingness is understood as meeting obligations with no intervention from the agent responsible for tax administration. The literature is vast and it is associated to a broader field which looks into why people observe the law. Elllickson, R. (1991); Tyler, T. (1990).*

Graphic 1: Tax Compliance Elements.



Source: Study of the Tax Awareness Baselines of Natural Persons in Peru – 2010.

The viability of making the contribution is associated to the degree taxpayers are informed on tax rules and procedures and, on the other hand, to taxpayer access to tax administration services, i.e. how simple it is for agents to make their contributions, administrative simplifications, expeditious formalities, etc.

It is worth pointing out that measures to induce tax compliance have traditionally been associated to regulating and implementing detection and punishment procedures for offenders, providing information on tax regulations and expanding access to tax services. Although all of these measures are relevant and should be designed to achieve higher effectiveness, it is proposed that they may be insufficient if one overlooks the tax awareness dimension and fails to have a better understanding of their determining factors.
Evidence

4. EVIDENCE IN PERÚ

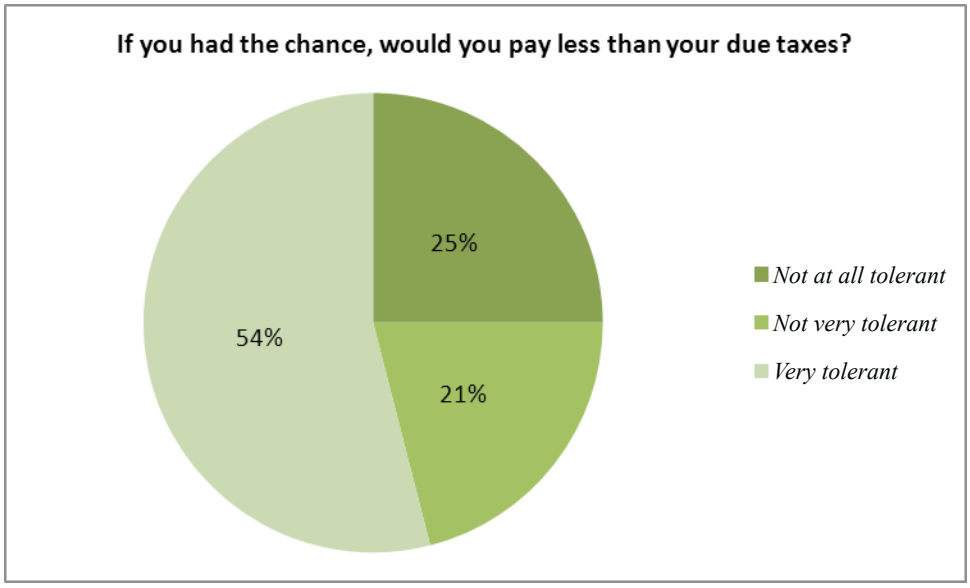
In Peru, 79% of the respondents to the survey on corruption perception[5] said they had high and medium tolerance to tax evasion when they know they will not be detected, while 82% do not demand an invoice to avoid payment of the Sales Tax, although the same people believe that the main issue their country faces is corruption, of which tax evasion is the most frequent form. In the area of corruption, these results are consistent with those reported by the survey to the question: What do you think is the main issue facing your country?

5. *IV National Survey on Corruption Perception in Peru, 2010. Visit http://www.scribd.com/doc/36168016/Sexta-Encuesta-Nacional-Sobre-Percepciones-de-la-Corrupcion-en-el-Peru-2010*

In the 4th and 5th surveys on corruption in Peru (conducted in 2006 and 2008), final rejection of tax evasion had dropped by 10 points in both cases. It has recovered by 2 points during this year.

These figures are consistent with the results from the perceptions study conducted by SUNAT itself in 2009[6], which found that 54% of the people say they are very tolerant of fraud; 25% say they are not very tolerant and 21% say they are not tolerant at all.

Graphic 2: Tax Tolerance Distribution.



Source: 4th National Survey on Corruption Perception in Peru, 2010. Prepared internally.

However, since the question relates to the likelihood of detection by the tax administration, SUNAT's study included the variables "likelihood of detection" and "sensitivity to stepped up punishments".

Only 26% of the population attaches to SUNAT either low or no likelihood of finding and sanctioning evaders, i.e. 74% believe it is either likely or very likely to be detected and punished.

When the population was reduced to only those who stated they incurred bad practices such as purchasing goods without demanding a payment receipt, over 50% perceived the likelihood of being detected and punished and felt discouraged from evading as the risk increased. In the same group a direct variation of sensitivity was found relative to stepped up punishment.

Nevertheless, when statistical tools were applied, this correlation was found to be weak. In other words, other reasons explained the variation in evasion practices vis-à-vis the risk of detection.

With these - still partial - results, the deterrence theory in countries like Peru would not be enough to explain tax behavior by itself, and its use as a strategy to raise voluntary compliance would not

6. *Tax Awareness Baselines of Natural Persons in Peru – 2009. Book on Tax Culture, Tax and Customs' Administration Institute. Lima, June 2010. First edition, 200 p.*

yield the expected results in correlation with the amount of efforts made by the Tax Administration to discourage evasion and facilitate voluntary compliance.

For that reason, two other factors of tax compliance were included: amount of information and access to public service. Similarly, evidence from the behavioral pattern of the variables showed that as information and service provision increase, it is more likely to find a contribution, although this correlation is also weak.

The fourth factor in the model is the individual's tax morality, which has conventionally been synonymous with tolerance to committing tax fraud. According to this, a person with low tax awareness would have more tolerance and, thus, lower disposition to pay taxes or more inclination toward committing acts which negatively affect the level of tax compliance (purchasing goods with no payment receipt or smuggled goods).

This variable showed very similar results to the Proética survey: in 2009, SUNAT found that only 25% of the population would reject tax evasion. Therefore, if individuals perceive risk as a factor that would motivate them to comply, if they are sensitive to the cost of the penalty and would improve if granted more information and access to services, what are their reasons for being tolerant of fraud and inclined to evade as soon as they find an opportunity of remaining undetected?

5. WHAT COULD BE THE FLAW IN THE DETERRENCE THEORY?

Tax administrations have tended to point out that the cause could be citizens' tax morality. They have assumed that tax morality (or lack thereof) is determined by individuals' values (or lack thereof) and, recently, they further mention citizens' perceived tax equity (or lack thereof) as another likely cause.

For that reason, in recent years we have witnessed the emergence of a wealth of tax education and tax culture programs in the region supported and validated by international organizations. Their achievements have been reported in newsletters in the portals of Eurosocial, especially. In addition, meetings and technical assistance exchanges have been encouraged. Despite the progress made by Brazil, Argentina and Peru, all of the programs mentioned have focused on operational actions and political agreements with their governments in the area of amendments to educational syllabi with a purpose to providing education in values to future citizens and strengthening current citizens' values to raise tax awareness / morality. Except for the experience of the Maringá Tax Observatory in Brazil, whose actions aimed at accountability and expense control, in most of the countries in the region there has been little interest in or concern about other governmental institutions or society itself.

The term tax awareness could be defined freely as values, attitudes, feelings, perceptions, education, culture, etc. The common denominator is vagueness and, consequently, targets are strictly operational and the demand for showing cost-benefit results is like asking a church to show by means of charts how much their followers have strengthened their faith to justify expenditure and what targets they have set for the next spiritual year.

It seems ironical, but let's look at it in the following light: we are facing one of the factors at play on tax compliance and we do not understand it because it is the most complex and vague, and is unrelated to the conventional knowledge of tax administrations; thus, we do not tackle it in the same way as audit strategies nor are we giving it the importance granted to taxpayer services or

information provision. Moreover, we leave that task to a group of professionals who are carrying out a major job, quite often in solitude, guided by their intuition and social and political skills in coordinating with other government sectors, citizens and even businesses in some cases. They obtain significant achievements whose connotation is not seriously weighed by their officials, except from a marketing or institutional image perspective. This has proven partially favorable since it is a varied task ranging from designing educational materials to drafting slogans, negotiating with the education sector in all its competency areas, from the classrooms to the ministry of education and which should include teaching design and social research. Therefore, it is outside the scope of regular competencies of tax administrations.

6. TAX AWARENESS

In the literature, tax awareness refers to people's actions and beliefs, i.e. the non-coercive aspects which motivate agents' willingness to contribute. It is frequently reduced to analyzing tolerance to fraud[7] and it is believed that it is determined exclusively by personal values.

For a better understanding of what makes up tax awareness, it is necessary to broaden the approach to include studies on people's relations with the legal and political system. To this end, consideration has been given to including the study of the process of raising tax awareness, Jürgen Habermas' theoretical proposition, which will help better understand the relational aspect among taxpayers (individuals, social classes, types of citizens, social groups) with tax awareness which is also shaped by socialization in its respective processes of social and systemic integration.

6.1 Habermas' Social Theory

Like many theoreticians before him, Habermas was interested in the question: What makes social order possible? This question was posed by Thomas Hobbes (1588-1679). Hobbes asked himself how a stable and predictable social order may arise from the actions of a huge number of individuals, very few of whom know one another personally, and very few of whom are in a position to coordinate their actions by an explicit agreement. Hobbes' reply was that social order is brought about by laws and authority held by an almighty ruler, backed by the use of force and the credible threat of punishment.

Hobbes' theory applied to the field of tax compliance tells us that observing tax rules somehow benefits each individual. However, the "free-rider" phenomenon is more difficult to explain. In other words, it cannot explain why people comply or should comply when it would seem rational to do the opposite and benefit personally from the revenues contributed by others.

This is the same difficulty tax administrations come across, especially in the area of tax education, when they mention the reasons why individuals should pay, based on arguments such as "to improve we need to pay", while for most people it is more rational to stop paying partially or totally and continue using that which either the city or the national government provide thanks to taxes paid by others or by loan transactions and the sale of valuable natural resources, perhaps. Other philosophers have favored social covenant theories to find answers to the issue of social order. Such theories hold that social order relies on a network of implicit or explicit contractual relations. However, it is equally difficult, if not impossible, to explain when and how exactly was the

7. See Torales et al (2004), Torales et al (2006), Torales et al (2007) Alm. et al (2005), Frey et al (2006),

contract agreed by the people who abide by its terms. For this reason, people find it very difficult to accept covenants, since they do not feel they were individually involved in them nor do they have a historical memory in this regard, especially relative to taxes in societies where they were an obligation reserved to aboriginal peoples and other castes, where those who were not subject to taxation were clearly socially privileged, and whose modernization was a long, tortuous and incomplete process where they had no involvement whatsoever.

Durkheim tried to explain social order by assuming that agents content themselves with norms that make up collective moral awareness. This is due both to positive and negative reasons. By socialization, they link certain sanctions with the breach of norms and learn to avoid these sanctions through voluntary actions. At the same time, they identify with the collective moral awareness of the society where they live. However, in our countries, poor organizational performance from government as well as pervasive corruption in all social spheres contribute negative experiences to people's socialization processes. In terms of tax compliance, citizens who honor the law are considered dissident by their closest social environment.

American sociologist Talcott Parsons developed this perspective in a more sophisticated theory which proposes that having a system of rules and values leads to social coordination and stability. He argued that agents acquire: (1) a disposition to place moral (non-instrumental) reasons aimed at others above non-moral (instrumental) reasons aimed at themselves; and (2) a disposition to punish those who fail to do so. As long as most people develop both dispositions, the social order may be maintained even if a few agents may eventually depart from social norms. We have already mentioned the situation of Peru, for example, where it is acknowledged that evasion is an act of corruption but people would do it if they believe they will remain undetected. In the countries of the region, much has been argued and written about the loss of values as the main cause of social and other types of instability. However, it would be worth noting that in our region, predominant values are still the transcendental values prioritizing cooperation and that, consequently, in light of Parsons' theory we should pay taxes because our societies were born from the collectivism of the Inca Empire and developed cooperation and resource distribution systems, which would make us distributive and benevolent people, especially when these social orders are still current. But this is not the way it happens. Ordinary citizens are contributive with their direct family and social environment and this quality is shown at the level of their communities, but not with regard to the others whom they do not perceive as their equals for the most varied reasons, such as territorial, ethnic, cultural or blood-related, among many others. Collectivism is endogenous and the idea of common good does not transcend its social or territorial units.

Habermas' reply to the issue of social order consists of a reconfiguration of the fundamental premises of the theories which had so far attempted to explain how social order comes to be and how it is maintained.

According to Habermas, if we wish to explain people's tax awareness, we should not resort exclusively to philosophy or deontology but shift toward the social practice of communicative action in the inter-subjective context of language, since human actions are primarily coordinated by acts of speech, through which we can retrieve practical, non-metaphysical reason.

So we will find the components of tax awareness in the reasons from various types of issues, but they should respond to a given hierarchy and order themselves according to certain dimensions. Following Habermas' theory, when subjects speak, they always assume, even implicitly, four validity claims: understanding, honesty, rightness and truthfulness. In essence, only understanding is inseparable from language, although rationally it may be distinguished from it. The other three claims assume the speaker's posi-

tion relative to an extra-linguistic state of things and, at the same time, a relationship between the utterances and the different realms of the world.

Chart 1: Speech Act and World Realm

Action form	Function of language	Validity Assumption	Extra Linguistic Reference / Worlds
Teleological Action	Cognitive or representative	Propositional truthfulness	Objective world (objects, facts)
Normative Action	Appellative or direct action	Rightness or normative rectitude	Social or inter subjective world (norms)
Dramaturgical Action	Expressive or emotional	Truthfulness or honesty	Subjective world (personality)
Communicative Action	All language functions	Understanding	Reflectively relates all three "worlds"

Comparing and replacing in the evidence found, tax awareness would be represented by that which individuals state when explaining the reasons why they would comply or not with their tax obligations. And, since this is the sphere where all three "worlds" relate reflectively, we may gather these data by using a research instrument.

Following this reasoning, the three worlds: life-world, social systems and norms and the individual's subjective world would be represented respectively by the knowledge individuals have of reality (that which is actually thought, not to be confused with "reality"), which we reduce to that which relates to the context where taxation occurs or the tax system was designed, i.e., the State and the way individuals understand it and establish a certain type of relationship with it. The system-world encompasses the political and taxation system, as well as the principles which rule it. Finally, we would have individual values.

Each one of them makes up a dimension of tax awareness – the vision of the world or life-world; the political and tax system; and the values. The complexity of these dimensions imposes a new analysis which will lead to establishing sub-dimensions and indicators.

But before that, it must be known that Habermas also proposes that the three worlds are not similarly close or, in other words, that they do not contribute in a similar fashion to individuals' communicative action when referring to the reasons underlying their position relative to taxation.

In the modern world, capitalistic economy and the administrative system grow gradually apart from the sphere of family and culture and institutions of the public sphere such as communication media. In other words, the normative world or system created by people increasingly becomes a kind of entity with an apparent life of its own and turns to the life-world, entering it and absorbing its functions. Strategic decisions are left up to the markets or administrators. The transparency of the life-world is gradually darkened and the basis for action and decision-making are withdrawn from public scrutiny and the possible democratic control. As the realm of the life-world becomes reduced for the individual, "social pathologies or phenomena" arise, such as corruption, which includes tax evasion. Taxation is no longer the result of the community's consensus which had the main function of supporting experts and providing public services to ensure common good. Instead, this system is now geared towards providing resources to an increasingly complex and sophisticated administrative system. Thus, the duty to pay taxes has become a nuisance created by politicians and officials, and it intrudes in the sphere of individuals, in the public space where they carry out their economic and social activities, and deprives them of part of their resources and decisions.

7. CONCLUSIONS

In conclusion, the theory would force us to not only gather data so as to cover all variables but also to design a methodology which allows us to establish the optimum enabled by gaps, with no background of similar studies. The expected result is the order each variable has taken or the reasons contributing to the shaping of that social representation called tax awareness and the individual contribution of each one of them in the process of shaping tax awareness in any given society in a specific period of time and context.

With this definition of tax awareness, this factor of tax compliance would no longer be a black box where we were entering processes, strategies and resources with no certainty of the effect they have on the presumably sole element making up tax awareness, i.e., the same individual values which are part of human beings' more private sphere and which are not necessarily protagonists even in people's disposition to pay taxes.

This approach proposes that values would not bear enough weight to explain citizens' lack of disposition to comply voluntarily with their tax obligations and, thus, it is not perceived as an offense against the society they belong to, it does not trigger rejection of the evader and evasion will continue despite coercive measures, information and taxpayer service.

Consequently, we should look for the remaining factors, which include social order, systematize their study and, if possible, measure them to learn and communicate how much they contribute to obtaining tax revenues and, ultimately, welfare.

8. BIBLIOGRAPHY

Alarcón García, G y L Pablo Escobar, 2005. La Conciencia fiscal y el fraude fiscal. Factores que influyen en la tolerancia ante el fraude, Instituto Universitario de Estudios Fiscales y Financiero de la Universidad de Murcia, España.

Alligham, M., A. Sandmo, 1972. Income Tax Evasion: A theoretical Analysis" Journal of Public Economics, 323-338.

Alm, J. y B. Torgler, 2005. Culture differences and tax morale in the United States in Europe Journal of Economic Literature.

Estevez, A. y S. Esper 2007. Ciudadanìa fiscal en America Latina: el contrato incumplido. www.rlcu.org.ar/revista/numeros/06-10-Abril-2008/documentos/alejandro_esteves.pdf

Frey S y B. Torgler, 2006. Tax Morale and conditional cooperation" Journal of Comparative Economics.

Feld, L. y B. Frey 2002 (a). "Trust Breeds Trust: How Taxpayers are Treated", Economics of Governance, 3: 87-99.

Feld, L. y B. Frey 2002 (b). "Deterrence and tax morale: How tax administrations and tax payers interact", OECD Jan Francke Tax research Award.

Habermas, J. 1991 Conciencia moral y acción comunicativa Barcelona: Península 2da. Ediciòn.
Proética. 2010. “IV Encuesta Nacional sobre Percepciones de la Corrupción n el Perú”. En http://www.scribd.com/doc/36168016/Sexta-Encuesta-Nacional-Sobre-Percepciones-de-la-Corrupcion-en-el-Peru-2010

SUNAT. 2010. “Libro de consulta de Cultura Tributaria”. Lima: Instituto de Administración Tributaria y Aduanera:1ra edición, 200 p.

López Jiménez, S. 1997. Ciudadanos reales e imaginarios: concepciones, desarrollo y mapas de la ciudadanía en el Perú. Lima: IDS.

Nerrè, B. 2004. Modeling Tax Culture Annual Meeting of the Public Choice Society, San Diego CA.

Rivera, R y Sojo, C. Cultura tributaria. El sistema tributario costarricense: contribuciones al debate nacional / Contraloría General de la República: editado por Fernando Herrero Acosta. – 1. ed. – San José, C.R.: Publicaciones Contraloría General de la República, 2002. p. 619.

SUNAT. 2008. “Modelamiento del Programa de Cultura y Conciencia Tributaria”. Lima. IATA.
The World Values Survey (WVS) http://www.worldvaluessurvey.com/

Tyler, T. 1990 “Why people obey the law” Newhaven and London: Yale University Press.

Vasquez, C. “Cómo influir en la conciencia tributaria del contribuyente para mejorar su comportamiento”, documento presentado ante la Asamblea General del CIAT en Chile el año 1993.

Velasco Arroyo, J. C.. 2003 “Para leer a Habermas” Alianza Editorial, S.A. Madrid .

The Impact of Tax Policies in Ecuador: Analysis from the Gender Perspective

Juan Carlos Campuzano S., Joan Maribeth Palacios B.

SUMMARY

Assessing the impact of tax policy has always been an issue of economic discussion, especially relative to the spheres of equity, efficiency and redistribution. This document seeks to analyze the incidence of an indirect tax such as Value Added Tax (VAT) from the perspective of household heads through their consumption behavior and find out whether women bear a heavier tax burden from VAT. Results show that the impact of an increase in VAT would be stronger on women.

The authors: *Juan Carlos Campuzano S. An economist from the Escuela Superior Politécnica del Litoral, he specializes in Public Administration. He holds a Master's degree in Economics from the Universitat Pompeu Fabra from Spain. He is an expert in the area of International Taxation at the Internal Revenue Service. Joan Maribeth Palacios B. An economist with specialization in finance from the Escuela Superior Politécnica del Litoral. She holds a Master's degree in Social Economics and SME Management from the International University of Andalucía. She has a Diploma in Public Budgeting from the Latin American School of Social Sciences. She is an analyst in the Area of Tax Fraud Investigation and Money Laundering at the National Department of Tax Management from the Internal Revenue Service.* *We express our appreciation for the financing and assistance provided by the Andean Regional Office of the United Nations Development Fund for Women (UNIFEM) and the National Women's Council (CONAMU)..*

INTRODUCTION

Content

Evaluating the impact of one or several tax policies has been a long-time economic debate issue, especially in the spheres of equity, efficiency and redistribution. Currently, two criteria could be added: flexibility, that is to say, taxes should adapt to the economic fluctuations in such a way that they behave as automatic stabilizers; and the criterion that the tax incidence shall be clear, to allow taxpayers to know who actually pay taxes. Additionally, since any tax measure could lead economic agents to change their behavior pattern, not only are we required to conduct an in-depth analysis of the variables that may alter such pattern, but also of the economic agent proper. This paper seeks to present a gender-perspective analysis of taxation, especially for an indirect tax like the Value Added Tax (VAT).

Therefore, this document attempts at analyzing the tax impact experienced by heads of household (men and women) according to their consumption behavior, and determine in particular whether consumption by women represents a greater tax burden with respect to VAT.

The paper has been divided into seven sections. The first one presents the background on the presence of women in the economic and tax sphere. Section two presents a summary of the methodology. Section three includes a detail of the key gender aspects analyzed herein. Section four details the main results of the methodology employed for the data gathered from the survey conducted, as well as the information bases of the Internal Revenue Service of Ecuador (SRI). Section five calculates in a very simplified manner the impact of a variation on the VAT tax rate on individuals' consumption, divided according to gender. Finally, section six and seven draw the conclusions and recommendations from the analysis conducted.

1. BACKGROUND

The growing interest towards gender-sensitive budgets reflects greater awareness on the importance of allocating public resources for gender equality[1]. Gender-sensitive budgets have appeared as a relevant and broadly disseminated strategy to examine in greater depth the successes and failures of government budgets in promoting economic and social equality among men and women. Such initiatives employ numerous analysis and participation instruments in

1. *In September 2010, Ban Ki-moon, UN Secretary General, designated former President of Chile, Michelle Bachelet, as the head of the new entity for the advancement of gender equality worldwide, UN Women.*

the budgetary processes with the purpose of: assessing the impact of government spending and income on the economic and social situations of men and women, boys and girls; and, developing strategies that lead to gender-sensitive resource allocation.

Analyzing such policies from a gender perspective introduces additional complexity in the research process, since in Ecuador evidence was not found in the sense that tax policy was approached from the empirical standpoint in terms of its gender implications. Nevertheless, such fact makes it fertile ground in current and future studies.

Gender studies have been mostly explored from the analysis of expenditure. Nevertheless, in terms of income, it is also relevant since it underlies spending decisions. Spending is determined only after answering questions on the size of the budget and income sources. In developing countries, external funds account for a significant share of the total revenue, and direct taxes mainly burden the middle and higher classes. Changes in the tax policy, in taxes and the services derived from the tax policy are more likely in developed countries, since their tax base and social welfare systems are larger.

In developing countries, Grown (2006) recommends undertaking research of gender-biases in indirect taxes such as VAT, and introduce incentives programs aimed at obtaining information in such countries with a view to improving the quality of the data that shall underlie decision-making processes in the tax policy area.

With Adam Smith, notions of gender equality were developed, although some have been lost in history. In the writings by Smith, as well as Thomas R. Maltus and David Ricardo, women appear as rational and decision-making agents. Nevertheless, opponents to the idea of gender-equality existed, such as John Millar (1771) and Jean-Babtitste Say (1803). Later, Harriet Martineau (1855) insisted on the rationality of women as economic-agents.

John Stuart Mill and Henry Fawcet also promoted the role of women in the political and economic sphere of the time. Nevertheless, certain concerns existed on the specific role of women such as the unrestricted entry in the labor market.

From that time, arguments start to arise regarding wage gaps, schooling differences, the relation between family responsibilities and wages, and the evolution of women in specific occupations that have motivated the study of gender differences in the economic sphere.

Contemporary authors such as Grown, Stotsky, Cagatay, Budlender, Sharp, Barnett, and Himmelweit, among others, conclude in both papers that the tax systems are not gender-neutral. The analysis of the income in such groups reveals their biases and provides the necessary grounds to minimize them.

In their publication, Budlender and Sharp (1998) present experiences from studies and cases conducted as from 1984 and among which we may highlight the importance of calculating direct and indirect taxes that different individuals or families pay. They suggested that data are required on the distribution of income and spending, which may be typically gathered from household surveys and revenue services. One of the limitations of the analysis is that it tends to assume equitable income distribution in families, while many studies have indicated that this is not the case. They also highlight that “the reduced tax base and the features of the distribution of income and employment mean that, although women do not pay a large portion of the total tax collected, the burden of indirect taxes increasingly affects women disproportionally.”

Himmelweit (2002) finds that the objective of the economic policy basically appears in the formal economy. Nevertheless, the undesired effects on the non-remunerated care economy may limit the efficacy of any policy. The evaluation of the impact of policies that incorporate gender perspectives shall enable policymakers to achieve their objectives with greater efficacy.

On the other hand, Stotsky (2005) acknowledges that the tax systems reflect multiple economic, political and social influences, and therefore, gender biases could be materialized explicitly and implicitly. The author concludes that efforts have been undertaken in certain nations to eliminate such biases, but the advances are still insufficient, and the diversity of cultural patterns shall continue determining the differences in opinion with respect to the aspects constituting discrimination and the need of introducing changes.

Grown (2006) and Barnet and Grown (2004) suggest that since tax systems are not gender-neutral, stimuli are required to promote reforms to incorporate gender perspectives in budgetary processes' policies.

2. METHODOLOGY

In order to meet the objectives set forth herein, two stages were designed for data analysis. The first consisted in information gathering by designing and conducting a survey similar to the Living Conditions Survey (LVS) with the purpose of disaggregating spending by household and defining a domestic support basket. The second stage explored and modeled the data gathered from the survey as well as the SRI databases through the multivariate analysis and Blinder-Oaxaca decomposition methodology (Blinder 1973, Oaxaca 1973) and assess whether gender-differences exist in the payments for Value Added Tax and Income Tax incurred.

The variables to be applied in such models were taken from the SRI, Civil Registry and the survey databases.

3. INCORPORATION OF THE GENDER PERSPECTIVE IN THE TAX SPHERE

Gender is an organization principle of social life affecting social relations overall. It is differentiated from sex to express that the role and the condition of men and women respond to a social construction and are subject to change. The sexual difference and its social construction permeate the overall institutional and regulatory framework in all modern societies. All relations: economic, political and symbolic, which regulate exchanges among individuals are modeled by the hierarchies of gender, expressed in social, economic and political inequality among women and men among different groups of women and men[2].

The Organization for Cooperation and Economic Development (OCDE) defines the gender approach in public policy as: "The consideration of differences among sexes in promoting development and analyzing in every society the causes and institutional and cultural mechanisms that structure inequality between sexes, as well as elaborating policies with strategies to correct the existing imbalances."

Gender-analysis studies the relations between women and men (gender relations), as well as the differences and inequalities in access and control of resources, decisions, opportunities, compensation, and all the other aspects of power. The basic premise in this analysis is:

2. *Conceptual materials and tools for the Gender Cross-section. Government of the Federal District of Mexico. 2004.*

- That gender relations imply relations between women and men; women and women and between men and men, with respect to duties, opportunities, resources and decisions.

This document seeks to provide useful information in the analysis of potential gender biases in indirect taxes (Value Added Tax).

The structure for gender-analysis consists in differentiating two levels of social analysis:

- Description
- Causal explanations

The first approach generally distinguishes the roles of subjects regarding the sexual division of labor, since this is the basic pillar on which the distribution of time and the division of participation areas between men and women is organized. This description entails asking:

What are the activities women and men perform? What is the quantitative expression (gap) between women and men in terms of addressing the problem and the most relevant variables thereof?

The second step is aimed at identifying the causes and establishing the causal relations that explain the way in which the sexual difference in rules, norms and procedures defining the problem is represented, symbolized and valued. The key question for the purpose of the research work is:

What are the rules, laws and regulations governing the behavior of women and men in a given context or problem? By analyzing the impact of tax policies in Ecuador, the norms that govern this area are the Tax Code norms, whose provisions apply on all levies, that is to say, taxes, charges and special levies.

3.1 Public policies and gender

One of the most important objectives of public policies is to contribute to the promotion of the wellbeing of the population. In such sense, we shall analyze the type of policy underlying the tax sphere in this specific case and whether they are equitable and do not affect the condition and position of women and men. In the development policy line, the policies aligned under an equal opportunity approach were identified with the gender in development approach (GED).

The GED policy approach acknowledged marginality and subordination of women not only as part of the social lag, but also as a power issue. It promotes efficiency and identification of opportunities to improve gender distribution and equity in development policies, projects and programs. Nevertheless, the drawback to such actions is that they fail to reverse the gender relations established, or transform the gender dimension of the world as it stands.

The regulatory framework governing public finances used in the tax policy analysis are the basic principles of universal Tax Law: legality, generality, equality, proportionality, non-confiscatory and non-retroactive nature.

The most widely adopted notions for this analysis with a GED approach are: generality and equality. Generality indicates that the tax system shall grant exemptions or benefits to certain individuals or groups of individuals.

Tax equality is the most debated principle, since it is based on the premise that benefits and exemptions shall not be applied and levies shall not be imposed by reasons of race, color, sex, language, religion, political affiliation or of any other nature. Nevertheless, a consumption tax such as the Value Added Tax (VAT), owing to its regressive nature, largely affects individuals with lower income, since they spend more on consumption than the wealthier population.

One form of reducing the impact of VAT regressivity is by exemptions or lower rates for goods largely purchased by lower-income groups, and through special taxes or higher taxes on sumptuous goods consumed by the higher-income groups. Exemptions of such type, although tar-

geted on those who earn less income, obviously fail to address the heart of the problem: in general, women earn lower salaries than men. Therefore, the impact of exemptions is partial. Such policy actions, although vital to reduce the tax impact on society, shall go hand in hand with cross-sectional strategies in drafting collateral policies. Such strategies entail the inclusion of the gender perspective in the dynamic and the procedures involved in designing public policies in all the relevant sectors.

4. KEY RESULTS

4.1 Results from the multivariate survey analysis

The results shown are chiefly based on the analysis conducted upon the questions in survey sections: "Distribution of the total family spending among household members" and "Approximate Consumption Baskets".

4.1.1 Descriptive analysis of household expense distribution

This survey involved 257 men and 343 women heads of household in the cities of Guayaquil, Quito and Cuenca. Therefore, upon reviewing the impact of the need to disaggregate the information within the household, we obtain an approximate distribution of the domestic income earned among family members. The sample survey results enabled to determine whether households with women heads or men heads featured a greater tax burden based on consumption, in addition to their level of income and whether their needs were met according to the level of the basic basket. A second reason to disaggregate the household arises from empirical studies on the inequitable distribution of household resources that discredits the idea that households are unitary entities that operate on the basis of altruistic principles and replaces it with the notion that they are scenarios of competition in terms of claims, rights, power, interest and resources.

Table No.1. Percentage of Income allocated to Expenses

	Total allocation of expenses (Dollars)	Food (Percentage)	Health (Percentage)	Education (Percentage)	Household Services (Percentage)
Men					
Guayaquil	449.47	0.60	.220	.150	.05
Quito	468.62	0.77	0.07	0.12	0.04
Cuenca	1798.940	.380	.2	0.21	0.18
Women					
Guayaquil	291.06	0.56	0.23	0.15	0.07
Quito	359.80	.750	.080	.160	.01
Cuenca	355.63	0.39	0.22	0.13	0.23

Source: SRI-UNIFEM Survey

The information from the survey regarding the distribution of household expenditure in the food, health, education and household service areas, revealed that households headed by men and women allocate between 50 % and 60% of their income to food, accounting for the highest expense, which is reasonable since it is a basic need. The percentages in terms of health and education sustained the same expense distribution trend in the three cities. Such expenses

were largely attributable to products exempted from VAT, so the net impact could be measured according to the individual's level of income, considering that although it is true that percentages are similar, in the surveys, the overall nominal amount allocated to expenses is always lower in households with women heads.

Based on the data gathered by city, a similar average expense was obtained between both genders in the household products basket section and personal care products and services; therefore, the increase or reduction of the 12% VAT rate in such products would affect men and women alike. Likewise, the articles included in such baskets are for daily consumption in household tasks (laundry detergent, detergent) as well as personal care (shampoo, deodorant, condoms).

Although the data in the household services' basket are not too surprising, since the higher average value of this type of expense applies in households with male heads ($51.12 monthly for Guayaquil, $18.59 in Quito and $32.4 in Cuenca), based on the stereotyped idea that the male gender does not assume the reproductive activities in the household and delegates them to other individuals (spouses, daughters, employees), the result in the case of female heads in the households is surprising ($49.25 in Guayaquil, $3.81 in Quito and $17.78 in Cuenca); in the capital city of Ecuador in households with female heads a low amount is spent in this item, while in the other two cities the values are higher. In this case, we would have to refer to the income from women in this city, since they could be lower than in other cities, or also attributable to the fact that it is more difficult to hire an employee for domestic tasks in this geographic area. Nevertheless, such apparently encouraging data are no longer so upon reviewing the net percentage of income spent on household services, in which the units headed by women privilege this outlay (7% in Guayaquil, 1% in Quito and 23% in Cuenca) compared with the male heads of household (5% in Guayaquil, 4% in Quito and 18% in Cuenca).

Table No. 2: Section of the monthly approximate basket in dollars by cities

Men	Household products basket	Personal care products and services	Household services	Entertainment, recreation	Clothing and shoes	Woven goods for the household	Vehicle Maintenance	Health Spending	Pregnancy Spending	Total
Guayaquil	42.8	20.87	51.12	20.25	84.58	11.19	36.68	73.1	11.09	351.68
Quito	21.54	17.88	18.59	12.89	45.73	2.5	10.59	18.8	0.33	148.85
Cuenca	47.62	25.08	32.4	86.65	94.62	17.88	79.67	103.96	2.33	490.21
Women										
Guayaquil	41.47	22.65	49.25	23.28	57.08	6.26	20.14	87.54	35.84	343.51
Quito	24.35	14.17	3.81	11.21	25.32	0.28	6.24	17.69	0.51	103.58
Cuenca	38.48	21.12	17.78	19.24	38.78	2.37	5.51	125.47	0.88	269.63

Source: SRI-UNIFEM Survey

It is worth highlighting that the study revealed a preference according to which men who are heads of household spent more on clothing and shoes, while women heads of household were more conservative for this type of consumption.

4.1.2 Descriptive analysis of the results of the preliminary basket section

Although the intra-family information on this type of expense is not gathered, the total outlays

are assumed for the household overall. Upon analyzing the differentiated basket in the first five items, they are repeated on the consumption list of women as well as men. This type of goods meet the health needs (medications), clothing and shoes and domestic service. The only element that was not repeated in the first five places on the list for both genders was hospitalization and vehicle maintenance. Hospitalization ranks fourth in the information gathered from female heads of household; while men heads of household rank vehicle maintenance second as one of their priorities.

Some of the reasons underlying this type of behavior relate to the biological gender features in the case of medication purchases, and could relate to the initiation, development and conclusion of the reproductive life: menarche, contraception, pregnancy and menopause in female heads of household. Nevertheless, it is also worth considering that healthcare is an inexcusable need; since at any time, disease or discomfort may affect any family member, whether man or woman. On the other hand, the heads of household expressed that vehicle maintenance is a priority since all the family members benefit from its use. It is also worth highlighting that certain heads of household interviewed expressed that owning a vehicle in good condition gives you status before other acquaintances or individuals in general.

Although the objective of this section was to obtain a domestic support basket that not only grouped needs for food, health, education, housing, public transportation (with 0% VAT rate), clothing and shoes (with 12% VAT rate) but also specific needs by gender. The results obtained provide information explaining that the needs of women and men heads of household are similar according to the order obtained from the list. For example, both rank domestic service, household care products, laundry and ironing service, as well as the purchase of condoms and contraceptives as similar needs. The conclusive observation in this step of the analysis is that men and women have ***similar needs***; the differentiating element refers to the income percentage spent on meeting them, which shall be affected according to the salary level for each one. And precisely, that is the nature of VAT, since it is an indirect tax, by which all taxpayers enjoy the same treatment regardless of their specific economic situation.

The VAT rate applicable as men and women heads of household based on their consumption is clarified hereinafter in section 5, under Impact Analysis.

4.1.3 Correlations' analysis

A first approach during the analysis consisted in finding the correlations among total spending on food, health, education and household services. This is aimed at verifying whether, for example, an increase in food expenses would trigger a reduction in the other items (health, education, etc.) or vice versa.

For the total sample, the results showed a relatively strong (but negative) link between the Total Food Expense, Household Service and Health variables, while the link between one of them any third one is clearly weaker. Therefore, it would seem evident that they may be considered as a separate subset of information.

Upon separating the sample between men and women, the outcomes indicated that among men, the strongest relation arises in the Food Expense and Household Service variables, which would mean that if households headed by men shall distribute a larger share of food expenses among the family, the item they shall sacrifice to offset such increase is Household Services. For the remaining variables, two additional subsets could be defined: the first one formed by the expenses on Health and Education, and the other, by the relationship between the household Service, Health and Education. This would suggest a marked preference for Food expenses in men, followed by Education and Health, and household services in the last place. On the other hand, women featured a slightly different behavior pattern than men, although the central

relation still stands between Food, Household Service and Health expenses. The correlations suggest that in this case, women spend a larger share on Food, Health and Education, and Household Service stands as the less explained variable.

4.2 Extracting the factor space

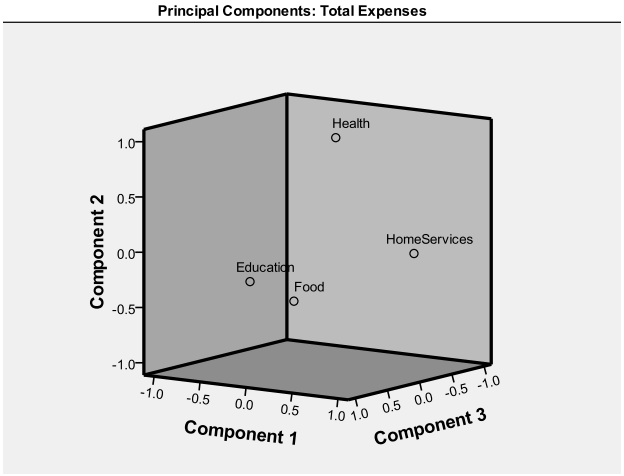
The purpose of obtaining the factor space was to find a better section and interpretation in the point cloud of the original data.

4.2.1 Rotation of factors

The aim of rotating original factors is to obtain a solution that is easier to interpret, in the sense that strongly intra-correlated variables may produce higher saturations (in absolute values) on one same factor and lower on the rest.

The results obtained from the extraction of the factors as well as their orthogonal projection and rotation provides the coordinates in a tri-dimensional space that shall facilitate the interpretation of expenses.

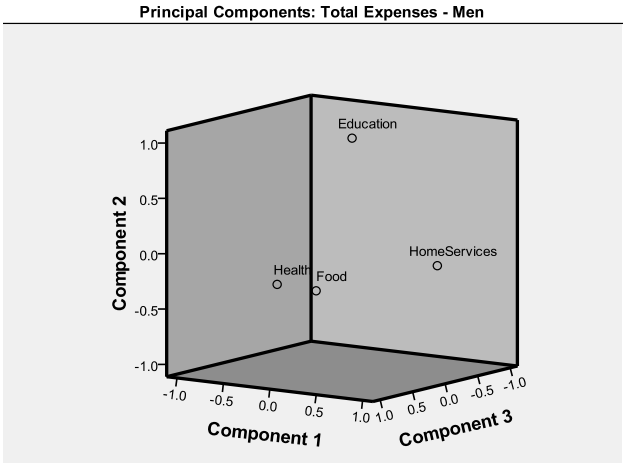
Graphic No. 1



Source: the authors.

Graphic No. 1 is the graphic section of the reduction of dimensions to a space that enables the interpretation of the Total Expenses' results of the family in the household. The conclusions presented in the correlations section become more evident in this graphic, since it shows at a general level, that Food Expense is the most explained or most relevant for individuals, followed by education, household services, and finally, health[3].

Graphic No. 2



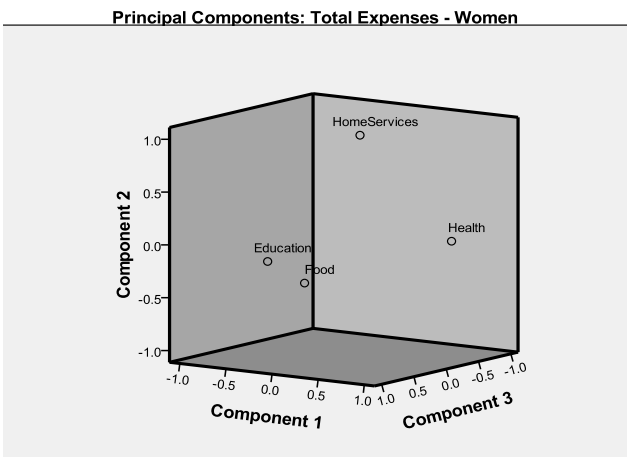
Source: the authors.

Upon differentiating the way in which expenses are distributed between heads of household, men and women, we may observe interesting results. Graphic 2 shows that Food is the most important item for men, followed by health and household services. Education is the least important expense.

On the other hand, Graphic 3 presents the behavior of women. It shows that food expenses still remain the top priority, while, contrary to men, the allocation of expenses in education and health rank second. They leave the household services' expense allocation in the last place.

3. *Note: the closer a point is to the intercept, the better the explanation of the variable. The greater the distance of a variable to the intercept, the lower the relevance or influence thereof.*

Graphic No. 3



Source: the authors.

Following, we shall elaborate on the interpretation of food, education, health and household services' expenses at the intra-family level. To such end, we shall only present the best section of data on the key component graphics.

With respect to food expenses, we found a clear difference between men and women as to the allocation of food expenses among household members. While women prioritize the wellbeing of their children, men prefer the wellbeing of their spouses. Also, women feature three additional subsets formed by parents and other household members: spouses, domestic employees, and a last subset for their own wellbeing. On the other hand, men do not feature such defined family subsets as women, but we may notice the capacity of attaching the same importance to the allocation of food expenses among children and other household members.

Regarding education expenses, children are the point nearest to the intercept, with a higher relative importance than other household members. In terms of education, when the head of household is a woman, she forsakes such desire in favor of other family members or owing to the lack of time based on her devotion to tasks related with the care economy. As to men, there seems to be a preference for the education of their children, followed by a similar importance for education expense for the spouse and for the head of household.

The intra-family health expense allocation analysis presented identical or similar features to the allocation of food expenses by both groups. Women pay special attention to their children's health, while men are especially concerned over the health of their spouse. Both groups attach special importance to their own health, especially men, after providing for the health of their children or spouses.

Such behavior may be portrayed as selfish since the head of household, man or woman, ranks second as the beneficiary of this expense. Notwithstanding, upon asking respondents about the reason for this attitude, the answer was repetitive by gender as well as by city: in order to be the providers in the home, it is vital to enjoy good health to be able to work.

Education and health are factors enabling individuals to become more productive and active in the development processes of a nation, and although it is true that they are exempted from VAT, and that men as well as women enjoy such social exemptions, the allocation each may decide upon constitutes a factor that could affect the household. For example, that fact that women do not pursue professional careers is discouraging at the time of qualifying for a promotion, and consequently, better compensation for their work; this could promote a salary gap, placing women heads of household at a disadvantage.

The observation on the allocation of the household services expense made by heads of household, men and women, featured similar behavior to the item "other members", since in both cases this point is repeated as the nearest to the intercept. This type of expense relates to the use of time. Studies conducted in countries like Australia reveal that married women spend more time on tasks such as laundry, cleaning, and cooking without remuneration. The samples gathered in Ecuador revealed that in the case of women,

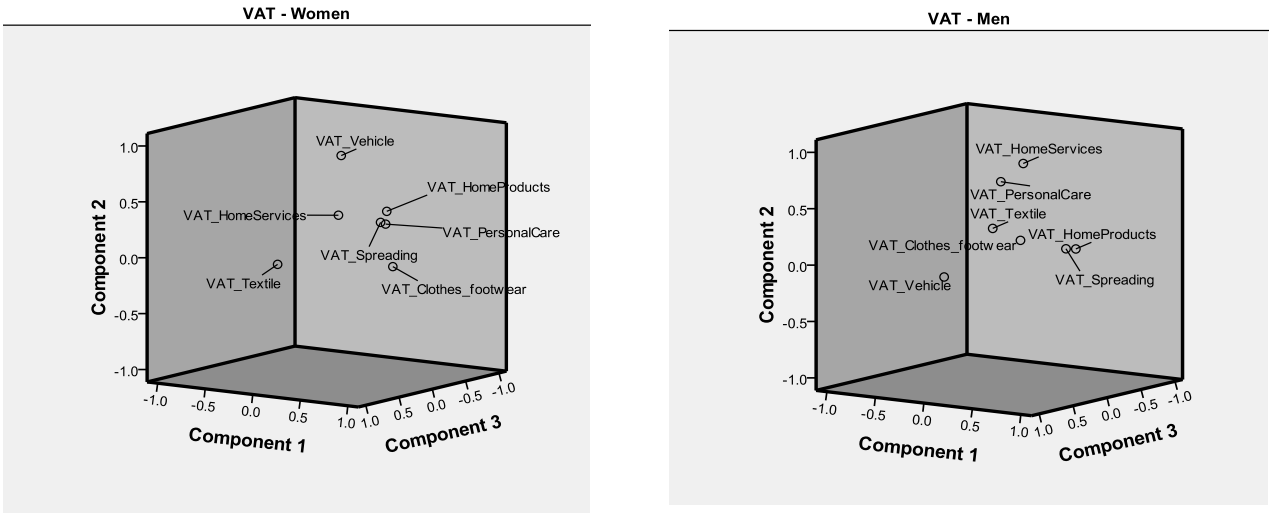
they allocate the household services expense in the following order: laundry, domestic employee, children, spouses and finally, themselves as heads. In this space we may introduce the notion that when they manage this item, they do so by prioritizing the individual who performs household chores in exchange for remuneration –the domestic employee-; and then, according to who may help them in the family, based on the notion of loyalty in the family. This approach would entail the existence of structured group expectations, according to which all the members assume a commitment, as if invisible but strong fibers existed that kept them united[4].

On the other hand, male heads of household presented a different expense allocation behavior. In this item, they allocated more money, on the notion that since men are the ones who make decisions and earn the money for the home, they assume the largest share of expenses for the daily household activities. In this item, not only money plays a key role as to power, but also as to the appreciation of the differentiated tasks for women/men in the household, since this expense is distributed to spouses followed by children, laundry and lastly, the domestic employee. Something worth highlighting is that male heads of household implicitly assume that their spouse will take over such tasks, in principle.

VAT payment

With regards to VAT payment (amounts calculated from consumption baskets), Graphic 4 shows that the greatest variability in the rotated space is the vehicle consumption basket for men and the clothing, shoes and woven goods' basket for women. In the case of men, VAT on consumption of goods in the personal care and household services basket features lower weight. On the other hand, in the case of women, VAT in the basket of articles for vehicles features less relevance. Both groups attach average importance to the Household Services and Entertainment expenses.

Graphic No. 4



Source: the authors.

4. *Maldonado Ignacio et al., "Effects of the Opportunity Program in spousal and family relations". López, María de la Paz and Salles, Vania (Coord). The Opportunities' Program from the Gender perspective. Mexico, 2006, pp. 95-130.*

4.3. The Blinder-Oaxaca decomposition

One of the purposes of this study was to identify gender differences in the behavior of individuals in terms of consumption of certain baskets of goods, some of them levied with VAT, and with respect to the payment of Income Tax. For the first case, we used the information gathered from the survey, and for the second, the data gathered from the SRI internal databases.

For a detailed elaboration of the theoretical aspects of the decomposition, please refer to Blinder (1973)[5] and Oaxaca (1973)[6].

This methodology is frequently employed to study the outcomes of the labor market by groups (gender, race, education, etc.) and to break down the differences in wage averages on the basis of regression models. The procedure is known in literature as the Blinder-Oaxaca decomposition (Blinder 1973, Oaxaca 1973) and divides the wage differences between two groups into one component that is "explained" by the differences of the group's productivity features such as education or labor experience and a residual part that may not be explained by such differences in the determining factors of wages. This "unexplained" component is frequently used as a measure of labor market discrimination.

To the extent relevant to this paper, the variables considered from the survey data were the following:

a) Groups
   a. Group A: Men
   b. Group B: Women
b) Interest variable: logarithm of the total monthly VAT amount calculated on the basis of consumption baskets: LVAT
c) Explanatory variables
   a. Age
   b. Marital Status (1 for married or common-law partnership, otherwise 0)
   c. Education Level
   d. Socio-economic level
   e. Geographic location
   f. Number of children
   g. Labor status (1 if employed, 0 if not).
   h. Logarithm of expenses on the personal care basket
   i. Logarithm of expenses on the household services' basket
   j. Logarithm of expenses on the entertainment basket
   k. Logarithm of expenses on the clothing and shoes basket
   l. Logarithm of expenses on the woven goods basket
   m. Logarithm of expenses on the vehicles' basket
   n. Logarithm of expenses on the health basket
   o. Logarithm of expenses on the pregnancy basket

For consistency with the notation applied, the model is developed from the standpoint of women (Group B). The outcomes of the application of the Blinder-Oaxaca decomposition for payment of VAT are shown on Table No.3

5. *Blinder, A. S. 1973. Wage Discrimination: Reduced Form and Structural Estimates. The Journal of Human Resources 8: 436–455.*
6. *Oaxaca, R. 1973. Male-Female Wage Differentials in Urban Labor Markets. International Economic Review 14: 693–709.*

Table No. 3. Blinder – Oaxaca Decomposition for the Survey Sample

	Coefficient	Value P	Confidence interval 95%	
Difference	0.1068654	0.02	0.0168318	0.1968989
Linear Decomposition				
Total	Coefficient	Value P	Confidence interval 95%	
Staff number	0.097	0.034	0.007	0.186
Coefficient	0.052	0.141	-0.017	0.120
Interaction	-0.041	0.209	-0.105	0.023
Number of observations	Men	249		
	Women	339		

Source: the authors.

Evidence suggests that a slightly significant difference exists, which is solely explained by the number of men and women staff (0.106854). The 0.0966612 increase on the table would indicate that the differences in number of staff accounts for the largest share of the VAT gap. The second term quantified the change in the amount of VAT paid by women upon applying the coefficient of men for the characteristics of women; as it may be noted, the result is not significant. The third part is the interaction term measuring the simultaneous effect of the differences in staff number and coefficients. Therefore, women would be paying more VAT than men owing to an intrinsic behavior regarding the products they consume.

The details of the ancillary regressions showed that coefficients for geographic locations, Guayaquil and Quito, present a positive and significant value (moreover in Quito) in its share of the VAT contribution as well as the personal care, clothing and shoes and vehicle expenses. Nevertheless, the differences for such coefficients among the groups under consideration are not significant.

A similar exercise was conducted for the payment of **Income Tax** with information gathered from the SRI databases. The sample features 186,905 observations, out of which 136,806 are men and 50,099 women. The final sample resulted from the screening of the global taxpayers' database only considering active taxpayers, who are under the SRI administration and with positive values on average in 2005-2007 for Income Tax incurred. This is a purely referential estimation, since in spite of combining the tax database with the civil registry database to obtain the information of gender, age and marital status, other variables are still missing to control the bias, such as education, schooling years, whether the taxpayer is employed or not, number of children, etc. Therefore, the variables employed were:

a) Groups
   a. Group A: Men
   b. Group B: Women
b) Variable of interest: logarithm of the average (2005-2007) Income Tax accrued: LIncome-Tax
c) Explanation or predictive variables:
   a. Age
   b. Marital Status

Table No.4 presents results that are much more consistent and robust than those obtained from the 600 pieces of data from the expense survey. We observe that the 0.0527843 increase for the coefficient portion is the largest contribution to the difference.

Table No. 4. Blinder – Oaxaca Decomposition. SRI Database Sample.

	Coefficient	Value P	Confidence interval 95%	
Difference	0.122	0.000	0.100	0.143
Linear decomposition				
Total	Coefficient	Value P	Confidence interval 95%	
	0.035	0.000	0.029	0.041
Staff number	0.053	0.000	0.031	0.075
Coefficients	0.034	0.000	0.026	0.042
Interaction				
Number of observations	Men	136806		
Number of observations	Women	50099		

Source: the authors.

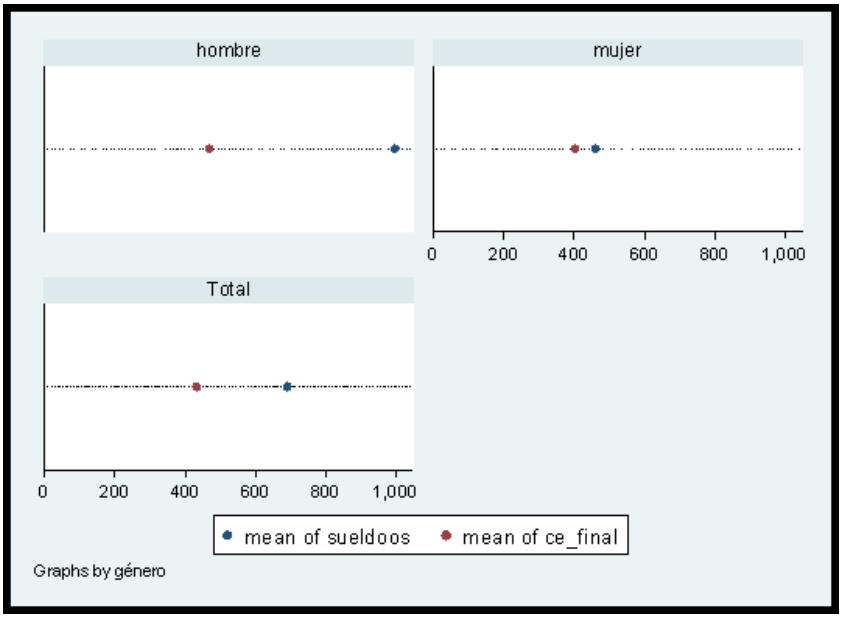
Given the data available, the three terms of the decomposition contribute to the difference among groups. The staff number affects the gap. The second term that quantifies the change in the Income Tax accrued amount by women, upon applying the coefficient of men to the characteristics of women, is significant and makes the largest contribution. Finally, the interaction term that measures the simultaneous effect of the differences in staff number and coefficients is also significant. Much is left to say about these data and their impacts; nevertheless, the lack of other socioeconomic variables prevents more and better interpretation. Likewise, it would be interesting to control according to selection bias using the Heckman (1976, 1979) procedure. We recommend doing so for future studies, since the ground is very fertile in such regard.

5. IMPACT ANALYSIS

The purpose of this section was to make a very simple calculation of the impact of a variation in the VAT rate on the consumption of individuals, broken down by gender.

Graphic No. 5 shows the distribution of the average income and expenses from men and women out of the 600-observations sample. The gap is evident between income and expenses (savings) for each group. A visual inspection would indicate that any shift in consumption would largely affect the group of women.

Graphic No. 5



Source: the authors.

Thus, a consumption function may be expressed as followed:

$$C_i = \bar{y} + cYd_i \qquad (1)$$

Where,

C_i is the consumption of individual i, $\bar{y}$ represents the autonomous or subsistence consumption[7], c is the marginal trend to consume, and Yd is the disposable income of individual i.

On the other hand, the consumption of the individual may be broken down in two components: one component that does not apply VAT (for notation purposes, it shall be called effective consumption) and the other for VAT.

$$C_i = Ce_i + Civa_i \qquad (2)$$

The consumption portion corresponding to VAT is a proportion τ of effective consumption:

$$Civa_i = \tau Ce_i \qquad (3)$$

Thus, by inserting (3) in (2) we obtain:

$$C_i = Ce_i + \tau Ce_i = (1+\tau)Ce_i \qquad (2')$$

Subsequently, if we replace total consumption by individual i as a function of the tax rate and its effective consumption, equation (1) might be expressed as:

$$(1+\tau)Ce_i = \bar{y} + cYd_i$$

Upon reorganizing the terms, we obtain:

7. *Certain economists interpret autonomous consumption as the "consumption required to sustain a minimum subsistence level". That is to say, individuals shall always consume something to prevent death by starvation, disease, etc.*

$$Ce_i = \frac{\bar{\gamma}}{(1+\tau)} + \frac{c}{(1+\tau)} Yd_i \qquad (4)$$

Expression (4) may be expressed as:

$$Ce_i = \beta_0 + \beta_1 Yd_i \qquad (4')$$

Where $\beta_0 = \frac{\bar{\gamma}}{(1+\tau)}$ and $\beta_1 = \frac{c}{(1+\tau)}$

Given assumption (1) – (4´), the problem to be solved would then be: what is the variation of effective consumption in the face of a tax rate variation? In other words, we must find $\frac{\partial Ce}{\partial \tau}$.

Therefore, the objective is to calculate (4') for the group of men and women through least squares estimators of the parameters β_0 and β_1.

The results of the estimation based on the sample of 600 individuals are shown on the following table:

Table No. 5

Estimators	Men	Women
$\widehat{\beta_0}$	337.59	213.8835
	[34.90454]	[32.14497]
$\widehat{\beta_1}$	0.1326383	0.411725
	[0.0118656]	[.0458424]
R^2	0.3289	0.1913
N	257	343

Note: standard errors are in parenthesis.

The results show, in spite of the relatively low determination coefficient values, that the impact of a VAT increase would be greater in women. Therefore, according to initial statistics, women with an average income of approximately 500 dollars and autonomous consumption of 214 dollars, have very little room to maneuver to shift their consumption patterns. On the other hand, men with an average income of almost 1,000 dollars and autonomous consumption of 337.59 may change their consumption patterns in the case of a variation in the Value Added Tax. The marginal propensity to consume coefficient also evidences the great dependence of women on consumption (0.41 of their income) while in men this indicator is much lower (0.1326). Nevertheless, it is worth clarifying that the absolute consumption values in households with female heads shall remain lower than in households with male heads.

The foregoing results may be also interpreted in the sense that the decisions that heads of household make with respect to expenses is a matter of restriction rather than election. As regards to women, their restriction is to meet "constant" consumption to support the family, for example, by covering the basic needs basket. Probably, the households headed by men pursue the same end as suppliers of goods and services; nevertheless, every decision made is mainly affected by the income they earn.

The patterns obtained from the sample reflect the differences prevailing in the consumption priorities by gender. Also, they reveal the factor that acts as the greatest determinant influencing expenses. As set forth in section 4.1.2, households headed by men feature a higher income average; therefore, given the regressive nature of VAT, they would be less affected compared with households headed by women. This conclusion would prove the existence of an inverse relation between income and indirect taxes; so that lower-income households pay a larger VAT share.

6. CONCLUSIONS

Although it is true that this study was a preliminary attempt at finding gender biases from the income standpoint using tax information, it is also true that it may be subject to endless criticism. Such criticism is welcome, since it shall contribute in improving and correcting estimations and interpretations.

With respect to the baskets by cities, the consumption behavior varies among men and women from the three cities, chiefly in the household service, health and pregnancy expenses. That is to say, the upward or downward trend in the health expense section within the men and women subset is sustained, but it changes upon analyzing them by city. For example, men and women heads of household in Guayaquil prioritize health expenses compared to individuals in Quito. Notwithstanding, individuals from Cuenca rank above them. This may be based on different reasons such as, for example, a greater family burden, greater concern over personal care; which are factors that are not included in the survey. The section on entertainment and leisure shows that men from Cuenca feature higher spending predisposition in this area than women counterparts; while the predisposition to spending on these services stands at the same values in the remaining cities for heads of household, men and women.

Considering the limitations of the observations in the case of surveys and variables from SRI bases, the results remain interesting. The data gathered from the tax administration showed the Single Taxpayers' Registry (RUC, as per the Spanish acronym), which is a sort of code for taxpayer identification, name, economic activity type, profession, class of taxpayer (individual or corporation), business opening date, address, contact information, filing obligations; and, curiously, the taxpayer gender is not stated.

In the case of the analysis of the survey data, the multivariate analysis showed different behavior patterns and selection of consumption baskets for men and women, as well as the form of allocating expenses in the household. In particular, we may notice the protective role of women at the time of deciding on the allocation of expenses, especially for food, health and education among the household members.

As to the results obtained through the Blinder-Oaxaca decomposition, there is still extensive room for research to continue looking into the causes of the differences found in the VAT and Income Tax payment considering women as the interest group. In particular, the result obtained in the payment of VAT with a difference explained solely by the number of staff and not by other variables (the fact of being woman or man) leaves the door open to further research.

The key finding is that there is effectively a greater impact of VAT in women heads of household owing to their greater propensity to consumption, which is based on a matter of restriction rather than election, since the largest share of their income is spent on meeting basic needs. It is worth highlighting that, in spite of the marginal propensity to consume coefficients obtained, the net values for average consumption in households headed by women are lower compared to men.

The results of the impact simulation may be analyzed from the standpoint of Art. 6 of the Ecuadorian Tax Code, which established among other notions, that taxes, in addition to being a means to collect revenue, shall facilitate better distribution of national income. Thus, a policy aimed at improving the income of women is required, that establishes better labor conditions and opportunities for this group.

From the standpoint of the survey outcomes, the term on women empowerment still features certain hurdles. This might be due to the inherent oppression, since, for example, in the allocation of household expenses, women always prioritize the interests of the other members of the household to their own. It suffices to observe the education and household services' expenses, where everyone comes before the head of household. This is alarming to the extent that, very likely, if a female head of household enjoyed better skills, she would earn a higher salary and would be able to hire the services of somebody to assume the care tasks while she is away. This is a simple fact, which evidences that she has made the decision to give the other members of the household the priority that she denies herself.

In order to manage the SRI information registration system for individuals at the time of filing for their RUC (Single Taxpayers' Registry), we suggest requesting individuals' gender, since this information is currently excluded from their bases, and for the purpose of this paper, information was crossed with the database of the Civil Registry[8] updated as of 2004.

Subscribe agreements for online connection with entities such as the Civil Registry and the Registry of Corporations in the case of corporations and, thus, rely on accurate and updated information among organizations.

With the purpose of verifying the references of disabled taxpayers and the goods subject to VAT reimbursement (orthopedic vehicles, special medical devices, raw material for orthoses and prostheses), the signing of agreements for access to CONADIS (National Council of Disabilities) database information would result in shorter terms to VAT rebates.

7. BIBLIOGRAPHY

Andía, Bethsabé and Beltrán Arlette (2004). Analysis of the public budget with a gender approach: systematization of experiences in the Andean Region and methodological proposal, in UNIFEM. Towards transparency and equitable governance. Gender-sensitive budgets in the Andean Region, pp. 58-85.

Boskin, Michael. (1974). The Effects of Government Expenditures and Taxes on Female Labor. The American Economic Review, Vol. 64, No. 2, Papers and Proceedings of the Eighty-sixth Annual Meeting of the American Economic Association. pp. 251-256.

Blinder, A. S. 1973. Wage Discrimination: Reduced Form and Structural Estimates. The Journal of Human Resources 8: 436–455

Budlender, Debbie and Sharp, Rhonda (1998). How to conduct a gender-sensitive budgetary analysis: contemporary research and practices. British Commonwealth Secretariat, USAID.

Cagatay, N. (1998). Incorporation of Gender in Macroeconomics, Gender and State United Nations Development Programme (UNDP), Working Paper 6.

Chant, Sylvia. (2003). New contributions in the analysis of poverty: methodological and conceptual challenges to understand poverty from a gender perspective. Women and Development Unit. ECLAC and United Nations.

8. Government agency that manages the information on births, deaths, marriages, divorces and IDs of the Ecuadorian citizens.

Crompton, Rosemary; Hantrais, Linda; Walters, Patricia. (1990). Gender Relations and Employment. The British Journal of Sociology, Vol. 41, No. 3, Special Issue: Britain as a European Society? Relations and Employment.

Cruz, Carmen de la. (1998). Methodological guide to integrate the gender perspective into development projects and programs. Basque Country.

Dimand, Robert, Nyland, Chris and Forget, Evelyn (2004) Retrospectives: Gender in Classical Economics The Journal of Economic Perspectives, Vol. 18, No. 1. pp. 229-240.

Fraser Nancy (1994). After the Family Wage: Gender Equity and the Welfare State Political Theory, Vol. 22, No. 4. pp. 591-618.

Jann, B. 2008. A Stata Implementation of the Blinder-Oaxaca Decomposition. Forthcoming in the Stata Journal.

Maldonado Ignacio, et al., "Effects of the Opportunities Program on the spousal and family relations." López, María de la Paz y Salles, Vania (Coord). The Opportunities' Program from the gender perspective, Mexico, 2006, pp. 95-130.

Oaxaca, R. 1973. Male-Female Wage Differentials in Urban Labor Markets. International Economic Review 14: 693–709.

Redding, Sean. (1993). Legal Minors and Social Children: Rural African Women and Taxation in the Transkei, South Africa. African Studies Review, Vol. 36, No. 3. pp. 49-74.

Salanié, Bernard (2003). The Economics of Taxation. MIT Press.

Smith C. Karen. (1997) Labor Supply, Taxes, and Government Spending: A Micro-econometric Analysis. The Review of Economics and Statistics, Vol. 79, No.1. pp. 50-67.

Stotsky, J. (1997a). Gender Bias in Tax Systems. Tax Notes International, pp. 1913-1923.

Tamar Diana Wilson (1998) Approaches to Understanding the Position of Women Workers in the Informal Sector Latin American Perspectives, Vol. 25, No. 2, The Urban Informal Sector. Pp. 105-119.

Alm James; Leslie A. Whittington for Love or Money? (1999). The Impact of Income Taxes on Marriage. Economica, New Series, Vol. 66, No. 263. pp. 297-316

Act on the Internal Tax System in Ecuador, 2008

Tax aspects of financial transactions, centered on derivatives instruments and/or contracts

Domingo Carbajo Vasco; Pablo Porporatto

SUMMARY

This paper discusses the most relevant tax aspects involved in financial transactions and the specific derivative instruments and/or financial contracts in the general framework of the complex interaction between taxation and the activities of financial institutions and markets, a unique and important sector of economic activity, which demands special attention by Tax Administrations since on the one hand, financial entities facilitate tax collection and provide useful tax-relevant information while on the other hand they involve experts and even complex tax treatments, they promote tax planning schemes and are the usual cannel for laundering criminally obtained assets.

The authors: *Domingo Carbajo Vasco. Economist. Lawyer. State Treasury Inspector. Tax Administration official. Author of books and technical publications on tax issues. Professor in the International Tax Administration and Public Treasury Master's course. Consultant to international agencies. Co-author of the virtual course "The role of the Tax Administration in Controlling Asset Laundering" (RAAM-CEDDET-IEF-AEAT), which has just completed its second edition. Pablo Porporatto. Certified Public Accountant. He holds a degree in Business Administration. International Master's Degree in Tax Administration and Public Treasury (1st Edition). Official of the Federal Revenue Administration. Author of tax-related technical publications and the virtual course of the Inter-American Center of Tax Administrations (CIAT) on "Control of Financial Institutions and Transactions". Co-author of the virtual course "The role of the Tax Administration in Controlling Asset Laundering" (RAAM- CEDDET-IEF-AEAT).*

INTRODUCTION

Contents

The financial sector or system, in addition its relevant economic role, features central tax relevance by virtue of the revenue contribution, its inherent contribution and as source withholding agent and provider of tax relevant information.

Additionally, the financial origin of the recent systemic crisis has enhanced the key role of financial institutions in the operation of the international economy, as well as the concern over its incidence on economic imbalances (the principle known as "too big to fall"), their excessive trend to operate with toxic, opaque or imbalanced instruments, their propensity towards excessive risks, etc.

In the tax sphere, such reflections (which are leading to a deep reconsideration of the financial system regulation, with proposals under full development from the Vickers Report in the United Kingdom up to Basle III) are also producing important consequences regarding what is increasingly evident: the under-taxation of the financial sector compared to effective economic activities and the need for taxes to function, in a supplemental or central role, as a regulating mechanism of financial markets, restricting their trend of assuming systemic risks and operating with complex and barely transparent financial instruments, whose typical examples are certain derivatives.

Precisely, and with regards to financial transactions, and particularly, financial derivatives instruments, products or contracts (hereinafter, DFIs); their nature, taxation (domestic and international), regulation and control have been complex and labile issues, whose evolution and tax treatment constitute relevant matters and genuine challenges for the Tax Policy (hereinafter, TP) and the Tax Administrations (hereinafter, TAs) enforcing it.

Logically, the appropriate taxation and control of DFIs are current topics, based on the renewed interest in such transactions, in the context of the international financial crisis that evidenced the scope and complexity of such operations at the international level, chiefly in terms of the over-the-counter market (hereinafter, OTC), owing to the lack of sufficient regulation and supervision thereof. Therefore, this has spurred the trend of creating official clearing instruments and markets, genuine Securities' Clearing Corporations, for the transactions with such instruments, reducing their opacity and making the valuations and profit and losses from such transactions more transparent.

In this framework, this paper is not intended to provide an in-depth analysis, but rather, a broad review from an international standpoint of the key tax aspects of financial transactions, focusing on DFIs, through an overview of the current principles and trends, based on the most common criteria applied by countries and considering the recent studies by international agencies and experts. Such criteria and studies have been multiplied, with even new forms of taxation appli-

cable on the financial entities and transactions to cover potential systemic contingencies they may generate.

The final section of this paper presents the bibliography and information sources consulted that complete, update or elaborate on certain issues.

1. FINANCIAL ACTIVITY AND TAXATION

Financial markets play relevant roles given the fact that they essentially enable to channel savings towards investment. Especially, derivative markets facilitate risk distribution and constitute important sources of information and valuation for the economy. Therefore, we may conclude that they significantly contribute to countries' economic development.

Therefore, DFIs markets shall not be banned or be subject to very casuistic regulations, since they are necessary for the general operation of actual markets (raw materials, transportation, etc.) as well as traditional financial markets (insurance, securities' issues, credit transactions,…). They actually require appropriate control, moderate and flexible regulation and greater transparency on aspects such as: qualification and integration on the balance sheets of the entities operating therewith, their valuation, allocation on income accounts, tax assessment of such income, etc.

Financial transactions, especially DFIs, raise problems or anomalies with regards to the tax treatment applied traditionally, in the form of asymmetries, inconsistencies, imbalances, inaccuracies, etc. This promotes tax planning by taxpayers and serious control challenges for TAs, which lack sufficient knowledge on the transactions' commercial or business rationale and the broad possibilities arising from the use of this "tax termite" modality of globalization[1].

Traditional financial classifications are presently very blurry for Income Taxes, debt and equity (and their payment forms: interest and dividends, respectively); they have been overcome by hybrid financial products, which bring together in a single instrument the features of debt and equity, incentives to under-capitalization (excessive tax advantages for interest rather than dividends constitutes one of the key international taxation topics presently), etc., as well as the difficulty in distinguishing between ordinary income and capital gains, becomes even more complicated with regards to DFIs.

Qualification, time of allocation, valuation and localization of income, -core setbacks in the sphere of direct taxation-, are weakened in the face of the unimaginable possibilities arising from DFIs. The existence of different tax regulations for the parties to the same transaction or the financial products or instruments producing identical economic effects or the lack of adequate regulations (or their unclear or controversial purpose), as well as the absence of international consensus on the matter, are the culture medium for the design of tax planning activities, chiefly aggressive ones, based on the use of DFIs.

In this context, TAs, as privileged observers of reality with greater dynamism than other public institutions, are responsible for alerting the TP-makers on the issues arising from tax planning

1. *Tanzi (2001) considers DFIs as one of the types of "tax termites", which in the framework of a globalized world undermine the bases of the tax systems.*

applicable to DFIs, based on field experience, in line with the natural competencies of facilitating and controlling taxpayers' tax compliance.

It is worth highlighting that the recent international crisis triggered by shortcomings in the financial structuring set up on subprime mortgages[2], uncovered the magnitude and complexity of DFIs transactions – especially, in the OTC segment, the credit derivatives -, and particularly, the latent systemic risks in such complex (and, sometimes, "opaque") transactions and the lack of adequate regulation and supervision. An important American investor qualified them as "potentially lethal weapons of mass destruction". Therefore, the need to address taxation of DFIs, the related transactions and their income becomes specifically important and influences the present regulation of the international financial market.

From the tax standpoint, discussions exist on whether the inadequate or insufficient definition of TP applicable on financial transactions and, particularly, on innovations to financial products, may have been responsible for this crisis to a certain extent, without concluding evidence in one sense or the other. Nevertheless, the International Tax Dialogue (2009) understands that, although TP has not caused the great failures in the financial system, it is very likely to have exacerbated them[3].

The ground is fertile and allows for different proposals to reform and regulate DFIs markets, which once defined and implemented might undoubtedly change their nature, structure and operation, and maybe, their taxation. Certain doctrinarian critical opinions on such instruments, whose considerations exceed the tax sphere, argue lack of transparent markets in their negotiation and, particularly, difficulties in their valuation; especially, if we consider that fair values are contaminated in many cases, since the parties involved in the negotiation are not independent or the valuation methods applied are arcane, artificial or poorly comparable (the so-called "effectiveness tests" or the "test of the 100").

A very different notion is that DFIs, just like in financial markets, have been used in very unscrupulous manners for tax planning and, particularly, international arbitration. This is chiefly due to the fact that in their trading, the different income categories applied in the Model International Double Taxation Agreements become blurred and given the possibilities set forth in terms of arbitration by different TAs.

Each derivative, given its variety, is a world of its own and we may even conclude that the appropriate term should not be "DFIs taxation" but "taxation of each DFI individually" or of the function they perform in the transaction, especially, the controversial difference between hedging and speculation transactions.

---

2. *The paper by Carbajo Vasco and Porporatto (2010a) seeks to identify the possible causes of the international financial crisis, although it admits that, even in the present, attempts at understanding them continue and there is no unanimous doctrinal explanation in such respect.*

3. *Harmful notions in this respect are the tax bias in favor of debt financing, the use of complex financial instruments (including their opacity) and the indirect effects of cross-border taxation of financial instruments and international double taxation that warrant the alert on the benefits of reforming the tax treatment of financial instruments and institutions, which seems to be more relevant than in past times.*

1.1 Importance of financial activity

The financial sector, (including financial markets, institutions and instruments[4]) plays a vital role in countries' economic development, since it facilitates channeling savings towards investment, risk distribution and facilitation of payments and transfers, among other relevant functions.

In the tax sphere, the financial sector or system plays an essential role in the enforcement of the tax system (and, particularly, its expansion and struggle against the underground or hidden economy) based on several reasons:

- Significant tax contribution, from the inherent tax obligations as well as the revenue collected in its role as source withholding agents. For example: tax on financial transactions, income tax on non-residents, etc.

- It facilitates tax collection from voluntary compliance as well as coercive or executive proceedings (attachment of bank accounts), since most tax payments are made in financial institutions (with electronic payments enabled in the financial networks).

- Supply of tax relevant information, except in such countries where the access to financial information by TAs is banned without a court order. The bank secrecy regulations enforceable upon the TAs are a shield that facilitates tax evasion, although the recent efforts by the G-20 and the OECD to counter this scourge are worth commending. On such grounds, we may refer to "control through the financial sector" of its users, customers and investors and, likewise, of the taxable events that such taxpayers generate.

Also, we shall highlight the need that TAs undertake specialized control of the financial sector given:

- The complexity of the business and the tax treatment applicable thereto.

- The possibility of designing "financial products" for tax purposes exclusively. Financial institutions, specifically investment banks, play the role of "tax intermediaries" as defined in OECD terminology.

- The fact that it constitutes a frequent channel for illicit assets' laundering.

Therefore, we may conclude that DFIs, as one of countless complex financial instruments, present a serious challenge from the tax standpoint, and since they are important tools to manage the market risk of corporations and investors, their legitimate purpose shall not be impaired. On the other hand, aggressive tax planning practices shall be avoided and discouraged as well, in which the use of DFIs is based on tax reasons exclusively.

From the tax standpoint, the greater focus on DFIs shall not be deemed a new source of revenue (moreover in the present, considering the pressures in finding "revenue niches"), but a tool to avoid an undue reduction thereof based on their abusive tax use, in addition to other implications, for example, at the international level, by the erosion of national tax bases. Nevertheless, as discussed later herein, the financial crisis called to reconsider –and even in certain cases, implement- new taxes on financial entities and transactions.

---

4. The financial sector or system may be explained in very simple terms according to its inherent components: 1) financial markets (negotiation spheres classified into primary –or issue- and secondary –or trading-; short-term, -or spot- and long-term –or equity-, etc.), 2) financial institutions (entities operating in such spheres, some of which transform financial assets, such as banks and insurance companies and others facilitating the transfer of assets in the same condition, such as stock brokers) and financial products and instruments (also known as "financial assets" –with different profitability, liquidity and risk features-, constitute supporting elements, through which savings and risk are channeled; for example, securities –bonds, shares, etc.-, deposits, insurance policies, investment funds' shares, financial derivatives, etc.). For further information, please refer to Carbajo Vasco and Porporatto (2008).

1.2 Tax issues in financial transactions and products

Traditionally, the Income Tax has established classifications and subsequent specific tax treatments, such as the financing source, whether debt or capital contribution (paid in the form of interest or dividends, respectively), as well as ordinary income and capital gains[5]. Financial innovations and, specifically, DFIs, easily dilute such categories, which fail to consider the actual underlying nature of transactions, their economic nature.

More recently, and partly as a consequence of the foregoing distinctions, Weisbach and Blum (2005) identify the following anomalies produced in the tax treatment of financial products in general and innovations in particular:

- **Asymmetries**: when the parties to a financial transaction receive a different tax treatment. For example, in the same DFI transaction, the non-resident taxpayer is exempted from income tax and the resident taxpayer who paid income tax, it is deductible.

- **Inconsistency:** when financial products or instruments (with different form or structure) producing equal economic effects receive different tax treatment, such as, financing through a "synthetic loan" based on a DFI, with a different tax treatment compared to a traditional loan.

- **Gaps**: when there are legal loopholes, contradictory criteria, etc. in the tax treatment, very common with regard to DFIs.

Certain authors, such as Raskolnikov (2010), also identify as an anomaly the imbalance arising when the tax treatment differs according to the profit or loss obtained from the transaction.

Such anomalies promote the design of tax shelters or tax products, a species within aggressive tax planning practices, as Carbajo Vasco (2007) points out. Such practices are broadly disseminated in the USA, according to González de Fruto (2007) and are the focus of great attention and controversy in the field of International Tax Law.

With respect to VAT and excises, financial brokerage (and the insurance business) presents serious practical problems, considering the generally implemented methodology in assessing VAT, based on tax credits versus debits by transactions or billing method. In this framework, the financial products and instruments generally fall under the VAT exemptions applied to financial activities. This implies that in the most common and relevant excise in international taxation, the financial system is under-taxed and its tax treatment is confusing and complex, for example, owing to the enormous difficulties in establishing the pro rata rule for financial transactions.

2. THE FINANCIAL DERIVATIVE' BUSINESS

2.1. Conceptual framework

Financial derivatives are transactions by which the contracting parties negotiate the transfer of risk, arising from the behavior of other elements, by the name of "underlying variables", such as the prices or value of commodities or raw materials (energy, minerals and agriculture

5. *For further elaboration on this topic, please refer to the second part of the complete work by Sauco (2002), which reviews the international experience regarding the methods applied.*

and livestock), securities (bonds, shares, etc.), interest rates, currency, stock exchange indices, etc., and even other DFIs. Certain newer instruments feature as underlying variables the credits or bonds (compliance and qualification), the context, the risk assumed by insurers (reinsurance derivatives), etc.

At this point, it is possible to foresee how complicated and even, impossible, it may be to attempt a comprehensive definition of all the possible DFIs modalities.

Currently, as explained hereunder, framework or general criteria exist to try to define "derivatives", especially, in the context of International Accounting Standards /International Financial Reporting Standards (hereinafter, IAS/IFRS), which seek to summarize in a common category a series of instruments with diverse nature and functions.

In order to serve a growing demand stemming from a globalized and competitive world (resulting, in turn, from factors such as the need for businesses and investors to hedge risks in the face of volatile and deregulated markets and, surely, a disproportionate pursuit of profits by certain actors), financial engineering encounters no limits for transactions, moreover in a deregulated context and considering the enormous (and economic) possibilities offered by the new information and communications' technologies, as defined by Carbajo Vasco and Porporatto (2008).

Broadly speaking, the main features of such transactions, according to IAS 39 of the International Accounting Standards Board (IASB)[6], are:

- They require minimum or zero initial investment, compared to other products or instruments producing an equal (or similar) effect, which makes them produce high leverage. In other words, with low investment, gains are high (and also losses, of course), thus the enormous risk of this type of transactions, whose misuse has been evident in sounding corporate fraud cases.[7]

- A temporal space is defined from the time the negotiation conditions are agreed ("agreement") and the time they are fulfilled ("settlement"). In this period, the underlying variables shall suffer value variations (or performance variations) according to market conditions.

- The instrument value, as well as the subsequent rights and obligations of the parties and the gains obtained overall, depend or "derive" (thus the name "derivatives") from the value (or performance) of the underlying variables or transactions.

The natural purpose of such transactions is risk negotiation, pursuant to the foregoing definitions, although many other motivations or intentions may exist to participate therein, as discussed hereunder. In certain cases they may go beyond a purely commercial or business reason, as it occurs precisely when DFIs are based exclusively on tax reasons.

In spite of the efforts by international agencies to establish definitions (International Swaps and Derivatives Association, Inc. –ISDA-, NIC 39, etc.) and experts on the matter, it is by no means easy in practice to clearly determine the inherent nature of these transactions (and their possible alternatives or types) and accurately distinguish them from others. This, of course, brings about problems in the tax arena, given the difficulty in qualifying the transaction and the revenue or income earned.

6. The rules of this international accounting board are applied in close to 100 countries, including the EU, Canada, Japan and Brazil who have also adopted them. The USA is excluded.

7. Certain famous corporate scandals with financial transactions (including derivatives) that generated multimillion dollar losses were: Allied Irish Bank, Barings, Chemical Bank, Daiwa, Kidder Peabody, LTCM, Midland Bank.

To such ends, it is worth highlighting that the definition of DFIs is inherent in accounting or financial standards, and the tax norms, such as the Spanish regulations, may or may not establish definitions and distinct classifications of what they understand by such instruments, with respect to the financial-accounting provisions. Therefore, Spain lacks an accurate tax definition of DFIs as well as Argentina. The latter features a very broad reference in the principles of a norm.

Once again, this variability in the definition of DFIs and their related transactions is a good ground for the complexity and difficulties in establishing their tax treatment.

An interesting case worth highlighting is Mexico, where a tax definition was established[8] for "derivative' transactions" subject to the treatment set forth in tax regulations, with respect to other transactions that, although applying DFIs, do not fit such tax definition, as explained by Carbajo Vasco and Porporatto (2010b).

2.2. Typologies

In very simple terms, we may distinguish between two broad types of transactions:

- Those generating reciprocal commitments or obligations for the contracting parties: this group includes forwards and futures as well as swaps.
- Those generating rights for one party and an eventual commitment for the other: options are included in this classification.

The kinds, typologies or basic categories of DFIs may be explained as follows:

- **Forwards / futures contracts**: in these transactions the parties convene the purchase/sale in the future, establishing in advance the asset to be delivered, the price due, as well as date and venue to enter the contract. The difference is that futures contracts are traded on a standard basis (according to a predefined traded asset, contract amount and delivery venue) in standardized or regulated markets; on the other hand, forwards contracts are traded bilaterally between the parties, according to their needs and possibilities, but without the assurance of the market as a counterpart, as in futures.

- **Options**: contrary to forwards and futures, by which the parties assume reciprocal commitments they shall meet at the maturity date (unless they abandon the position, through a backward transaction, such as in futures, for example), in these contracts, the contracting parties assume a differentiated or asymmetric position, since one of them (the owner or purchaser) is entitled to buy (call option) or sell (put option) a given asset, at a predefined price (strike price) and the other (issuer or seller) shall be eventually bound

8. *The tax definition comprises:*
1) Those by which one of the parties acquires the right or obligation to: a) Buy or sell in the future, at a price established at the time of acquisition: goods, shares, entitlements, securities, currency and other fungible goods traded in renowned markets, b) Receive or pay the amount between the price established at the acquisition and the price of such goods at the time of maturity and c) execute one of such transactions;
2) Those in which the differences between the value agreed at the start of the transaction and the value at given dates are settled according to: an indicator or basket of indicators, indices, prices, interest rates, exchange rate and any other indicator defined in renowned markets and
3) Those involving disposal of rights or obligations related with the mentioned transactions, provided the rest of the applicable conditions are met.
These transactions are classified into credit default swaps and equity derivatives (in addition to combined ones) as a function of the underlying assets, with the relevant tax implications according to their type. The gains from credit default swaps shall be treated as interest.

to fulfill within (European option) or as of a given term (American option), should the owner or purchaser exercise his right. This asymmetric position is based on the collection of a premium by the issuer or seller of the option, which is mandatory, since it is not refundable. Should the market conditions require so, the owner or purchaser shall exercise his right to purchase (or sell, according to the type of option) the specific asset. Such contracts may be negotiated under the standardized forms, in established markets, or in the OTC segment, where the parties freely determine their conditions. Special options are caps, floors and collars (combination of the latter two) as well as warrants, used in certain countries[9].

- **Swaps:** this is a contract in which the parties define the conditions by which reciprocal payments shall be made (in most cases, regular payments, although many variables exist in such contracts). Such payments, as agreed, shall be netted out and originate a single flow, towards one party or the other, pursuant to market conditions. Payments are based on a "notional value" which, in general, is not changed. The interest rates, exchange rates, indices, listings, etc. agreed by the parties shall be applied on that value. For example, in a plain vanilla, one party pays a fixed interest rate and the other a variable rate (LIBOR, to mention one); based on their comparison, a net flow shall arise for one of the parties.

In practice, these transactions may be executed in isolation, but usually they are inter-combined (such as, swaption, an option to enter into a swap transaction), or even embedded, included or implicit in other transactions or instruments (for example, a dollar bond containing an option to convert it into Euros).

On the other hand, exotic DFIs are more complex than ordinary DFIs. Pedrosa (2003), defines the following exotic options, among others: cash-or-nothing call, compound option, etc.

Overall, there are infinite possibilities, in principle, of creating DFIs and this variety and variability of financial products calls for the tax administration to individually analyze the tax implications of each one of them and their specific transactions.

Such transactions may be settled with the physical delivery of the promised goods or by price differential (or financial equalization). In the first case, it is fulfilled at the time of settlement, with the delivery of assets (for example, commodities, bonds, etc.). In the case of financial settlement, an amount of money to be delivered is defined, calculated from the difference between the agreed value (defined at the time of agreement) and the market value at the time of settlement. The parties shall determine the settlement form, although certain DFIs shall be necessarily settled by the difference in prices or equalization, since they do not involve tangible assets, such as a stock index or interest rate swap.

To this point, this paper has revealed the large variety of situations that TAs face at the time of classifying income from transactions with these products. The situation becomes complicated, additionally, by the existing tradition in many countries of differentiating between the use of derivatives as hedging mechanisms for other operations or as speculative instruments. This tradition is not arbitrary and entails serious consequences, starting with one of the essential problems of DFIs: their valuation.

9. *It is worth highlighting that the notion of option shall not be used broadly for all countries since it may carry other meanings in certain countries. For example, in Argentina they refer to certificates of deposit of agricultural, mining, and manufactured products, etc. and serve as access to loans. That is to say, in Argentina they are credit instruments and in other countries they operate as guarantees.*

2.3. Trading scope and mechanisms

Traditionally, these products are traded normally in standardized markets as well as non-standardized or OTC markets, according to the following features:

- **Transactions in Exchange-traded markets**: these markets trade standardized instruments (in terms of the asset negotiated, contract size, place and terms of delivery), where there are no risks of default by the counterpart, since the market (or the clearing house) acts as the counterpart, settling, recording and ensuring performance with the transaction. The market (or the clearing house) acts as a counterpart for transactions. To such end, the parties are regulated in the negotiation and shall deliver, according to the case, the income and surety spreads and the daily settlement system for losses and gains (mark-to-market). Futures and options' contracts are traded in these markets. The transaction is conducted by authorized brokers.

- **Transactions in non-standardized or OTC markets**: in this area, the parties are free to define their transaction, but there is no central counterpart underwriting transactions, in terms of their correct compliance. Thus the counterpart risk inherent in the transactions of this business segment. Essentially, forwards contracts and swaps are negotiated in such markets, although OTC options' contracts may be also traded. As mentioned above, serious difficulties prevail in this sector to value the transactions in the absence of independent counterparts.

As defined by González Pueyo (2009), certain convergence has been observed between these markets, evidenced by the following events:

- Trading of OTC products through multilateral electronic platforms has increased. In the past, they were exclusively used by standardized derivatives markets together with the trading floor or open outcry system, which are being discontinued. The OTC segment resorted to bilateral trading, chiefly over the phone.

- OTC contract registration in the clearing house or central counterparty clearing house, which are no longer exclusively relevant to the instruments traded in standardized markets. Such clearing houses secure the positive outcome of the registered contracts.

- OTC markets have increased standardization of contracts, especially, credit derivatives and interest–rate swaps, which are more similar to standardized markets.

- The pressures of the new international financial regulations, starting with the American ones, demanding standardization of such operations and their trading in organized markets.

According to such source, the following trends are worth highlighting:

- In standardized markets:

- Internationalization of traded products: an important presence of international underlying assets.

- Technological advances facilitating connections and remote access to foreign markets (including agreements enabling the negotiation of contracts from other markets through the trading system), and evidence of growing investments in trading systems to send automated orders to markets.

- Market consolidation. The three most important markets of the world (CME Group, Eurex and Liffe[10]) originated from the consolidation of different markets in their respective continents.

- In the OTC segment:

- Contract standardization, which does not attain complete fungibility of the products traded in regulated markets.

- More negotiation in electronic platforms, leaving telephone transactions for more complex dealings.

- Registration and settlement of transactions in clearing houses or central counterparty clearing houses.

- Demands for greater transparency and regulation, based on the international crisis and the proposals promoted.

Such trends, which somehow lead to convergence in the traditional segments of DFIs negotiation and, consequently, the phasing out of traditional differences between the two trading modalities, shall impact tax norms, since, in many cases, the transactions outside of standardized or organized markets imply higher tax costs[11], precisely as a protective measure against potential abuse, in this bilateral negotiation in which the parties freely agree on the conditions, with respect to the multilateral operations in organized markets. Should the trend continue and consolidate or should an official regulation be implemented in such respect, greater transparency and information on DFIs transactions shall be facilitated. Therefore, more evidence and means to determine the value of DFIs transactions and their gains shall become available to facilitate financial and tax control.

2.4. Gains from financial derivatives

As we have pointed out previously, these instruments may be used to hedge risks, speculation and also arbitrage, among other purposes.

Hedging is aimed at risk management. In other words, it consists in a strategy that seeks to restrict or limit risks, arising from potentially adverse fluctuations in the value or behavior of financial variables such as prices or listings, interest rate, exchange rates, etc. The idea is to isolate market volatility risks so that a business focuses entirely on producing and marketing with top quality and efficiency. Thus, business certainty is pursued, at least with regards to market fluctuations.

Therefore, a business (extractive, manufacturing, financial, services, etc.) may predetermine the interest rate it shall pay for a loan, restrict the cost of the raw materials it employs, establish a sale price for its products guaranteeing acceptable profitability, etc. The investor, on the other hand, may also limit the financial funding cost; define a profitability floor for certain financial placements, etc.

As to the importance of such transactions, it is worth stating that the ISDA announced, based on a survey it conducted with information from 2008, that 94% of the 500 largest businesses in the world (from 32 countries) resort to DFIs to manage their risks (risk hedging practices), as pointed out in the 24th General Annual Meeting in Beijing, in April 2009. The results of the survey

---

10. CME Group appeared in 2007 after the merger between the Chicago Mercantile Exchange, the Chicago Board of Trade and the New York Stock Exchange), Eurex –which since 2001 includes the Frankfurt Stock Exchange- arises from the 1998 merger between the Deutsche Terminbörse and the Swiss Options and Financial Futures Exc. and Liffe, acquired by Euronext, belongs to a transatlantic alliance with the NYSE from the USA.

11. For example, in Peru, one of the requirements to define the tax scope is that the transaction is conducted in standardized markets and also for counterparts based or domiciled in tax havens.

are interesting to the extent they illustrate the degree of adoption by country, by DFI type, by economic sector, etc.

The risk of hedging with forwards/futures contracts, as well as swaps, is missing favorable behaviors of market variables (lost profit), which is not the case with options; but, the latter carry an initial cost, as mentioned before, the premium payment. The use of standardized or OTC markets (whether national or international) or settling via physical delivery or clearance, does not impact the hedging decision. In any case, the DFI type, its trading and settlement methods are matters based on the decision of the business-owner or investor, based on his needs or possibilities. On the other hand, if we consider the potential tax motive underlying such transactions, the implications may be quite different, since DFIs may be used solely with the intent of devising sophisticated tax evasion or tax avoidance formulae.

In certain cases, we may define a hedging transaction from the tax viewpoint, such as in Argentina or Peru, among many other countries. A hedging transaction should feature conceptual, amount and time consistency with the transaction or position to be hedged. Based on this elementary principle, countries may introduce fiscal protection measures to avoid abuse -excluding from the notion of hedging the transactions with tax havens, in markets that are not recognized, etc.- and even enforce reporting requirements and require documentation and proof of evidence, risk and risk analysis, the corporate decision and approval thereof, settlement procedure, etc.

It is highly desirable that regulations, including accounting and tax standards do not introduce distortions affecting genuine hedging strategies; quite to the contrary, neutrality and economic efficiency in such transactions are pursued. In the tax sphere, the first arguments in such respect arose from the G-30 in 1993, as Jorion (1995) sets forth as well as the International Fiscal Association (IFA) (1995).

An interesting aspect worth highlighting is the "hedging accounting" notion, promoted in international financial standards, by which, in order to avoid distortions, the results of DFIs are paired at the time of determination and valuation against the results of the hedged items or transactions. Rules shall be followed to apply it, with regards to the probity of the genuine hedging strategy, hedging efficacy, etc. In this regard, refer to the analysis by Porporatto (2007) on the Argentine accounting standards governing registration of such transaction, with the author's review thereof.

With regards to the other modality of DFIs, the speculative instruments, at first glance, they relate to taking positions in such transactions (and even with others different from DFIs, since speculation is not exclusive to such products) with a view to obtaining gains, based on the expected behavior or value of certain market variables, in a given direction. Somehow, speculation is the reverse of hedging transactions. In other words, when someone seeks to reduce risks (risk-averse individual) he shall find someone willing to assume them (risk-loving individual). Without speculators, the derivatives market would not exist, since it would lack liquidity. Investment banks and hedge funds are important actors in this business.

The peculiar function of synthesizing or replicating the effects of other transactions or financial products is also known (for example, ''synthetic loans''). Through DFIs, combinations thereof and with other instruments, it is possible to reproduce the economic effects of other investments[12]. For

12. *The International Tax Dialog (2009) sets forth the "The put-call parity theorem" setting forth a fundamental relation between debt, shares and put-call options on such shares. This equation shows how DFIs may be used to build equivalent positions from the economic standpoint but with different structures. Porporatto (2007) also explains this theorem and links it to the anti-abuse measure by the name of "integration principle" incorporated in Argentine legislation.*

example, a total return swaps is an adaptation of the traditional swap to synthetically create a financial asset or a loan. This feature calls for special regulatory attention.

In the tax sphere, in order to avoid tax arbitrage practices, we recommend adopting anti-abuse measures, some broader ones such as the principle of the substance over form, which is very important; or the business purpose test, or other more specific ones such as the integration rule, the bifurcation theory, mark-to-market accounting, etc. It should be highlighted that in Spain, after the 2008 accounting reform, upon introducing the prevalence of the economic substance of the transaction over the legal form, such criterion has been standardized, as provided for *in fine* in Article 34.2 of the Spanish Code of Commerce.

Lastly, DFIs are also used for tax planning purposes[13], chiefly international tax planning. In such respect, KPMG (2005) makes an interesting analysis of the use of DFIs as tax planning instruments. Carbajo Vasco and Porporatto (2009) comment on a relevant example detected by the Internal Revenue Service (IRS) (USA), in which a total return swap was used to replicate the effects of holdings in American shares by non-residents with the purpose of avoiding the withholding tax.

2.5. Business volume and evolution

In spite of the downturn in the worldwide DFIs business volume after the recent international crisis, it is striking to see how it seriously affected the OTC market. The growth in the last decades has been truly explosive, fostered by financial deregulation and the evolution of ICTs, in the face of greater risk-hedging needs.

According to the Bank of International Settlements (BIS) (2009) the world OTC transactions' volume as of December 2008 amounted to USD 547.371 billion (measured in terms of notional values) and as of June 2009, it totaled USD 604.622 billion. A large portion of such totals were made up by interest rate derivatives.

According to the same source, and with regards to the global transactions in standardized markets, as of June 2009, the open positions in futures' contracts amounted to USD 19.691 billion and as of September 2009 to USD 21.218 billion. For options, the values amount to USD 43.758 billion and USD 48.274 billion, respectively.

The effect of the crisis may be observed in the impact on the standardized market, since the total futures and options transactions as of December 2007 amounted to USD 79.078 billion, while as of December 2008, it reached USD 57.864 billion (27% reduction) and from that point, it improved progressively, but failed to recover the 2007 volume. With regards to the OTC market, the impact is evident, comparing the values as of June 2008 of USD 683.814 billion and their decline as of December 2008 (20% drop), pursuant to the foregoing, followed by a gradual recovery.

Regarding the distribution based on the underlying amount within the global transaction volume, and in terms of number of contracts negotiated during 2008 according to the World Federation of Exchanges, we shall highlight variable income indices amounting to 35.4%, individual shares for 28.3%, interest rate types 24.1%, raw materials 5.7%, energy 3.2%, currency 2.9 % and the rest, encompassing credit, inflation and carbon, amounting to 0.4%.

The same source provides the following information in terms of the regional distribution:

- North America: 39.63%
- Europe: 23.61%
- Asia / Pacific: 28.18%
- Latin American: 4.84%
- South Africa, Turkey, Israel and Dubai: 3.74%

13. *The International Tax Dialog (2009) has attempted a number of international tax planning definitions and the role of their promoters (tax intermediaries and investment banks), with reference to several OECD papers.*

As to Latin America, the main market is Brazil, the "Securities, Commodities and Futures Exchange (BM&F Bodespa) (4.2%), followed by the "Mexican Derivatives Exchange", (MEXDER) and Argentina with the "Rosario Futures and Options Exchange" (ROFEX) and the "Buenos Aires Forward Exchange" (MATBA).

With respect to the European outlook, the "Spanish Financial Futures Market" (MEFF) features 0.47%.

With respect to the larger international standardized derivatives exchanges, according to the Futures Industry Association, the 2008 outlook was the following:

- The first four international exchanges in terms of number of transactions traded are: CME Group, Eurex (inc.ISE), Korea Exchange and NYSE Euronext Liffe.

- In the Spanish market, the MEFF ranks 24.

- In terms of Latin American markets, BM&F Bodespa ranks 6th, MEXDER 25th and the Argentine markets ROFEX and MATBA, rank 29 and 51 respectively.

Anyhow, it is worth highlighting that DFIs statistics are disputable, moreover in the OTC segment.

2.6. Regulation

Transactions through organized markets are governed either by market rules (self-control or self-regulation, principle, which prevails today but has been disputed after the crisis, evidencing that this self-regulation is not regulation or anything of the sort), which, reasonably, shall not be deemed "regulation" in the absence of a third-party or independent body, or by regulations from the government authority or agency overseeing the securities' market. Norms are in place to create and operate in these markets and for brokers (brokerage firms or stock brokers) through which transactions are conducted.

For example, Directive 2004/39, of April 21, 2004, governs the EU derivative markets.

The OTC segment is not governed by major regulations, except for financial institutions, insurance companies, collective investment structures and other regulated institutions in the financial market, which operate with these instruments. In such cases the applicable authorities foresee specific guidelines with regards to the use of such instruments. After the crisis, the intention is to enforce more stringent regulations in this segment, and, therefore, North America is working on bills that shall constitute such regulations.

As to the latter segment, the role of the ISDA should be highlighted. It is an international organization of participants in the OTC derivative market that created a standard contract known as the **ISDA Master** Agreement. Overall, this institution creates the standards for the derivatives industry and provides legal definitions of the terms commonly used in contracts. Nevertheless, it is not independent, since its members are the market creators, by which, it is barely valid as a market control mechanism.

It is highly desirable that legal, financial, accounting and tax regulations be consistent and moreover, compatible, even when they pursue their own purposes individually. In practice, different countries still do not evidence this expectation and it seems that it shall remain so in the near future. To the contrary, in general, we may assert that the accounting standards prevail in the world of DFIs definition and valuation, while tax norms provide for specific qualification rules and objectives, many of which are disperse, contradictory and unrelated. Somehow, and in spite of the existing drawbacks, accounting standards have made the greatest progress towards international convergence among countries, a situation that is still not evident in regulations of a different nature like financial regulations, and even less so in tax regulations.

2.7. International accounting standards

NICs (IASB) 32 and 39 regulate the authorization, valuation and presentation of financial instruments, including DFIs. Likewise, we shall include the NIIF 7 that supplements the foregoing, incorporating a breakdown of the information to be delivered. In 2008, the IASB published amendments to NIC 39 and NIIF 7 in response to the arguments in the realm of the EU in particular to create conditions equivalent to the US GAPP, as to the capacity to re-classify financial assets, also as a reaction in the face of the international crisis and the fact that the EU did not accept the NIC 39 in full.

Currently, a discussion is underway on whether the accounting standards have had any degree of incidence on the origin of the international financial crisis, and, particularly, the application of the "fair value" for most financial instruments is questioned.

On the other hand, the relation between accounting standards and tax regulations is worth considering, which in certain cases match (Corporate Income Tax in Spain) but in others do not (therefore, in the Income Tax for Argentina, the rules are not necessarily the same, since there are accounting practices on the one hand and tax practices on the other).

With respect to DFIs and as a special case, it is worth stating that in the beginning, DFIs in Peru had foreseen compliance with hedging efficacy (accounting principle) based on the calculation of the applicable ratio (whose result shall range between 80% and 125%)[14] for the acceptance of the hedging transaction from the tax standpoint. This provision was disregarded based on business arguments, and remains valid only for accounting purposes.

3. TAX SPECIFICITIES OF FINANCIAL DERIVATIVES

Following a very broad outline of the most relevant aspects of the derivatives instruments and contracts business, and under the framework of the tax issues arising from financial transactions, as mentioned herein, we shall now approach certain tax specificities in such financial derivatives:

3.1. Income Tax:

According to Carbajo Vasco and Porporatto (2010b), Richard Gallacher, from the OECD, considers that the issues relevant to DFIs may be summarized according to the ***C.A.T.S.*** acronym**:**

- **"C**haracter": income description.
- "**A**mount": amount assessment.
- "**T**iming": time of allocation.
- "**S**ource": income origin.

As regards income description, we shall consider whether such transactions generate ordinary income or capital gains, given the repercussions regarding the applicable rules, considering how easily these instruments replicate economic consequences.

With respect to amount assessment or valuation, the recent international crisis evidenced the serious valuation issues for certain products, chiefly

14. *Hedging efficacy is the degree by which the changes in the fair value of the hedged position (subject to risk) are eliminated or offset by the modifications in the fair value of the financial instruments employed.*

OTC-traded instruments. On the other hand, with respect to those traded in standardized markets (futures and options), it is worth analyzing whether the market variations of their listed values (non-transferred) generate an impact on the tax basis at the closure of the fiscal years.

With regards to the issue of the income allocation time, we shall consider the classic alternatives for realization (or settlement) and the accrual (or mark-to-market) and include a special one for transactions with hedging purposes, based on the rules corresponding to the hedged transaction or position (hedge accounting). The time of determination for the options' premium is a complex issue, since, on the one hand, it constitutes a final payment (whatever the outcome, it is non-refundable) but on the other, it entitles the owner to buy (implying a greater cost to buy) or sell (it is a trading expense) and an eventual commitment for the issuer, compared to the transaction in a standardized market with a listing. Additionally, one may abandon an option position with a backward transaction, at least in standardized markets. The time of allocation, based on allocation of profits and income to the different fiscal years, also relates to the valuation of these products (owing to the implications of increases or reductions in their value at the end of the fiscal years), with the pertinent setbacks mentioned above.

With respect to the jurisdiction criteria defined among countries to claim the right of levying income, the objective or source criterion shall be distinguished from the subjective or residence-based criterion (or domicile or nationality). The international recommendations, to a certain extent governed by the IFA (1995), endorse taxation in the taxpayer's country of residence. This sparks the issue of asymmetry with the country of origin or income source, since, at least in the case of risk-hedging transactions it would be a deductible expense for the taxpayer; while, the foreign beneficiary shall not be subject to a final withholding for the same transaction. Income tax payment in the counterpart country of residence would eliminate the asymmetry, and this is frequently difficult to determine, except via information exchange practices. It should be remembered that integration of markets and electronic transactions generate relevant dilemmas in this field.

A relevant matter is the analysis of the implications of DFIs in the framework of Double Taxation Agreements, requiring the analysis of the classification of income and the income from such transactions for the residents in the States who are signatory to any of the categories set forth: interest, dividends, capital gains, business profits or other forms of income. The issue with such categorization lies in the possibility of replicating effects from other instruments or transactions with such financial innovations.

3.2. Value Added Tax:

Although VAT features practical setbacks since it intends to levy a financial brokerage activity, countries define and adopt different alternatives (with their subsequent effects), as reviewed by Carbajo Vasco and Porporatto (2008). We shall highlight that DFIs are not, per se, financial brokerage transactions, although they may related to them since banking institutions may use them to restrict the risks arising from the financial brokerage they undertake. Additionally, as defined above, such transactions may replicate the effects of financing or investment alternatives ("synthetic products").

DFIs may be settled by the delivery of the goods, in which case, for raw materials, manufactured products, etc., a domestic sale or import subject to taxes would apply. Also worth considering are fees or compensation for brokers acting in these transactions, as well as the payment of options' premium.

Exemptions on such transactions would generate distortive effects (cascade tax) and as regards the tax credit calculation, the application of the pro rata rule, involving certain complexity in the business rationale.

3.3. Equity Tax:

Whether taxation affects personal or individual equity as well as corporate equity (structured as an asset tax operating as minimum income tax), the equity implications of such transactions are worth analyzing, specifically:

- In options (is the premium paid/collected, until the right is exercised an asset/liability or expenditure/gain? This relates to the treatment defined in the Income Tax, as set forth above).

- In open futures' contracts (each party assumes a right and an obligation, which –inversely- mirrors the other, in such case: is the equity effect on each party annulled. When only assets are levied, which is the general case to avoid under-capitalization practices, is it reasonable for both parties to assume the asset position only?).

- In swaps (in addition to the same problem affecting futures/forwards) the rights and obligations of the parties are not always (until the payments are settled based on the behavior of the variables foreseen) defined. In this case, it is worth asking whether an equity position exists and in such case, how is it quantified?

As an international benchmark of the tax treatment of DFIs and their transactions, it is worth referring to the results published by KPMG (2008), based on a survey conducted in 49 countries worldwide, regarding the tax treatment of DFIs, in particular, income tax, VAT and withholdings (with special focus on non-residents), including in certain countries practical examples to understand a typical transaction and its respective tax treatment.

The conclusions drawn in this international overview are:

- Broad array of tax treatments applied in countries around the world (each with its own idiosyncrasy).

- Similarities among systems, which generally consider the following factors:

  a) Nature of the taxpayer (trader or non-trader)
  b) Type of derivative (option, future, etc.)
  c) Purpose of participating in the transaction (hedging or speculation) and
  d) Accounting treatment

- Many systems impose certain limits through:

  e) Quantification of gains/losses (particularly regarding foreign exchange DFIs)
  f) Time of allocation (cash/realization or mark-to-market)
  g) Nature of income (ordinary income or capital gains)
  h) Loss quarantine (that is to say, limitations in their general calculation with other income, which countries like Argentina consider "specific losses" only offset with gains of similar origin or nature).

- Certain jurisdictions establish special comprehensive systems for these transactions to the extent others treat them in the framework of the general principles. Among such extremes, combinations exist that encompass the general principles but additionally, there are specific guidelines (laws or TA guidelines). Great uncertainty is generated by the absence of a special case-based treatment of DFIs for tax purposes in order to treat ongoing innovations (it is impossible to treat them all), where the tax treatment is an "accident of history" (attitude by the TAs and business trends), are scarce in our view, since they shall always pursue financial engineering and market variability. Therefore, in our view, general tax rules are preferable

to treat all DFIs, their income and related transactions.

- Monitoring accounting or financial standards could lead to tax treatment convergence, although it is unlikely in the near future. Therefore, taxpayers and their respective advisors shall still face differentiated tax treatments from one country to another.

On a different note, we recommend referring to the review by Carbajo Vasco and Porporatto (2010c) of the tax treatment of financial derivatives in Argentina and Spain, even with regards to the experience of the TAs in such countries.

4. RECENT CONTRIBUTIONS AND DEVELOPMENTS IN THE TAX SPHERE

4.1 OECD projects

For quite some time, this Organization has been promoting projects and seminars on financial issues, with the first report published in 1994 on the taxation of the new financial instruments.

With respect to the "Tax Administration Forum", created by the OECD, we may highlight a recent paper on the role of the banking sector in transparent tax compliance (OECD 2009), which continues the study on the role of tax intermediaries –including investment banks- (OECD 2008), centered on aggressive tax planning and, particularly, the analysis of implications from the risk management standpoint, the complex financial businesses that financial institutions tend to design for their own use and their customers'.

Said study dwells on the inconveniences for TAs in identifying the level of actual tax risk implied in these complex and low transparency financial structurings. The products financial institutions offer their customers and the ones they design for their own activity may involve tax motivations (in certain cases, almost exclusively above any other business motivation) and lack transparency.

This report sets forth an aggressive tax planning definition that mentions disputable positions that bear unexpected and unwanted tax consequences, as well as tax positions that are favorable for taxpayers but fail to openly reveal the significant uncertainty prevailing as to their legitimacy. In turn, a number of features relevant to such argument exist; among others, the use of off-market terms, circular flow of funds and in the face of the multiplication of legally unintended tax benefits in different jurisdictions in practice or theory.

In general, an environment of greater confidence, transparency and cooperation is pursued, to favor better tax compliance. Therefore, recommendations are issued to the TAs and banks, so taxpayers may incorporate tax risks in their corporate governance practices to become more transparent towards the TAs, given the actual risk levels implied in transactions with DFIs.

More recently the OECD has published a new study with respect to the tax planning risk arising from the losses suffered by financial entities as a result of the international financial crisis (OECD 2010b) and another report sets forth a voluntary code of conduct among TAs and financial entities (OECD 2010c).

On the other hand, and with regards to the allocation of benefits to permanent establishments regarding banking transactions, with negotiable instruments and insurance, we shall highlight the OECD 2008 report, and the latest edition published (2010a).

Said report provides a guide regarding the way in which the arm´s length principle may be used to determine the benefits attributable to a permanent establishment, pursuant to Article 7° (business benefits) of the Model Double Taxation Agreement. Therefore, this Report aligns the text of Article 7° and the 2010 version of the Transfer Pricing Guidelines. Part I of this Report dwells on general issues, while subsequent sections refer to specific financial activity aspects; Part II on banking activity, Part III on the global negotiation of securities and, Part IV, the insurance business.

Lastly, it is worth highlighting that with regards to financial transactions, the last edition of the OECD Model Agreement (2010) introduces, among other notions, a new text on the extension of benefits from the Agreements applicable on collective investment schemes or vehicles (or mutual funds, as known in certain countries) and the enforcement of Agreements to State-owned entities, including sovereign funds.

4.2 Conference of the International Tax Dialog in Beijing

During this interesting event entitled "Taxation of financial transactions and instruments: tax challenges and possible solutions", the financial issue was addressed at length, and in two of the sessions, the financial innovation topic was addressed, spanning the products analyzed in this paper:

- Session 4 included case-studies and broadly addressed the tax issues of innovative financial instruments, including, in addition to DFIs, hybrids, zero-coupon bonds, among others. With regards to DFIs, special attention was given to swaps in presentations and discussions and, particularly, credit default swaps (CDS), owing to the problems such products feature with regards to their possible qualification (DFIs or insurance, for example) and their potential direct impact on the origins of the international systemic crisis.
- Session 13 referred to the use of cross-border financial instruments for aggressive tax planning, ATP, addressing the definition drawn by the Tax Administration Forum study and the different ATP schemes involving financial transactions.

4.3 Seminar: OECD, CIAT and SII from Chile

The international seminar entitled "Control of financial instruments and derivatives" was held in Santiago de Chile, with the participation of experts from OECD and CIAT, officials from other TAs and a great turnout from members of the Internal Revenue Service of Chile.

As Carbajo Vasco and Porporatto (2010b) report, the key conclusions from this meeting, were based on CIAT and OECD presentations, as well as Argentina, Spain, Mexico, and USA:

- Broad legislation is preferred to very detailed, case by case norms, explaining taxation for each instrument, since such complexity promotes tax avoidance. The business and specificities of DFIs in each country shall be known very well before enforcing tax legislation upon them.
- Systematic application of the general Tax Law principles on anti-fraud efforts in all its forms. For example, use of the principle of substance over form, very pertinent in the realm of these instruments which are subject to change, replace or copy the economic effects of other transactions.
- Coordination between the TP and the Tax Administration (privileged observer of reality that alerts and even devises improvements in the tax policy design).
- Specialization of the TAs in overseeing financial institutions and products. It is vital that the TAs know the financial business and, particularly, the operation of DFIs; to

such end, the ongoing education of officials is essential in this area.

- Drafting taxation guides or questionnaires with questions on the use of such instruments to facilitate the tasks for risk profile analysis.

- National administrative cooperation with financial oversight bodies and international cooperation with other TAs.

4.4 Proposals and recommendations after the international crisis

Even in the absence of a doctrinarian consensus on the causes of the international financial crisis, it is generally attributed to the behavior of the financial sector, which was strongly internationalized, lacking appropriate regulation and control and lead by ambitious and unscrupulous agents; promoting a wave of leverage, cheap credit, excessive asset valuations (chiefly real estate), etc. and another excessively risky series of behaviors and activities resulting in the systemic crisis.

From this standpoint, and to a large extent, in order to react to the pressures of the public opinion considering that the culprits of the crisis (financial institutions and their directors) should pay, at least in part, for its consequences and also offset the extraordinary expenses that Governments had to incur in order to save financial entities on the brink of bankruptcy with diverse measures (nationalizations, extraordinary guarantees, asset acquisitions, deposits' guarantee, etc.), a favorable trend developed to establish a tax on financial institutions (the institution-based model) or on the transactions and operations performed thereby (the model known as transaction-based), the Financial Transactions' Tax or the Financial Assets Tax.

The G-20, which, since 2007 has been relevant as an ad hoc international agency focused on coordinating the international measures to counter the international crisis, called upon the International Monetary Fund (IMF) in the 2009 Pittsburg Summit, to undertake a report on the different tax measures for the financial sector, so it would assume the expenses from public sector contributions to its balancing.

Evidently, the government expenditure allocated to support the financial sector in different forms has been enormous. The IMF ranks it at an average level for the G-20 economies, and at the end of 2009 at 2.8% of the GDP of these economies. Nevertheless, a portion of such government interventions is being paid back by financial institutions, by which the net government expenditure volume for the sector is less than the mentioned amount.

The taxes enforced to recover such costs are classified in two types:

- Selective taxes on the financial sector, which the IMF exemplifies with the fee suggested by the United States, the Financial Crisis Responsibility Tax, to recover the costs of the intervention in the banking sector: 0.15% on the liabilities of financial institutions, minus the core capital, certain deposits and reserves, in the case of insurance companies.
- Levies on certain income earned by bank directors: bonuses, stock options, etc., as in the case of France and the United Kingdom. It is worth remembering the success of the tax on bonuses of financial entities' directors in the UK in revenue and social terms, as well as the expansion of this model to other European countries, like Germany.

The IMF considers that the best tax measure (individually or better, in coordination with other regulatory provisions) to face future crises in the financial sector (which are deemed inevitable owing to the dynamic risk facing the sector) is to introduce a tax on the balance sheet of financial institutions, on their fixed value of the previous fiscal year, deductible from the Corporate Income Tax and earmarked to a Fund for financial institutions in distress, based on a resolution mechanism.

In fact, as in the Swedish case, it is possible to establish a tax on bank assets, considering their risk exposure enabling to generate funds to face future bank recapitalizations.

Although an additional possibility is that specific taxes on financial institutions offset the negative externalities they spur on the rest of the economy and society overall based on its great relevance for economic stability; overall, it is evident that the IMF does not favor over-taxation solely enforced upon financial institutions and not on other forms of business. As deemed reasonable, this responds to the IMF conservative ideology and purely favorable approach to financial institutions, always against introducing, for example, an international tax on financial transactions or the Tobin tax.

In the view of the IMF, the modality of the financial entities' tax shall previously define certain aspects:

- Scope, or in other words, relevant taxpayers.
- Tax base.
- Tax rate, which has been defined at 0.2%.
- Setbacks for its enforcement, highlighting the need for international coordination in such respect in order to avoid, at least, tax evasion problems.

The income from such tax shall be allocated to the Fund or to a special instrument created by the public sector to manage the financial crisis, or the Public Treasury in general. This option, in principle, is more neutral. Moreover, if the idea is to empower a quick solution for the potential systemic crises of the sector, the IMF deems it appropriate to allocate the resources obtained with this special tax to the Fund, to endow it with financial strength and fast intervention capacity.

On the other hand, the work of the IMF is also extensive to other possible tax procedures in the sector, with a purpose beyond that of raising funds to prevent future bank bankruptcies. The special taxes levied on financial entities are presented as a formula to offset the negative externalities spurred by the risk trend that such entities produce on the national economy and consider two broad scenarios:

A) Tax on financial transactions, based on the Tobin tax idea. The IMF acknowledges that a tax of this nature is feasible and may be implemented without excessive administrative complications. Although it immediately poses a significant number of issues, including the fact that it may levy businesses or that its cost shall surely affect consumers, showing, once again, the type of interests served by this international organization.

B) To the contrary, it seems more favorable to a levy (or an increased tax type in the Corporate Income Tax) on the income of financial institutions or regarding certain types of income and salaries earned by their directors and managers, owing to different reasons: offset externalities, balance the broad VAT exemption for financial transactions, reasons of equity, etc.

Whichever the modality of the tax on financial institutions, the matter of international coordination is decisive, since, if not implemented broadly (which does not mean an identical form of the tax in all Countries) or at least in integrated financial markets (the EU being the typical example), shall greatly increase the likelihood of distortion, tax evasion and arbitrage.

The IMF pays great attention to the relations and differences between regulatory measures and tax provisions and their incidence on the financial sector, clearly pointing out the possibility of coordinating them.

Lastly, an important reflection is that the financial sector, based on different reasons (VAT exemption, interest deductibility, etc.) enjoys a lower tax burden than the average remaining economic sectors, and consequently, there is no reason to warrant such lower tax rate.

In this area, although the opposition by the finan-

cial oligarchy hinders the slightest progress in this regard, there is a generalized experience in appropriately levying the financial sector (whose under-taxation is increasingly less acceptable) and the EU continues working (with a recent broad survey in such regard) in favor of a certain type of European consensus on the taxation of the financial sector or financial transactions, in whose context, the treatment of DFIs plays a vital role.

4.5 CIAT online courses

In recent years, the Center has been working to strengthen the role of the TAs of member countries in this complex area, by organizing onsite and virtual courses and research efforts.

In particular, we may highlight the online course "Control of Financial Transactions and Institutions", which contains a complete lesson on the treatment of financial innovations.

5. CONCLUSIONS

- As a summary of the foregoing notions, we shall highlight the tax relevance of the financial activity and, especially, the information it delivers to control other subjects. Therefore, we may refer to the notion of "inherent control of financial activities" (entities, institutions, brokers, funds, etc.) and "control through financial activities" (users, customers, investors, etc.). Through the financial sector, it is possible to obtain information regarding savings, funds movements, –even international funds-, foreign exchange transactions, credit card expenses, collection of salaries and yields, etc., rendering a clear idea of customers, users and investors' effective taxpaying capacity. Although, on the other hand, it also constitutes a frequent generator of tax-planning schemes.

- With regards to DFIs, we may observe the magnitude and complexity they have acquired; given their nature, they constitute relevant risk management tools, among multiple other functions. Overall, a prudent approach is recommended when operating with such instruments, since they also entail risk.

- The tax treatment applicable to DFIs within a same country or considering the international situation (cross-border transactions) generally features asymmetries, inconsistencies, imbalances and inaccuracies that promote international tax planning practices, in certain cases of the abusive or aggressive type. Therefore, transactions with DFIs are qualified as one of the forms of "tax termites" of globalization.

- In this context, TAs play a relevant role, based on their contact with reality, in identifying such anomalies and their respective correction, even by introducing anti-abuse measures -even specific ones such as the integration principle- considering that these instruments feature the potential of replicating or synthesizing the effects of other transactions. Likewise, they shall facilitate tax compliance relevant to such instruments to the greatest extent, providing certainty and assurance to taxpayers that such transactions shall be legitimately undertaken.

- Knowledge of the financial business, and particularly, DFIs, is vital for the success of the TAs. Therefore, education and ongoing training of their officials and the subsequent specialization on tax controls (creation of special units in charge of tax monitoring the financial entities and transactions, stock brokers and insurance companies, such as the Special Delegations for Financial Institutions of the Receita Federal of Brazil) are relevant

in this field. The latter applies considering how detrimental it is not to counter abusive schemes with DFIs, as well as countering the ones wrongly deemed abusive owing to their negative impact on the efficiency of financial markets.

- Likewise, it is worth highlighting that the international financial crisis renewed the interest and spurred discussion on financial transactions' taxation, even promoting new tax entities designed to cover the contingencies for infringements by the financial sector, based on the recent experience. The great challenge remains the coordination of such measures at the international level, considering the high mobility of financial capital.

- Lastly, it is worth highlighting that unless new international financial regulation formulas are established that introduce checks or controls on DFIs, including tax regulations, we face the risk of another international financial crisis with its serious social consequences: unemployment, greater inequality, etc.

6. BIBLIOGRAPHY

Alworth, Julian S. – "Taxation and Integrated Financial Markets: The Challenges of Derivatives and Other Financial Innovations", International Tax and Public Finance, (2004).

Carbajo Vasco, Domingo – "Taxation of financial instruments" -, document presented in the Workshop organized by the Intra-European Organisation of Tax Administrations (IOTA), 5- 7 March, 2007a.

Carbajo Vasco, Domingo, "Meeting of IOTA members in Budapest: Taxation of financial instruments", report of the meeting published on Virtual Newsletter Nº 4 of the Ibero-American Tax Forum, RAAM (2007b).

Carbajo Vasco, Domingo and Porporatto, Pablo - "Control of Financial Transactions: Experiences in Ibero-America and Spain, Institute for Fiscal Studies, Working Paper N° 9/08 (2008a).

Carbajo Vasco, **Domingo** and **Porporatto**, **Pablo**, "Financial institutions and markets**: Tax policy and control challenges", Refer to** the institute's review, March 2008, Institute for Fiscal, Customs and Social Security Resources of the AFIP, Argentina (2008b).

Carbajo Vasco, Domingo and Porporatto, Pablo – "Tax Administrations in the Systemic Crisis: Examples of Interventions in Latin America and Spain", Institute for Fiscal Studies, Working Paper N° 3/10) (2010a).

Carbajo Vasco, Domingo and Porporatto, Pablo - "Control of Financial Instruments and Derivatives", Observatory of the Institute for Fiscal, Customs and Social Security Resources of the AFIP, Argentina (2010b).

Carbajo Vasco, Domingo and Porporatto, Pablo - "Tax treatment of derivatives in Argentina and Spain", "Partida Doble" Review N° 221 and N° 222, Madrid (2010c).

Esteban Paúl, Ángel - "Taxation of Financial Derivatives", Working Paper N° 7/03 of the Institute for Fiscal Studies (2003).

Esteban Paúl, Ángel, "Taxation of Financial Products", Institute for Fiscal Studies (IEF), 2005.

EUROPEAN COMMISSION, "Taxation of the Financial Sector", COMMISSION STAFF WORKING DOCUMENT, Brussels, SEC(2010) 1166/3

"Ideas para el Progreso" Foundation – "Taxes to stop financial speculation. Proposals to the G-20", Madrid 2010.

González de Fruto, Ubaldo – "Expansion and control of tax shelters in the United States ", Tax Chronicle N° 122/2007 (Institute for Fiscal Studies).

Honohan, Patrick – "Designing the Taxation of Financial Intermediation", World Bank (http://www1.worldbank.org/finance/html/taxation.html#acknowledgments).

International Fiscal Association (IFA) – "Tax aspects of derivative financial instruments", Cahiers de droit fiscal internacional, Vol. 80b (1995).

International Tax Dialogue (ITD), "Financial Institutions and Instruments: Tax challenges and solutions", working paper for the October 2009 Conference, prepared by the IMF and the OECD (2009).

International Tax Dialogue (ITD) - Global conference on the topic of "Financial Institutions and Instruments – Tax Challenges and Solutions", Beijing, China, 26-28 October 2009 (http://www.itdweb.org/financialconference/).

Jorion, Philippe – "Derivatives markets: economic implications for taxation"(1995).

KPMG – "Derivatives: International tax handbook" (2008).

KPMG – "Financial Derivatives as a tool for tax planning" (2005).

OCDE, "**Taxation** of **New Financial Instruments" (1994).**

OCDE, "The **Taxation of Global Trading of Financial Instruments"** (1998).

OCDE, "Study into the Role of Tax Intermediaries" (2008).

OCDE, "**Building transparent** tax compliance by banks", Report of Forum on Tax Administration (2009).

OCDE, "Report on The Attribution of Profits to a Permanent Establishment Part I: General considerations, II: Banks, III: Global Trading of Financial Instruments, IV: Insurance" (2010a).

OCDE, Addressing Tax Risks Involving Bank Losses (2010b).

OCDE, Framework for a Voluntary Code of Conduct for Revenue Bodies and Banks (2010c).

Porporatto, Pablo, "Taxation of Derivatives: a comparative review", Working Paper N° 2/07, Institute for Tax Studies (2007).

Porporatto, Pablo A. – "Control of Large Taxpayers and financial activities", Ibero-American Fiscal Forum N° 6/2008, RAAM (2008a)

Porporatto, Pablo A. – "Administration of income tax and capital gains tax", Ibero-American Tax Forum N° 6/2008, RAAM (2008b)

Raskolnikov, Alex – "Reforming the Taxation of Derivatives – An Overview", Working Paper N° 372, The Center for Law and Economic Studies, Columbia University School of Law, 2010.

Network of Alumni from the International Master's Course in Tax Administration and Public Treasury (RAAM), virtual newsletter Ibero-American Fiscal Forum Nº 4 (July 2007), whose core theme is the tax treatment of financial transactions.

Sauco, Fernando Rodrigo (University of Zaragoza) – "Taxation of Capital Gains in the Individual Income Tax: where we come from and where we are headed for", Working Paper Nº 2/02 of the Institute for Tax Studies (2002).

Staff of the European Commission's Directorate-General for Taxation and Customs Union – "Taxation Papers. Innovative Financing at a Global Level" Luxembourg, 2010.

Stijn Claessens, Michael Keen, Ceyla Pazarbasioglu, Financial Sector Taxation: The IMF's Report to the G-20 and Background Material, IMF 2010.

Tanzi, Vito – "Globalization and the action of the tax termites", Finance and Development, International Monetary Fund, March of 2001.

Thuronyi, Victor - "Taxation of new financial instruments", International Monetary Fund – United Nations (2001).

United Nations – "Innovative financial transactions: tax policy implications (A report by the special sessions on innovative financial transactions of the OCDE), 2001.

Vilariño Sanz, Ángel - "Financial Derivatives Course", Public Treasury School, 2007- Photocopied document.

Weisbach, David A. and Blum, Walter J. – "Problems with the Taxation of Financial Instruments "– University of Chicago Law School – (2005).

Transfer pricing regulations in Germany: Relocation of functions

Frank Kramer

SUMMARY

The purpose of this article is to offer a brief summary of the methods foreseen under German tax law to enable the determination of adequate transfer pricing accepted by the tax administration. Special emphasis will be made on the new provisions regarding “functional relocation” introduced with the Corporate Tax Reform Act of 2008. This new law foresees a valuation of the portion of the company to be transferred (called the “relocation package”) aimed at the future cash-flow that could arise from the business function related to the relocated package.

The author: *An economist, with a PhD in Economics from the University of Bayreuth, Germany, he holds a Master's degree in tax management and accounting from the University of Bayreuth, Germany. He is a visiting professor to the chair of Accounts Review and Taxes of the University of Bayreuth, Germany. He is an advisor to the Gesellschaft für Internationale Zusammenarbeit (GIZ) in the program with the Economic Commission for Latin America and the Caribbean (ECLAC).*

INTRODUCTION

Contents

Presently, globalized value chains are the norm in many economic sectors. Manufacturing and the services required in producing and distributing numerous products are disseminated over several countries. Frequently, the process of generating the value required in developing the end products is undertaken by related parties. Based on estimations, over 60% of worldwide trade is managed in consortia (refer to European Commission, 2001, p. 23). Therefore, the great influence that agreed transfer pricing policies exert on these transactions in the geographic distribution of the tax base, as determined within consortia, shall not be underestimated. Although conflicting interests may be assumed when two unrelated companies participate – this principle being the requirement of market prices' generation – this difference in interests does not apply in the case of two related companies. Therefore, consortia tend to define their internal prices (also) under tax criteria. This entails great efforts for the tax authorities in determining whether such transfer pricing policies are in line with the market or whether they require adjustments, as applicable. Individual transactions in a consortium, which lack comparable market prices hurdles this control procedure even more. The relocation of overall business functions in the framework of a restructuring process (for example, production and distribution of a given product in a given region), normally constitutes individual transactions of a consortium with a great potential for tax avoidance or tax evasion.

On such basis, this paper seeks to provide a brief summary of the methods enabling, pursuant to German tax law, to determine appropriate transfer pricing policies, with special focus on the new provisions regarding relocation of functions introduced by the Corporate Tax Reform Act of 2008.

To such end, the article is divided in two titles subsequent to this introduction. Firstly, we present a summary of the methods allowed in Germany to determine transfer pricing policies. The second title addresses provisions on the relocation of functions and focuses on the valuation of the relocated function. The paper ends with a brief overview of German regulations.

This article is largely based on a paper presented on 24 November of 2010 in the framework of a seminar on transfer pricing regulations in Latin America, organized by InWEnt (Capacity Building International, Germany), CIAT (Inter-American Center of Tax Administrations) and DIAN (National Tax and Customs Directorate, Colombia) in Bogota, Colombia.[1]

1 *All charts, unless otherwise stated, belong to the author.*

1. THE ARM´S LENGTH PRINCIPLE IN GERMANY

Fundamentals

Although the parties to a consortium may remain legally independent companies, they are normally under the headquarters' financial management. Frequently, this situation is correctly described with the term "business unit with legal diversity" (Sigloch, J., 2010, p. 465). Therefore, the transactions among companies belonging to the same consortium lack the conflicting interests that are a feature of the economically unrelated parties in the market.

Tax authorities address this type of situation based on two options (refer to Sigloch, J., 2010, p. 471):

(1) For tax purposes, they may treat the consortium as a single company. In this case, the internal transactions of the consortium and the transfer pricing policies defined for them bear no influence on the consortium tax base assessment. Currently, discussions are underway on the applicable solutions in the framework of a consolidated tax base for consortia in Europe. Nevertheless, to date, little progress has been made (refer to Spengel, Ch./Oestreicher, A., 2009, p. 773). The greatest difficulty in this case is the distribution of the tax base or revenue among the different countries where the members of the consortium are based.

(2) The different members of a consortium shall pay taxes as financially unrelated companies. This entails controlling and, eventually, correcting the transfer pricing amounts defined for internal consortium transactions, comparable with similar market prices. In other words, it requires taking as the basis a price that in similar conditions, would also have been agreed by external third-parties. This method is normally called, briefly, dealing at arm´s length principle. This is an internationally-applied principle, but the methods to determine transfer pricing policies differ from one country to another, to a given extent, in spite of the fact that many countries follow the OECD transfer pricing guidelines (OECD, 2010).

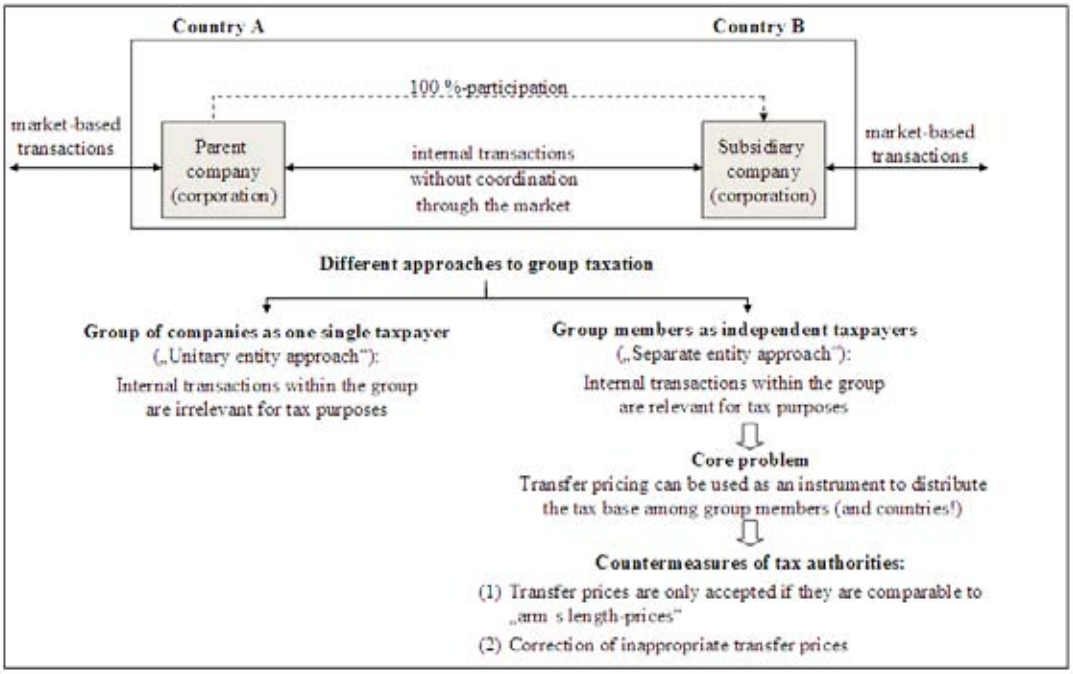
In Germany, the Arm´s length principle is defined in the International Taxation Act (AStG, Außensteuergesetz):

„When a taxpayer's income resulting from a cross-border commercial relation with a related individual is reduced by the fact that the income statement is based on different conditions, especially prices (transfer pricing), from those that would have been agreed under equal or similar conditions by unrelated third-parties (arm´s length principle), such income, regardless of other provisions, shall be determined as if it would have occurred in conditions agreed by unrelated third-parties."

Similarly, this principle also exists in certain provisions on national transactions exclusively (such as, concealed distribution of dividends).

The following chart (Chart 1) illustrates the two alternatives.

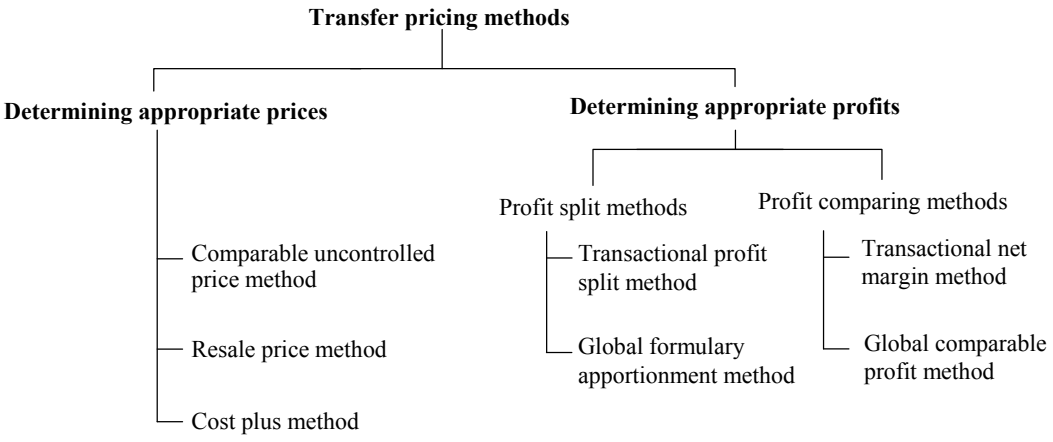
Graphic 1: Different approaches to group taxation



1.2 Methods to identify profits in the consortium

The following chart (Chart 2) presents a summary of the existing methods to define profits in a consortium (for a similar chart, refer to Schmidt, L./Sigloch, J./Henselmann, K., (2005), p. 378):

Graphic 2: Transfer pricing methods



By principle, a distinction is made between the transactional prices methods and the profit-based methods. The transactional prices methods (comparable uncontrolled price method, resale price method, cost plus method) are also called “standard methods”. The profit-based methods require distinguishing between the disaggregation (apportionment) of profits and the profit comparable methods. Both may refer to the individual transaction under analysis (transactional-profits methods) as well as the global business profit (global profits methods).

The applicable methods in determining price based on the Arm’s length principle depend on the relevant comparable transaction comparability with available comparable transactions. In order to determine the comparable basis, the following aspects shall be analyzed, among others:

- quantity and quality of the transaction’s assets/services,
- other contractual conditions (such as terms of payment, guarantees),
- functions and risks assumed by the companies involved (for example, companies with routine functions that do not assume significant market risks, companies who are strategic partners assuming considerable market risks),
- prevailing market conditions (such as, competition).

Based on the outcome of this comparability analysis, German tax law defines three categories for the arm's length principle:

(1) The unlimited arm's length principle: the comparable transactions are identical in their essential features or the comparable price may be adjusted without difficulties to the existing differences. In such cases, tax law provides for the application of the standard methods.

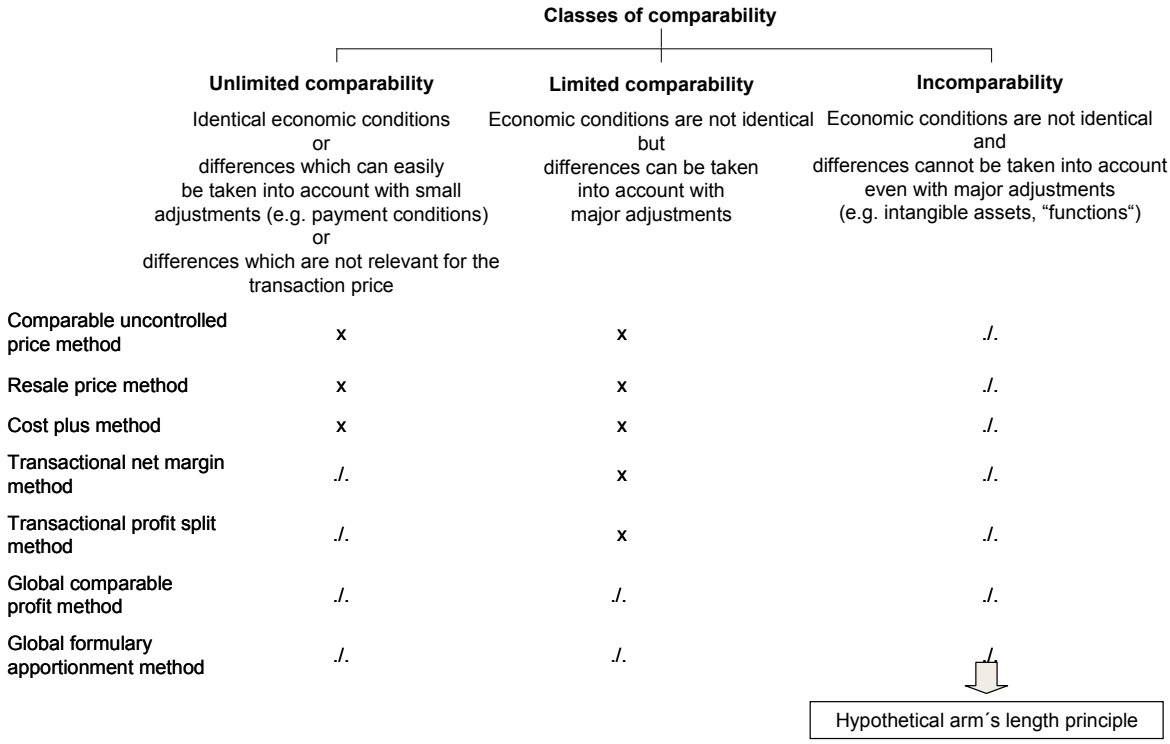
(2) The limited arm's length principle: the comparable transactions are not identical in their essential features, but by greater adjustments to the comparable prices, comparability is still possible. In this case, the standard methods as well as the transactional profits methods apply.

(3) The hypothetical arm's length principle: no transactions are available that may be made comparable with the transaction subject to control, even if greater adjustments were applied. In fact, the application of the hypothetical arm's length principle seeks to simulate the price negotiation and determination process among unrelated parties. To such end, a minimum price is defined, from the standpoint of the supplying company, and a maximum price from the standpoint of the company who is the beneficiary of the good or service. The applicable transfer price shall range between the minimum price and the maximum price in the so-called “transactional margin” (when applicable).

The global profit comparable method and the global profit apportionment method are not admissible in any case.

The following chart (Chart 3) presents a summary of the three categories and the applicability of the transfer pricing methods according to German tax law:

Graphic 3: Classes of comparability



2. THE GERMAN RULES FOR RELOCATION OF FUNCTIONS

The following notions are exclusively centered on the so-called relocation of functions, in which the hypothetical arm's length principle applies as a general rule.

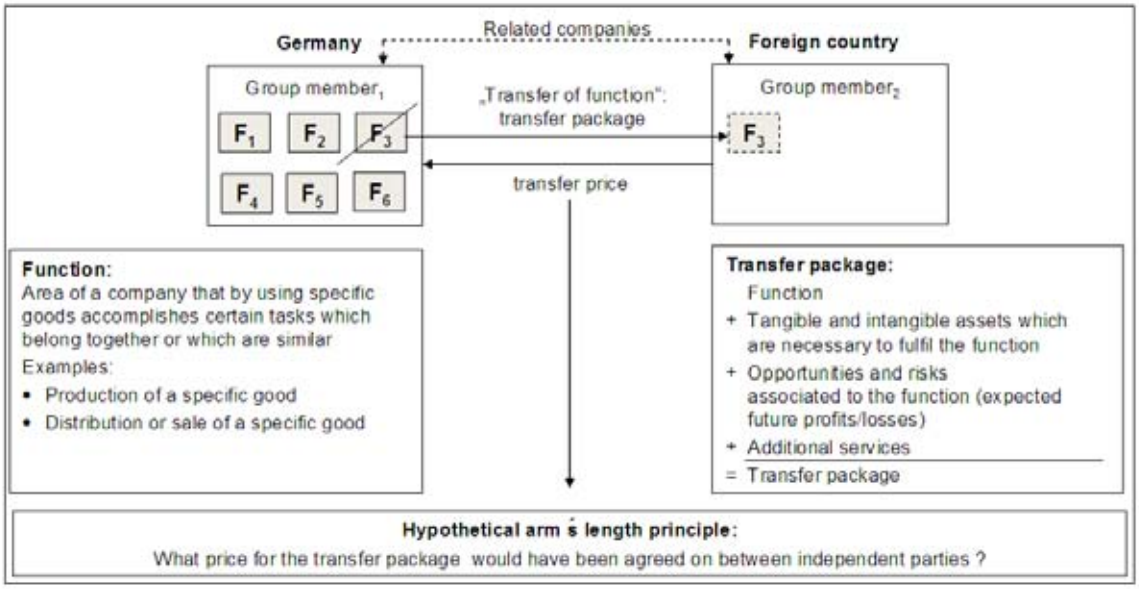
2.1 Fundamentals

The Corporate Tax Reform Act of 2008 introduced in Germany the legal fundamentals for the relocation of functions in the International Taxation Act. Pursuant to this law, relocation of functions shall apply when:

- a national corporation
- by relocating the use or transfer of tangible and intangible assets and services
- and the applicable opportunities and risks (implying the notion of future expected profits/losses)
- enables a foreign related company
- to perform a function until that moment performed by the relocating company
- and such function, upon completing the relocation, is discontinued or performed on a (very) limited basis.

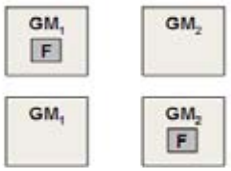
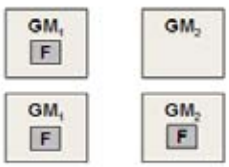
The overall relocated financial assets and the applicable risks and opportunities are called the relocation package. The following chart (Chart 4) illustrates the rule.

Graphic 4: Business restructuring – “Transfer of functions”

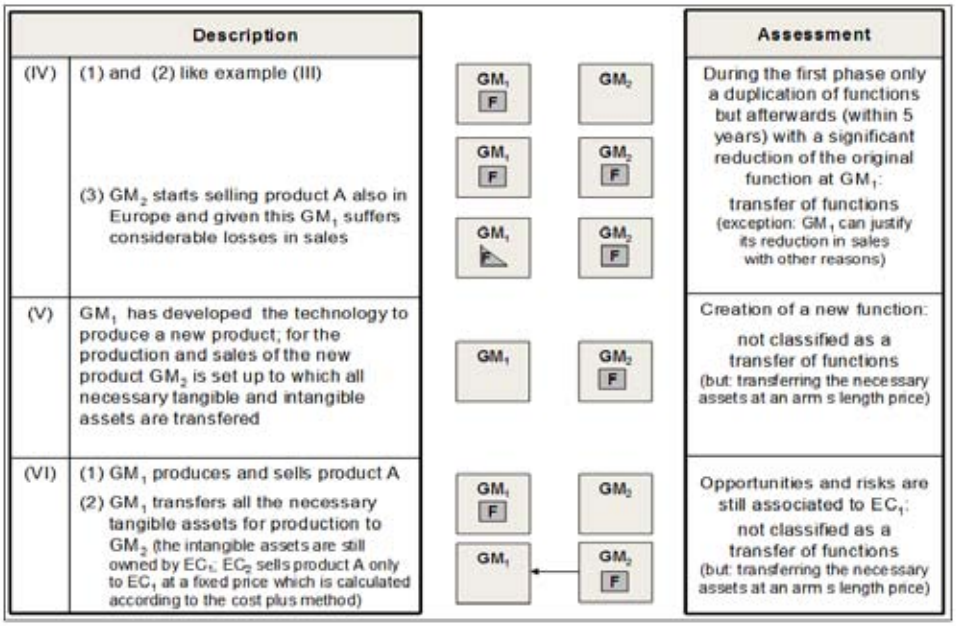


The legal definition allows for extensive interpretation. In order to explain when the relocation of functions applies, a number of examples are provided (Charts 5 and 6)

Graphic 5: Tansfer of functions – examples I

	Description		Assessment
(I)	(1) GM_1 (Group member 1) produces and sells product A (2) GM_1 transfers all tangible and intangible assets which are necessary to produce and sell product A to GM_2; GM_1 stops producing and selling product A		Transfer of functions
(II)	Like example (I), but now GM_1 continues producing and selling product A suffering a considerable loss in sales		Function is still carried out at GM_1 but at a reduced level: if this reduction is considerable: transfer of functions
(III)	(1) GM_1 produces and sells product A in Europe (2) GM_1 transfers tangible and intangible assets which are necessary to produce and sell product A in Asia to GM_2; GM_1 continues producing and selling product A in Europe		Duplication of functions: not classified as a transfer of functions

Graphic 6: Tansfer of functions – examples II

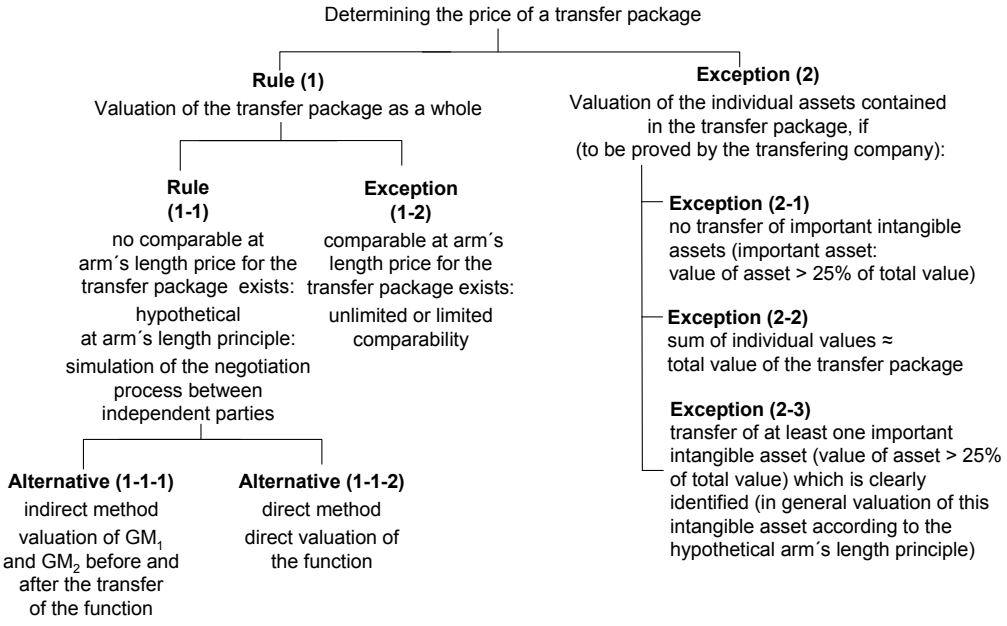


2.2 Determining the function price

2.2.1 Methods to calculate the function relocation price

The following chart (Chart 7) presents a summary of the rules and exceptions applicable in the assessment of relocation packages in the framework of relocations of functions:

Graphic 7: Determining the price of a transfer package

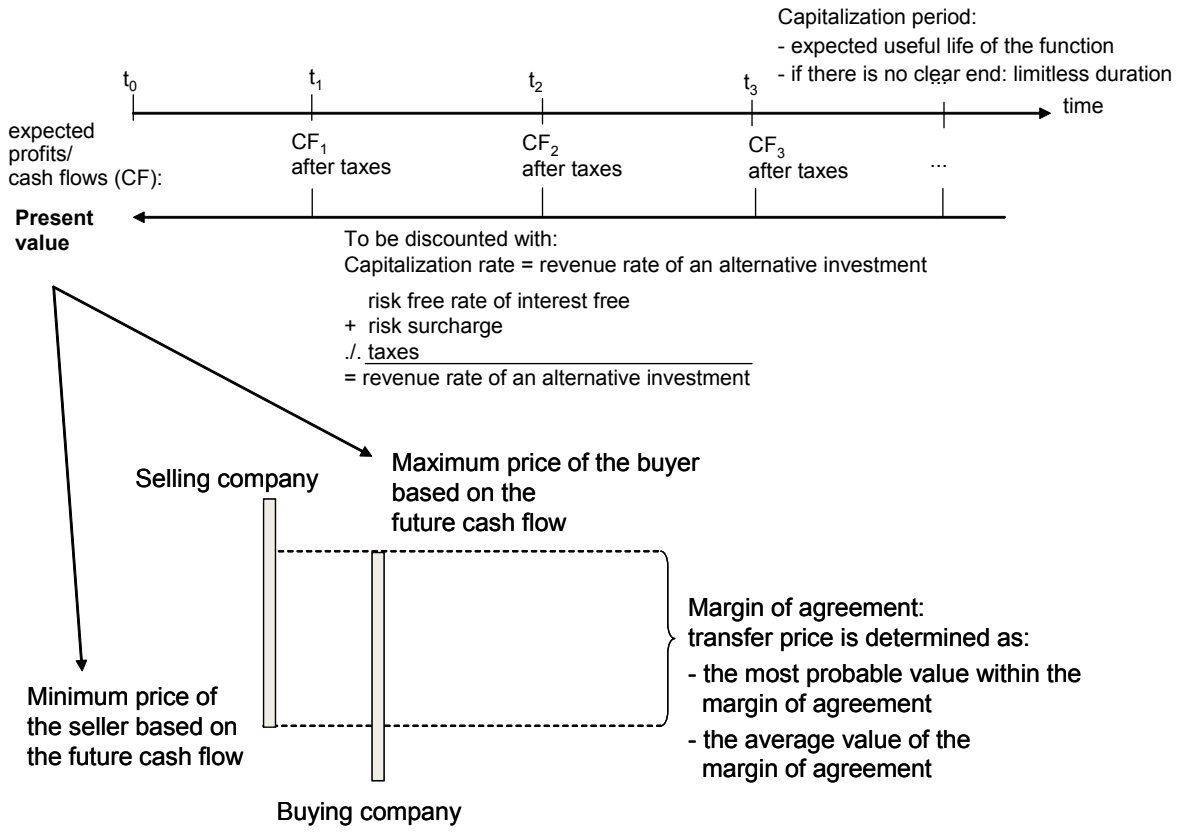


In order to value a relocation package, in general, a global evaluation is required (also see Oestreicher, A./Hundeshagen, Ch., 2009, p. 145). Since it may be impossible to determine comparable, or to a certain extent comparable, market values for the relocated functions (alternative 1-2 of the foregoing chart), the hypothetical arm's length principle is normally applied (alternative 1-1). It shall be calculated according to the cut-off prices' calculation, known in the theory of business valuations. The company relocating the function determines the minimum price to be requested; while the function beneficiary company calculates the maximum price it is willing to pay for the relocation package. The maximum price indicates the maximum value that the beneficiary company is able to pay without impairing its situation should it never acquire the relocation package. If the maximum price of the beneficiary company exceeds the minimum price of the company relocating the function, a positive transactional margin is created, according to which both parties would reach, through their negotiations, the transaction price. Therefore, the transfer pricing applicable shall also stand in the range of this transactional margin. The key evaluation parameters in calculating the respective cut off prices are:

- future profits and cash-flows expected from the performance of the function after tax (the law mentions only profits; nevertheless, a company valuation must be based on cash-flows),
- life of the relocation function as a capitalization period,
- capitalization rate adjusted to risk after tax.

The following chart (Chart 8) presents a summary of the procedure:

Graphic 8: Calculating the maximum and minimum price – valuation steps



Since it shall be frequently difficult to directly forecast future profits (cash-flows) from an individual function (alternative 1-1-2), many times only the indirect method applies to value the relocation package (alternative 1-1-1). In this case, the value of the relocation package is defined as the difference in company values before and after the relocation of functions. Given the fact that this shall be performed by the company relocating the function as well as the beneficiary company, four (!) business valuations are required.
In exceptional cases, it is possible to depart the principle of global valuation of the relocation package and conduct an individual evaluation of the relocated financial assets (alternatives 2-1, 2-2 and 2-3 on Chart 7) (also see Greil, S., 2010, p. 479):

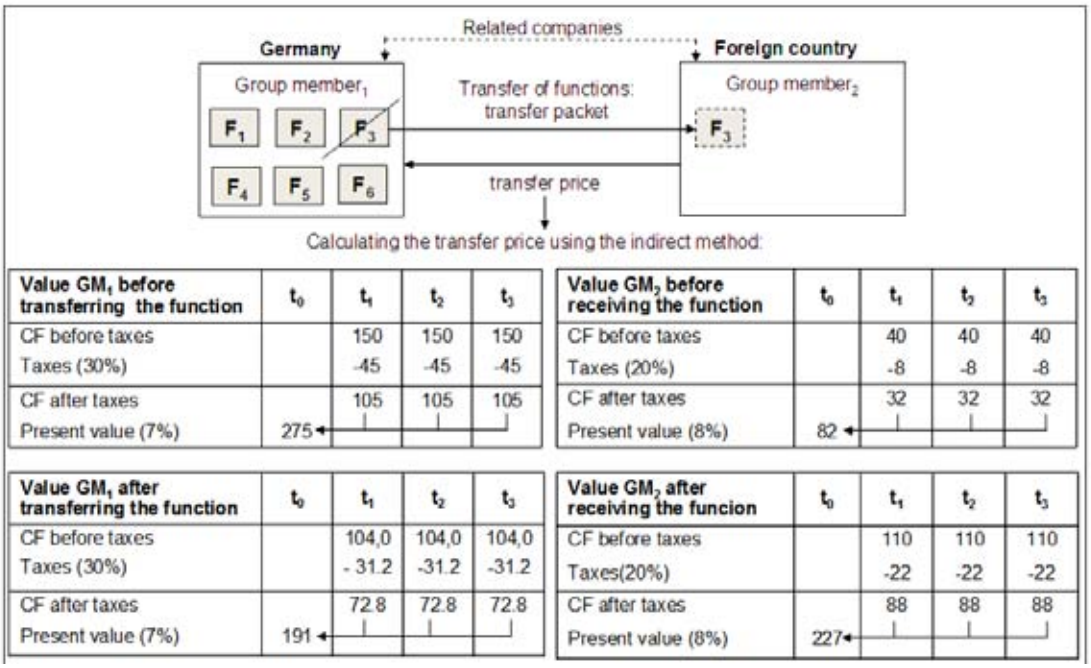
- No transfers of intangible assets (exception 2-1): an intangible asset is considered essential if its value exceeds 25% of the total relocation package value. If no intangible asset is relocated or if its value is under 25% of the total value, an individual valuation of the relocated assets may be performed (for example, the relocation of a company's accounting shall be covered in this exception). Should several intangible assets be relocated in the framework of the relocation of functions, its value shall be added to determine whether the amount exceeds the 25% cap or not.
- The sum of the individual values of the relocated assets equals the value of the relocation package (exception 2-2): if the sum of the individual relocated values ranges within the transactional margin applicable in a global valuation, the sum of the individually valued assets may be used as transfer pricing. Nevertheless, this exception does not entail laxer rules for taxpayers, since overall, an individual valuation and a global valuation shall be required.
- Transfer of at least one essential intangible asset that is accurately described (exception 2-3): when at least one essential intangible asset forms part of the relocation package (value > 25%) and is accurately described by the taxpayer, it is also possible to forego a global valuation of the relocation package. Nevertheless, on many occasions, it shall be necessary to apply the hypothetical arm's length principle for the accurately described intangible asset. Contrary to exception 2-1, this exception does not require adding the values from several intangible financial assets. In particular, this third exception generates many questions that still remained unanswered.

2.2.2 Function valuation example

Explanation on the indirect global valuation of a relocation package with a simplified example:

A consortium company (CC_1) relocates a specific function with all the tangible and intangible assets required in performing the function of another consortium company (CC_2). The latter also assumes all the inherent risks and opportunities in the future performance of the function. In order to simplify the example, we assume that the function shall only be performed for an additional three years. In order to determine the cap prices for the relocation package of CC_1 and CC_2, the values of companies before and after the relocation of functions shall be determined. To such end, future cash-flows (and profits) shall be estimated before and after the relocation of functions. It is assumed that the interest rate for the alternative investment adjusted by risk (capitalization rate), is 10% before tax in both countries and it shall be reduced by the tax burden applicable. The capitalization rate after tax is determined as the capitalization rate before tax multiplied by the factor of one less the tax base. (Such assumptions on the capitalization rate and the tax consideration have been greatly simplified. Nevertheless, they are necessary in order to explain the principles of the procedure). For simplification purposes, risk surcharges, normally different according to the company, are identical for both companies and shall not change as a consequence of the relocation of functions. The calculations are presented on the following chart (Chart 9):

Graphic 9: Determining the price of the transfer package – example I



Value GM_1 before transferring the function	t_0	t_1	t_2	t_3
CF before taxes		150	150	150
Taxes (30%)		-45	-45	-45
CF after taxes		105	105	105
Present value (7%)	275			

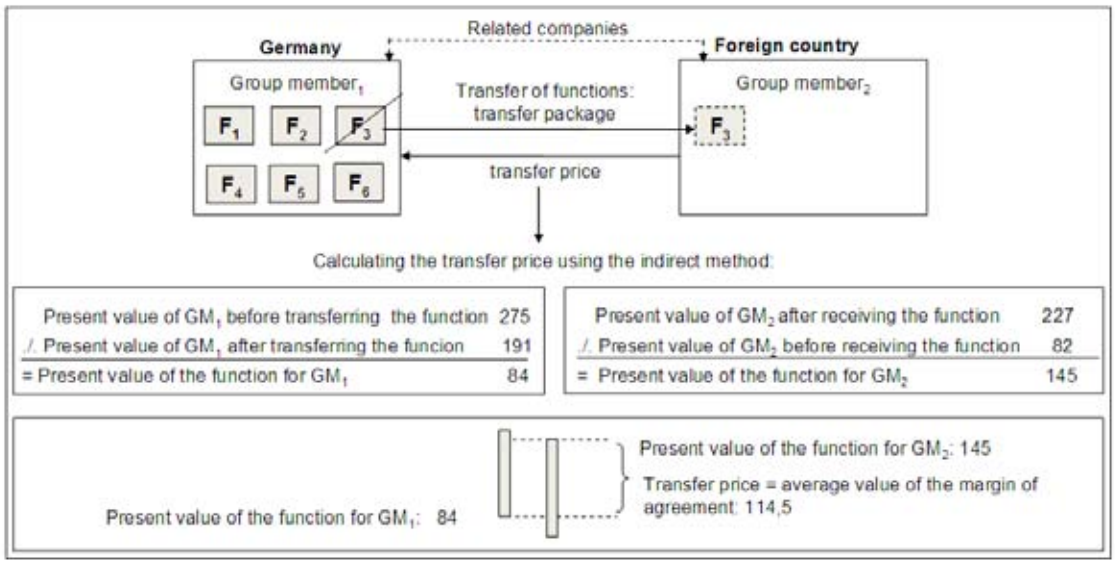
Value GM_2 before receiving the function	t_0	t_1	t_2	t_3
CF before taxes		40	40	40
Taxes (20%)		-8	-8	-8
CF after taxes		32	32	32
Present value (8%)	82			

Value GM_1 after transferring the function	t_0	t_1	t_2	t_3
CF before taxes		104,0	104,0	104,0
Taxes (30%)		- 31.2	-31.2	-31.2
CF after taxes		72.8	72.8	72.8
Present value (7%)	191			

Value GM_2 after receiving the funcion	t_0	t_1	t_2	t_3
CF before taxes		110	110	110
Taxes(20%)		-22	-22	-22
CF after taxes		88	88	88
Present value (8%)	227			

In the case of CC_1, the difference between the company value before the function relocation (275) and the company value after the relocation (191) equals the minimum price for the relocation package. The maximum price from the standpoint of CC_2 is formed as the difference between the value of the company after the function relocation (227) and the value of the company before relocation (82) as defined in the following chart (Chart 10):

Graphic 10: Determining the price of the transfer package – example II



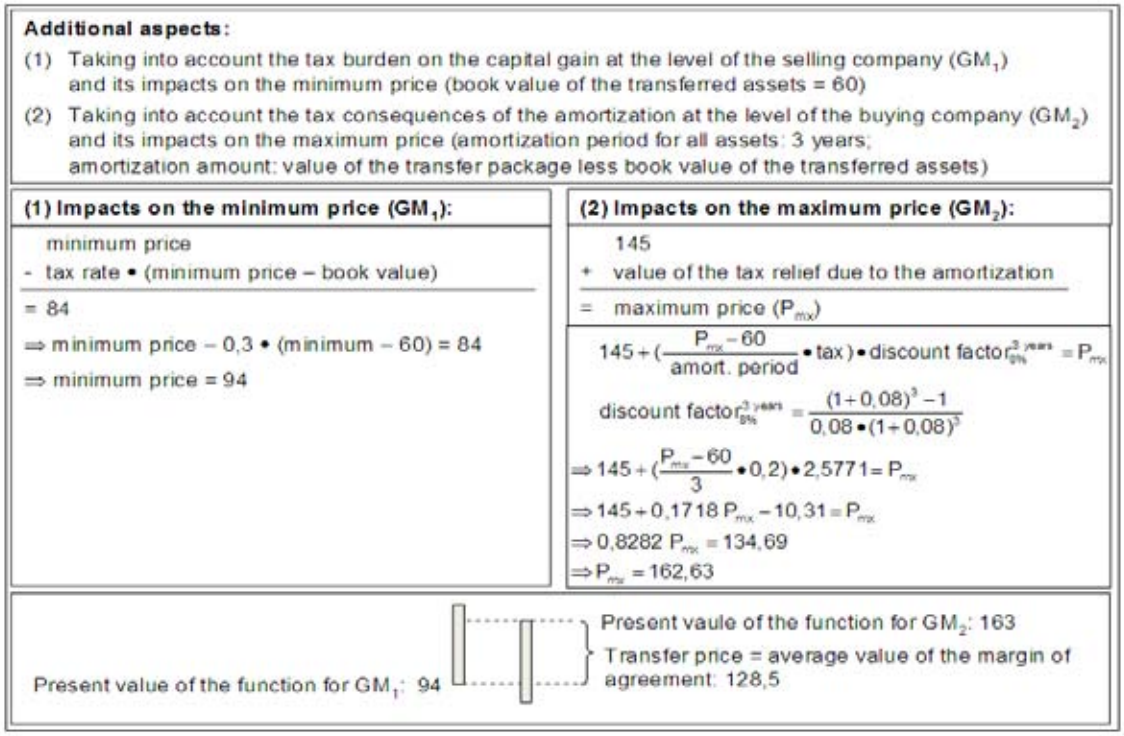
Upon comparing the cap prices, we obtain a positive transactional margin between 84 (minimum price CC_1) and 145 (maximum price CC_2). By principle, admissible transfer pricing is deemed to be any value within the transactional margin, provided it meets the arm's length principle. When in doubt, the average value of the transactional margin is taken (114.5) as the relocation package transfer pricing admitted from the tax standpoint.

A factor that is not taken into consideration in the calculations is taxation of a possible profit from the sale in CC_1 and the tax effects of the amortization of the assets acquired in CC_2. Should these tax consequences be included in the considerations, new cut-off prices shall apply for CC_1 and CC_2 and, therefore, a new transactional margin as well:

- Owing to the taxation of the sales profit, CC1 should increase the minimum price required for the sale of the relocation package not to produce impairment of their financial status. Therefore, the minimum price of CC1 increases from 84 to 94 (for the calculation, see Chart 11).
- Should CC2 apply the total price paid for the relocation package as purchase expenses for the assets purchased (an infrequent case), an additional amortization potential arises and a tax discharge effect that increases the purchase cap price for CC2. In a simple example, the maximum price would increase from 145 to 163 (see Chart 11 for the calculation 11).
- Therefore, the new transactional margin goes from 94 to 163 with an average value of 128.5.

The following chart (Chart 11) illustrates the calculations applicable:

Graphic 11: Determining the price of the transfer package – example III



3. CONCLUSIONS

With the new regulation on the determination of fiscally approved transfer pricing policies for the relocation of functions, another highly complex regulation was introduced in German tax law. For its theoretical evaluation – we still do not rely on many practical experiences – the following items may be mentioned:

- The valuation of assets or sections of companies (relocation packages) centered on future cash-flow is in line with the valuation theory.
- A global indirect valuation of the relocation packages requires four company valuations. In order to deduct the relevant cash-flows for valuation and the relevant profits as the tax base, it is necessary to draft, on a case by case basis, planned balance sheets, planned profits and losses accounts and planned financial calculations, all of which shall be concerted. This is very onerous for the taxpayer and implies, based on the estimations required, significant legal uncertainty with respect to the approval of transfer pricing by the tax administration.
- Determining a capitalization rate adjusted by risk and taxes is highly complicated. The risk surcharge also depends, among others, on the capital structure that may be modified with the relocation of a function. Even without modifying the capital structure, the individual risk of each company may vary before and after the relocation of functions. In fact, this would be the rule, since the relocation of the function also entails relocation of the opportunities and risks inherent in the performance of the function. This requires determining a number of risk-adjusted capitalization rates.
- German tax authorities determine applicable taxes on the future foreign profits generated as of the date of the function relocation. This could be interpreted as a very broad taxation power of the German tax authorities and, eventually, deemed a violation of the European law of freedom of establishment. A negative argument may be the fact that, as of the function relocation date, only the sale price that would have been agreed between two rationally behaving unrelated parties was considered for taxation purposes. In general, the tax authority of the country of the seller headquarters is entitled to levy the sale profits.
- If the tax authority of the country of the headquarters for company acquiring the function does not accept transfer pricing as determined by the German tax authority, the parties are faced with the risk of double taxation on future profits. The German tax authority levies such profits as of the date of the function relocation, and the foreign tax authority levies them as of the date of realization of the profits based on the amortization potential that is not generated at the time of acquisition.
- From the standpoint of economic policy, we may argue that many companies decide early on against headquarters in Germany, basing such decision on the fact that the tax barriers for subsequent relocation of functions from Germany to a foreign jurisdiction are very high.

4. BIBLIOGRAPHY

AStG: Gesetz über die Besteuerung bei Auslandsbeziehungen (Außensteuergesetz) (Ley tributaria internacional), del 08.09.1972, BGBl. I 1972, p. 1713; último cambio a través de Art. 7 de la Ley del 08.12.2010, BGBl I 2010, p. 1768.
BRÄHLER, Gernot: Internationales Steuerrecht, 6. Auflage, (Wiesbaden 2010).

EUROPEAN COMMISSION: Report on Company Taxation in the Internal Market, (2001).

FVerlV: Verordnung zur Anwendung des Fremdvergleichsgrundsatzes nach § 1 Abs. 1 des Außensteuergesetzes in Fällen grenzüberschreitender Funktionsverlagerungen (Funktionsverlagerungsverordnung, Reglamento del traspaso de funciones), del 12.08.2008, BGBl. I 2008, p. 1680.

GREIL, Stefan: Ausnahmen von Grundsatz der Gesamtbewertung des Transferpakets Zugleich Neufassung des § 1 Abs. 3 Sätze 9 und 10 AStG, IStR 2010, p. 479-487.

OECD: OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, (OECD 2010).

OESTREICHER, Andreas /HUNDESHAGEN, Christian: Weder Wirtschaftsgut noch Unternehmen die Bewertung von Transferpaketen anlässlich der grenzüberschreitenden Verlagerung von Unternehmensfunktionen, IStR 2009, p. 145 - 157.

SCHMIDT, Lutz/SIGLOCH, Jochen/HENSELMANN, Klaus: Internationale Steuerlehre, (Wiesbaden 2005).

SIGLOCH, Jochen: Rechnungslegung, 7. Auflage, (Bayreuth 2010).

SPENGEL, Christoph/OESTREICHER, Andreas: Gemeinsame (konsolidierte) Körperschaftsteuer¬bemessungs¬grundlage in der EU, DStR 2009, p. 773-787.

UntStRefG Unternehmensteuer¬reform¬gesetz 2008 (Ley de Reforma Fiscal Corporativa), del 14.08.2007, BGBl. I 2007, p. 1912.

Verwaltungsgrundsätze Funktionsverlagerung: Grundsätze für die Prüfung der Einkunftsabgrenzung zwischen nahe stehenden Personen in Fällen von grenzüberschreitenden Funktionsverlagerungen, Schreiben des Bundesfinanzministeriums vom 13.10.2010.

Strategies to control tax fraud in the VAT rebate benefit to the exporting sector in natural resource extraction activities

José Antonio Miranda López

SUMMARY

This article describes the strategies adopted in Peru for controlling tax fraud in relation to VAT refunded to the exporting sector, with a focus on extraction activities. First of all, there is a description of the fraud modalities identified in the value chain. Subsequently, an analysis is made of the EEC's experience in controlling similar fraud modalities. Finally, an account is given of the Peruvian experience in the control of fraud and the challenges posed with respect to future control models.

The Author: *Economist with a Master's degree in Finance and Administration from the School of Administration and Businesses for Graduate Students ESAN; Master's degree in Public Finance and Financial Administration of UNED - Spain; Specialized Professional of the National Intendance of Tax Compliance of the National Superintendence of Tax Administration - SUNAT - Peru.*

INTRODUCTION

Contents

The legislations of most Latin American countries include VAT rebate benefits, applicable on intermediate goods and/or services aimed at the production of end products for export.

This measure is based on the criterion of promoting competitiveness of the export sector in a two-fold manner:

- When the exporter is a price-taker in the international market, if said tax were not reimbursed, its amount would be passed on to the cost of the exported product.

- Timely VAT rebates improve exporters' current liquidity levels and thus reduce funding needs which lead them to take debt. This in turn slashes funding costs.

In most countries, VAT is not levied on exports. All of these measures are consistent with the generally accepted principle of not exporting taxes.

The VAT rebate benefit is granted from the administrative perspective by following quite expeditious proceedings, which implies short times to effective rebates, since the purpose is to achieve the desired efficiency of the measure.

However, effecting rebates within short periods has a huge potential of eroding the VAT revenue base, inasmuch as it has induced certain economic agents in the value added creation chain to adopt fraudulent behaviors, acting as fictitious providers to issue false invoices that support inexistent purchases of goods or services aimed at producing export goods.

In extractive sectors of natural resources used as raw materials for traditional or non-traditional exports, the issue has an additional connotation – in Peru, from the taxation perspective, a large percentage of raw material suppliers carry out their activities informally, i.e. they are not registered in Tax Administration registries and therefore fail to submit VAT returns and to pay the tax. This has a social connotation, since most of these people work at survival levels – they belong to low income social classes and, in most cases, lack the necessary education to enable adequate tax compliance. In addition, they perform their activities in areas which are geographically distant from the capital city and lacking adequate government assistance. Combined, these factors result in a situation which exceeds the taxation sphere proper.

The characteristics of the suppliers of extractive sectors which aim at making their sales in the formal tax loop so that they can claim VAT rebates on those sales upon the exporter's request is leveraged by fraudulent economic agents, giving rise to strategies to "formalize" the sales by providing invoices that meet the requirements of the norm. The invoices issued support the VAT rebate benefit, but a tax loss occurs when the VAT reimbursed is not declared or paid by the fraudulent agent.

The fraud strategies mentioned may be encouraged by the time window between the time when the Tax Administration makes the rebate effective (a brief period of time), and the subsequent time when the Administration detects fraud and adopts measures to redress the offense.

Another issue to be mentioned is that, over time, said fraud strategies have become more sophisticated and it is in this scenario that interest is aroused in assessing the way tax administrations have responded.

This article provides an overall analysis of the strategies used to control this type of tax fraud and the actions adopted by SUNAT.

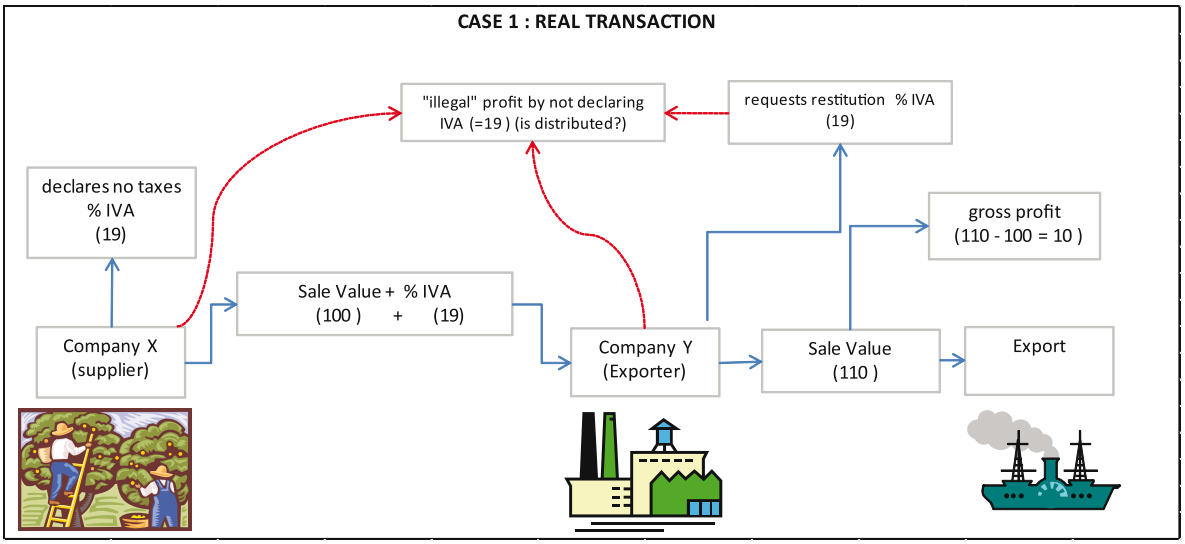
1. POSING THE PROBLEM

The rebate benefit of VAT levied on goods and service purchases aimed at manufacturing export goods does not bring about a tax loss if the tax being reimbursed to the exporter, which was passed on by its suppliers, has previously been paid to the tax authority.

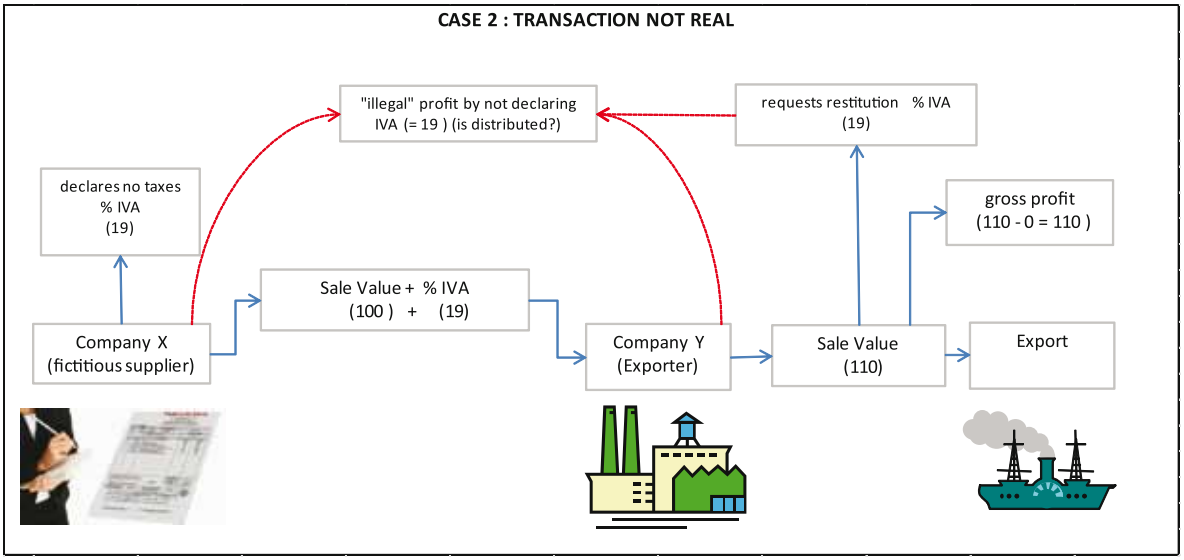
Conversely, if the supplier neither declares nor pays said tax, the tax loss is equivalent to the undeclared, unpaid amount.

This notion is presented in Case 1, where the loss arises when Company “X” neither declares nor pays VAT equivalent to 19 monetary units (MUs), which was passed on to Company “Y”. Later, company “Y”, which exports the product, requests VAT reimbursement for 19 MUs, with the subsequent loss of 19 MUs to the tax administration.

This kind of non-compliance is often not considered tax fraud inasmuch as the supplier’s intent to deceive the tax administration remains undetected. In this case, the tax administration combats it by crossing information and conducting timely audits.



There are situations where transactions are simulated, as in Case 2, where Company “X” creates a fictitious VAT of 19 MUs on an inexistent economic transaction. The company neither declares nor pays the VAT supposedly triggered, which is in turn reimbursed by Company “Y”, an exporter. Unlike Case 1, there is a clear intent to deceive the tax administration, and this series of actions defines tax fraudulent behavior.



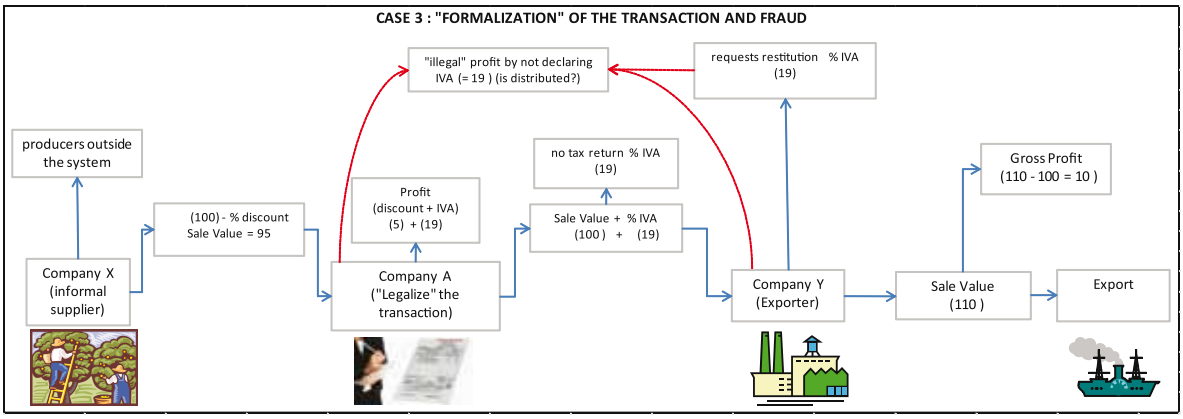
It should be pointed out that the general sales tax reimbursed to Company “Y” is an illegal profit of 19 MUs made by both Company “X” and Company “Y”, since it was based on an inexistent transaction and therefore the exporting company had to be aware of the unlawful deed. The share in which Companies “X” and “Y” distribute the profit depends, among other factors, on the parties’ bargaining power.

In addition, it should be noted that these fictitious transactions may often have the negative effect of overestimating the GDP calculation in the national accounts to the degree that fictitious documents and financial reports are used as the basis to estimate said macroeconomic variable.

As mentioned in the introduction, in the case of Peru, raw material suppliers who carry out their activities in the informal market need to sell their products to an exporter in the formal business chain. In these circumstances, they seek the provision of a document that “formalizes” the transaction. To this end, an economic agent is provided to issue an invoice in the company’s own name, passing the VAT on to the exporter.

The notion is presented in Case 3, where Company “X” is the informal supplier that seeks to formalize the transaction by accepting a discount of 5 MUs from Company “A”. Said company invoices 100 MUs to the exporter and passes on a VAT of 19 MUs, obtaining as an initial profit the 5 monetary unit discount accepted by Company “X”. Later, the VAT passed on to Company “Y” (the exporter), is reimbursed.

The tax loss arises when Company “A” fails to make the 19 MUs tax payment to the tax administration and passes it on as a cost instead. The unlawful profit of 19 MUs could be shared between Company “A” and Company “Y” based on their negotiation. It should be noted that these forms of tax non-compliance are often coordinated joint actions between different companies.

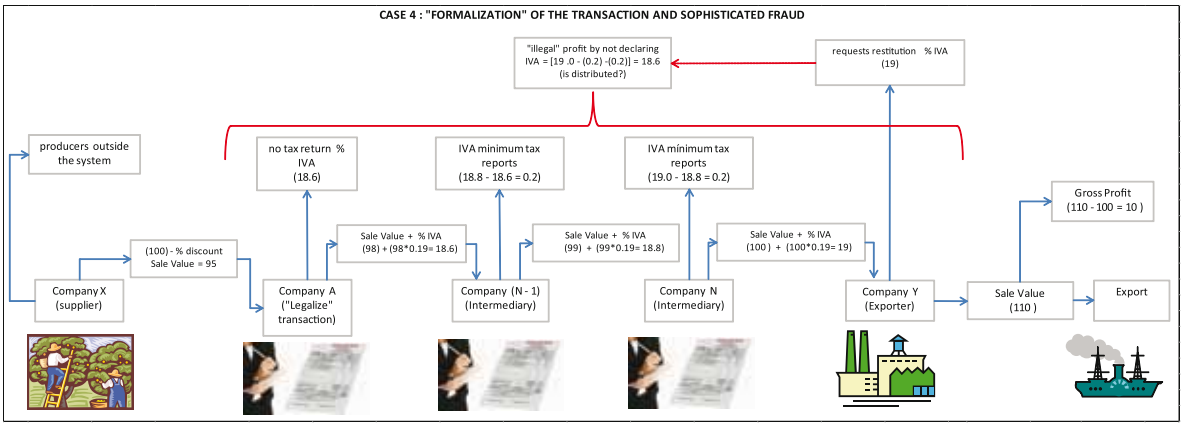


The follow-up made by the Tax Administration of companies similar to Company "A" is difficult, since this type of company tends to be set up and liquidated in brief periods of time, with their shareholders remaining hidden and declaring addresses in geographically distant places which are difficult to audit.

Over time, the evasion modality stated under Case 3 became increasingly sophisticated with the purpose of making detection by the Tax Administration more difficult.

Case 4 shows a more sophisticated form of fraud – a set of companies are set up which pass on fictitious VAT carousel style in order to evade the Administration's controls. With the purpose of formalizing the transaction, Company "X" accepts a 5 MU discount from Company "A", thus receiving 95 MUs. Then, Company "A" passes on the product to Company "N-1" at 98 MUs, creating a VAT of 18.6 MUs which is not paid to the treasury. Later, Company "N-1" transfers the product to Company "N" at 99 MUs, creating a VAT of 18.8 MUs.
Finally, Company "N" transfers the product to Company "Y", which exports at 100 monetary units, creating a VAT of 19 MUs.

Case 4 is unique in that Companies "N-1" and "N" are apparently complying with their tax payments, since they submit a return and pay the VAT created. As you see, Company "N-1" pays a VAT of (18.8 MUs – 18.6 MUs = 0.2 MU) and Company "N" pays a VAT of (19 MUs – 18.8 MUs = 0.2 MU). (It should be noted that the VAT payable is determined by the difference between the tax debit minus the tax credit). However, if the transaction is viewed as a set along the value added chain, it becomes evident that there has been a total non-compliance of 18.6 MUs.



The strategy of Case 4 shows the attempt at making fraud detection impossible by the Tax Administration, inasmuch as it calls for deepening IT crossings and creating increasingly sophisticated risk variables to detect the offenses in a timely fashion.

Auditing strategies are further hindered because companies “X”, “N-1”,”N” and “Y” could be domiciled in different administrative jurisdictions within the country, which hampers coordinated and timely actions.

2. THE EUROPEAN EXPERIENCE WITH AUDIT STRATEGIES TO COMBAT VAT FRAUD

VAT tax fraud is not only a concern for Latin American tax administrations; in the case of the European Community, there is recent concern about VAT tax fraud as a result of intra-community transactions, also known as “carousel fraud”.

This modality has a few similarities with the forms of fraud identified in export chains, and consists of an intra-community operator purchasing the goods of a Community Member State to sell them in a different Member State where it has its address. Upon making the sale in its State of origin, it passes on VAT, but fails to pay it to the Treasury. The transferred VAT becomes a tax credit for the purchaser, and so on, until it is passed on to the end consumer. In this form of fraud, the tax loss to the State is the VAT which the intra-community operator failed to pay.

This form of fraud becomes more complex when a series of companies are created between the intra-community operator and the end seller, with the sole purpose of being shell companies, much like in Case 4 in the previous section.

The issue becomes more serious and takes the form of a true carousel when the good involved in the transaction is once again transferred to a different Member State, which could even be the same State where the transaction had begun, in which case there has not been a final destination for the good. It could even be the case that these are fictitious transactions which created tax credits.

The strategies adopted by the EC countries include:

- Normative changes: in Spain, for example, measures were adopted to combat “carousel fraud”. They consist of a set of provisions included in the Value Added Tax Act to prevent tax fraud, like determining the recipient is jointly liable for the VAT that the taxpayer (the supplier) should have paid, provided the recipient is in a position to reasonably presume that the transferred or transferrable tax was not and will not be declared or paid.

- Audits in the supply chain, especially in the case of distributors with abnormally low prices or other indications of involvement in plots.

- Registry of intra-community operators and use of risk indicators to detect operators which show irregularities.

- Intelligence actions in affected economic sectors.

- Focus on high-risk operator groups.

3. THE PERUVIAN EXPERIENCE

In Peru, the amount of VAT rebates to the exporting sector[1], called the export benefit of positive balance rebates, accounts approximately for 12% to 14% of the total VAT collected (in 2010 this percentage was 12.5%), as shown in the following chart:

DEVOLUCIÓN DEL IGV - EXPORTADORES

AÑO (Millones de Nuevos Soles)	2005	2006	2007	2008	2009	2010
(1) IGV - VENTAS INTERNAS	10,586.9	11,981.7	13,585.8	15,751.9	17,321.8	19,628.6
(2) IGV - IMPORTACIONES	7,715.3	9,535.4	11,672.5	15,834.8	12,197.8	15,907.7
(3) IGV - TOTAL	20,307.2	23,523.1	27,265.3	33,594.8	31,528.6	37,546.3
(4) MONTO DEVUELTO IGV - EXPORTADORES	2,727.6	3,151.0	3,839.7	4,312.3	3,828.7	4,700.7
(5) MONTO DEVUELTO - TOTAL	3,569.8	4,119.6	5,393.2	6,482.1	6,639.0	7,060.2
RATIOS						
(6) Porcentaje (4) / (3)	13.4%	13.4%	14.1%	12.8%	12.1%	12.5%
(7) Porcentaje (4) / (5)	76.4%	76.5%	71.2%	66.5%	57.7%	66.6%
(8) Ratio Exportaciones/ PBI	21.9%	25.8%	26.0%	24.7%	21.1%	

Fuente: Notas Tributarias de la SUNAT - (www.sunat.gob.pe) (Puntos (1) al (7))
Banco Central de Reserva del Perú - (www.bcrp.gob.pe) (Punto 8)

Elaboración: Propia

The VAT amount reimbursed also represents a significant percentage of the total amount reimbursed to taxpayers on account of taxes (66.6 % of the total amount reimbursed in 2010).

The percentage of VAT reimbursed relative to the VAT collected leads one to conclude that there is a significant potential for this rebate benefit to reduce the performance of the tax if the VAT reimbursed in the last stage of the export chain was not paid in the previous stages as a result of the sale of intermediary goods.

Consequently, SUNAT has adopted administrative measures to curb fraud in the VAT rebate benefit since its creation as a tax administration entity. The following stages may be described:

Initial Stage:

During the 90's, the information required to back the goods and service purchases made by the exporter were required at the time of requesting VAT rebates by electronic means through a data survey software called "COA-Exportadores" (*Validation of Self-declared Transactions-Exporters*).

In this information support, the exporter reported to SUNAT the detail of transactions made and reported suppliers' data. Subsequently, using its validation or auditing powers, SUNAT crossed information to detect VAT non-compliance by the supplier.

1 *In Peru, Value Added Tax is called Overall Sales Tax (IGV as per the Spanish acronym).*

In terms of building administrative systems to curb VAT evasion by the exporter, the issuance of documents called purchase settlements was implemented, which allowed the exporter to make transactions with an informal primary producer, on condition that it withholds the VAT levied on the latter and pays it to the Treasury in its capacity as withholding agent. This procedure was aimed at preventing the occurrence of rebates of unpaid VAT amounts. However, the rationality of the economic agent which gives rise to the fraud induces him to avoid this option.

This stage was characterized by the lack of systems to make massive data crossings in short periods of time, as a result of which detection of tax non-compliance or indications of fraud did not happen in a timely fashion, resorting to support from the tax auditor or data from other sources (third party reports) to detect these offenses.

Notwithstanding the above, during said decade several cases of VAT fraud were detected, which were taken to court.

Middle Stage (2000 - 2005):

The so-called Annual Declaration of Transactions with Third Parties (DAOT as per the Spanish acronym - an informative declaration) was implemented in 2001, which compels taxpayers to declare information relative to the transactions made with their customers (income transactions) as well as with suppliers (cost-generating transactions) for purposes of VAT. The obligation reaches non-exporting taxpayers and exporters alike (on the transactions not declared to request VAT reimbursement).

Furthermore, an integrated system called SIFP was developed for taxpayer selection purposes, which worked based on the risk profile basis and making multiple crossings with previously defined risk variables. It selected a set of taxpayers on grounds of indications of non-compliance or fraud. In addition, an integrated query system was built for auditors, known as SIFA, which facilitated auditors' queries since it integrated data from different sources in a single working environment.

These IT tools helped to improve the efficacy of fraud detection along the value added chain for exports. However, fraud detection was still untimely since the selection system processed risk variables on the basis of data that were entered at differing times because of the annual frequency of the informative declaration.

The 2000 – 2005 period was also characterized by the beginning of the administrative VAT systems, including the VAT relief for certain commodity products which are ultimately destined for export. Such system enabled to combat tax informality by demanding that a person who transfers a commodity included in the relief system deposits in a bank account of the Banco Nación a VAT percentage generated prior to transferring the goods. Said obligation is controlled by the Tax Administration during the transport of the product.

Although this measure mitigates the possibility of non-compliance and tax fraud, it is not enough to stop them, inasmuch as there are inadequate administrative resources to verify and oversee all of the transports. It should also be noted that the amounts deposited in the bank account, unless used as advance payments on the VAT declaration, eventually remain freely available to the account holder.

Finally, in this period the Anti-Evasion and Economic Formality Act was passed, which includes the obligation paying commodities by means of payment which are common in the financial system, provided the transaction amount is equal or higher than five thousand new soles (S/. 5,000) or one thousand five hundred US Dollars (US$ 1,500). This measure is aimed at preventing fictitious transactions.

Current Stage (2006 to date):

In 2006, the "COA-Exportadores" (Validation of Self-declared Transactions) was replaced by the

"PDB-Exportadores" (Tax Benefit Declaration Program) as a means to declare the purchase of goods and services made by the exporter which backs their request for VAT reimbursement.

This application enables the addition of further data on commodity purchases, as well as the form of payment of the transaction and reliefs, withholdings or receipts imposed on the transaction, in accordance with the normative changes such as bank usage or those passed in the area of Overall Sales Tax – withholding systems, receipts or discounts, which were not regulated in the "COA-Exportador".

On the other hand, in this latter stage, new commodities destined for export were included in the relief system, such as agro-industrial products (paprika, asparagus) and mining products (non-auriferous metallic minerals and gold).

Finally, there are plans to develop high-risk transaction detection systems to enable early detection of fraud schemes such as those indicated in item II in this document. Said systems should leverage the data coming from other Government entities and from our own systems, in particular the Taxpayer Registry, informative declarations and assessment declarations.

4. THE CHALLENGES AHEAD

Companies set up with the sole purpose of committing fraud exist for brief periods of time and only with the purpose of conducting unlawful activities. Thus, strategies designed to repress consummated fraud should have the goal of reducing the time to detection and punishment by the Administration. This calls for more timely data from the different sources of information.

Once this data is gathered by the Tax Administration, it should be processed by selection systems that calculate both "individual" risk profile variables and "joint" or collective risk profile variables including taxpayer groups. To design collective risk profiles it is necessary to establish common criteria among taxpayers, which make the information coming from tax identification registries and non-tax registries particularly important.

Relative to the design and enforcement of auditing actions undertaken to repress fraud, we must point out that in principle one should conceptualize evasion and fraud as the actions carried out by a set of agents which work in collusion to obtain mutual benefit (the non-payment of taxes). This definition renders it meaningful to make it a strategy to repress fraud, design and enforce auditing procedures in coordination between the different administrative jurisdictions where the agents involved are located.

Coordinated audits to repress fraud will demand adjusting current organizational and IT systems to enable work by auditors' teams made up of staff located in the different administrative jurisdictions in the country.

5. CONCLUSIONS

Given that the purpose of VAT rebates is to promote competitiveness for exporters, said reimbursements should be granted expeditiously.

On the other hand, VAT rebates to the exporting sector resulting from purchases of raw materials from extractive activities carried out informally involving natural resources have a huge implicit potential for eroding the tax collection base inasmuch as said rebates are granted without previously having paid the respective tax on the sale made by the raw material supplier.

Failure to pay the supplier's VAT is quite frequent in Peru, where the natural resource extracting sector shows high rates of tax informality. Coupled with the above, there are incentives in certain economic agents to develop tax fraud behaviors in the sphere of VAT which consist of providing false invoices with the purpose of being reimbursed of a tax which was actually never created, leveraging the delay in the Tax Administration's capacity to detect fraud.

The situation described is not exclusive of Peru, as shown in this article. It may also be found in all other Latin American countries to a lesser or greater extent. Therefore, we believe the issue should be analyzed when designing the audit strategies of our Tax Administrations.

In this regard, the challenge ahead for our Administrations is designing control models that enable detection and punishment of the fraud modalities presented in an increasingly timely manner, thus creating the feeling of effective risk.

6. BIBLIOGRAPHY

BANCO CENTRAL DE RESERVA EL PERU – BCRP. Estadísticas Económicas Anuales 2005–2010. Disponible en Web: www.bcrp.gob.pe

CAMARERO GARCIA, JESUS. El "FraudeCarrusel" en el Impuesto sobre el Valor Añadido. Modalidades y Propuestas para erradicarlo. Trabajo presentado al XII Curso de Alta Especialización en Fiscalidad Internacional celebrado en la Escuela de la Hacienda Pública del Instituto de Estudios Fiscales en el primer semestre de 2010.

SANZ DIAZ-PALACIOS, JOSE ALBERTO. Un Apunte sobre el Fraude carrusel del IVA en Europa. Revista Peruana de Derecho Tributario. Universidad San Martín de Porres. Lima-Perú. Año 3 / N° 14 / 2009.

SUPERINTENDENCIA NACIONAL DE ADMINISTRACIÓN TRIBUTARIA. Notas Tributarias de la SUNAT (2005 – 2010). Disponible en Web: www.sunat.gob.pe

New Technologies for intra-government and international Automatic Information Exchange (AIE) in Tax Administrations

Miguel Angel Paco Escobar

SUMMARY:

In the framework of the CIAT and OECD Model Information Exchange Agreement, Bolivian regulations, in line with the features of a global economy, procedural and technological aspects, this paper describes the new technologies applicable for the automatic information exchange mechanism; the latter constitutes an efficient and effective method given the cost-benefit in achieving and meeting the Tax Administrations objectives and goals. Additionally, this experience is a valuable contribution at the time of implementing a formal, automatic and systematic information transfer mechanism with other government or international entities.

The author: *He holds a degree in Information Technology. Master in Computer Science from Universidad Mayor de San Simón (Bolivia) - Utrecht University (Netherlands). Forensic IT expert. Former lecturer and consultant. Former Chairman of the Association of IT Professionals from Cochabamba-Bolivia. Former Manager of TSI -Tecnología and Sistemas Integrales- Bolivia SRL, a software development company. Professional in the National Office for IT and Telecommunications in the National Revenue Service – SIN (Bolivia). Presently, he is pursuing a Doctor's degree in the International Doctorate Program in Science and Humanities of the International Institute for Integration, Andrés Bello Program.*

INTRODUCTION

Contents

Background

Recent decades have stood witness to the unprecedented liberalization and globalization of national economies. CIAT-member countries and a growing number of non-member countries worldwide have eliminated or limited controls on foreign investment and loosened or eliminated exchange controls. While tax administrations remain confined in their respective jurisdiction, taxpayers operate globally. This imbalance and the differences in national tax systems lead to the need of addressing harmful tax practices of all types, focusing on the improvement of transparency and cooperation among tax authorities, increasingly resorting to better and broader tax cooperation. In a broader context, the efficient operation of tax cooperation helps to guarantee that taxpayers who access cross-border transactions do not also access greater possibilities of tax evasion and tax avoidance against taxpayers who only operate in their national market. Tax cooperation also reflects the basic principle that participation in the global economy entails benefits as well as responsibilities. The sustainability of an open world economy depends on international cooperation, including tax cooperation.

The efforts to counter tax fraud, tax evasion and tax avoidance practices have always been one of the most complex aspects facing the national tax administrations. Moreover, the need for continuous reliance on resources to face, with more updated knowledge and training, the sudden changes of the economic activity, internal and external, as a consequence of the advancement in communications' technologies. In such respect, countries with greater relative economic development, in line with the modifications seen in the respective socio-economic sectors, have worked to facilitate to the tax administrations the means required to sustain an adequate relation with such modifications. On the other hand, in most developing countries, the administrations have failed to adequately meet the modifications observed in the international economy.

The intensity of bilateral and multilateral economic relations in developed countries has contributed in establishing strong working relations in the tax field. This entails that the administrations in said countries feature a growing level of communication and cooperation enabling them to control taxpayers who conduct activities in several national tax jurisdictions. On the other hand, the administrations from developing countries, in general, have failed to follow the same guidelines, in spite of the growth in direct investment, in terms of its share in international trade and the payments for external technology and financial services, in such countries.

The growing inter-dependence of nations, arising from the economic internationalization, offers a new opportunity for the administration in both categories of countries, in the framework of a firm

support of government cooperation, to subscribe agreements of administrative support and assistance programs, basically enabling developing countries to attain greater efficiency in meeting their tax administrations' compliance objectives as well as exchange the information required to counter, more effectively, tax fraud, tax evasion and/or domestic and international tax avoidance.

A key element in international tax cooperation is information exchange. It constitutes an effective mode for countries to maintain sovereignty over their own tax bases and to guarantee the appropriate allocation of taxation powers among the different national jurisdictions, or, more precisely, when such information exchange is supported by tax treaties among contracting States. Information exchange may be based on a number of different exchange mechanisms provided for in domestic legislation and/or international agreements. Information exchange is increasingly implemented via specific agreements based on Model Information Exchange Agreements like the CIAT Model.

- The appropriate implementation of an information exchange mechanism calls for a model based on certain recommendations and experiences, considering the legal and procedural aspects and the technological factors. The Bolivian case shall serve as a benchmark model useful for consultation by any stakeholder, which is subject to improvement in time. Moreover, when compared to other mechanisms, it enables saving time, costs, use of human resources.

Benefit expected from the automatic information exchange (AIE) initiative

Tax information exchange may produce multiple benefits, in addition to the foregoing, such as:

- Increase simultaneous audits, effectively and concurrently.
- Increase risk sensation.
- Improve collection from the greater auditing capacity that such Agreements confer, whether directly or by way of the broadest voluntary compliance that such greater capacity promotes.
- Save time, costs and use of human resources.

Scopes and scenario

In the framework of CIAT recommendations with regards to the topic under discussion and considering the Bolivian legal framework applicable, the following sections shall describe a general information exchange scenario, detailing the steps to follow to materialize implementation, based on specific recommendations, if required. We shall emphasize the technological aspects, mentioning the most appropriate means for information exchange in an environment where we may expect a variety or heterogeneity of operating systems and databases or a diversity of platforms, giving the recommendations for the most commonly used ones. Additionally, the aspects of information security to be considered according to international standards are deemed relevant.

More concretely, the tasks of making the systems (mostly heterogeneous, that is to say, using different operating systems, programming languages, database managers), communicate and share information correspond to the system integration area described hereunder.

Remote system access

A mechanism to enable user access to a system's is **remote access**, with a login and password; a user may connect via telephone or a dedicated channel. Certainly, remote implies relying on media to restrict the functions he shall be authorized to perform. In the diversity of operating systems and platform, relying on such remote access implies great complexity and sometimes it would not be technically feasible to integrate systems (interoperability of applications) given the high inter-layer coupling. Nevertheless, it features certain disadvantages: it is insecure, intrusive; it has printing difficulties and is slow.

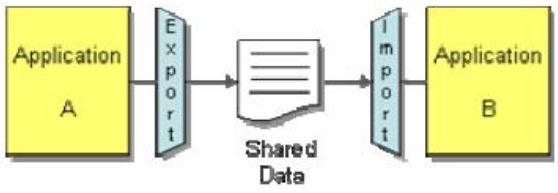
1. SYSTEMS' INTEGRATION

Systems integration is the task of making totally different applications work together to produce a set of unified functionalities[1].

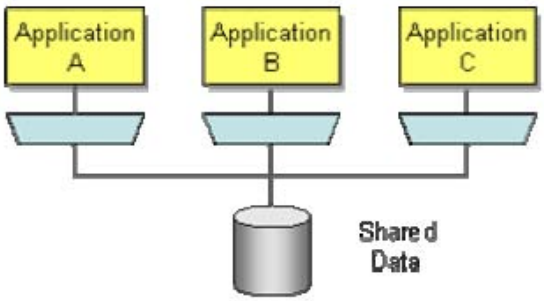
Such applications may have been developed or purchased from a third-party, which probably run on different computers and may require multiple platforms that may be geographically distributed. Some may be running outside of the company with business partners or clients. Other applications may not have been designed to accommodate integration and are difficult to change. These issues and other similar ones, hinder integration.

1.1 Systems' integration styles

Following, we describe the different integration styles, by sophistication and complexity order[2]:

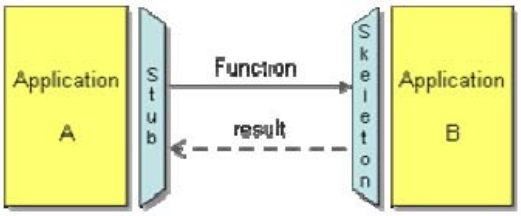


- **File Transfer**. Each application produces data to share and consume files produced by others. Integrators assume the responsibility of: a) Transforming files in different formats, b) Good structure knowledge; c) producing files at regular intervals according to the business nature. It presents the following disadvantage: a) it does not sufficiently secure the data format. b) its inconsistencies are difficult to address, as time goes by and c) updates are infrequent, and as a result the systems may lose synchronization and cause data unreliability.

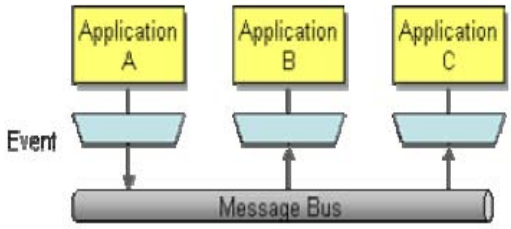


- **Shared Database**. It enables applications to store the data desired in a shared database. Advantages: a) it is easier by the broad use of relational databases. a) all applications are compatible with SQL and c) formats are not a concern. Disadvantages: defining the appropriate (public) system.

1. *HOHPE, Gregor; WOOLF, Bobby. Enterprise Integration Patterns: Designing, Building, and Deploying Messaging Solutions. Addison Wesley. October 10, 2003. ISBN : 0-321-20068-3.*
2. *HOHPE, Gregor; WOOLF, Bobby. Enterprise Integration Patterns: Designing, Building, and Deploying Messaging Solutions. Addison Wesley. October 10, 2003. ISBN : 0-321-20068-3.*



- **Remote Procedure Invocation**. An application invokes a function in another application, transferring the data for sharing and invoking the function that instructs the receiving application on how to process data. Advantages: a) it relies on objects or components with encapsulated data. b) it provides an interface to enable other applications to interact with other applications that run. Disadvantages: it is complex to control the sequential process execution.



- **Messaging System**. Multiple applications' exist that were built independently with different languages and platforms. It is necessary to share data and processes in a dynamic fashion. A receiving application is notified automatically when a new package is available for consumption. Advantages a) Message asynchrony. b) Decoupling. c) It enables reattempting in case of failure. Disadvantages: difficult testing and screening.

Precisely, one of the disciplines based on remote procedures invocation is the SOA Architecture, which is described hereunder.

2. SERVICE-ORIENTED ARCHITECTURE (SOA)

2.2 Systems' integration based on SOA

Contrary to the foregoing mechanism, systems' integration based on SOA (Service-Oriented Architecture), implies having an additional layer over the existing ones that will perform the information exchange, with well-defined inputs and outputs parameters (services contracts), which encapsulate the functionality and other details.

Several industry trends are converging to manage elementary IT changes on the service-oriented concepts and implementation[3]. Such key technologies are:

- **XML** (Extensible Markup Language), an independent data format based on the enterprise and the Web.
- **Web Services.**
- **SOAP,** an XML-technology to send and receive messages,
- **WSDL**, Web service description language.
- **UDDI**, universal description, discovery and integration.
- **BPM** (Business Process Management), a methodology and technology to automate business transactions.

SOA is built on traditional technology and a progression of business requirements. It is centered on the **reuse of code and modular design, objects, components and integration of enterprise applications**[4]. SOA is an emerging

3. *NEWCOMER, Eric; LOMOV, Greg. Understanding SOA with Web Services. (Addison-Wesley, 2005).*

4. *SUCHAROV, Toby. Mainframe Makeovers. Information Professional, Institute of Engineering and Technology. Volume 4, Number 6 (Dec/Jan 2007/08).*

solution to increase data and applications' integration, streamline the strategy and flexibility in the business sector. Considered as the forthcoming technological innovation in the IT market, sellers and business organizations are anticipating their potential and enormous impact. Based on a survey by "Cutter Consortium" on the adoption of SOA and best organizational practices, 64% of respondents were in the launching process or are thinking of launching SOA, while 10% has already implemented it. In order to establish its importance in the corporate IT environment, a number of example organizations are provided, which have benefited from the SOA implementation.

- McGraw-Hill Education, in an effort to integrate more relevant content through online books, experienced a revenue increase after the SOA implementation.
- Likewise, Sabres Holdings, owing to more effective services' management, reduced the unnecessary cost to deliver access to new and existing clients.
- Along such lines, during the implementation of services' repository, Sprint won new business that was directly attributable to SOA.
- International Business Machines (IBM) also experienced a business transformation enabled by SOA.

2.2. What is service-oriented architecture (SOA)?

SOA (Service-Oriented Architecture) is the evolution of business processes, applications and services from legacy heterogeneous applications with soft integration to a connected business world, accommodating fast response to changes and with great business automation levels. It is a set of design principles enabling organizations to change business processes on the fly and meet the growing business demand in a way that would be impracticable or at a prohibitive cost using traditional applications development as well as resource allocation[5]. SOA may be deemed a computer methodology or approach to building IT systems, in which business services, that is to say, the services provided by an organization to its customers are central. It is used to align IT systems with the business needs. The first approaches in building IT systems were centered on the direct use of specific implementation environments, such as object or process-oriented environments to address business issues. Such approaches resulted in systems that frequently tie the features and functions of a particular technology execution environment. From the foregoing description of the SOA, we clearly see that a service is a key component. A service may be deemed a means by which the client's (consumer) needs are aligned with the service provider capacity[6]. Services within an organizational context may be oriented to the needs of the consumer, user/business requirement and system call (top down), or consider the system capacities of the service provider and build services that may be laid out on the higher architecture layers (bottom up). But today, services are built more from the standpoint of engineers and providers than users.

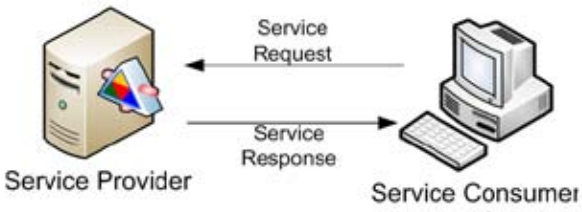


Figure 1- Services are available resources aimed at consumption by the client (software).

The interest in SOA as a guiding principle resulted from the IT community, from the development of large-scale applications and towards the creation

5. *NEWCOMER, Eric; LOMOV, Greg. Understanding SOA with Web Services. (Addison-Wesley, 2005).*

6. *ROSEN, Michael. Adoption of Best Practices in Service Oriented Architecture Development. Cutter Benchmark Review on Analyzing IT Metrics for Informed Management Decision. Volume 6, Nº 10 October (2006).*

of services that reflect the underlying business processes faster[7]. Businesses and the IT sector are now supplemental and need from each other more than ever. But, for years, the successful integration of these two sectors was a nightmare, even with the advent of different technologies. While the previous technologies had poorly developed the IT units and business relation, IT researchers and professionals believe that the nature of services, as consumable products, represents the most urgent change. The main difference between development with SOA and previous approaches is that service-orientation **is centered on the business issue description, while previous approaches were more centered on the use of a specific execution technology environment**. This technique has been employed in services' development and improves its alignment to address business problems, which was not the case with previous technology generations.

It is worth clarifying that the business rules, whether in corporations, organizations or entities, are created on the basis of:

- Laws in effect.
- Applicable internal or external norms and regulations.
- Internal strategies and decisions.
- Organizational and technological changes.

Consequently, given the **high probability of changes in the foregoing, this would trigger and require changes and adjustments on the systems**. Similarly, an increasing requirement in government organizations is to rely on communications between systems to conduct the information exchange required. In this regards, a service-oriented solutions would also contribute in the integration of potentially heterogeneous systems. Figure 2, briefly shows the interaction of a services' provider and a service consumer.

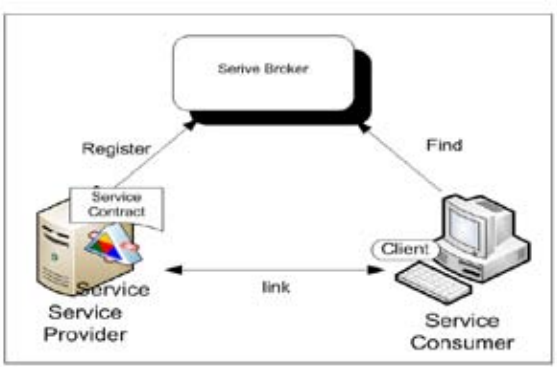


Figure 2 - Service-Oriented Architecture.

1. **Client**. Application that the consumer uses to access the service.
2. **Service**. Application used to deliver the service.
3. **Service Agreement**. Describes the API that the client shall use.
4. The provider describes the service by publishing the contract and registering it with the broker.
5. The consumer consults with the broker over a compatible service.
6. The broker delivers the contract and the indications to find the associated service to the consumer.
7. The consumer uses the contract to bind the client to the service, after which they may communicate.

2.3. SOA Benefits

The main reason underlying the SOA is to improve the relation between IT and business units. Business organizations are addressing two fundamental aspects[8]:

- The capacity of quickly changing their business rules or improving the services they render or adding new services, to meet the urgent demand of today with the new level

7. *ROSEN, Michael. Adoption of Best Practices in Service Oriented Architecture Development. Cutter Benchmark Review on Analyzing IT Metrics for Informed Management Decision. Volume 6, Nº 10 October (2006).*

8. *ROSEN, Michael. Adoption of Best Practices in Service Oriented Architecture Development. Cutter Benchmark Review on Analyzing IT Metrics for Informed Management Decision. Volume 6, Nº 10 October (2006).*

of expediency and timely response, given the high competitiveness.
- The need of reducing costs in terms of money as well as time.

In order to maintain competitiveness, businesses shall **quickly adapt to the internal factors like acquisitions and restructuring, or external factors like competitive forces, client requirements or government regulations.** It is highly necessary to rely on cost –effective flexible IT infrastructure to support the business.

The notion of SOA may help organizations succeed in the dynamic business world of today. This is possible through the primary features of the SOA, which call for the reuse of the business rationale. When implemented appropriately, SOA makes the reuse extremely cost-effective. The motivations for different SOA initiatives include a series of technical and business reasons. The most common motivations are **agility, flexibility, reuse, data rationalization and cost reductions.**

3. SERVICES AND WEB SERVICES

The SOA may be implemented by using several technologies such as Web services, Service Component Architecture (SCA), Enterprise JavaBeans (EJB), CORBA and others. It is possible to have a developed service with different types of interfaces. For example, a service may feature a Web Service interface and a Java SCA-service interface. Nevertheless, Web Services are the new and most common technology for SOA implementation. In spite of certain current limitations, an SOA implementation with Web services is an ideal combination between architecture and technology for ongoing delivery of robust, reusable services that support the current business needs and may be seamlessly adapted to meet the changing business requirements[9].

SOA based on Web Services seeks to simplify integration by delivering universal connectivity to incumbent systems and data. The W3C's, Web Services Architecture Working Group, reached consensus on the definition of Web Service: "**A Web Service is an IT application identified with a URI, whose interfaces and bindings are definable, describable and discoverable as XML artifacts**". A Web service supports the direct interaction with other software agents using XML-based messages conveyed via the Internet-based protocols[10]. Basic Web Services combine the power of two well-known technologies: XML, the universal data description language and the HTTP transport protocol broadly supported by web browsers and servers.

9. *NEWCOMER, Eric; LOMOV, Greg. Understanding SOA with Web Services. (Addison-Wesley, 2005).*

10. *ENDREL, Mark, et al. Patterns: Service Oriented Architecture and Web Services. IBM Red Books, (IBM, 2004).*

Web Services = XML + transport protocol (as well as HTTP)

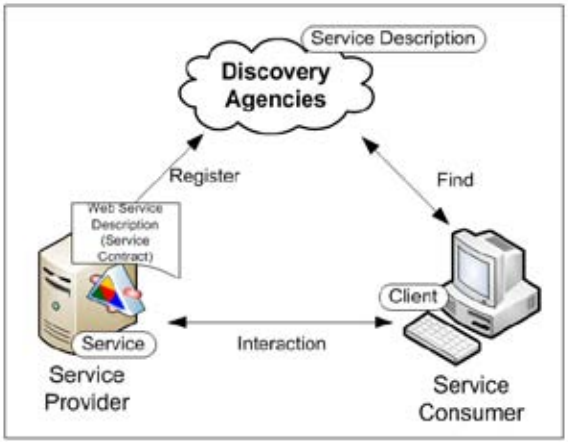


Figure 3 - Web service Architecture[11].

3.1. Understanding of services

Although the terms service and Web service are used interchangeably in different situations, there are basic distinctions between them.

Service. A service is a set of observable behaviors of a system via a predetermined interface. "A service is a mechanism to enable access to one or more capacities, where access is provided by using a predetermined interface and is exercised with restrictions and polities as specified by the service description" [12].

Web Service. A Web service is a type of specific service, which describes its interface using WSDL, SOAP over HTTP as transport protocol, for example.

A service is delivered by an entity called **services' provider** to be used by others called **service consumers** or **clients**, and it may be accessed by means of a service interface where the interface spans the specifications as to how to access the underlying capacities. Services, just like components, were designed to stand as the independent building blocks that are collectively represented in an application environment. But, they are different from traditional components in the sense that services require a number of unique features enabling them to participate as part of a service-oriented architecture. One of these distinctive features is the full autonomy with respect to other services, which entails that each service is responsible for its own domain. This design approach results in the creation of isolated business functionality units based on a common communications' standard framework. As a result of the independent services in this framework, the program logics they encapsulate do not need to meet the requirements of any specific platform or technology.

The most widely adopted and successful type of service is the **Web service XML**, which features two fundamental requirements:

1. It communicates via Internet protocols (more commonly, HTTP).
2. It forwards and receives formatted data as XML documents.

The broad acceptance of this design model, nevertheless, has made way for the upcoming of a set of supplemental technologies that have converted to de facto standards[13]. Therefore, a standard Web Services' industry is expected to deliver a service description consisting of, at least, a WSDL (Web Service Definition Language) document and is able to carry XML documents using the Simple Object Access Protocol – SOAP on HTTP.

---

11. ERL, Thomas. Service-Oriented Architecture: A Field Guide to Integrating XML and Web Services. (Prentice Hall, 2004).

12. MACKENZIE, C. Matthew et al. Reference Model for Service Oriented Architecture 1.0, Committee Specification 1, (OASIS 2 August 2006).

13. ERL, Thomas. Service-Oriented Architecture: A Field Guide to Integrating XML and Web Services. (Prentice Hall, 2004).

Three basic classes of service-related knowledge exist: service profiles, service models and service groundings[14]. A **service profile** is a description of a service supply and requirements; that is to say, its specification. This specification is essential for a service to be discovered by an agent that seeks services and may help the agent in determining whether a service fits its purposes, based on the service profile. **A service model** describes how a service works. Such information is relevant for an agent that seeks services for the complex services to carry out a complex task, and to supervise the service execution. While the **service grounding** specifies the details on how an agent may access a service; it shall typically specify a communication protocol and the numbers of ports that shall be used to connect to the service.

The difference between Web Services designed for SOA and Web Services created for use with other distributed applications' environment is that they typically follow a set of different conventions. The W3C framework for Web Services consists in a foundation built over three core XML specifications[15]:

1. **Web Services Description Language (WSDL)** is a descriptive language binding the interface and the protocol.
2. **Simple Object Access Protocol (SOAP)** is an RPC (Remote Procedure Call) and XML messaging protocol.
3. **Universal Description Discovery and Integration (UDDI)** is a registry mechanism that may be used to locate Web Services' descriptions.

The following figures show the different standards for Web services, and their interrelation.

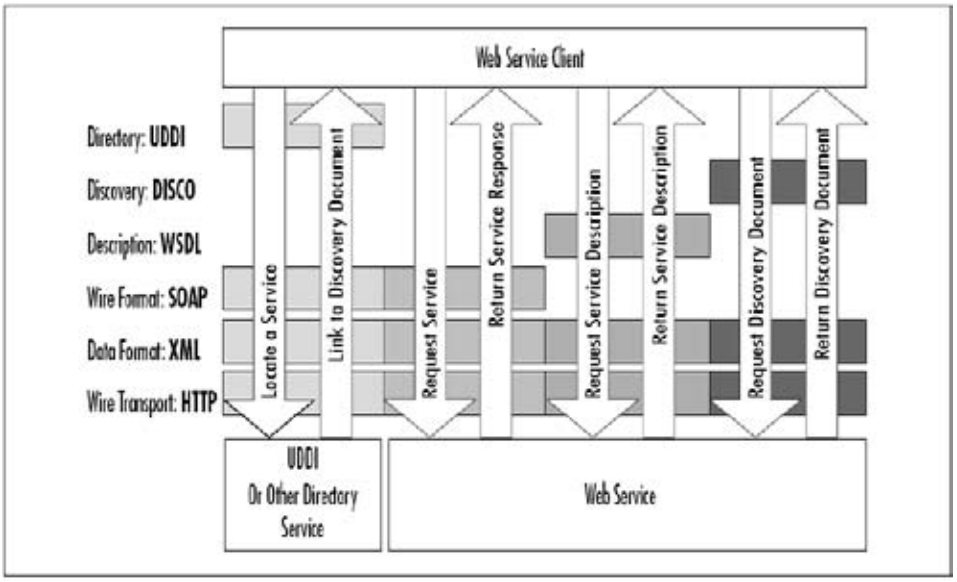


Figure 4 - Web Services Standards[16] .

14. *MACKENZIE, C. Matthew et al. Reference Model for Service Oriented Architecture 1.0, Committee Specification 1, (OASIS 2 August 2006).*
15. *MACKENZIE, C. Matthew et al. Reference Model for Service Oriented Architecture 1.0, Committee Specification 1, (OASIS 2 August 2006).*
16. *TURTSCHI, Adrian et al. C# .NET Web Developer's Guide. Develop and Deliver Enterprise-Critical Desktop and Web – Applications with C# .NET. ISBN: 1-928994-50-4.*

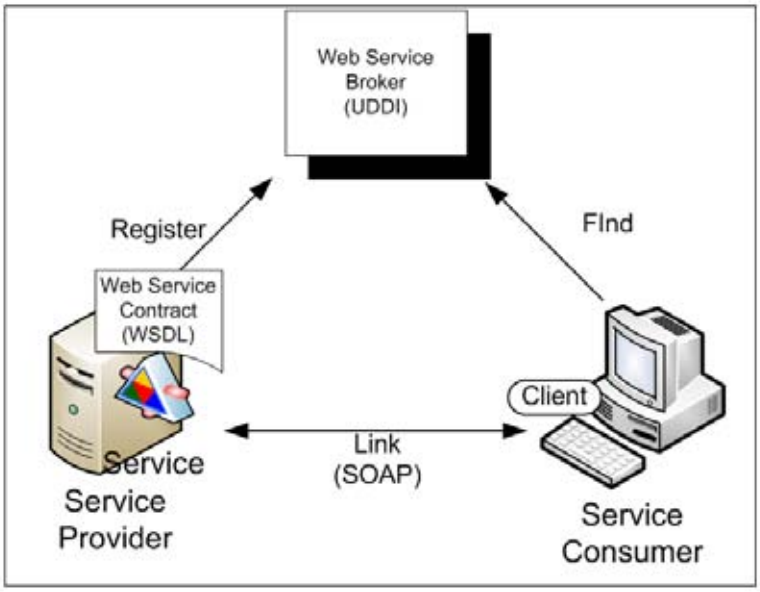


Figure 5 - Web Services' standards. WSDL (Web Services Description Language) provides a mechanism to describe the service. UDDI (Universal Description Discovery and Integration), provides a mechanism to publish and discover services. SOAP (Simple Object Access Protocol), provides a mechanism for client and service communication.

3.2. Key web services features

Following, we shall address some of the Web Services (WS) features that have made it an industry option[17].

- **WS are autonomous (self-contained)**. For an organization to adopt Web Services, a programming language supporting XML and HTTP is enough, initiating without requiring additional software on the client side. On the server side, the only requirements are a web server and the servlet[18] engine.
- **WS are self-describing**. Neither the client nor the server knows any field other than the format and content of the request messages and response messages; this is the purpose of weakly coupled applications' integration. The message format definition travels with the message without requiring metadata repository or external code generation tools. The only part of the service visible to the outside world is the one exposed through the service description. Other than the content of this description, the nature or form of the underlying logic is invisible and inapplicable to other services.
- **WS are modular**. Web Services are a technology to deploy and deliver access to business functions over the Web, while J2EE, .NET, CORBA, and other standards are specific technologies to implement such Web Services. Web Services may be also published, located and invoked through the Web.
- **WS are language-independent and interoperable.** The interaction between a service provider and a service requester is fully designed to be language and platform-independent. This interaction requires a WSDL document to define the interface and describe the service, together with a network protocol (generally HTTP)[19]. Since the service provider and the service requester have no idea of what are the platforms and languages used by the other, interoperability is achieved.

17. *GEETANJALI, Arora; KISHORE, Sai. Building Web Services with XML. (Premier Press Incorporated, 2002).*

18. *A servlet is a program executed on a server. It is typically written in Java.*

19. *ENDREL, Mark, et al. Patterns: Service Oriented Architecture and Web Services. IBM Red Books, (IBM, 2004).*

- **WS are intrinsically open and standards-based**. XML and HTTP are the technical foundations for Web services. A large number of Web services' technologies have been built on open source projects using the set of standards. Therefore, the vendor's independence and the interoperability are realistic sources.
- **WS are dynamic**. Dynamic electronic commerce may become a reality with WS since, with UDDI and WSDL, the Web service description and discovery may be automated.
- **WS are stackable**. Simple WS may be stacked on other complex ones, using workflow techniques, or calling Web services from a lower layer in a Web service implementation. This enables the logic to be represented in different layers of granularity and promotes the reuse and creation of abstraction layers.

3.3. Web services' interoperability and organization

WS are one of the rising stars of the IT world, supporting the integration of existing systems and the distribution of resources and data, inside as well as outside of the organization. Web services' specifications progress towards standardization in an array of forms; including small groups of vendors, and formally, technically dedicated committees. Standards shall be carefully managed for the key promise of Web services' interoperability to work. Also, the approach in the standard interpretation and implementation is vital in facilitating the adoption of a technology. The Web Services Interoperability Organization - WSIO plays a key role as standards' integrator to help the advancement of Web services in a structured and consistent manner. This organization is committed and has actively participated in the development of WS-I (Web Services Interoperability) standards. IBM was one of the first to early deliver compliance with WS-I on their products in execution and development time. Microsoft and IBM are the de facto leaders of the movement for Web services specifications and have defined or assisted in defining the key specifications. WS-I standards and guides are considered enablers for Web services interoperability. WSIO is an open industry consortium of approximately 150 companies, representing different industries such as automotive, finance, government, insurance, telecommunications, and others to achieve the following objectives:

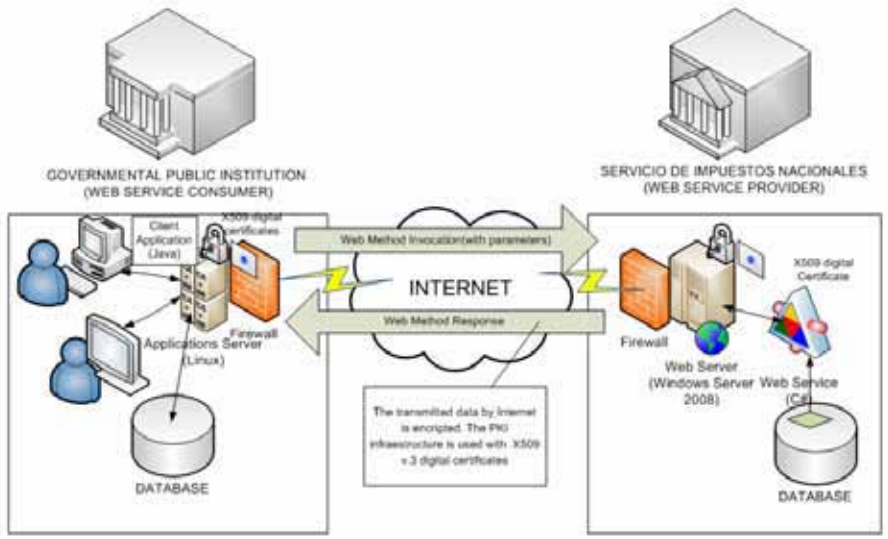
- Promote Web services' interoperability through different platforms, operating systems and programming languages with the use of generic protocols for the interoperable exchange of messages among the services.
- Promote the adoption of Web services.
- Accelerate deployment by providing guides, best practices and other resources to develop interoperable Web services.

4. DEVELOPMENT AND IMPLEMENTATION OF WEB SERVICES AND THEIR CLIENTS

Upon learning the WS conceptual framework, in the SIN experience, web services based on .NET technologies have been already developed, for specific information exchange with several public entities with which an intrinsic relation exists based on the tasks performed, among them we may list: Customs, Vice-ministry of Tax Policy, the SIGMA of the Ministry of Economy and Public Finance. As stated before, WS deliver only specific and determined information of already existent applications and/or enjoy access to specific and authorized portions from the Database, fully encapsulated, not allowing the so-called "**fishing expeditions**".

In fact, in order to perform the activities in coordination with other entities, the case may arise of an entity provider of a WS, which is simultaneously consumer of an active WS on their client side. Therefore, information delivery and

sequencing is controlled. On this basis, the implementation of this technology could enable, when necessary, online two-way communication between two or more than two entities.



6 - Layout of the Web Service Automatic Information Exchange with security through digital X509 certificates. Source: the author.

On the Internet, extensive information and tutorials are available on how to develop a web service and consume services on different platforms, such as: Windows Communication Foundation (WCF) and its .NET [20] framework, Java[21], PHP[22], etc. The data delivered by the web service may be obtained just as in any application of any database manager: Oracle, SQL Server, PostgreSQL, MySQL, etc. Following is an example of the source code of a WS developed with Visual Studio 2010 and C# language. Refer to http://sarangasl.blogspot.com/2010/09/create-simple-web-service-in-visual.html and another example of a Web page (web service client), created with Java programming language.

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.Services;

namespace MyFirstWebService
{
    /// <summary>
    /// Summary description for
Service1
    /// </summary>
    [WebService(Namespace = "http://
tempuri.org/")]
    [WebServiceBinding(ConformsTo =
WsiProfiles.BasicProfile1_1)]
    [System.ComponentModel.
ToolboxItem(false)]
    // To allow this Web Service to
be called from script, using ASP.NET
AJAX, uncomment the following line.
    // [System.Web.Script.Services.
ScriptService]
    public class Service1 : System.
Web.Services.WebService
    {
        [WebMethod]
        public string
simpleMethod(String srt)
        {
            return "Hello "+srt;
        }
    }
}
```

20. *http://www.onglasses.net/Default.aspx?id=1075, features an explanation of the creation of a WS in visual studio .Net with C#.*

21. *http://fabianbermeop.blogspot.com/2011/02/como-crear-services-web-en-java-ide.html features an explanation of a WS created in NetBeans with Java.*

22. *http://www.scourdesign.com/articulos/tutoriales/php/tutoriales-php-mysql-services-web-soap.php features an explanation of a WS created with PHP.*

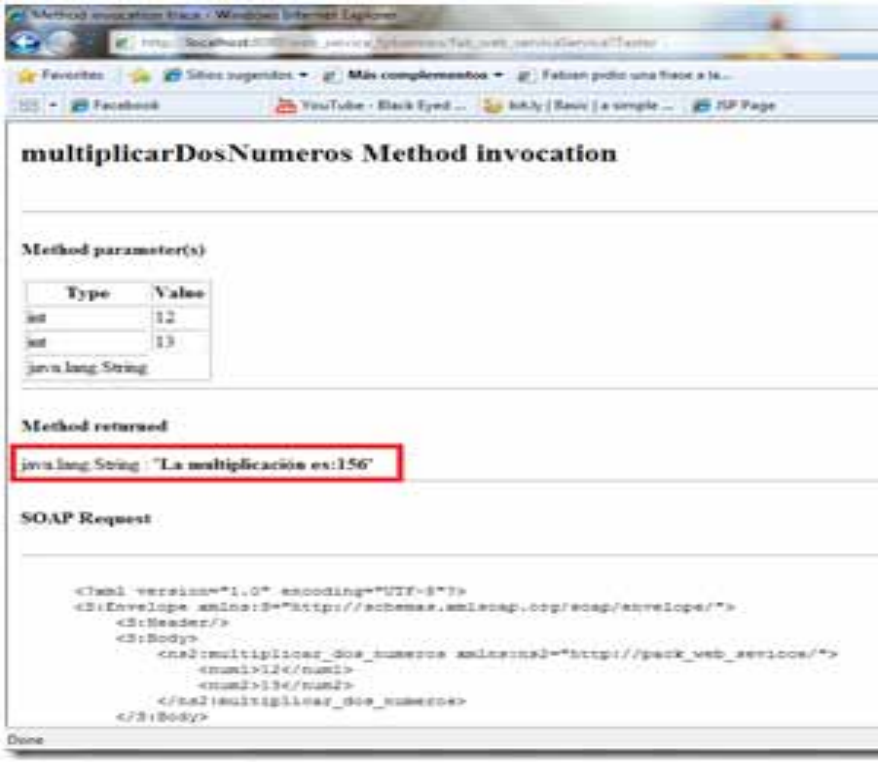


Figure 7 - Web page of a WS developed in NetBeans with Java.

5. STEPS TOWARDS INTRA-GOVERNMENT AIE

After describing a specific technology such as web services applicable in the AIE, and based on the experience of the SIN in the implementation of WS for AIE, we present a description of the sequence of steps to follow in the methodical and systematic implementation of the AIE in an intra-government scenario, in this case in Bolivia, but serving as a benchmark for other TAs.

The following steps shall be followed in the automatic exchange of information at the intra-government level:

- **Step 1- Kick-off meeting.** A kick-off meeting shall be conducted to discuss the intention and the need for information exchange. We suggest the participation of executive authorities from the entities who shall exchange information, as well as expert officials in the legal and regulatory field, technologies and processes on the Web service vendor and consumer side. The regulatory framework shall be governed by Act No. 2494 of the Bolivian Tax Code and Executive Decrees No.: 0077 and 0122, which regulate the scope of the information confidentiality for non-third parties.

- **Step 2 –Establishing the MOU.** In case of reaching a positive agreement in the meeting recommended in Step 1, conduct working sessions aimed at reaching consensus on the legal framework of the information to be exchanged, the data structure (Web Service agreement), the potential confidentiality regulations, contingencies and solutions, and other aspects deemed relevant. This shall be embodied in an operating Information Ex-

change guideline. We suggest analyzing the volume of the information to be transferred to consider the most appropriate solutions.

MINIMUM CONTENT OUTLINE OF THE AIE OPERATING GUIDE

- ❑ Background
- ❑ Legal framework
- ❑ Physical infrastructure support (servers, network)
- ❑ Detailed description of the Web services methods
  - o Inputs' parameters and types
  - o Outputs' parameters and types (collections are included)
  - o Sequence and/or functional diagrams
- ❑ Contingency plan
- ❑ Security
- ❑ Annexes

- **Step 3 – Institutional Agreement**. A written inter-institutional agreement is required based on the legal provisions in effect, and the features already defined in Step 2. We suggest attaching to the agreement an operating guide on automatic information exchange.

- **Step 4 - Implementation**. Undertake the Web service implementation based on the definitions in steps 2 and 3. The service provider shall document the Web service according to generally accepted standards. We also suggest adding:
  - o For better understanding, prepare class outlines, dynamic and functional diagrams that provide a detailed description of the functions, input and output messages' structures, type of data and contingency plans. We suggest using UML as the modeling tool.
  - o Implementation of the methods with their input parameters.
  - o Implementation of WS responses.
  - o Determining and written report of data frequency.
  - o Implementation of error managers.
  - o In a heterogeneous technology scenario, we recommend implementing clients in at least 2 programming languages.
  - o Definition of URLs and WDSL description of Web services.
  - o Servers' connectivity tests.
  - o Log for Web Service use follow-up.
  - o Data encryption mechanism.
  - o Institutional mail to conduct automated notification of errors.

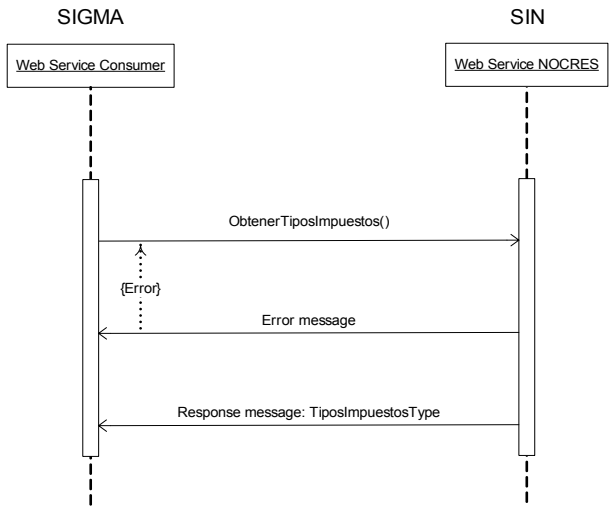


Figure 8 - Example of a sequence diagram for the AIE, describing the sequence of steps in the consumption of information via WS.

Step 5 (Tests). Web Service tests shall be first conducted in the network of the service provider and subsequently from the device or devices of the service consumer.

Step 6 (Commissioning). Commissioning the Web Service and WS clients.

Step 7 (Maintenance). Perform maintenance on the Web Service, without modifying the Service agreement. Verify WS consumption logs.

Step 8. **(Acceptance).** To conclude, the consumer shall issue an acceptance report for service consumption. (Optional)

6. STEPS FOR THE INTERNATIONAL AIE

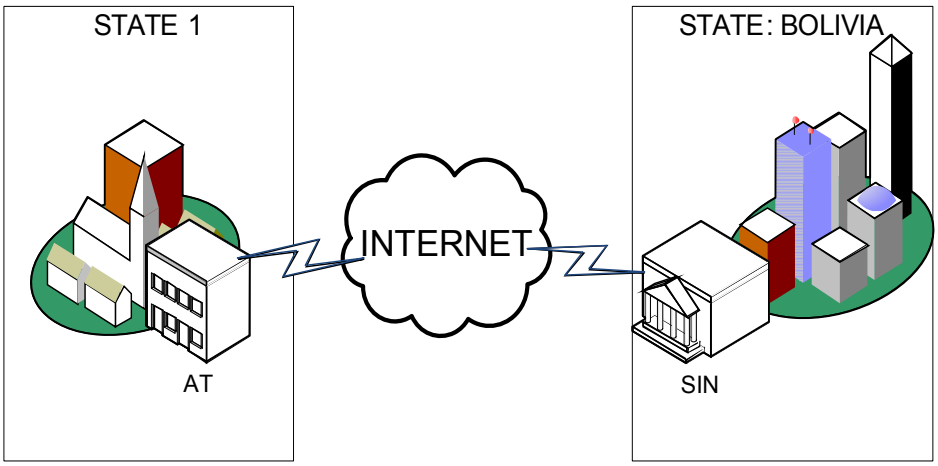


Figure 9 - Diagram of the international AIE layout among Tax Administrations.

After gathering experience with the implementation of the AIE at the intra-government level, and with the relevant know how, the steps in the international implementation of the AIE are similar to those described above, with the exception that the legal framework of the countries involved is to be considered as well as the relevant national authorities (Foreign Office or Finance Ministry); additionally, this scenario calls for the support of experts in international treaties and international law, just as recommended in the CIAT Model. From the technology standpoint, since Internet is the communication means, the AIE is fully feasible from the technical standpoint.

Similarly, the type of information exchanged among TAs may coincide with the examples set forth by the CIAT Model, or others deemed necessary, to improve tax control.

7. CONCLUSIONS

Without detriment to the other information exchange mechanisms set forth in the CIAT Model, the automatic information exchange mechanism, in line with the legal and regulatory aspects, proves the most effective in time, cost and HR, to deliver timely information for the different types of tax audits and procedures.

The implementation of SOA and Web Services enables systems' integration for the fast and efficient automatic information exchange among intra-government institutions and at the international level, regardless of the platforms and operating systems or programming languages, since a standard and interoperable data format is used.

Technically, the automatic exchange of international information shall be easier to implement, when the experience and technology base is available from the automatic information exchange at the intra-government level.

The AIE benefits described on the CIAT and OECD Model, using the new information technologies, such as Web Services, are technically feasible to implement, thus benefiting the TAs requiring immediate and timely information to achieve their objectives and goals.

The AIE with WS may constitute an effective tool in countering international tax fraud, tax evasion and tax avoidance practices.

8. BIBLIOGRAPHY

CIAT - CIAT Information Exchange Manual. (2006).

ENDREL, Mark, et al. *Patterns: Service Oriented Architecture and Web Services*. IBM Red Books, (IBM, 2004).

ERL, Thomas. *Service-Oriented Architecture: A Field Guide to Integrating XML and Web Services*. (Prentice Hall, 2004).

GEETANJALI, Arora; KISHORE, Sai. *Building Web Services with XML*. (Premier Press Incorporated, 2002).

HOHPE, Gregor; WOOLF, Bobby. *Enterprise Integration Patterns: Designing, Building, and Deploying Messaging Solutions*. Addison Wesley. October 10, 2003. ISBN : 0-321-20068-3.

MACKENZIE, C. Matthew et al. *Reference Model for Service Oriented Architecture 1.0*, Committee Specification 1, (OASIS 2 August 2006).

NEWCOMER, Eric; LOMOV, Greg. *Understanding SOA with Web Services*. (Addison-Wesley, 2005).

SIN - New invoicing system (NSF-07); Board Resolution No. 10.0016.07; 18 May, 2007.

ROSEN, Michael. *Adoption of Best Practices in Service Oriented Architecture Development. Cutter Benchmark Review on Analyzing IT Metrics for Informed Management Decision*. Volume 6, Nº 10 October (2006).

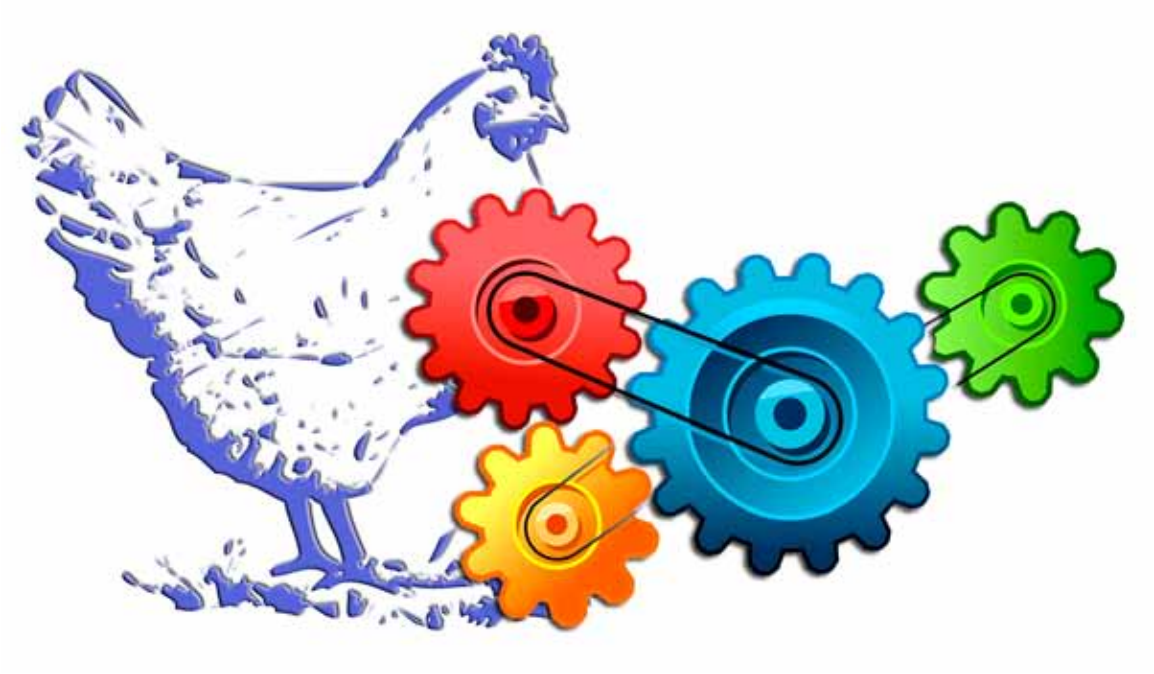
SPROTT, D. Wilkes. *Enterprise Framework for SOA*. CBDI Journal (17 marzo 2005).

SUCHAROV, Toby. *Mainframe Makeovers. Information Professional, Institute of Engineering and Technology*. Volume 4, Number 6 (Dec/Jan 2007/08).

TURTSCHI, Adrian et al. *C# .NET Web Developer's Guide. Develop and Deliver Enterprise-Critical Desktop and Web – Applications with C# .NET*. ISBN: 1-928994-50-4.

Audits in the Poultry Sector: Productive Stage

Maria Luisa Requena Yachachin; Mag. Fredy Richard Llaque Sánchez.



Summary

This paper analyses the producer stage of the poultry sector, educating on tax benefits and the accounting regulations applicable to this sector. In addition, it establishes a risk matrix showing the inconsistencies that might arise in the sector. In addition, it provides an operational control strategy for poultry meat producers which may be extended to the rest of the marketing chain of the poultry sector (including both meat and eggs) to enable enhanced compliance by the sector's supplier chain.

The autors: *Maria Luisa Requena Yachachin Certified Accountant, International Master's Degree in Public Treasury and Financial Administration of the UNED-IEF – Spain, Master's Degree in Tax Law of the University of Barcelona- Spain, Master in Accounting with a mention in Tax Policy and Administration from the Universidad Nacional Mayor de San Marcos - Peru. Doctor (c) in Accounting and Finance from San Martin de Porres University – Peru. Fredy Richard Llaque Sánchez.- Certified Accountant, Master's Degree in Accounting and Finance – National University of Trujillo-Peru. Master's Degree in Tax Law of the University of Barcelona-Spain, Doctor (c) Accounting and Finance from San Martin de Porres University – Peru.*

INTRODUCTION

Contenido

In the 80's and 90's, tax administrations implemented controls to combat taxpayer non-compliance. Although initially successful, over time these controls showed falling performance. With the purpose of redressing the situation and meeting public interests, administrations should rethink their control strategies.

Deep knowledge of the sectors and the use of technology allow tax administrations to make less intrusive, more effective and much timelier controls to enable the monitoring of sector compliance and more efficient targeting of audit efforts. This type of control may be supported by traditional mass controls, which have low operational costs.

Auditing activities pose on-going challenges to the work of tax administrations. Most administrations' operations are usually conducted in a context of legal, financial and HR restrictions which compel them to seek alternative audit methods that will not impose significant restrictions while allowing them to maximize their results.

In many cases, conventional auditing fails as a result of the operating conditions of the taxpayer sectors, which affect the auditability of their transactions. Operational controls are proposed as a means of improving compliance by sectors like poultry production, whose characteristics enable controls on their production and marketing.

1. BACKGROUND

Overall controls tend to show falling performances. This is usually the case because the restricted context in which tax administrations operate prevents them from sustaining the feeling among taxpayers that there is high risk of non-compliance detection and debt enforcement.

Operations control is a desirable goal for those responsible for developing control strategies. Good operational controls enable enhanced taxpayer compliance of taxpayers with low or medium risk aversion, who will tend to improve their self-assessments if they believe that the tax administration knows about their transactions and if they perceive that their non-compliance will not be tolerated.

One of the sectors that lends itself well to efficient operational controls by virtue of its specific characteristics is poultry raising. In subsequent paragraphs we provide an analysis of the tax advantages which make it feasible to implement less intrusive, less costly and more effective operational controls.

If, as in the Peruvian case, the sector is highly informal, an initial control at the level of the farmer and a subsequent expansion to the whole sales chain could not only improve collections of all the sales chain with interesting ramifications for controlling the transactions of suppliers of goods and services in the industry but also improve competitiveness in the sector, given that the Administration could reduce the unfair competition created by evasion in the sector.

2. SECTOR ANALYSIS

2.1 Applicable tax system

The system that is currently in effect for taxes under central government administration includes:

- General Sales Tax at an 18% rate[1] over total sales.
- Income Tax[2] at a general 30% rate, which given the relevance of the poultry sector, is reduced to 15% provided the conditions in the norm are met.
- Agricultural Sector Promotion Act - Act N°27360[3]. Individuals or corporations may apply for the benefits granted by Act N° 27360, when they conduct the following activities:
- Agriculture and/or breeding activities, except for forestry;
- Agro-industrial activities;
- Aquiculture.

It is understood that the beneficiary's core business is the agricultural, breeding and/or agro-industrial activity when net income from other activities is not comprised in the benefits established by Law and do not exceed, overall, twenty-percent (20%) of the overall net income estimation. The validity of the benefits granted by Act N° 27360 has been extended by Act N° 28810 as of 31 December, 2021.

2.1.1 Agricultural sector application

In order to apply for the benefits of the Agricultural Sector Promotion Act, the businesses of the sector shall file form No. 4888 with the Tax Administration as of 31 January of each fiscal year, during the effective term of the benefit.

1. *Text of the General Income Tax and Selective Excise Act – Executive Order N° 055-99-EF (published on 15 April, 1999 and effective as of 04.16.1999) and its Regulatory Executive Order N° 29-94-EF (published on 03.29.1994, effective as of 03.30.1994).*
2. *Text of the Income Tax Act, Executive Order N° 179-2004-EF (Published on 8 December, 2004),*
3. *Article 1 of Executive Order N° 065-2002-AG, published on 12-30-2002, indicates that the agro-industrial activity under the scope of this Act, is the productive activity included in the Annex to Executive Order N° 007-2002-AG, even when it is conducted by an individual other than the beneficiary.*

   As provided for in Executive Order N° 007-2002-AG, the agro-industrial activities included in this benefit correspond to CIIU 1511-4, 1513-0, and 1542-0. By virtue of the provisions in article 3 of Act N° 28852 on the promotion of private investment in reforestation and agroforestry; for the purpose of enforcing Act N° 27360, reforestation activities shall be deemed crops.

2.1.2 Sector benefits

The Benefits established by Act N° 27360 are summarized hereunder:

Benefits	Agriculture	Agro-industry
15% rate on third-category income from the Income Tax	Yes	Yes
Exemption from the Extraordinary Solidarity Tax [4](1) applicable on remunerations for individuals employed in the agricultural sector.	Yes	Yes
Agricultural Health Insurance (receiving all the services from the Social Security and a 4% contribution from the salary).	Yes	Yes
Special 20% annual depreciation rate on investments in hydraulic infrastructure and irrigation works undertaken by beneficiaries during the effective term of the Law.	Yes	Yes
Beneficiaries with investments in the pre-productive phase shall recover the General Sales Tax and the Imports' Tax paid for imports and/or local purchases of capital goods, supplies, services and construction contracts, provided they apply in the pre-productive phase, which shall not exceed a 5-year term.	Yes	Yes

2.1.3 Beneficiaries' obligations

In order to qualify for the tax benefits set forth, individuals or corporations shall be up to date with their tax obligations. Otherwise, they shall lose the benefits extended, when during the effectiveness of the Law, they fail to meet 3 current, consecutive or alternate tax obligations in the fiscal year they applied for the benefit. To such end, the payments made effective within 30-calendar days subsequent to maturity shall not be deemed noncompliance.

The loss of the tax benefits extended by Act Nº 27360 shall apply upon determining noncompliance with tax obligations with the SUNAT. This is an automatic process, without requiring a notification by the Administration (Refer to Report Nº 227-2005-SUNAT/2B0000).

Upon losing the benefit, the taxpayer is required to pay an income tax advance within the general system, as from the month subsequent to the loss.

2.1.4 Auditing of the benefit

In order to audit the benefit granted, the SUNAT files a request with the Ministry of Agriculture for the pertinent technical qualifications of the beneficiaries' activities, which shall be delivered within thirty (30) working days subsequent to the date of the request.

Should the information submitted in the process to apply for the benefits of the Law be false or, if at the end of the fiscal year the taxpayer has failed to fulfill the requirements in item 1 of Article 2 of the regulation, the taxpayer shall not be deemed a beneficiary. To such end, the SUNAT shall issue the corresponding resolution.

In such cases, taxpayers shall be required to file the statement and make the payment of the taxes they failed to file in the fiscal year, plus interest and fines applicable, as provided for in the Tax Code.

4. *Extraordinary solidarity tax, annulled as from 12/01/2001 by Act N° 28378 in its single article, published on 11-10-2004.*

2.2 Analysis of the accounting standards for the poultry sector

Biological assets: In the poultry sector, biological assets apply to birds in the breeding and production phase, which produce birds for future sale, as well as chickens in the breeding phase as of 31 December each year. The businesses of the sector record their biological assets according to the following accounting practice:

- Birds in the breeding phase (from zero days to week 22 in the case of chickens) are valued at the cost. This practice is adopted in the absence of an active market that determines their fair value, considering the short life-span.
- Birds in the completed breeding phase. The bird moves into the productive phase (egg-laying), such as the case of broiler chicks, and they are valued at the fair value less the costs estimated at the point of sale; in Peru it is estimated on the basis of the prices published by the Ministry of Agriculture.[5]
- Birds in process (live birds) bred for sale (up to 34-days), are valued at the cost in the absence of an active market that determines the fair value. In the subsequent phase, they are valued at the fair value less the costs estimated at the point of sale. In Peru, it is determined on the basis of the prices published by the Ministry of Agriculture.
- On their financial statements, the businesses of the sector account for the income or expenses obtained upon applying the variation in the fair market value of the assets, at the Balance Sheet date. Considering the application of the IAS 41, any future variation resulting from production, such as prices or other factors, shall be accounted for on the income for the year in which such change is made. In other words, the operating profits or losses shall include an adjustment for the change in the fair value of such assets in the applicable period.
- Birds in the reproductive phase (in the breeding and laying phase) are deemed to have a 69-week productive life; after 69 weeks, they are discarded and carried over as inventory applying the fair value minus the costs estimated at the point of sale.

2.2.1 Accounting estimates applicable to the sector

In the poultry sector, in compliance with Accounting Standards, businesses undertake estimates and assumptions for the future.

Accounting estimates do not reflect actual performance.

Estimates and assumptions with the risk of producing a material adjustment may imply:

- Determining the recoverable Value of biological assets[6]:
- Reviewing the book value and the depreciation provision[7].

5. *http://www.minag.gob.pe/boletin-diario-de-precios/boletin-diario-de-precios-2010/index.html*

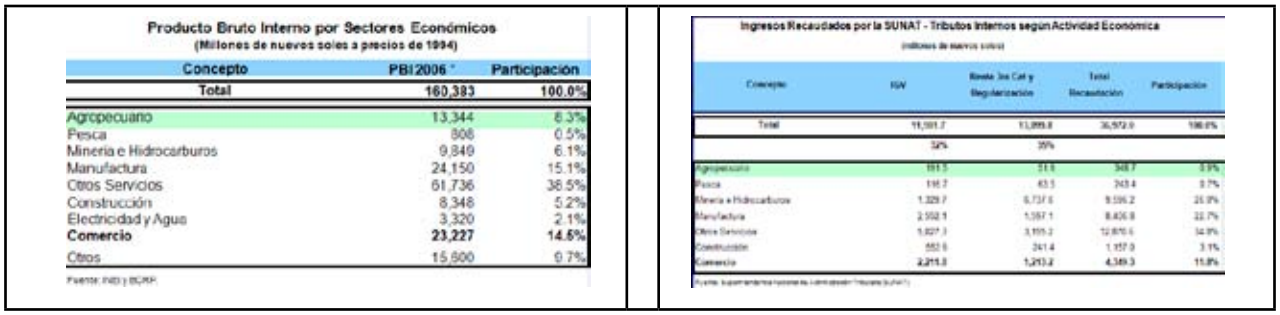
6. *In this case, the sector's businesses apply the criteria established in IAS-41, which sets forth that the asset shall be measured in the initial recognition on the financial statements as well as at the date of the balance sheet at their fair value less the estimated costs at the point of sale.*

   Such Fair Value is determined according to their quoted market price in the active market. In the absence of a market, the applicable principle shall be the prices of transactions at the assessment date or market prices for similar assets or present value of the net cash flows expected from the asset, discounted at a rate before taxes defined by the market.

7. *Businesses in the poultry sector apply the provisions in IAS-36 in order to determine whether a permanent asset has been impaired and a provision is required. Reproductive birds are depreciated as of the date on which the reproductive activity starts. The breeding process extends over 180-days, during this period, the consumption in these species are accounted for together with the value of chickens in the cost of the biological agent, which is subsequently amortized (depreciated, according to our tax regulations).*

2.3. Sector importance

The poultry sector forms part of the livestock sector and together with the agricultural sector, constitutes the agricultural-livestock sector. The poultry sector includes the production of meat as well as eggs. In Peru, the agricultural-livestock sector is one of the most important, as presented hereunder:



Producto Bruto Interno por Sectores Económicos
(Millones de nuevos soles a precios de 1994)

Concepto	PBI 2006 *	Participación
Total	160,383	100.0%
Agropecuario	13,344	8.3%
Pesca	808	0.5%
Minería e Hidrocarburos	9,849	6.1%
Manufactura	24,150	15.1%
Otros Servicios	61,736	38.5%
Construcción	8,348	5.2%
Electricidad y Agua	3,320	2.1%
Comercio	**23,227**	**14.5%**
Otros	15,600	9.7%

Ingresos Recaudados por la SUNAT - Tributos Internos según Actividad Económica

Concepto	IGV	Renta 3ra Cat y Regularización	Total Recaudación	Participación
Total	11,191.7	11,899.8	36,572.9	100.0%
	32%	35%		
Agropecuario	181.5	51.8	348.7	0.9%
Pesca	116.7	43.5	243.4	0.7%
Minería e Hidrocarburos	1,329.7	5,737.6	9,599.2	26.9%
Manufactura	2,552.1	1,357.1	8,426.8	23.7%
Otros Servicios	5,827.3	3,955.2	12,870.6	34.9%
Construcción	552.6	241.4	1,157.3	3.1%
Comercio	2,211.8	1,213.2	4,349.3	11.8%

In spite of the importance of the sector in terms of revenue, it does not match its GDP contribution, as presented on the table at the end of paragraph. In this area, such lack of consistency arises from the high level of tax expenditure in the sector[8] as a consequence of State tax policies; the other component is explained by the high level of production consumption by the inhabitants in rural areas; finally, the high level of informality that prevails in the sector explains the difference.

In Peru, the production of poultry meets the largest share of the demand for animal protein[9]; this explains the lack of important pastures in the country that promote livestock breeding. The lack of a quality cold-storage change prevents the fish from the Peruvian sea, rich in species for direct human consumption, from reaching consumption centers in sufficient amounts.

Such restrictions to substitute products favored the development of the poultry industry for meat and eggs, making bird meat the one in highest demand[10]. According to data from the National Institute of Statistics and Information Technology (INEI, as per the Spanish acronym), the production of chicken meat went from almost 462 Million metric tons in 1997 to almost 938 Million metric tons in 2009.

Broilers are the inputs for other activities such as cold cut factories, restaurants, chicken meat outlets, hospitals, among others; but it is also an end product. The largest share of broiler chickens are aimed at end consumers (households) through supermarkets, general markets or mini-markets.

Retail sales is the most informal stage, chicken is sold alive by weight in the storage centers of broiler chicken producers or in large wholesale markets; from that point, control of the product is lost.

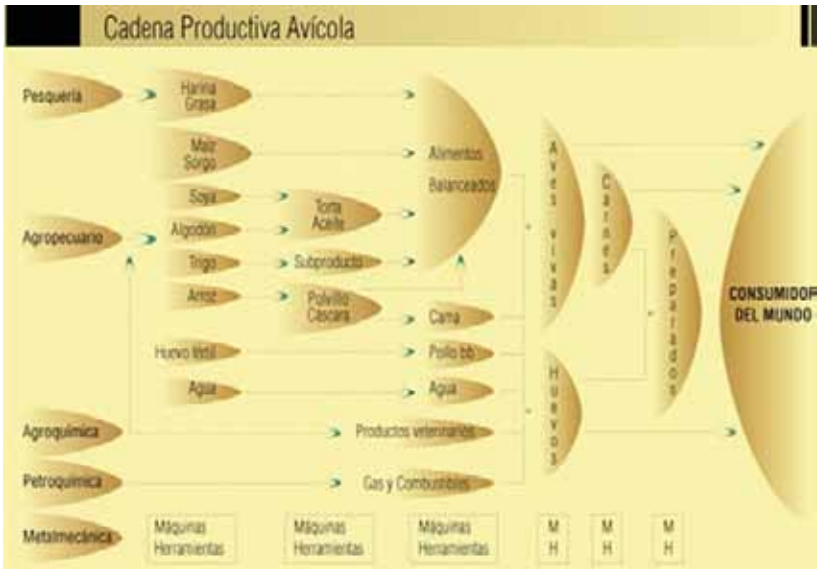
2.4. Description of the sector's operation

The poultry productive chain involves a diverse series of goods and services, including: inputs such as corn, soy, micro-elements, fish meal, vitamins, etc. In the following chart, we present the information prepared by the Poultry Breeders' Association of Peru:

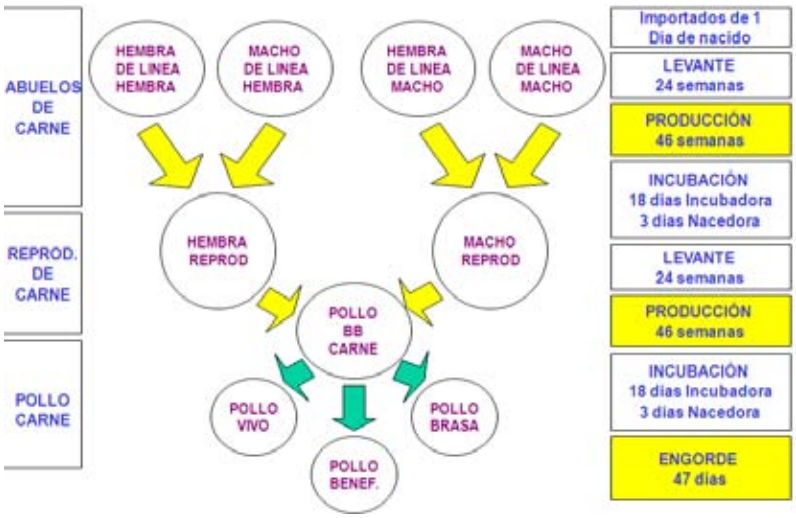
8. *In 2009, the estimated total Tax expenditure, understood as: the quantified amount of tax base exemptions, authorized deductions from gross income, tax credits drawn from payable taxes, reductions in tax rates and deferred taxes, amounted to USD 2.648 MM, out of which 22% was aimed at the Agricultural Sector http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1780035 as of 04-08-2011.*

9. *http://www.inei.gob.pe/web/aplicaciones/siemweb/index.asp?id=003*

10. *Available at http://www.apavic.com/html/sections/cuadros/cuadro_11.asp*



At the level of the broiler chicken producer, we find producers of broiler grandparent stock, broiler producers (parent stock), and finally, producers who purchase eggs for incubation of parent stock or chicks for fattening and subsequent sale. Each production phase is headed by specialized producers. The largest producers in the country start their production from the grandparent level. The following chart has been prepared by the Ministry of Agriculture (MINAG) and distinguishes the different levels of producers:



2.5. Informality in the sector

The poultry industry requires great capital investments and this stands as a market access barrier. According to the information from the Peruvian Agriculture Association (APA[11]), supported by the statistical information from the INEI, industrial poultry and egg production is concentrated in the departments of Lima, La Libertad and Ica and large producers account for over 80% of the total production.

The rest of the production comes from small or semi-industrial ventures, the latter by a significant number of small and medium-sized producers in specific areas, which, taking advantage of the access barriers or transportation surcharges, control a significant portion of the commercial meat and egg production.

The tax behavior of the latter group tends to be deficient, and the collection of the debts it generates is low, since they normally lack sufficient resources to operate and use the General Sales Tax (VAT) as a permanent working-capital financing mechanism, and, in many cases, as the single source of business profit.

In an auditing process, the work of the auditor is based, among others, on the knowledge regarding the operations of the business and reviews on accounting documents and records; the latter, naturally, account for past events. Given the dynamic and complex nature of the poultry sector, it is difficult to assert that such records are complete and reasonably reflect all the economic events of the business, particularly when the purpose is to systematically conceal production and sales, as in the case of informal actors (partially or totally)[12].

Consequently, such situation renders the auditing efforts and methods based on historic records ineffective in controlling informality in the poultry sector.

On the other hand, for years, producers in the poultry sector have developed information and auditing methods and means enabling them to efficiently manage their productive and marketing operations, even before they are reflected on an accounting document or record, since this is vital for the efficient operation of their business.

Nevertheless, there are no tax regulations demanding the enforcement of audits based on records or the content thereof. This is due to the fact that tax regulations provide for the use of general documents by taxpayers, without distinctions by sector or types of taxpayers (beyond their size). Therefore, innovative control and auditing programs are required, focused on current events of the productive units and more aligned with the dynamic nature of economic sectors or activities such as poultry breeding, in order to attain better efficacy in audits and collection.

---

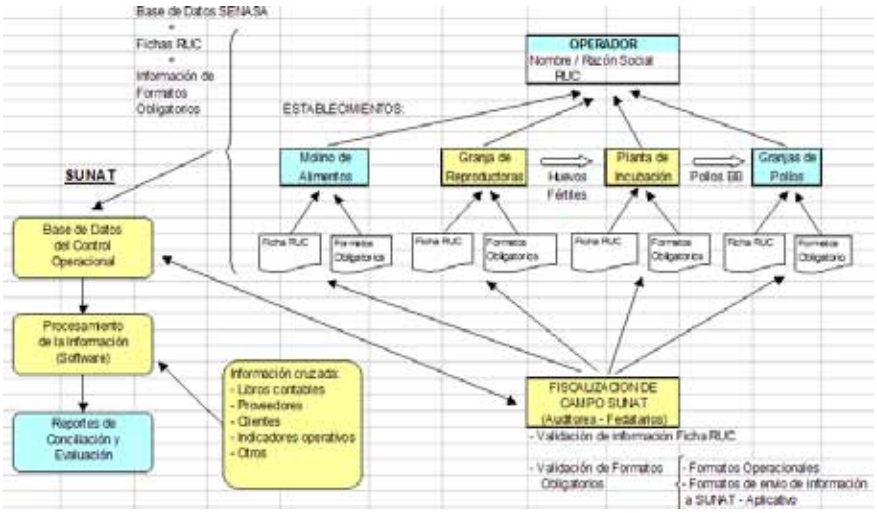
11. The association's web page is: http://www.apavic.com/index2.asp

12. This is a feature of the economic sectors whose operation and type of productive chains require deep knowledge of the productive processes, the production-marketing chain, etc.

3. PROPOSAL FOR AUDITS

3.1. Business model

The business model set forth is summarized in the following chart, in order to avoid false selections, it suggests using the information on the purchase of feed, as a supplemental indicator enabling to distinguish a producer from a simple seller.



3.2 Sector risk table

Following is a risk Table that describes the sector:

CONCEPT	Individuals	Small	Medium	Rest of PRICOS	MEGAS TOPS
No records of feed purchases for poultry breeding.	H	H	M	L	L
No records of poultry sales	H	H	M	M	L
False inventories	H	H	H	M	L
Accounting estimations applicable to the sector	-	-	M	H	H
Under-valuation of the bird sales' record	H	H	H	M	M
Failure to issue invoices	H	H	M	L	L
Inconsistencies in bird transportation	-	-	M	M	L
High index of write-offs and losses.	L	L	M	H	H

H= High M= Medium L= Low

This table shows how risks are presented as a function of the type of taxpayer. Audits shall be defined according to the type of taxpayer and the risks observed in each one.

The type of taxpayer is classified according to income, by which individual taxpayers and small taxpayers feature lower income. This group includes MYPES –micro and small taxpayers-, many of them created as subsistence businesses, and few to accumulate capital and grow. This group of taxpayers is large; therefore, the results of their audits are not positive. They present great inconsistencies and high risk; owing to their number, massive audits apply in this group.

Medium-sized taxpayers and the rest of Large taxpayers (PRICOS, as per the Spanish acronym) are subject to audits. Nevertheless, owing to their audit history, noncompliance in this group ranks in the middle level. The level of income and number of taxpayers in this group is not high.

Taxpayers classified under TOPS and MEGAS feature high income and equity levels, but are few in number.

Actions are aimed at HIGH-risk cases and, the type of procedure and the enforcement time depends on the taxpayer group and size.

3.4 Operations' traceability: informative statements and direct audits.

The tax administration, among other powers, may require taxpayers to file informative statements of their transactions. Based on this power, it may mandate producers to report on their operations electronically (PDT[13]), from imports of grandparent stock, which has to go through customs, to the final benefit from the assets and the statements from the farms in which broilers' breeding or fattening process has been conducted.

The SUNAT may enforce the informative statement not only through random or ongoing audits[14], but also with additional controls by the SENASA, the public animal health authority. This could supplement the regular audits not only with the regular visits to the production centers, but also by the recording and verification of exceptional mortality cases.

3.4. Bancarization15 of transactions as a supplemental auditing mechanism for taxpayers

In order to guarantee the traceability of transactions and avoid the rejection of the purchase and/or sale transaction reported, Peruvian legislation requires using payment means when transactions exceed S/. 3,500 or USD 1,000. The payment means defined by legislation enable to identify the parties without any doubt.

On the other hand, the informal production of broilers requires lots of at least 5000 units of broiler chicks, and over 50,000 eggs for incubation of chicks, for a profitable operation. Producers would be mandated to use means of payment to complete their transactions. This mechanism would avoid rejection of transactions and prevent the disruption of operations' traceability.

3.5 Sales tax to guarantee the payment of tax obligations

As mentioned above, approximately 20% of the total chicken production is informal in this context. To the extent parent stock egg and meat producers are more reliable, it is possible to establish the obligation of a General Sales Tax

13. *PDT: Electronic Statements' Programs*
14. *Visits to the production facilities may be scheduled in order to verify the physical existence of chickens prior to the chicken status process. (checar esta llamado debe ser 14)*
15. *Act No. 28194*

withholding on sales of goods; a tax advance that would guarantee (depending on the rate) at least a share of the tax obligations from less formal producers.

3.6 Compliance control: monitoring transactions and selection of taxpayers subject to audits

3.6.1 Sector auditing

According to the taxpayer group and the risk level, diverse auditing actions shall be applied, all of them with the purpose of enforcing compliance with tax obligations.

- Concurrent Audits. - They are conducted regularly in order to determine compliance with formal obligations, verify the transportation of goods with waybills, or verify the issue of invoices for the products sold.
- Operational Audits. - It consists in audits conducted regularly in order to induce the taxpayer to comply. This audit is conducted on the basis of information from concurrent audits.
- Notifications from the Administration. - These are expeditious and massive actions to promote taxpayers' compliance with tax obligations. The Administration sends notices to the taxpayer upon detecting inconsistencies that require rectification. Should the taxpayer not comply within the term defined, he shall be summoned to the offices of the Tax Administration in order to submit the documentation and regularize or explain the reasons for the inconsistencies.
- Audits.-This action requires more time. The taxpayer's accounting books are inspected in order to determine gaps in terms of sales as well as purchases with tax relevance a and omissions on the statement record and the tax payment.

3.6.2 Selection of taxpayers

Taxpayers shall be eligible for audits when they meet the following conditions:

1. Businesses in the sector with inconsistencies in the transportation of birds.
2. Taxpayers in the sector who, according to inspections, failed to issue invoices.
3. Suppliers from poultry businesses, who fail to file their General Sales Tax statement.
4. Customers from poultry businesses who fail to file their General Sales Tax statement.
5. Suppliers of poultry businesses who, based on third-party information, understate sales.
6. Customers from poultry businesses, with mismatches between the purchases filed and the effective purchases from their suppliers.
7. Customers from poultry businesses who are not registered with the Tax Administration.
8. Poultry businesses who do not file sales and/or purchases according to the information delivered by their customers and/or suppliers.
9. Businesses in the poultry sector that file estimations by sector.

The following types of audits are suggested:

3.6.3 Concurrent audits:

Mobile control: The area of massive actions and audits shall be based on mobile controls, which consist in procedures by the massive operations' unit based in strategic geographical areas for the purpose of controlling entry and exit of trucks carrying cargo; for the poultry sector, they would control the transportation of birds. During each audit, they shall request waybills, whose information shall be entered on the internal systems, providing the data of the carrier, driver, related invoice, and delivery address.

Invoices' procedures: The system shall identify taxpayers who are traders in the poultry sector, identifying those based in the markets or places where birds are stocked, and a massive audit shall be conducted in order to verify whether they issue invoices.

Administrative control: An induction audit shall be conducted with the purpose of promoting taxpayers' voluntary compliance.

Audits: A General audit shall be conducted, consisting in a review of documents with a specific scope. Subsequently, the omission shall be determined and the applicable assessment Resolutions shall be issued, when the taxpayer fails to rectify the situation.

3.6. 4 Applicable audits' procedures

3.6.4.1 Internal tax administration requirement

- Statements filed with the Tax Administration.
- Audits' reports presented by the taxpayer.
- Result of the interventions conducted in the Mobile Audits.
- Results of the interventions in procedures to verify the issue of invoices.

Information provided by other agencies in the sector

- Information delivered by the Ministry of Agriculture regarding prices.

Information provided by taxpayers

- Detail of the sales in the poultry sector.
- Detail of the purchases in the sector.
- Detail of the prices for sales.

Review of documents

Upon reviewing the documents, the auditor shall asses the obligation according to two methods, based on:

- an actual basis
- a presumptive basis

3.6.4.2 Specific procedures on an actual basis applicable to the sector:

3.6.4.2.1 Verify that purchase transactions are recorded according to the detailed accounting by suppliers.

The administration shall identify whether purchases qualify as inventory or fixed assets, considering the definitions in IAS 2 Inventories and IAS 16 Property, Plant and Equipment. The following calculations shall apply for the assessment:

The Average Gross Profit Margin (Pm) shall be determined as follows:

The purchase and sale price from the invoices filed by the taxpayer shall be considered.

Determination of the Pm by product. The purchase and sales invoices' filed by the taxpayer shall be accounted for. The unit purchase price and sale price shall be stated, respectively.

$$Pm = (USP/UPP) - 1$$

Where: USP is the Unit Sale Price and UPP is the Unit Purchase Price.

In order to assess the omitted sales, the amounts of the assessed omitted purchases shall be entered, and the assessed Pm applied; based on this procedure, we may draw the following formula:

$$MOS = MOP + VA$$

Where: MOS is Monthly Omitted Sale; MOP is Monthly Omitted Purchase, VA: Value Added, which is calculated as:

$$VA = Pm. * MOP$$

3.6.4.2.2 Verify the accounting and filing of the total sales transactions.

It is worth verifying whether the taxpayer accounts for and files the total sales transactions.

The auditor shall gather all the information relative to the sales made by the taxpayer. To such end, he shall obtain the information delivered by customers as well as the detail of all the purchases reported by the main poultry businesses summoned.

3.6.4.2.3 General audit for understatement of sales

Pursuant to the provisions in Article 42º of the General Sales Tax Act, approved by Executive Order Nº 055-99-EF and Article 10º section 6 of the Regulations in the General Sales Tax Act, as approved by Executive Order Nº 136-96-EF, the amount of a transaction is deemed inaccurate when, in spite of the issue of an invoice, the following situations arise:

1. that such amount is lower than the regular market value, for other goods and services of equal nature, unless otherwise determined.
2. that reductions in prices arising from write-offs and similar reasons, are off the normal ranges for the business.
3. that the discounts do not meet the provisions in the law or Regulation.

In order to enforce article 1, it is necessary to determine whether the taxpayer**'s accounting records feature the inconsistencies mentioned above, among others, the following procedures**:

- Verification that the sales prices are in line with the market; that prices do not vary among customers and the value is not under the prices to the public, unless the taxpayer applies a special prices' policy based on volume and/or customer loyalty.

- Verify that the taxpayer has conducted sales at actual values. In other words, that the sales of goods are accounted for at normal market values. In order to determine a potential understatement of sales, a comparison is required between the sale price of a sample of sales transactions for the same taxpayer and the market value of assets. The taxpayer shall be required to present supporting documentation of the inconsistencies detected.

- In this type of situation, taxpayers may argue that the difference is based on the fact that they establish the prices of assets according to the following criteria; in such case, they shall be required to file a report explaining the price determination procedures[16].

16. *Dominating and free competition position; Free market in terms of product prices, considering discounts without impairing the cost thereof; Fulfillment of their financial obligation, which impacts the reduction in profits; Special customers who pay cash or immediately (within 2-day minimum and 7-day maximum term); Purchase/sale contracts at similar prices; The case may be that a business sells its products under the cost, provided the market value is lower; Greater cost owing to technology factors; Greater financial burden borne by one business with respect to another; Access to second-quality inputs' markets.*

- In this sense, a comparison shall be conducted among the customers who were granted special prices, according to the sales volume and payment terms, since with different customer segments, different sales prices may apply.
- Supporting documentation is required to determine that such values were lower than the normal market value for other goods or services of equal nature.
- It is necessary to determine the percentage of the taxpayer's income that accounts for sales in each level, stating volume and profit margin; the percentage of sales in each level that matches the sales invoices and the percentage of income that represents transactions conducted with buyers who received the invoices, moreover when such details show that in certain cases, the alleged understated sales are one-time sales.
- For the discounts granted, the Administration shall verify whether the taxpayer meets or fails to meet the provisions in section b) of Article 14° of the General Sales Tax Act and item 13) of Art 5° in the Regulations of the General Sales Tax Act.
- The taxpayer shall be informed of the criterion that the auditor shall apply in establishing the assessed market value.
- Upon determining an understatement, the assumptions in the Tax Code shall be the basis to define the need to apply the applicable presumptions.
- In Peru, section a) in item 6 of Article 10º of the General Sales Tax Act Regulations, sets forth that in order to assess the sale price of an asset, a service or a construction contract, as referred to in the first paragraph of Article 42 of the General Sales Tax Act, the SUNAT shall assess it officially based on the market value, and it may apply the procedure set forth in Article 32 of the Income Tax Act. It also sets forth that in the absence of a market value, the sale value shall be determined based on the background information held by the SUNAT (for example: information crossed with customers, audits to taxpayers of the same sector, information from institutions, etc.).
- Additionally, the data and amounts from the invoices whose values are deemed inaccurate shall be accounted for, that is to say, in cases of sales' understatements.
- Based on the invoices, the unit sale price and the sale price for the product shall be accounted for.
- The sale value shall be assessed by the SUNAT, by multiplying the units of the asset sold according to the invoice, by the unit sale price obtained from the invoices for other customers.
- The sale price is determined by comparing the sale price from the invoices and the sale price assessed by the SUNAT; when the latter is higher, a price understatement applies.
- In the case of sales' understatement, the omitted sale price is assessed as the lowest sale price outstanding, and the 18% General Sales Tax rate shall be applied to such amount.
- In the case of a general audit from which differences arise, the procedures applicable are those defined in the Tax Code.
- When the assumptions established in the Tax Code may not be applied, the taxpayer shall be induced to admit the omissions through the induction process described above.

3.6.4.2.4 Fair value accounting estimates

Based on the provisions in IAS 41, the medium and large-sized taxpayers' sectors account for estimates to present the fair value of their inventories. In this sense, it is worth considering that the highest value attributed shall be accounted for as income for the fiscal year. Nevertheless,

for tax purposes, this amount shall be deducted, since in Peru, the annual Income Tax is assessed on an accrued basis. In other words, such income is calculated and shall be considered income when the products are sold. Therefore, it is necessary to verify that the deduction effectively matches the fair value assessment, with the precaution not to deduct the items that constitute actual sales in the fiscal year.

3.6.4.2.5 Write-offs and losses

The deduction of write-offs shall be accepted provided that they are reasonable and verifiable in the productive process.

Regarding losses, the technical report of the losses in the sector shall be filed, as well as veterinarian's reports, etc.

3.7 Impact administration: price increases and impact on the basic shopping basket. management mechanisms

In our country, consumption of chicken meat is high and bears a relevant influence on the makeup of the basic shopping basket. It is foreseeable that informal producers are pressed to shift to the end consumer the higher cost implied by the auditing mechanism, which would compel them to reveal not only the amounts from the transactions they perform, but also to accurately assess their tax obligations.

Notwithstanding, we deem this a temporary effect, since, the largest share of production is concentrated in a small group of large businesses, who feature an integrated operation that extends to the end consumer, with chicken at more beneficial prices directly in their stores, or indirectly, through sales in large markets and/or supermarkets.

We consider that although the initial pressure to shift the price to the end consumer could end in inflationary effects, such pressure would drop and disappear in the short-term owing to the regulating effect of the formal marketing chain in the market, since they would have zero pressure to increase their prices as a consequence of the auditing mechanism. This is empirically reasserted as a consequence of the application of General Sales Tax withholdings on certain sensitive products (such as fishmeal), whose volatile prices in the beginning owing to the expectation, became normal in less than 15 days.

4. CONCLUSIONS

Operating audits shall enable to: Broaden the tax base: (Taxpayers who file and pay); Keep the RUC registry updated (poultry businesses); Promote the documentation of transactions and reduce understatement of income (accuracy gap) from omitted sales/understatement of sales; Encourage taxpayers to carry a record of their transactions through operations' forms; Facilitate administrative controls by the SUNAT and the early detection of noncompliance; increase the risk sensation and promote voluntary compliance.
Operating audits constitute an effective anti-evasion and informality measure in certain sectors.

Owing to its inherent features, the poultry sector qualifies for the implementation of operating audits to control the main risks in terms of Income/ Costs.

Operating audits are perfectly supplemented by traditional field audits.

The implementation of such a measure requires the support of the formal sector to reduce resistance.

5. BIBLIOGRAPHY

Decreto Supremo N° 065-2002-AG, publicado el 30-12-2002.

Decreto Supremo N° 007-2002-AG.

Ley N°27360, Ley de Promoción del Sector Agrario

Ley 28194, Ley para la Lucha contra la Evasión y para la Formalización de la Economía (Publicada el 26.03.2004 y vigente a partir del 27.03.2004)

Texto Único Ordenado de la Ley del Impuesto a la Renta Decreto Supremo N° 179-2004-EF (Publicado el 08 de diciembre de 2004).

Texto Único ordenado de la Ley del Impuesto General a las Ventas e Impuesto Selectivo al Consumo - Decreto Supremo N° 055-99-EF (publicado el 15 de abril de 1999 y vigente desde el 16.04.1999) y su Reglamento Decreto Supremo N° 29-94-EF (publicado el 29.03.1994, vigente desde 30.03.1994). Informe Nº227-2005-SUNAT/2B0000

Páginas Web Consultadas:

http://www.apavic.com/html/sections/cuadros/cuadro_11.asp

http://www.apavic.com/index2.asp

http://www.inei.gob.pe/web/aplicaciones/siemweb/index.asp?id=003

http://cpn.mef.gob.pe/cpn/Libro3/nics/41_NIC.Pdf

http://www.minag.gob.pe/boletin-diario-de-precios/boletin-diario-de-precios-2010/index.html

Global measures of tax progressivity, tax incidence and the redistribution operated by the Italian Personal Income Tax (2001 – 2009)

Tomarelli, Francesca; Acciari, Paolo

Summary

This interim report from the Italian Ministry of Economy and Finance sets out the scene on the level of redistribution operated by the Italian tax system through the Personal Income Tax, and explains how the level of redistribution can be measured together with the level of tax progressivity. The aim of this work is to describe the Italian distribution of gross taxable incomes through some well-known statistical indexes computed both at the national level and by geographical areas, and compare it with the distribution of incomes of the other Oecd countries.

The authors: *Francesca Tomarelli (Statistical officer) works at the Italian Ministry of Economy and Finance – Department of Finance. Paolo Acciari (Head of Unit) works at the Italian Ministry of Economy and Finance – Department of Finance and is the Vice-Chair of the OECD Working Party n. 2 on Tax policy analysis and tax statistics.*

INTRODUCTION

Contents

In Italy the distribution of gross taxable income is characterized by a high level of inequality (i.e. concentration): the purpose of this paper is to provide additional background information within the debate on the level of tax progressivity and the redistribution operated by the Italian tax system, through the use of some well-known statistical indexes such as the Gini index and the two derived indexes of Reynolds-Smolensky and Kakwani.

The analysis is focused on the Italian Personal Income Tax, as it directly implements the progressive fiscal levy described by the Italian Constitution. This work performs an ex-post analysis that makes use of the entire PIT taxpayers database (more than 41 millions of Italian taxpayers), computing the RS and K global indexes both at the national level and by geographical areas. In particular, the analysis carried out for each of the five geographical areas (North West, North East, Centre, South, Islands) is highly significant, due to the fact that, regarding economic development, in Italy there are significant differences between the North and the South of the country, the former being more developed than the latter.

The analysis includes also a set of international comparisons, based on data contained in some databases and publications of the Oecd.

1. SOME THEORETICAL ASPECTS

The level of tax progressivity can be measured through local or global indexes:

Local measures refer to specific income levels (they generally compare the marginal and average tax rate).

Global measures instead consider the entire distribution of taxable incomes which is described by a single final index. In the context of the global measures:

- **Tax progressivity** stays the same if the average tax rate of all taxpayers (which measures the global tax incidence) increases or decreases by the same rate;
- The **redistribution** operated by the tax system is measured through the comparison of a Gini index “before tax” and a Gini index “after tax”;

The level of "global" redistribution operated by the tax system relates both to the Gini index and to the two derived indexes of Reynolds Smolensky and Kakwani.

The Gini coefficient is a measure of the inequality (or concentration[1]) of a distribution, a value of 0 expressing total equality (i.e. minimal concentration) and a value of 1 maximal inequality (i.e. maximal concentration).

When used as a measure of income inequality, the most unequal (i.e. most concentrated) income distribution will be one in which a single person receives 100% of the total income and the remaining people receive none (G=1); and the most equal (i.e. least concentrated) income distribution will be one in which every person receives the same income (G=0).

The Reynolds-Smolensky index measures the redistributive effect of the income tax as the difference between the Gini index before tax and the Gini index after tax. Higher the index, higher the redistributive effect:

$$RS = G_{before} - G_{after}$$

Finally, the **Kakwani** index measures the progressivity of the tax as the difference between the tax concentration index (known also as the Gini index of tax revenue) and the Gini index before tax (in the presence of a progressive income tax, the level of tax concentration is higher than the level of income concentration, because high income individuals pay a higher proportion of tax).

Higher the Kakwani index, higher the progressivity of the tax system.

$$K = C_{tax} - G_{before}$$

The level of progressivity explains only part of the tax system redistributive effect. The level of taxation needs to be considered too. In this regard, there is a relation between the Reynolds-Smolensky index, the Kakwani index and the level of taxation (t = average tax rate):

$$RS = K\, t / (1-t) \qquad (1)$$

where t/(1-t) increases more than proportionally as t increases.

The above relation (1) implies that**:**

- the redistributive effect of a tax increases if the tax becomes more progressive;
- the redistributive effect raises if the total tax incidence (measured by the average tax rate t) raises
  - e.g. with a proportional increase of all tax rates the level of tax progressivity does not increase, but the after-tax distribution of incomes becomes more leveled;
- in the absence of legislative changes, variation of the Kakwani index may derive from changes in the distribution of the before-tax incomes among taxpayers.

1. *In this regard, it is useful to bear in mind that the concentration curve of a statistical variable y represents the cumulated share of the quantitative variable y which is owned by different cumulated shares of the total population, that is ordered on the basis of a different variable x . Instead, in the case of the Gini index , the total population is ordered on the basis of the same quantitative variable y.*

3. ITALIAN TAXABLE INCOMES: SYNTHETIC INDICATORS OF THE NATIONAL DISTRIBUTION

In this section we provide further information about the computing of RS and K global indexes using Italian PIT tax returns data.

In our work we perform an ex-post analysis that makes use of the entire PIT taxpayers database (more than 41 millions of Italian taxpayers). Tax returns data are aggregated in 58 gross income classes and refer to the tax years from 2001 up to 2009.

As we explained above, the Gini coefficient can range from 0 to 1; it is sometimes multiplied by 100 to range between 0 and 100. A low Gini coefficient indicates a more equal (i.e. less concentrated) distribution, with 0 corresponding to perfect equality, while higher Gini coefficients indicate more unequal (i.e. more concentrated) distributions, with 1 corresponding to maximal inequality (i.e. maximal concentration)

To be validly computed, no negative income can be considered in the income distribution, as well as no negative tax. Therefore, our analysis does not consider taxpayers belonging to those classes with a negative income or an income equal to 0: in this case the total amount of income earned and the amount of net tax paid are considered equal to zero, as well as the related frequencies.

The methodology used here differs from the one used in the EU-SILC (Community Statistics on Income and Living Conditions) and in the Bank of Italy Survey on Household Income and Wealth, that are both sample analysis that use the family as the statistical unit.

In our work we refer to the entire PIT taxpayers database, using the single taxpayer and not the family as the statistical unit. However, we do not take into account individuals earning no income, as they do not have to submit any tax return.

Furthermore, we consider only those incomes that are subject to the personal income tax, thus excluding many income sources of a financial nature that are normally subject to alternative taxation.

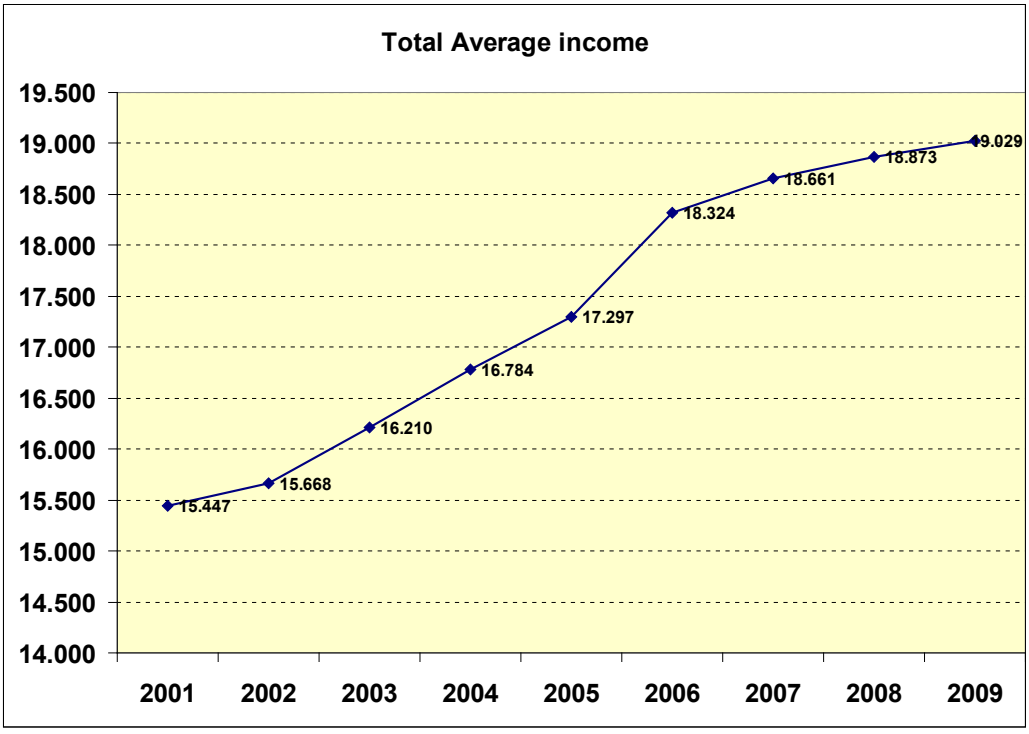
The Gini index computed on tax returns data "confirms" the high level of concentration (i.e. high inequality) in the distribution of gross taxable incomes:

- the index varies between a minimum value of 0,452 (2005) and a maximum value of 0,460 (2002) ;
- between 2001 and 2002 the index showed an increase, from a value of 0,457 to a value of 0,460;
- in the subsequent three years the index values instead showed a downward trend: from a value of 0,459 in 2003, to a value of 0,453 in 2004, up to a further diminished value of 0,452 in 2005;
- the Gini index increased slightly both between 2005 and 2006, (from 0,452 to 0,453) and between 2006 and 2007 (from 0,453 to a value of 0,458);
- finally, the Gini index decreased slightly both between 2007 and 2008 (from 0,458 to 0,456) and between 2008 and 2009 (from 0,456 to 0,454).

Figure 1

Source: Department of Finance – Statistics on Italian tax returns

Figure 2



Source: Department of Finance – Statistics on Italian tax returns – data in Euro.

Here we point out some aspects that are useful for an accurate understanding of the values observed for the Gini index in the covered years:

In all the analysed years (2001-2009) the trend observed for Gross Domestic Product needs to be taken into account:

Table 1: GDP – Italian gross Domestic Product - % real variation compared to the previous year

2001	2002	2003	2004	2005	2006	2007	2008	2009
1,8	0,5	0,0	1,5	0,7	2,0	1,5	-1,3	- 5,2

Source: Istat - Italian Statistical Institute

- in parallel with a period of stagnation in the growth of Gross Domestic Product for 2002, the level of concentration (i.e. inequality) of the distribution of gross taxable incomes increased, implying a likely negative impact on medium and low-income taxpayers;

- in 2004, the decreased level of concentration (i.e. decreased inequality) in the distribution of gross taxable income probably means that the growth observed for Gross Domestic Product benefited mainly low-income taxpayers;

- in the biennium 2006-2007 the economic growth in Italy benefited mainly medium-high income taxpayers;

- in 2008, the decreased level of concentration (i.e. decreased inequality) in the distribution of gross taxable income probably means that the decline observed for Gross Domestic Product involved mainly medium and high-income taxpayers (effects of the economic crisis);

- in 2009, the strong decline in the level of Gross Domestic Product compared to the "only" slight decrease of the Gini index (from 0,456 in 2008 to 0,454 in 2009) probably implies a general negative impact on all taxpayers.

The Italian Personal income tax: a brief description

The following paragraph highlights the main aspects concerning the Italian Personal Income Tax.

It is a personal and progressive income tax charged on the total income earned by single taxpayers.

The tax base is defined by the sum of all the incomes earned by the individual taxpayer, belonging to any of these categories: a) income from land; b) capital income; c) wage income; d) self-employed income; e) business income; f) pensions; g) other incomes.

Instead, the tax base excludes many income sources of a financial nature and income from very small businesses and professional activities that are normally subject to alternative taxation.

Furthermore, the Italian Personal Income Tax has been subject to some legislative changes during recent years:

- in 2003, the Financial Law revised tax rates and tax brackets and replaced the system of tax credits with an allowance system for employees, self-employed and pensioners, varying with income;

- in 2005 the Financial Law introduced: new tax rates and income brackets and converted tax credits for family dependants into tax allowances; In 2007 a new tax credits system replaced the former system of tax allowances.

Below you can find a table with the tax rates and income brackets that were applied in the tax periods from 2001 to 2009:

Table 2 : Evolution of PIT tax rates and income brackets from 2000 to the present

Income brackets (euros)		2000	2001-2002	2003-2004	2005-2006	2007- nowadays
0	10.329	18,5%	18%	23%	23%	23%
10.329	15.000	25,5%	24%			
15.000	15.494			29%		27%
15.494	26.000	33,5%	32%			
26.000	28.000				33%	
28.000	29.000					38%
29.000	30.987			31%		
30.987	32.600	39,5%	39%			
32.600	33.500			39%		
33.500	55.000				39%	
55.000	69.722					41%
69.722	70.000	45,5%	45%			
70.000	75.000			45%		
75.000	100.000					43%
100.000					43%	

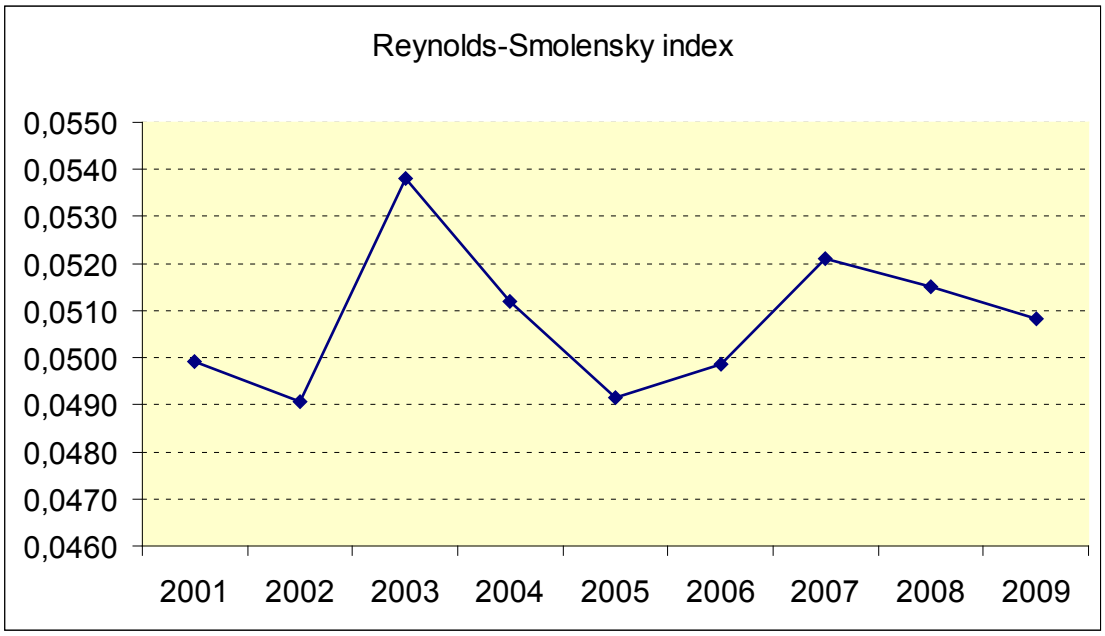
Both the level of redistribution operated by the tax system and the level of tax progressivity show a variable trend between 2001 and 2009, though the level of redistribution is found to be less volatile (Figures 3 and 4):

- the Reynolds-Smolensky index is equal to 0,050 in 2001 and 0,051 in 2009 (the maximum value is observed in 2003, equal to 0,054), with a coefficient of variation equal to 3,02;

- the Kakwani index showed a similar trend: it is equal to 0,217 in 2001 and 0,222 in 2009 (the maximum value is observed in 2003, equal to 0,243), with a coefficient of variation equal to 3,74;

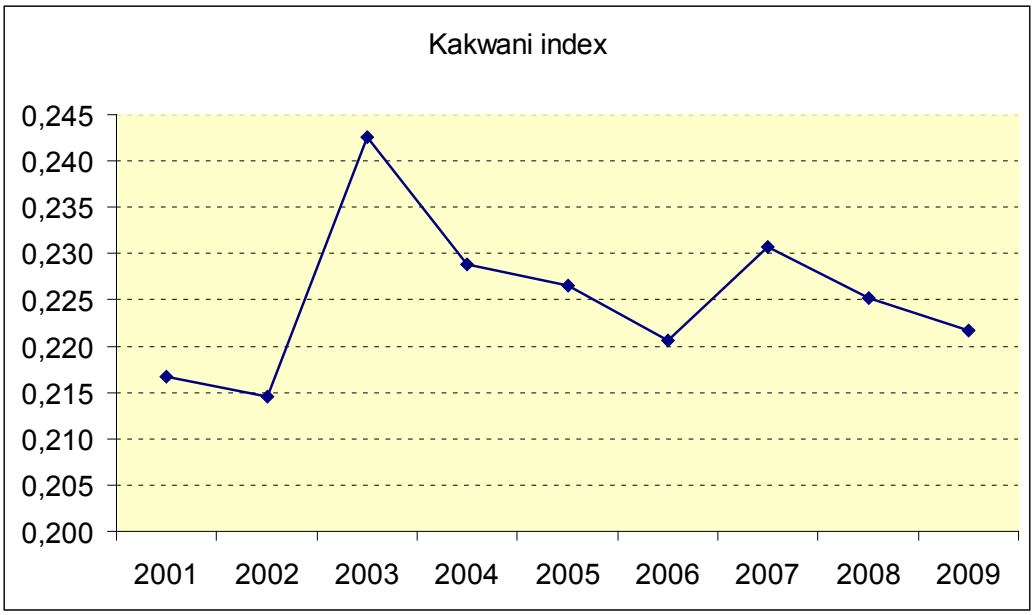
- it is interesting to note the impact of the introduction of the no-tax area in 2003, within the first part of the reform of the Italian Personal Income Tax.

Figure 3



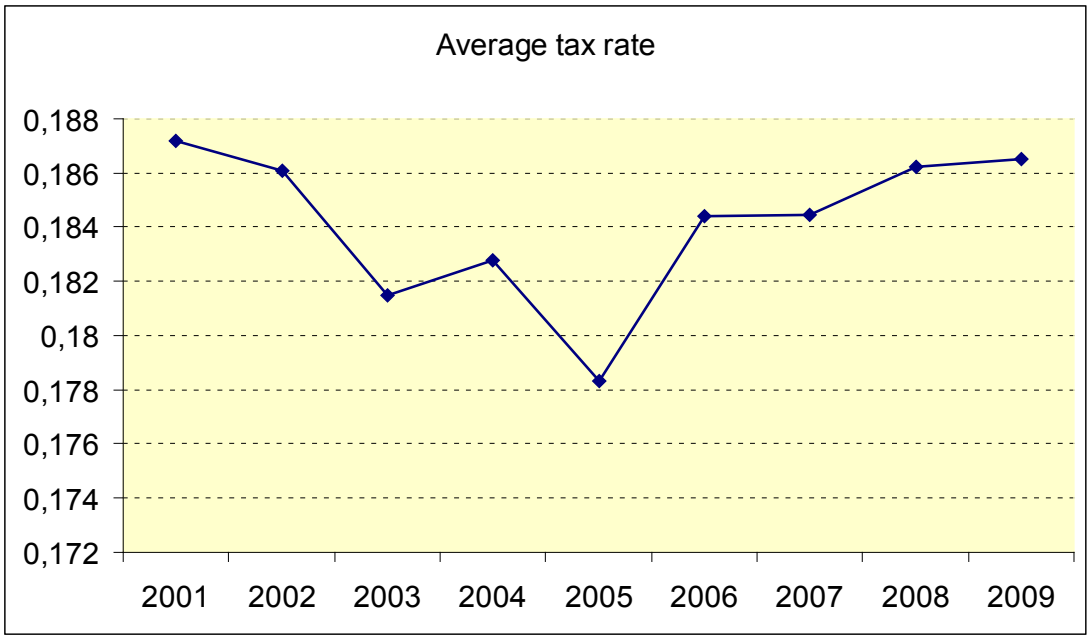
Source: Department of Finance – Statistics on Italian tax returns

Figure 4



Source: Department of Finance – Statistics on Italian tax returns

Figure 5



Source: Department of Finance – Statistics on Italian tax returns

The trend observed for the indexes of Gini, Reynolds-Smolenky and Kakwani is consistent with the relation (1), which shows how the redistributive effect of the tax system (measured by the Reynolds-Smolensky index) is given by the product between the level of tax progressivity (measured by the Kakwani index) and the factor t/1-t (which is an increasing function of the average tax rate t):

- between 2001 and 2002 the RS index decreases. This is the result of a decreased level of tax progressivity and of a decreased average tax rate;

- between 2002 and 2003 the RS index increases. This is the result of an increased level of tax progressivity measured by the Kakwani index (in 2003 the first part of the reform of the Italian Personal Income Tax was implemented, with the introduction of the no-tax area for low-income taxpayers). The increased K index is found to have a redistributive effect which is stronger than the adverse effect produced, in the opposite direction, by the decreased average tax rate;

- between 2003 and 2004 the decrease in the level of tax progressivity (K index) is not compensated by the increase in the average tax rate; therefore the Reynolds- Smolensky index decreases;

- between 2004 and 2005 the RS index decreases. This is the result of a decreased level of tax progressivity and of a decreased average tax rate; in 2005 the second part of the reform of the Italian Personal Income Tax was implemented, with the reduction of the top marginal tax rate from 45% to 43%;

- between 2005 and 2006 an increased level of tax equalization can be observed, due to a hightened “incidence effect”: the average tax rate increased from 0,178 up to 0,184, due also to the positive trend observed in

the economy in 2006. On the whole, taxation produced a uniform effect on all income ranges, without transferring the tax burden from low-income to high-income individuals. The redistribution of the disposable income thus occurred despite the reduced level of tax progressivity . In fact, the Reynolds-Smolensky index increases from 0,049 to 0,050, notwithstanding an opposite variation of the Kakwany index measuring the level of tax progressivity (from 0,226 to 0,221);

- between 2006 and 2007 there was an increase in the level of redistribution operated by the tax system, mainly due to an increased tax progressivity: in fact the Kakwani index increased from 0,221 to 0,231. This time the average tax rate is found to be almost invariable, moving from 0,184 to 0,185. For 2007, tax statistics are influenced by the new reform of the Italian Personal Income Tax, that modified the income brackets and reintroduced family tax credits and income tax credits instead of the pre-existing tax allowances;

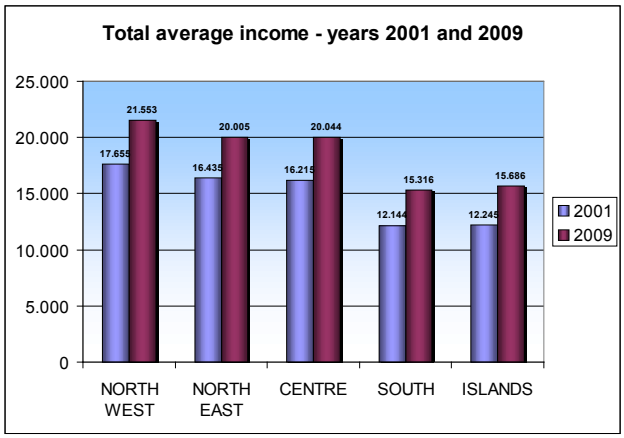
- between 2007 and 2008 the redistributive effect of the tax system was relatively stable: the Reynolds-Smolensky index maintains a value around 0,052 (the negligible decrease observed in the Reynolds-Smolensky index is mainly due to a slight decrease in the level of tax progressivity, with the Kakwani index varying from a value of 0,231 in 2007 to a value of 0,225 in 2008);

- finally, between 2008 and 2009 the RS index decreases slightly. This is the result of a decreased level of tax progressivity measured by the Kakwani index (from 0,225 to 0,222) which has a stronger effect than the effect produced, in the opposite direction, by a slightly increased average tax rate (from 0,186 to 0,187).

4. ITALIAN TAXABLE INCOMES: SYNTHETIC INDICATORS OF THE DISTRIBUTION BY GEOGRAPHICAL AREAS

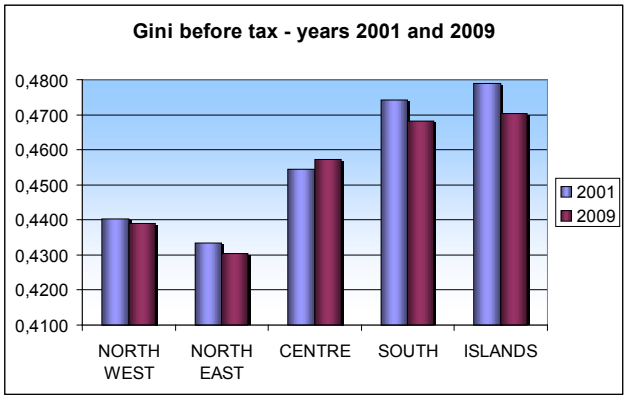
The analysis carried out at the national level has been repeated for each of the five geographical areas (North West, North East, Centre, South, Islands) for the tax years 2001 and 2009. The Gini index confirms the high level of concentration of the distribution of gross taxable incomes, which appears to be more unlevelled in Southern Italy and in the Islands for each of the two tax years considered. Regarding economic development, in Italy there are significant differences between the North and the South of the country, the former being more developed than the latter.

Figure 6



Source: Department of Finance – Statistics on Italian tax returns – data in Euro

Figure 7



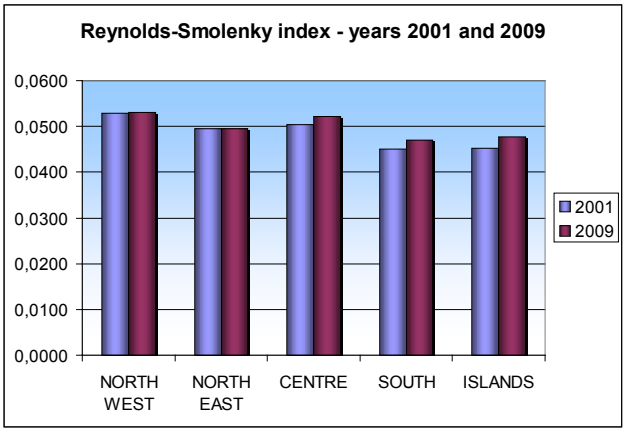
Source: Department of Finance – Statistics on Italian tax returns

In 2001, the Gini index varies between a minimum value of 0,433 for the North East and a maximum value of 0,479 in the Islands, with a value of 0,457 at the national level;

In Central Italy the Gini index is fairly stable in each of the two tax years considered, from a value of 0,455 in 2001 to a value of 0,457 in 2009; in the remaining areas the index decreases slightly in 2009: it varies from a minimum value of 0,430 for the North East and a maximum value of 0,470 in the Islands, with a value of 0,454 at the national level.

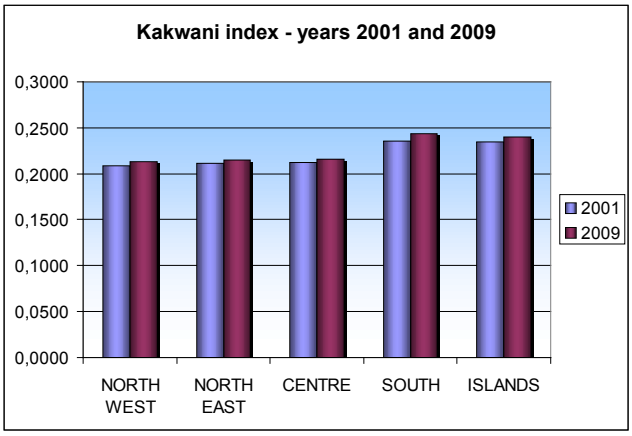
At the same time, the trend observed for the two statistical indexes of Reynolds-Smolensky and Kakwani highlights the fact that the level of redistribution operated by the tax system is lower in Southern Italy and in the Islands. The same trend is also consistent with the relation (1), which shows how the redistributive effect of the tax system (measured by the Reynolds-Smolensky index) is given by the product between the level of tax progressivity (measured by the Kakwani index) and the factor t/1-t (which is an increasing function of the average tax rate t): in fact, the lower level of redistribution observed in Southern Italy and in the Islands is directly influenced by the values observed for the average tax rate (which is lower in Southern Italy and in the Islands both in 2001 and in 2009); these values are not counterbalanced by the higher level of tax progressivity of the two geographical areas mentioned above.

Figure 8



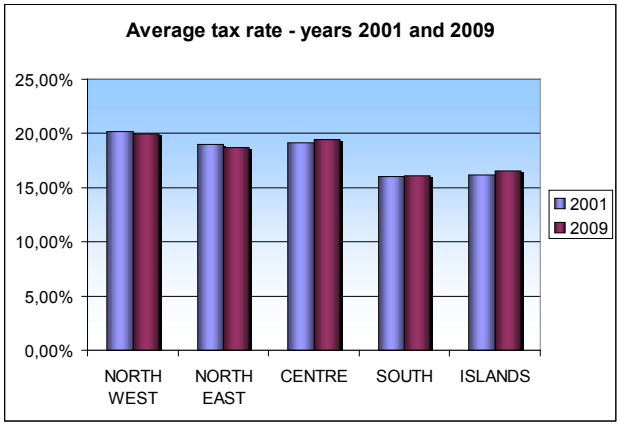
Source: Department of Finance – Statistics on Italian tax returns

Figure 9



Source: Department of Finance – Statistics on Italian tax returns

Figure 10



Source: Department of Finance – Statistics on Italian tax returns

An important aspect concerning tax concentration by geographical areas

Tax concentration measures the level of inequality in the distribution of the income tax liability ordered in 58 gross income classes.

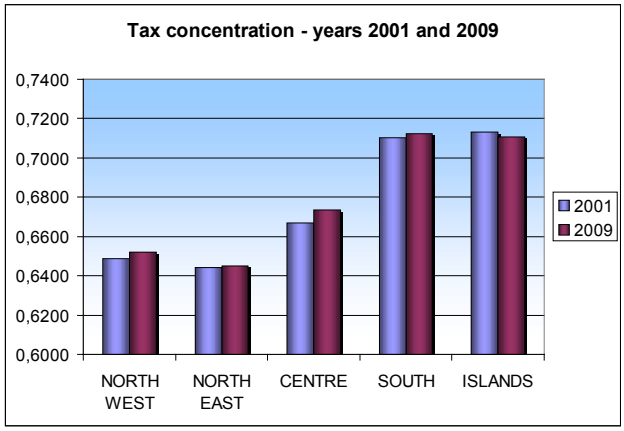
So far as the Gini index, the tax concentration index too varies between a value of 0 (perfect equality i.e. minimal concentration) and a value of 1 (maximal inequality i.e. maximal concentration).

More specifically, a value of 0 is observed when every taxpayer pays the same share of the total tax, whereas a value of 1 is observed when a single taxpayer pays the total amount of tax and the others pay none.

- The high level of tax progressivity that is observed mainly in Southern Italy and in the Islands is due to a level of tax concentration which is higher than the level observed for the other geographical areas (Figure 9);

- Probably, the higher level of tax concentration that is observed in Southern Italy and in the Islands is itself linked to the fact that here the income distribution is more unlevelled than in other areas; this circumstance, due to the progressive nature of the Italian Personal Income Tax, means that the overall tax burden is charged on a narrow group of taxpayers.

Figure 11



Source: Department of Finance – Statistics on Italian tax returns

5. INTERNATIONAL COMPARISONS

To perform international comparisons, the analysis needs to be based on data contained in some databases and publications of the Oecd.

Within the comparisons, in this paragraph three aspects are examined: the level of concentration (i.e. inequality) of the distribution of incomes, the progressivity of the tax system, and the level of the operated redistribution.

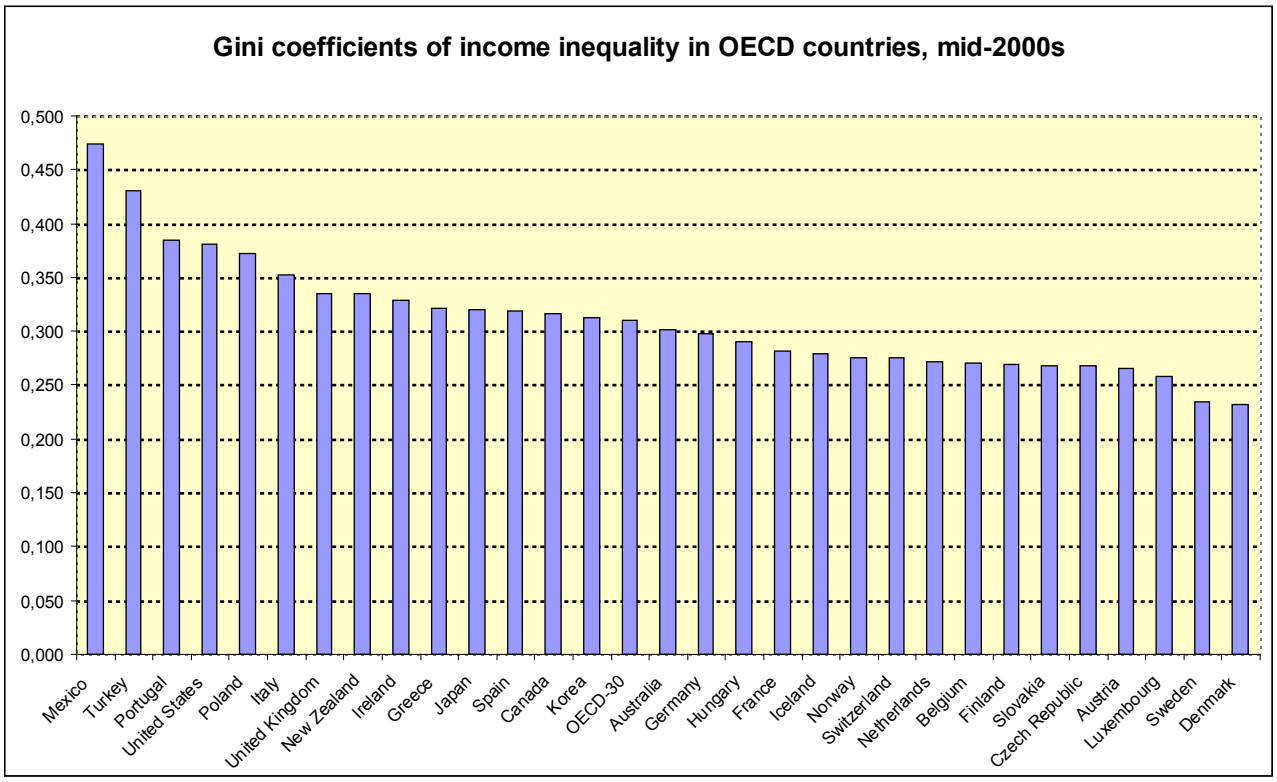
It is interesting to note the different methodology used in the analysis operated by the Oecd, that adopt the family as the statistical unit of reference, whereas in the analysis performed by

the Department of Finance the statistical unit is represented by the single taxpayer.

Income inequality

On the basis of the Gini index, measuring the inequality of the distribution of incomes with values between 0 (when all the families receive the same income) and 1 (when the total amount of income is earned by a single family), Italy ranks sixth (with a coefficient value around 0,35), overreached only by Mexico, Turkey, Portugal, United States and Poland (Figure 12). This means that in Italy the distribution of incomes is characterized by a high level of concentration (i.e. inequality).

Figure 12

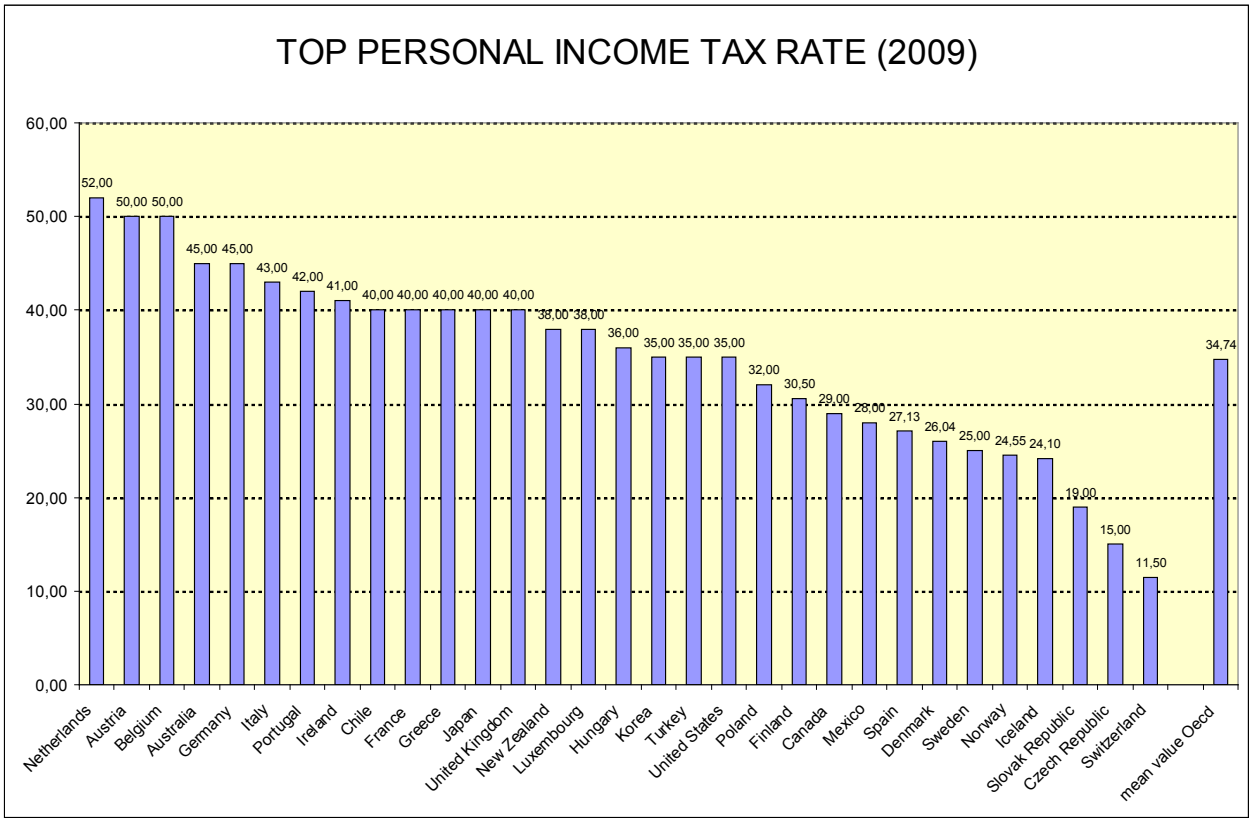


Source: Oecd (2008), Growing Unequal? Income distribution and poverty in Oecd countries

Progressivity of the tax system

A first indicator of the level of progressivity of the tax system can be represented by the top marginal PIT rate. Data provided in the Oecd tax database confirm the high level of the Italian top personal income tax rate for 2009: the top PIT rate for Italy is 43%, higher than the mean value for Oecd (Figure 13).

Figure 13



Source: Oecd Tax Database

The level of redistribution

For a more exhaustive analysis it is however necessary to make reference to further indicators related to the income distribution, as the Reynolds-Smolensky index.

To compute the RS index and compare it with the values obtained for the other Oecd countries, we considered, on the database Oecd Stats Extracts[2], available data comparing the values of the Gini index computed on the distribution of incomes of the Oecd countries.

In the Oecd database, the Gini index of the distribution of income is computed separately for the total population, the working age population (18-65 years old) and the retirement age population (older than 65 years). The calculations are repeated for six contiguous time periods, mid 70's, mid 80's, around 1990's, mid 90's, around 2000's, mid 2000's, and are performed both for the distribution of incomes "before" taxes and transfers and for the distribution of incomes "after" taxes and transfers. Talking only about the Gini index calculated for the total population in the time period "mid 2000's", the Gini index for the Oecd average is equal to 0,45 for the distribution of incomes "before" taxes and transfers, and 0,31 for the distribution of incomes "after" taxes and transfers.

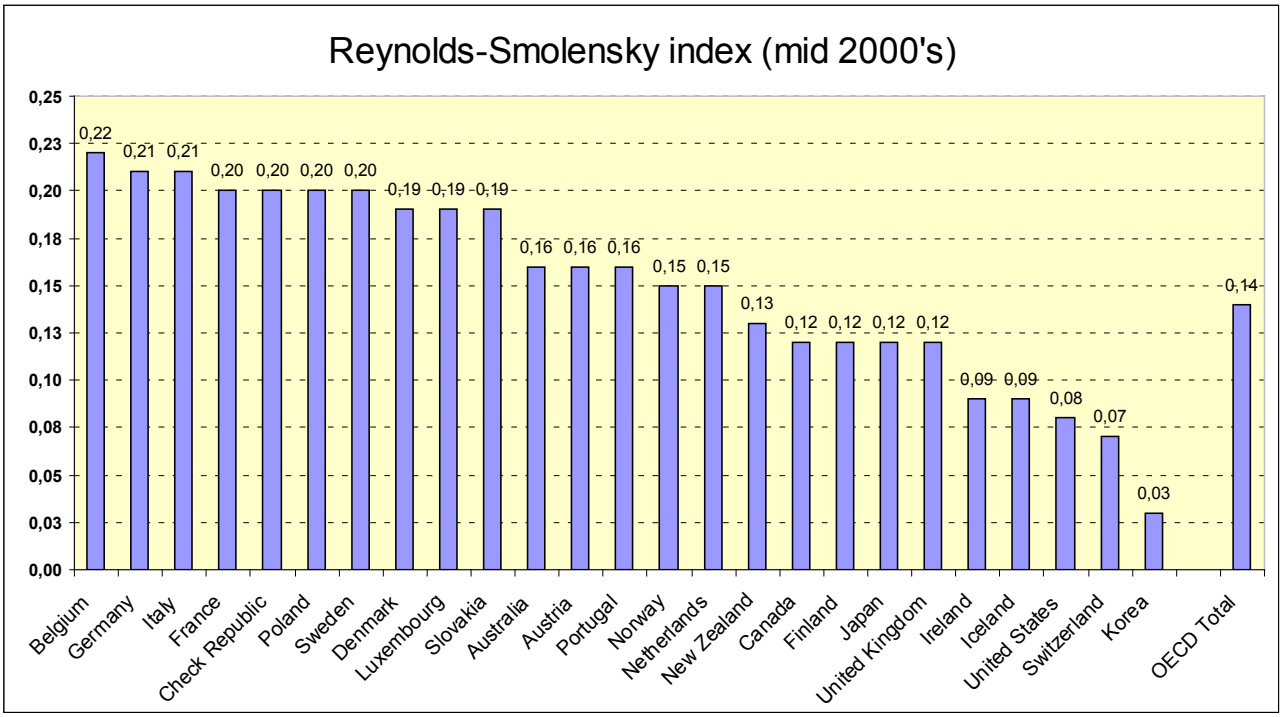
2 *Available at the internet address:* http://stats.oecd.org/Index.aspx?&QueryId=11353&QueryType=View

Italy is among those countries ranking above the Oecd average: the Gini index for the time period “mid 2000’s” is equal to 0,56 for the distribution of incomes “before” taxes and transfers and 0,35 for the distribution of incomes “after” taxes and transfers.

With the available data it is also possible to compute the Reynolds-Smolensky index for the six contiguous time periods mentioned above. Here the RS index is therefore equal to the difference between the Gini index for the distribution of incomes “before” taxes and transfers and the Gini index for the distribution of incomes “after” taxes and transfers.

Figure 14 reports the values of the RS index for the time period “mid 2000’s”(note that the values for Greece, Hungary, Mexico, Spain and Turkey are missing): the level of income redistribution appears significantly higher in Italy than in the Oecd countries as a whole.

Figure 14



Source: our calculations based on OECD Stats Extracts database.

6. CONCLUSIONS

The analysis performed on the distribution of Italian gross taxable incomes over the years 2001-2009 highlights the fact that the reforms occurred in the period examined had different impacts on the level of tax progressivity and the level of redistribution operated by the tax system. In 2003 the level of redistribution showed a marked increase, as a result of the introduction of the no-tax area for low-income taxpayers. Conversely, in 2005 the level of operated redistribution decreases, following the reduction of the top marginal tax rate from 45% to 43%. Then, in 2007 the level of global redistribution increases again, due to the introduction of a new tax credits system that replaced the former system of tax allowances.

Furthermore, in Southern Italy and in the Islands it is possible to observe a lower redistribution effect and a higher level of concentration of the distribution of gross taxable incomes, which appears to be more unlevelled than in the North as a consequence of the significant differences between the North and the South of the country, the former being more developed than the latter. In the end, the statistical indexes described can be a useful tool to perform an ex-post analysis of the impact of tax reforms, allowing the decomposition of the level of global redistribution into the two components represented by the level of tax progressivity and the average tax rate.

7. BIBLIOGRAPHY

Bank of Italy Survey on Household Income and Wealth, **http://www.bancaditalia.it/statistiche/indcamp/bilfait**

Bosi, P. e Guerra, M.C., "I tributi nell'economia italiana", Fifth edition, 2004.

Botarelli S., "La progressività dell'Irpef", University of Siena, Department of political economy, October 2000.

Istat, Eu-Silc "Reddito e condizioni di vita nel 2007". Nota metodologica. http://www.istat.it/dati/dataset/20091113_00/Nota%20metodologica%20e%20glossario.pdf

Leti, G., "Statistica descrittiva", 1997.

Oecd, "Growing Unequal? - Income distribution and poverty in Oecd countries", 2008

All the material contained in this publication was prepared, set up and printed at the Publications Center of the CIAT Executive Secretariat, P.O. Box 0834 – 02129. Panama, Republic of Panama. Printing was concluded in June 2011.