

Journal of Accounting and Taxation

Volume 7 Number 1 January 2015

ISSN 2141-6664



*Academic
Journals*

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The Journal of Accounting and Taxation (JAT) is published monthly (one volume per year) by Academic Journals.

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The Journal welcomes the submission of manuscripts that meet the general criteria of significance and scientific excellence. Papers will be published shortly after acceptance. All articles published in JAT are peer-reviewed.

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Full Length Research Paper

Canonical relationship between performance indicators based on Brazil, US and IFRS accounting standards of Brazilian and United Kingdom companies

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Received 03 September 2014, Accepted 14 January, 2015

The aim of the article is to identify canonical correlations among performance indicators calculated from a base of accounting statements prepared in accordance with United States Generally Accepted Accounting Principles (US GAAP), Brazilian accounting standards (BR GAAP) and International Financial Reporting Standards (IFRS). Descriptive research with a quantitative approach was carried out. A research sample of 50 companies was selected, including 17 Brazilian companies listed on the Bovespa's Board of Corporate Governance and 33 English companies listed on the London Stock Exchange, all of which trade American Depositary Receipts on the New York Stock Exchange. The results demonstrate divergence between companies and indicators in relation to differences calculated in performance indicators as well as statistically significant canonical correlations in both groups researched. The performance indicators of Brazilian and English companies were not affected in any significant way, despite divergences between BR GAAP and US GAAP and between IFRS and US GAAP. However, stands out as the main limitation that no company listed on Bovespa was found in the lists of European stock exchanges, which was necessary in order to verify the differences in these companies' indicators in the conversion of their accounting statements from BR GAAP to US GAAP and IFRS. This required the adoption of an alternative (i.e., canonical correlations). The main implication of this study is that the impact of IFRS adoption by Brazilian companies may be less than the expected, in terms of improvement of accounting quality and cost of adoption. The article advances research on a comparative study of the financial disclosures made according to Brazilian, American and international accounting standards, supported by an analysis of performance indicators calculated from accounting statements prepared from and based on these standards.

Key words: Performance indicators, accounting statements, BR GAAP, US GAAP, IFRS, canonical correlations.

INTRODUCTION

The separation between capital and management has brought asymmetric information problems, which in this

study are analysed from an external investor perspective. The differences between what is shown to foreign and

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domestic investors can be configured as an asymmetric information problem within the scope of Agency Theory.

The publication of audited accounting statements is one example of how accounting information functions as a reducer of information asymmetry. Therefore, accounting plays an important role in the reduction of information asymmetry in the context of Agency Theory. However, it also confronts information asymmetry problems in its financial disclosures from the perspective of the accounting standards of other countries.

Disclosure and the harmonisation of accounting standards have been the objects of several studies over the past few years. Various international bodies have issued accounting standards, such as the Financial Accounting Standards Board (FASB), the Federation des Experts Comptables Europeens and the Confederation of Asian and Pacific Accountants. However, the one that stands out in terms of harmonization is the International Accounting Standards Board (IASB), which has been aligning accounting standards with the objective of eliminating information asymmetry in accounting.

The intention of this article is to advance research in this direction by means of a comparative study of the financial disclosures made according to Brazilian, American and international accounting standards. To this end, we analyse performance indicators calculated from accounting statements prepared from and based on these standards. The study seeks to identify the differences between the performance indicators of Brazilian companies, calculated based on the accounting statements provided to the São Paulo Stock Exchange (BOVESPA) and New York Stock Exchange (NYSE), and those of English companies calculated based on accounting statements sent to the London Stock Exchange (LSE) and to the NYSE.

Therefore, this study refers to firms of two countries (Brazil and England) based on three accounting statements (BR GAAP, US GAAP and IFRS). The choice of these two countries is a result of their contextual differences in terms of legal systems, importance of capital markets, investor protection mechanisms and quality of accounting education in addition to the characteristics of the accounting regulations in each country. These factors may contribute to a comparison of the differences between the information highlighted by companies based on local accounting standards and International Financial Reporting Standards (IFRS) in relation to performance indicators.

Brazil can be characterised by a legal system based on code law, with developing capital markets and rule-based accounting standards, while England has a legal system predicated on common law, strong capital markets and principles-based accounting standards. Thus, one can identify which of these two contexts presents greater information asymmetry between what companies evidenced to local stakeholders (local GAAPs) and to external stakeholders (IFRS).

Moreover, no studies have applied canonical correlation

analysis to examine the differences in accounting information using performance indicators calculated on financial statements prepared based on different sets of accounting standards, in this case, BR GAAP, US GAAP and IFRS. This analysis can help determine the gain in accounting information quality through the adoption of IASB standards.

The use of canonical correlation analysis in this case is indicated by providing a broader perspective of the effects of different sets of accounting standards in relation to companies' performance indicators, which would not occur if the analysis were carried out by pairs, indicator by indicator.

Significant canonical correlations between the differences in the performance indicators of Brazilian and English companies would mean that the international accounting convergence process does not

offer significant improvements to accounting information quality in relation to the disclosure of Brazilian companies. In this case, efforts towards convergence might be useless.

Put another way, the absence of canonical correlations between these differences could represent an opportunity to improve accounting information quality in Brazilian companies through the adoption of IASB standards.

Based on this, the following research question was designed: Are there statistically significant canonical correlations between performance indicators calculated from a base in accounting statements prepared according to BR GAAP and US GAAP and to IFRS and US GAAP? Therefore, the objective of the article is to identify canonical correlations between performance indicators calculated from a base in accounting statements prepared according to Brazilian and American accounting standards and to International and American accounting standards.

The article is structured as seven topics, starting with the introduction to the study. This is followed by a theoretical inquiry into the efforts made towards the harmonisation of accounting standards, the principal divergences in accounting standards on an international scale and performance indicators calculated from a base in accounting statements. Evidence of the method and procedures used in the research is then given. This is followed by a presentation of the results of the research, highlighting canonical correlations between the investigated performance indicators calculated from the three accounting standards. Finally, the conclusions of the research are presented.

Harmonisation of accounting standards and accounting quality

Several studies have examined the convergence of international accounting standards and the impact on accounting information quality. There are many approaches being used for that, such as earnings management,

timely loss recognition and value relevance.

Since the 1980s, several international studies have sought to identify the quantitative impact of international accounting differences in different countries as well as interpret their causes using economic and cultural approaches (Gray, 1980, 1988; Weetman and Gray, 1990, 1991). Gray (1980) showed the tendency for companies in France and West Germany to be relatively conservative in earnings measurement compared with UK companies. Weetmann and Gray (1990) also found more conservative bias in earnings measurement under US GAAP compared with UK principles.

The adoption of IFRS by European Union countries since 2005 has increased international accounting convergence studies. Bartov et al. (2005) compared international and US standards and concluded that IFRS is a high quality set of accounting standards that is equivalent to US GAAP in terms of value relevance. Barth et al. (2008) examined whether the application of International Accounting Standards (IAS) was associated with higher accounting quality. They found that applying IAS generally leads to higher quality of accounting amounts. Daske et al. (2008) analyzed the effects of market liquidity, cost of capital, and Tobin's q in 26 countries using a sample of firms that were mandated to adopt IFRS. Their results show increases in market liquidity, decrease in firm's cost of capital, and increase in equity valuations.

On the other hand, Holthausen (2009) pointed out several factors that impact the financial reporting outcomes beyond the adoption of IFRS, as incentives, enforcement, ownership structure, and market and legal forces. Dechow et al. (2010) discussed the causes of various measures of earnings qualities have been used by researchers lately. They pointed out that the quality of earnings is a function of the firm's fundamental performance, what is one area for future work.

More recently, Barth et al. (2012) examined whether application of IFRS by non-US firms results in accounting amounts comparable to those resulting from application of US GAAP by US firms. They concluded although application of IFRS has improved financial reporting comparability with US firms, significant differences remain.

Previous research tends to indicate that the adoption of IFRS has improved the quality of accounting information. The differences observed among accounting systems and the impact of IFRS adoption may be related to institutional factors such as the legal system (Ball et al., 2000), capital market development (Ding et al., 2007; Jeanjean and Stolowy, 2008), the country's economic development (Kang and Pang, 2005) and differences between local accounting standards and IFRS (Barth et al., 2008).

Leuz (2003) examined companies trading in Germany's New Market in 1999 and 2000. He found no differences

in information asymmetry between companies using IAS and those using US GAAP. Bartov et al. (2005) also found no significant difference in the value relevance of US GAAP and IFRS.

Ball et al. (2000) found differences in the timeliness of the reporting of losses and conservatism based on whether companies are from a common law or code law country. Considering Brazil to be a code law country and England and the US as common law countries, we expect there to be no correlation between differences in performance indicators, when comparing BR GAAP with US GAAP and IFRS with US GAAP, which may mean higher or lower information asymmetry in the financial statements of Brazilian companies.

Lang et al. (2006) compared reconciled earnings for non-US companies with the earnings of US companies from 1991 to 2002. They found that companies from countries with weaker investor protection have less informative and more managed earnings, which can mean a lower quality of accounting information. Ali and Hwang (2000), Ball et al. (2000) and Hung (2001) all showed that in countries such as that, accounting quality and transparency are lower.

Nobes (1998) and Radebaugh et al. (2006) pointed out that differences in accounting systems exist because accounting needs differ among nations. Therefore, it would be expected that there is no correlation between differences in the performance indicators of Brazilian and English companies.

Bae et al. (2008) identified 21 key items to measure the compliance of local accounting standards to IASB standards, analysing the differences in 49 countries. They found that the UK has greater compliance between local accounting standards and IASB standards (of the 21 items analysed, only one was divergent). By contrast, Brazil had 12 differences from IASB standards. These results reinforced the expectation of no correlation between differences in the performance indicators of Brazilian and British companies when comparing BR GAAP with US GAAP and IFRS with US GAAP.

Thus, the following research hypotheses were formulated and tested by means of statistical analysis:

H_1 : There is statistically significant canonical correlation between the performance indicators of Brazilian companies, calculated based on BR GAAP and US GAAP.

H_2 : There is a statistically significant canonical correlation between the performance indicators of English companies, calculated based on IFRS and US GAAP.

There being no evidence to reject H_1 and H_2 , it could be concluded that the differences between Brazilian and American accounting standards are similar to the differences between American and international accounting standards. It can then be inferred whether

Brazilian accounting standards are more or less adequate compared with American standards and international accounting standards.

Principal divergences in accounting standards on an international scale

Most studies of differences in international accounting standards point in the same direction, attributing such differences to the legal characteristics and systems of each country. Commenting on the probable motivations for different accounting practices in member countries of the European Community, Castro (1998) listed the following motives: cultural influence, level of governmental control, structure of property and amassing of capital and peculiarity in accounting principles.

According to Weffort (2005), the causes of different accounting practices can be classified as the characteristics and necessities of the users and preparers of information, the way that the society is organised, cultural aspects and external factors. This can be accompanied by asymmetric information. Depending on their locations, users can have different impressions of the same company. Table 1 shows the principal differences between the recommendations of the IASB, the FASB and the Brazilian Accounting Standards for the recognition and measurement of differences in the valuation of company resources.

The divergences presented in Table 1 can influence the value constants of accounting statements. The same company can present different compositions of assets and liabilities and divergent results when analysing its accounting statements sent to different markets or countries. These differences end up altering the values of performance indicators, which are calculated from these statements.

In conclusion, a company can present very different indicators of liquidity, indebtedness or profitability depending on the statements analysed. However, the calculation of performance indicators is part of the analysis of accounting statements, which seeks to extract this information from reports on the economic and financial situations of organisations.

RESEARCH METHOD AND PROCEDURES

The research carried out here is characterised as descriptive research. In this sense, this research sought to analyse the performance indicators of Brazilian and English companies for verifying the existence of canonical correlations between them.

In relation to its approach to the problem, research can be characterised as quantitative. This comparability of information is what allows for the quantitative analysis of

data. Therefore, in order to apply it, the existence of a set of more or less comparable elements is indispensable.

The research population is composed of 81 Brazilian companies listed at Levels 1 and 2 in the New Market of Corporate Governance of Bovespa (www.bovespa.com.br) in January 2007 and 1,306 English companies (not necessarily made up of English capital but listed on the LSE) (www.londonstockexchange.com) in January 2007.

Initially, the intention was to compare Brazilian companies listed on Bovespa with those on a European stock exchange. However, no company listed on Bovespa was found on the lists of European stock exchanges. The intention was also to verify the differences in the indicators of these companies in the conversion of their statements from BR GAAP to US GAAP and IFRS. Since only companies that negotiate their shares on European stock exchanges were identified, which do not need to convert their statements into IFRS, this approach was compromised and the study took advantage of this second alternative.

In Brazil, companies listed at the Levels of Corporate Governance of Bovespa were selected, because they were considered to possess greater commitment to information transparency, thus transmitting greater reliability. In the case of English companies, we opted to use companies listed on the LSE as it has the greatest number of companies listed that need to publish accounting statements elaborated from a base in IFRS.

The sample selected for the research was of the intentional type in which, according to Richardson (1999), the elements of the sample are intentionally related according to the characteristics prescribed in the plan and hypotheses of the research. The criterion used was that sample companies negotiate American Depositary Receipts (ADRs) on the NYSE. Based on this, 17 Brazilian companies listed at the Bovespa Governance levels were selected along with 33 English companies listed on the LSE, making a total sample of 50 companies.

Data were collected by means of accounting reports sent to Bovespa, to the LSE and to the NYSE by the companies in the sample. Based on these reports, various economic and financial indicators related to the theoretical foundation of the work were calculated (Table 2).

Performance indicators were calculated based on the accounting statements of the Brazilian companies for 2005, sent to Bovespa and to the NYSE. Percentage differences were then taken between the indicators of the accounting statements sent to Bovespa and those sent to the NYSE. An identical procedure was then applied to the English companies, based on accounting statements sent to the LSE and NYSE. These performance indicators were chosen because they are the most important accounting indicators according Brazilian literature (used by analysts and investors from Brazil (Iudícibus, 1998;

Table 1. Principal differences between IFRS, US GAAP and Brazilian accounting standards.

Elements	Divergences in recognition and measurement
R&D expenses	IASB – generally recognised as a period expense. Activated only in specific cases (IAS 38). FASB – all R&D expenses must be taken as a result immediately, without exceptions (SFAS 2). BRAZIL – must be capitalised as an asset and amortised during the expected period of future economic benefits, no longer than 10 years.
Re-evaluation of Assets	IASB – is admitted for some specific assets. IAS 16 accepts re-evaluation as an alternative treatment in order to avoid material divergence between the cost and the respective economic market value. FASB – prohibits any type of re-evaluation. BRAZIL – permits re-evaluation, including negative. The proposal to modify corporate law foresees re-evaluation only in cases of corporate re-organisation.
Accounting of financial leasing	IASB – the essence must prevail over the form. The asset must be registered by the lessee as a fixed asset and it should correspond with a liability obligation (IAS 17). FASB – follows the same line as the IASB, but has criteria defined by characterising leasing as a financial operation. In this case, the contract must have at least one of these requirements: transference of the property of the asset to the lessee, a bargain buying price, the contractual period must be greater than 75% of the useful economic life of the asset or the present value of the minimum leasing payments must be greater than 90% of the market value of the asset leased on the date when the operation began (SFAS 13). BRAZIL – are accounted as rent, in obedience to fiscal legislation, both for the lessee and the lessor.
Accounting of goodwill	IASB – goodwill acquired must be capitalised as an asset and amortised during the period of useful life, no longer than 20 years. In the case of wanting to adopt a period longer than this, the impairment test must be made annually. Internally generated goodwill cannot be capitalised (IAS 38). FASB – must be capitalised as an asset and subjected annually to the impairment test, taking it as the result of the difference between the determined value of the goodwill and what is effectively capitalised (SFAS 142). BRAZIL – treated as a premium, must be declared an asset and amortised according to its useful life, no longer than 10 years. Fiscal legislation permits the inclusion of goodwill as an asset that must be amortised up to five years.
Responsibilities for employee retirement benefit plans	IASB – accounting through a competence regime, with recognition of a passive actuarial and of a financial asset evaluated by fair value (IAS 19). FASB – similar to IASB standards (SFAS 87 and SFAS 88). BRAZIL – essentially observes IAS 19, starting in 2001, but only for public companies authorised by the CVM (Deliberation 371/00). Others adopt a cash basis.
Financial instruments	IASB – derivatives must be registered as resource items in the balance sheet, as assets and liabilities by fair value and, usually, adjustments to fair value must be recognised when they occur as a result, except those derivatives classified as hedges (IAS 39). FASB – standards identical to the IASB (SFAS 133). BRAZIL – only financial institutions subordinate to the control and inspection of the Central Bank adopt international accounting rules. Public companies are subject only to disclosure by explicative notes of market values – for options, futures, terms and swaps. Other anonymously owned companies, subordinate to Law n. 6.404/76, are not obligated to make any kind of disclosure of these instruments.
Stock-based compensation	IFRS – cost is recognised in earnings when service is received. US GAAP – refer exclusively to employee payments. Two rules are applied: intrinsic value or fair value. Cost is recognised in earnings on which the employee worked. BRAZIL – no clear rules regarding about its calculation or recognition, only minimum standards of disclosures in notes.
Treatment of pensions and post-retirement benefits	IFRS – require accounting for post-retirement and layoff benefits. US GAAP – present more detailed guidance for post-layoff benefits. BRAZIL – less distinction between defined benefit plans and defined contribution plans, not as treatment for insured benefits. Also, the non-recognition of a usable surplus of benefit plans as assets of the sponsoring company, among others.

Table 1. Cont'd

Valuation of inventory	IFRS – methods include FIFO and weighted average. Reversals of losses are allowed.
	US GAAP – methods include FIFO, LIFO and weighted average. Reversals of losses are not allowed. BRAZIL – methods include FIFO and weighted average. Reversals of losses are allowed. Inventories should be adjusted to market value when less than the carrying value.
Balance sheet	IFRS – does not define a specific format but requires segregation between current and non-current assets and liabilities. Presentation by order of liquidity is only preferable when presenting more trustworthy information (IAS 1).
	US GAAP – can present a classified balance sheet or not. Items presented separately generally follow a decreasing order of liquidity (APB Opinion n. 22).
	BRAZIL – assets and liabilities are divided into circulating and non-circulating groups and presented in decreasing order of liquidity within these groups.

Source: adapted from Niyama (2005, pp. 55–83) and PriceWaterhouseCoopers (2006, pp. 12–25).

Table 2. Performance indicators used in the research.

Indicators	Formula	Comments
Current liquidity (CL)	$CL = CA / CiL$	Where the acronyms CA and CiL denote short-term assets and short-term debts.
General liquidity (GL)	$GL = (CA + LTRA) / (CiL + DLTL)$	Where LTRA is Long-term Realisable Assets and DLTL is Demandable Long-term Liabilities (long-term debts).
Indebtedness (IND)	$IND = TL / NW$	Where TL is Total Liabilities (short- and long-term debt) and NW is Net Worth (capital invested by shareholders and bond investors).
Financial dependence (FD)	$FD = TL / TA$	Where TA means Total Assets.
Fixed permanent capital (FPC)	$FPC = PA / (NW + DLTL)$	Where PA is Permanent Assets.
Profitability of Net Worth (PNW)	$PNW = NP / (NW - NP)$	Where NP is the Net Profit of the exercise.
Return on Assets (ROA)	$ROA = OP / (TA - NP)$	Where OP denotes Operating Profit.

Source: research data.

Assaf, 2002).

Moreover, the existence of canonical correlations between the performance indicators of both groups was analysed (Bovespa and NYSE; LSE and NYSE). Canonical regression was developed by Bartlett (1938) as an extension of the canonical correlation analysis of Hotelling (1935, 1936). Whereas canonical correlation analysis focuses on “correlation between linear combinations of two sets of variables, canonical regression deals with the estimation of a regression equation that corresponds to the largest, or first, canonical correlation” (Estrella, 2007, p. 724). This correlation measures the degree of association that exists between two sets of variables (here, the secondary indicators of BR GAAP and US GAAP, IFRS and US GAAP). Thus, the

regression is a generalisation of a multiple linear regression, or this is a particular case of the primary.

In the matrices $X_{17 \times 7}$ and $Y_{17 \times 7}$, we have the table of the 17 Brazilian companies and their seven respective accounting indicators. The matrices $W_{33 \times 7}$ and $Z_{33 \times 7}$ contain the table of the 33 English companies and their seven accounting indicators.

Concerning statistical inference, there is a test to verify whether the matrices X, Y, W and Z are correlated among themselves. However, this test is only applied when the vectors are normal multivariates. When multivariate normality is valid, it is also possible to construct statistical tests to evaluate the significance of canonical variables. As the software used in the article was the 5.1 version

Table 3. Percentage differences in performance indicators calculated based on the accounting statements remitted to Bovespa and the NYSE.

Percentage Difference in Indicators – 2005 (Bovespa to NYSE)	IND	FD	FPC	GL	CL	ROA	PNW
Aracruz Celulose & Papel S/A	0.38	0.17	0.02	-0.14	-0.12	-0.09	0.85
Banco Bradesco S/A	0.06	0.01	0.44	-0.00	-0.49	-0.55	-0.13
Banco Itaú Holding Financeira s/A	0.32	0.03	-0.53	0.01	-0.47	-0.38	0.20
Brasil Telecom Participações S/A	0.49	0.14	-0.13	0.01	0.20	1.01	-1.21
Braskem S/A	-0.30	-0.09	0.13	-0.06	-0.01	-0.40	-0.49
Cia. Brasileira de Distribuição	0.02	0.01	-0.02	0.05	-0.07	-0.64	-0.08
Cia. Energética de Minas Gerais – CEMIG	0.35	0.13	-0.05	0.02	-0.06	0.56	0.59
Cia. De Saneamento Básico do Estado de São Paulo – SABESP	-0.37	-0.18	-0.07	0.81	0.01	-0.11	-0.13
Cia. Vale do Rio Doce	0.38	0.17	0.03	-0.03	-0.25	0.05	0.13
CPFL Energia S/A	0.29	0.10	-0.04	0.02	0.00	-0.15	0.26
Gerdau S/A	0.06	0.02	-0.01	-0.00	-0.02	0.05	0.15
Gol Linhas Aéreas Inteligentes S/A	0.08	0.05	0.20	-0.09	-0.01	-0.14	-0.06
Perdigão S/A	-0.01	-0.00	0.03	-0.01	-0.02	-0.01	-0.01
Sadia S/A	-0.04	-0.01	0.08	-0.03	0.05	0.11	0.13
Ultrapar Participações S/A	-0.05	-0.03	0.05	-0.00	0.08	-0.08	-0.02
Unibanco Holdings S/A	0.05	0.00	0.04	0.01	-0.41	-0.58	0.19
Votorantim Celulose & Papel S/A	0.13	0.06	-0.01	-0.06	-0.08	-0.11	-0.15
Mean	0.11	0.03	0.01	0.03	-0.10	-0.09	0.01
Empresa	IND from Bovespa		IND from NYSE		Difference		
	(1)		(2)		[(1 : 2) – 1]		
Aracruz Celulose and Papel S/A	1.26		0.92		0.38		

Source: research data.

of *Statgraphics*, these tests were already conducted by default.

Correlation and determination were effected through the use of the following formulas:

$$r = \sqrt{\frac{SQ(\text{mod } el)}{SQ_{\text{Total}}(\text{running})}} \Rightarrow r^2 = \frac{SQ(\text{mod } el)}{SQ_{\text{Total}}(\text{running})},$$

where $SQ(\text{model})$ denotes the sum of the squares referent to the model of regression adjusted to the data and SQ_{Total} is the sum of the squares in their totality. One limitation of this research is that no company listed on Bovespa was found in the lists of European stock exchanges, which was necessary in order to verify the differences in these companies' indicators in the conversion of their accounting statements from BR GAAP to US GAAP and IFRS.

Another limitation results from the performance indicators chosen, since the results cannot be the same if the indicators differ from those selected. However, this is something that a future study with other research strategies can address.

Description and analysis of data

There were percentage differences in the performance indicators of Brazilian companies calculated based on the

statements sent to Bovespa and the NYSE. Similarly, there were also percentage differences in the performance indicators of English companies based on the statements sent to the LSE and to the NYSE. Moreover, the existence of canonical correlations between performance indicators was assessed for both groups (Bovespa and NYSE, LSE and NYSE).

Percentage differences in performance indicators according to Brazilian standards

Performance indicators were calculated based on the 2005 accounting statements of Brazilian companies remitted to Bovespa and to the NYSE. Later, percentage differences between the accounting statement indicators remitted to Bovespa and those sent to the NYSE were recorded. These differences are presented in Table 3, which were calculated this way.

Table 3 demonstrates that the percentage variations in the performance indicators are heterogeneous; there are positive and negative variations. Furthermore, some companies have significant differences in particular indicators and irrelevant ones in other indicators. For example, Aracruz Celulose S/A has a positive variation in PNW of 85%. In other words, this indicator, calculated according to the accounting statements remitted to the NYSE, is 85% higher than the indicator calculated based

Table 4. Percentage differences in performance indicators calculated based on the accounting statements remitted to the LSE and the NYSE.

Percentage difference in indicators – 2005 (LSE to NYSE)	IND	FD	FPC	GL	CL	ROA	PNW
Abbey National	0.61	0.01	0.51	-0.01	-0.01	0.00	1.90
Amvescap	0.52	0.25	-0.02	0.00	0.00	0.26	0.48
Astrazeneca	1.20	0.66	-0.29	0.06	0.00	1.40	2.80
Barclays	0.12	0.00	0.03	0.00	0.00	-0.10	0.38
BP	0.09	0.03	0.00	-0.02	0.00	0.05	0.31
British Airways	-0.23	-0.05	0.03	0.05	-0.09	0.06	-0.48
British Sky Broadcasting Group	-26.00	0.38	-0.06	-0.04	-0.07	0.12	-1.39
BT Group	-1.13	-0.16	-0.04	0.15	0.03	-0.02	-2.30
Cadbury Schweppes	0.67	0.18	-0.01	-0.09	0.01	0.10	1.37
Corus Group	0.26	0.11	-0.02	-0.08	0.00	0.03	0.39
Diageo	1.46	0.42	-0.04	0.07	0.00	0.57	2.26
Gallaher Group	2.24	0.08	0.02	-0.06	-0.02	0.04	-1.60
Glaxosmithkline	2.73	0.76	-0.26	0.22	0.00	1.45	15.22
HSBC Holdings	0.01	0.00	-0.02	0.00	0.00	0.00	0.11
Imperial Chemicals Industries	-5.51	0.52	-0.12	-0.02	-0.03	0.57	-5.30
Imperial Tobacco Group	11.53	0.26	0.08	0.08	-0.07	0.32	-3.23
Intercontinental Hotels Group	0.37	0.15	-0.05	0.33	-0.02	0.67	1.58
International Power	0.05	0.02	-0.02	0.02	0.11	0.04	0.55
Lloyds TSB Group	0.08	0.00	-0.01	0.00	0.00	0.00	1.36
National Grid	1.01	0.03	0.10	-0.34	-0.35	0.59	-1.89
Pearson	0.05	0.03	-0.02	0.02	-0.01	0.08	0.82
Prudential	0.35	0.01	0.51	0.01	0.00	0.02	-0.15
Reed Elsevier	0.97	0.21	0.02	-0.04	0.00	0.18	1.76
Royal Bank of Scotland Group	0.13	0.01	0.07	0.00	0.00	0.00	0.47
Scottish Power	0.17	0.05	0.03	-0.07	-0.10	0.09	-0.23
Signet Group	0.65	0.37	-0.35	-0.13	-0.13	0.21	0.58
Smith & Nephew	0.15	0.07	0.01	-0.06	-0.02	0.04	0.24
Spirent Communications	-0.52	-0.16	-0.44	0.55	0.60	-1.91	-1.92
Tomkins	1.89	0.52	-0.21	-0.13	0.17	0.73	2.42
Unilever	0.77	0.17	0.01	-0.01	-0.01	0.21	2.65
United Utilities	-0.05	-0.02	0.02	0.15	-0.11	0.16	0.47
Vodafone Group	-0.52	-0.39	0.02	1.23	-0.09	0.38	-0.38
Wolseley	0.14	0.05	-0.04	0.00	-0.05	0.05	0.22
Mean	-0.17	0.14	-0.02	0.05	-0.01	0.19	0.59
Empresa	IND from LSE (1)		IND from NYSE (2)			Difference [(1 : 2) – 1]	
Abbey National	65.57		40.76			0,61	

Source: research data.

on the statements sent to Bovespa. On the other hand, Brasil Telecom Participações S/A presented a negative variation of 121% in this same indicator. Perdigão and Ultrapar had minimum variations of approximately 1 and 2%, respectively.

Percentage differences in performance indicators according to IFRS

The performance indicators for English companies were

calculated based on their 2005 accounting statements sent to the LSE and the NYSE. Later, percentage differences between the accounting statements indicators sent to the LSE and remitted to the NYSE and those sent to the NYSE were recorded. These differences are presented in Table 4, which were calculated this way.

The percentage differences in performance indicators calculated based on IFRS in relation those based on US GAAP seem to be significant or not depending on the indicator and company analysed. For example, for the PNW indicator, we observe positive differences of

Table 5. Variables used for the analysis of canonical correlations.

indicator	bovespa	nyse	lse
CL	CL (SP)	CL (NYSE)	CL (LSE)
GL	GL (SP)	GL (NYSE)	GL (LSE)
IND	IND (SP)	IND (NYSE)	IND (LSE)
FD	FD (SP)	FD (NYSE)	FD (LSE)
FPC	FPC (SP)	FPC (NYSE)	FPC (LSE)
PNW	PNW (SP)	PNW (NYSE)	PNW (LSE)
ROA	ROA (SP)	ROA (NYSE)	ROA (LSE)

Source: elaborated for this article.

Table 6. Coefficients of the first canonical variables U_1 and V_1 , for each case analysed.

Indicator	Vector a_1	Vector b_1	Vector c_1	Vector d_1
CL	-0.142026	0.000136	0.357904	0.347224
GL	0.255925	0.352222	0.125954	0.105145
IND	-0.529735	0.0433868	0.212702	0.237947
FD	0.107004	0.241373	-0.577028	0.545090
FPC	-1.318900	-0.856630	0.683714	0.626723
PNW	0.191667	-0.067966	-0.205875	-0.382328
ROA	-0.261411	-0.015583	-0.136117	0.123756

Source: research data.

1,522% for Glaxosmithkline and 280% for Astrazeneca. On the other hand, we can also see negative differences of 530% for Imperial Chemicals and 323% for Imperial Tobacco. This heterogeneity of differences can also be seen in the other indicators. Depending on the company and indicator analysed, there may or may not be significant distortions.

Analysis of canonical correlations between the calculated performance indicators

In order to carry out a global analysis of the impact of the divergences in accounting standards on a company's performance indicators, we analysed canonical correlations. The indicators calculated based on accounting statements prepared according to the standards of countries whose stock exchanges were used in the study were used as variables, as seen in Table 5.

Using the statistical software *Statgraphics* (version 5.1), the coefficients of the first canonical variables U_1 and V_1 were determined for each case analysed, as demonstrated in Table 6.

Table 6 presents four vectors: a_1 , b_1 , c_1 and d_1 , with $i = 1, 2, \dots, 7$ ("i" is an indicator of its sub-index). The vectors a_1 and b_1 (with $i = 1, 2, \dots, 7$) establish the relationship

between Bovespa (called SP) and the NYSE. The values listed in the a_1 and b_1 vector columns are the coefficients of each variable (CL, GL, IND, FD, FPC, PNW, ROA). The c_1 and d_1 vectors (where $i = 1, 2, \dots, 7$) establish the relation between the NYSE and the LSE. The values listed in the c_1 and d_1 vector columns are the coefficients of each variable (CL, GL, IND, FD, FPC, PNW, ROA).

The canonical regression is also known as "first correlation" because it organises crossed regressions between the analysed variables (Timm, 2002). Therefore, it is possible to establish seven regression equations between each of the indicators analysed. However, there is no reason for analysing them all because only the first regression is important, since it has the highest correlation coefficient.

If the equation was calculated with the values of CL, GL, IND, FD, FPC, PNW and ROA for a company listed in Bovespa, the values were multiplied by each of their related coefficients, added (or subtracted, if they were negative), and then the same carried out for the NYSE, the result between U_1 and V_1 would be similar. Thus, this creates a relation that sets a cloud of data to another cloud of data. Thus, the first canonical variables were described between the values of Bovespa and the NYSE:

$$U_1(SP) = -0.1420265 CL(SP) + 0.255925 GL(SP) + \dots - 0.261411 ROA(SP)$$

and

$$V_1(NYSE) = 0.000136 CL(NYSE) + 0.352222 GL(NYSE) + \dots - 0.0155833 ROA(NYSE)$$

The coefficient of canonical correlation between these two groups of data is 99.88% (Table 7). Therefore, the performance indicators calculated based on accounting statements elaborated in BR GAAP are strongly related to those calculated from accounting statements elaborated in US GAAP.

Using an identical procedure, and taking the data between the NYSE and the LSE, we arrive at the following:

$$U_1 = 0.0357904 CL(NYSE) + 0.125954 GL(NYSE) + \dots - 0.136117 ROA(NYSE)$$

and

$$V_1 = 0.347224 CL(LSE) + 0.105145 GL(LSE) + \dots + 0.123756 ROA(LSE)$$

In this case, the coefficient of canonical correlation (also high) reached 99.22% (Table 8), which shows that a strong relationship exists between the indicators calculated from accounting statements prepared in IFRS and US GAAP.

Conclusions

The objective of the article was to identify canonical

Table 7. Canonical correlation coefficients of Brazilian companies.

Number	Eigenvalue	Canonical	Wilks	Chi-	D.F.	P-Value
		Correlation	Lambda	Square		
1	0,997705	0,998852	8,97877E-11	196,635	49	0,0000
2	0,992839	0,996413	3,91197E-8	144,981	36	0,0000
3	0,992189	0,996087	0,00000546267	102,999	25	0,0000
4	0,965656	0,982678	0,00069933	61,7558	16	0,0000
5	0,931028	0,964898	0,0203626	33,0995	9	0,0001
6	0,534313	0,730967	0,295231	10,37	4	0,0346

Source: research data.

Table 8. Canonical correlation coefficients of England companies.

Number	Eigenvalue	Canonical	Wilks	Chi-	D.F.	P-Value
		Correlation	Lambda	Square		
1	0,984409	0,992174	0,00000176399	324,574	49	0,0000
2	0,952385	0,975902	0,000113143	222,628	36	0,0000
3	0,935976	0,967459	0,00237623	148,035	25	0,0000
4	0,770145	0,877579	0,0371147	80,6967	16	0,0000
5	0,724752	0,851323	0,16147	44,6742	9	0,0000
6	0,399105	0,631748	0,586635	13,0672	4	0,0110
7	0,0237314	0,15405	0,976269	0,588429	1	0,4430

Source: research data.

correlations between performance indicators calculated based on three accounting systems (Brazilian, American and international). In terms of the global analysis of the impact of the divergences in accounting standards on companies' performance indicators, we found correlation coefficients of 99.88 and 99.22%, respectively, in the two related groups (BR GAAP and US GAAP, and IFRS and US GAAP). This indicates a strong relationship between the performance indicators calculated from accounting statements elaborated in BR GAAP and those calculated from accounting statements elaborated in US GAAP. It also shows a strong relationship between the indicators calculated from accounting statements prepared in IFRS and US GAAP.

The influence on performance indicators due to divergences between international and American accounting standards was greater than that observed between Brazilian and American accounting standards. These minor differences can be explained by turning to the historical origins of the sample countries. In Brazil, there has been a strong influence from Anglo-American audit firms, which came to the country bringing a strong tradition of audit procedures and manuals and the habit of training companies on accounting standards and procedures. These aspects have given the accounting procedures adopted in Brazil certain similarities to those established in US GAAP.

Concerning the research hypotheses formulated, the hypothesis H_1 and H_2 are accepted based on the presented statistical analysis. H_1 presupposed statistically significant canonical correlations between performance indicators based on BR GAAP and US GAAP of Brazilian companies. H_2 did the same between performance indicators based on IFRS and US GAAP of English companies.

It can be concluded that, in a general way, the performance indicators of Brazilian and English companies are not affected in a significant way, despite divergences between Brazilian and American accounting standards and between international and American accounting standards. Therefore, the main implication of this study is that the impact of IFRS adoption by Brazilian companies may be less than the expected, in terms of improvement of accounting quality and cost of adoption. By comparing the canonical correlations of the sampled Brazilian and English companies, it can be stated that the relationship of the indicators calculated from accounting statements converted from BR GAAP to US GAAP is greater than those converted from IFRS to US GAAP. Therefore, based on the sample researched and performance indicators considered, greater divergences are noted between international standards and American standards than between Brazilian accounting standards and American standards.

However, the results of this research cannot be generalised, as they only relate to the sample of Bovespa and LSE companies surveyed and the considered indicators. The canonical correlations presented could have been affected by the length of samples, which when extended may increase or decrease the effects of the differences between accounting standards. The performance indicators selected may also have influenced the research findings, since relating the financial statements of groups of accounts depends on the consequences of applying different accounting standards. It is thus still necessary to consider that each company may present larger or smaller values in accounting amounts that are more or less affected by differences in accounting standards. Moreover, the value relevance and importance of any performance measures can differ from Brazil to England due to various factors, including the differences in the underlying accounting methods. Another limitation of our study is related to the year 2005 that may not be ideal, since this is the first year of mandatory adoption of IFRS in EU.

Conflict of Interests

The authors have not declared any conflict of interests.

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Full Length Research Paper

Enhanced relationship preparedness in a Dutch multinational context: A tax control framework

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Received 07 January 2014, Accepted 16 January, 2015

This paper deals with enhanced relationship participation in an international context. The purpose of this paper is to present insight into the essentials for implementing a Tax Control Framework (TCF) and to present incentives to participate in an enhanced relationship. First, the relevant guidance for implementing a TCF is described. Second, based on a survey with tax directors of the largest Dutch multinational organizations quoted on the Dutch stock exchange incentives for participating in an enhanced relationship are investigated. Performing an analysis on the results identifies two important incentives for organizations to participate in an enhanced relationship.

Key words: Controlling, corporate governance, enhanced relationship, Tax, OECD, internal control

INTRODUCTION

Tax compliance and tax accounting are radically changing in most countries worldwide as part of an initiative of the Organization for Economic Co-operation and Development (OECD). Information notes published by the OECD stimulate the implementation of risk concentrated tax authorities resulting in an "enhanced relationship". The aim is that companies organize their tax structure risk base (OECD, 2010), comparable with the overall internal control systems emphasized after the Enron failure. The tax structure should give tax authorities insight into the largest tax risks. Based on the OECD initiative countries all over the world implemented enhanced relationship policies in their national regulations (Bakker and Kloosterhof, 2010). In 2005 the Dutch tax authorities introduced a version of the tax

based regulation proposed by the OECD, "horizontal monitoring".

From the year 2007 horizontal monitoring is official policy in the Netherlands (Belastingdienst, 2008; Van Daelen and Van der Elst, 2010). Horizontal monitoring changes the relation of the tax authorities and companies. On one hand, the tax authority has to stimulate an environment of trust and close cooperation. On the other hand companies are expected to contact the tax authorities whenever there is ambiguity about the tax obligation resulting from activities.

The advantage for the tax authorities is a better allocation of resources as it can focus on the organizations and/ or parts of organizations with the highest perceived risk. The advantage for companies is a

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JEL classification: H20, H25, K34

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Less intensive tax investigation by the tax authorities at year end (Kemp and Verbakel, 2010). To reach these advantages the tax authorities needs insight into the risks of companies. To fulfill this requirement the Dutch tax authorities obliged companies who want to participate in horizontal monitoring to set up a Tax Control Framework (TCF).

However, only limited Dutch guidance for a TCF is available; the Dutch Tax Authorities have no mandatory framework. The OECD offers some general guidance. Besides, well known models are present from controlling process other than tax, for example COSO and COBIT. A TCF model fulfilling the requirements of the OECD, COSO, COBIT and the Dutch Tax Authorities is the Tax Management Maturity Model (T3M). This model identifies tax risks in six specific tax related subjects: Business and (Tax) environment, Business operations, Tax Operations, Tax Risk Management, Monitoring/Testing and Tax assurance. These broad areas are divided into more specific factors which are the fundamentals for the judgment of a subject.

This paper focuses on the fundamentals for implementing a TCF and the main incentives for companies to participate in an enhanced relationship. First, relevant TCF guidance will be stated. As a TCF should fulfill requirements by relevant authorities, understanding this requirements is important. The question that will be answered is *what guidance is in place by the OECD, Dutch tax authorities, COSO and COBIT for implementing a TCF?* Second, focusing on practitioners in Dutch multinational firms answer will be given to the research question *what are the main incentives for multinationals to participate in an enhanced relationship?* Specifically, the focus will be on three possible incentives: effect on the business environment, new rules and policies in the short term, and the Netherlands as a tax haven.

This paper continues with the scientific relevance. Then the relevant TCF guidance from the OECD, the Dutch tax authorities, and controlling models will be discussed. The last part of this paper focuses on the results and analysis of a survey with Dutch multinationals quoted on the largest Dutch stock exchanges.

Scientific relevance

Enhanced relationships¹ are regularly discussed in the scientific literature (eSimonis, 2008; De Groot and Van de Enden, 2010). However, the (international) guidelines existing for a TCF have been rarely discussed in the literature. Tax controlling - and a TCF as a part of it - is a portion of the organization's corporate governance. So, research on the implementation of a TCF is rewarding for the controlling literature as well for company's best

practices. The first important contribution of this paper to the literature is the creation of a universal guideline for the development of a TCF. The Dutch focus of this paper could be easily changed to another country focus by replacing the Dutch tax law factors by other countries' tax laws factors.

The second important contribution of this paper is the focus on practitioners. An enhanced relationship could not be entirely based on theoretical concepts, but practitioners should contribute to enhanced relationship policies as this will overcome problems not recognized when focusing solely on theories. Only limited research concerning an enhanced relationship focused on practitioners (Freedman et al., 2009).

The survey results presented in this paper show companies' incentives for participating in an enhanced relationship. As willingness by companies to participate in an enhanced relationship is essential for the success of this policy, this paper exposes important insights for further implementation of enhanced relationship laws and regulations worldwide.

Guidance

OECD

The OECD introduced the concept of an enhanced relationship. After years of discussion with the member states and the draft of many papers 35 economies signed in 2006 the Seoul declaration (OECD, 2006): the commitment for cooperation on efficient and international orientated tax authorities. In 2008 this commitment has been followed up by the Cape Town Communiqué (OECD, 2008). Representatives of 45 economies discussed the application of risk management to taxes. Understanding the risk management of companies gives the tax authorities the possibility to allocate their resources to parts of organizations with higher risks (less effective risk management) and companies not in control for their taxes at all.

In the years after Cape Town the OECD introduced reports giving participating economies high-level input for enhanced relationship implementation (OECD, 2010; 2011; 2012). The main guidance consists of four aspects: real-time contact with companies about tax issues, focus on tax related processes, make tax compliance easier, and stimulate a good cooperation between the tax authorities and companies and their stakeholders.

Dutch tax authorities obliged implementing a TCF for horizontal monitoring participation but supported the interpretation of a TCF only with limited guidance (Belastingdienst, 2008). The horizontal monitoring documentation published by the Dutch tax authorities states that practitioners have to develop a TCF from their own knowledge and experience. Limited guidance is given in this documentation by referencing COSO as possible tool for implementing a TCF.

¹ As mentioned the Dutch form of a "enhanced relationship" is "horizontal monitoring". For the ease of reading in this paper the term "enhanced relationship" is used when the Dutch form is concerned.

COSO (ERM)²

COSO is a model developed to support companies in setting their internal control frameworks (COSO, 2004). It consists of four company goals. These goals are linked to four organizational levels and eight risk and control components. Besides the model COSO publishes additional reports which can be used by practitioners as best practice: the reports anticipate on new challenges companies encounter (e.g. COSO, 2009). So, usage of the COSO model requires also the application of the COSO reports.

COBIT

Information technology (IT) has a great impact on the functioning of most organizations. The processes concerning IT (IT governance) should be in control. A model supporting this purpose is COBIT³ developed by ISACA⁴. COBIT consists of five principles which are the fundamentals of the model: meeting stakeholder needs, covering the enterprise end-to-end, applying a single integrated framework, enabling a holistic approach, and separating governance from management. This leads to the practical implementation by the "key areas" defined in COBIT: plan, build, run, monitor, and governance.

Combining the guidance given in the sections above creates a framework for implementing a TCF. This framework can be easily internationally implemented, as only the guidance of the Dutch tax authorities has to be replaced to make it fit for other countries than the Netherlands. As mentioned before, a model fulfilling the (international) requirements for setting a TCF is the Tax Management Maturity Model (Colon, 2012).

Large multinationals

This part of the paper contains findings of a survey with tax directors of large multinationals. The results of the survey are further analyzed to find the incentives that are the most important for large multinationals to participate in an enhanced relationship. First the hypotheses will be rationalized, which form the input for our survey. Second the analysis and results will be discussed. Research on enhanced relationship with surveys is very limited. In the paper is referenced Freedman et al. (2009). The only relevant survey in relation to enhanced relationships is our focus. In this research the UK practice has been examined. As there is limited relevant research specific for an enhanced relationship, hypotheses are framed partly by (indirect) related literature and commonsense. Considering the limited research with surveys specific for

enhanced relationships, it is not possible to add more relevant literature and we consider literature that is only very limited not as value adding.

Hypotheses

Organizational goals are not only limited to the interest of shareholders. Organizations have to consider the interests of all the stakeholders. Corporate social responsibility (CSR) has an important impact on modern societies. A description of CSR is (Jones et al., 2009): the integration of social, economic, ethical and environment considerations into the organizational strategy and operational activities. So transparency about taxes is also a part of this description.

Not every society organizations' operations require the same strictness of CSR. The strictness of CSR could be an incentive for organizations to settle in a specific country. Of importance is the perception of the relevant society: does the society perceive the organization in performing their activities regarding CSR. Specific for taxes, this could entail an in-control statement for the TCF (De Groot and Van der Enden, 2010). However, it is important for companies to consider an enhanced relationship relevant for their business. If companies consider an enhanced relationship as positive for their business one could expect them to be more positive in the implementation of an enhanced relationship.

Hypothesis 1

The perception of a better business environment by an enhanced relationship is positively related to the willingness to participate in an enhanced relationship.

Not every company implements the same level of CSR. Some companies are more prepared to implement high level CSR than others. Currently an enhanced relationship is no obligation. However, when companies expect new compliance rules to be applied in the near future, companies have to consider how this impacts their activities. For an enhanced relationship this could mean that companies are more willing to participate immediately.

Hypothesis 2

The expectation of a short term (five years) international obligation to participate in an enhanced relationship is positively related to the willingness to participate in an enhanced relationship.

Some companies present themselves to the society as part of their CSR policy. If companies could be expected to be more society concerned regardless of the reputational effects and possible higher profits,

² Committee of Sponsoring Organizations of the Treadway Commission (Enterprise Risk Management). For a detailed background see: www.coso.org

³ Control Objectives for Information and related Technology

⁴ Information Systems Audit and Control Association

companies are expected to be more willing to pay taxes. Following this rationale, companies of the opinion that taxes can easily be avoided should be more convenient with an enhanced relationship as these present themselves more positively than relative less paying companies.

Hypothesis 3

The perception of the Netherlands as a tax haven is positively related to the willingness to participate in an enhanced relationship.

METHOD

The assumed relations will be tested by a survey with a selection of companies. The selection of companies is limited to Dutch multinationals quoted on the largest Dutch stock exchanges (AEX and Midkap). No difference was made to industry or the quotation on only the Dutch or also other stock exchanges. The Dutch multinationals quoted on the Dutch stock exchanges concern the most relevant sample as the Dutch tax authorities focused initially on the these companies before implementing enhanced relationships at other companies. Therefore these companies have more experience with an enhanced relationship than other companies in the Netherlands. For the selected companies a survey had been sent to the company's tax director. The relevant period of the survey is March to May 2012. The operational numbers are extracted from the relevant annual reports (2012). The sample is states of twenty companies.

Measures

Dependent variable - The measure for the willingness to participate in an enhanced relationship has been measured by a number given by the tax directors scaled from one to five (one is no willingness and five is the opposite).

Independent variables - The effect on the business environment has been determined by questioning respondents considering an enhanced relationship to be negative (one), with no effect (two) or positive (three) for the business environment.

The expectation that an enhanced relationship will be an obligation on the short term (five years) has been measured on a five point scale (five is an enhanced relationship is highly expected). Respondents were questioned to consider the short term obligation of an enhanced relationship in an international context.

The perception of the Netherlands as a tax haven has been EU centered. The tax directors were questioned to consider the taxes in comparison to the other EU member states. Number one indicates low tax avoidance while five indicates that the Netherlands is considered as a tax haven.

In addition, a control variable has been put into the sample to exclude the possible impact of other factors on the hypotheses. As larger companies have a larger impact on their environment; more pressure exists on a company to have more CSR. This possible impact has to be excluded. So, a control variable for the number of employees of a company has been adopted. The number of employees is measured by a logarithm of the actual number of employees.

Method of analysis

Relations will be considered by using SPSS. In SPSS the relations

are tested with linear regression. With this method the relations between the first three mentioned independent variables and the dependent variable as described above (conform the hypotheses formulated above) are tested.

RESULTS

The descriptive statistics (Table 1) show no indication for an exceptional sample. The willingness for an enhanced relationship (4.100 out of 5) is high in the sample. Besides, an enhanced relationship is considered to be positive for the business environment (2.421 out of 3). The perception of an enhanced relationship obligation in the short term and the perception of the Netherlands as a tax haven are neither considered to be positive or negative by the tax directors (3.000 and 2.500 out of 5 respectively). The number of employees in the sample is considered to be high (9.548 after using a logarithm) compared to other research, for example Gallo and Christensen (2011) who found an average of 2.28. However, this is plausible as our sample consists only of the largest Dutch multinationals.

The Pearson correlation (Table 2) shows only one notable outcome. Tax directors who are of the opinion that an enhanced relationship is positive for the business environment are expecting an enhanced relationship to be obliged in the short term. So, based on this finding, logically, it could be expected that these variables are either or neither related to the willingness to participate in an enhanced relationship. No other correlations were found in the sample.

Hypothesis 1 suggested a relation between the perceived (positive) effect on the business environment and the willingness to participate in an enhanced relationship. The regression results (Table 3) presented a significant relation on 1% level (coefficient of 0.729). Based on the sample the perceived effect on the business environment is a major incentive for companies to participate in an enhanced relationship. Hypothesis 1 is accepted.

Hypothesis 2 suggested a relationship between the obligation to participate in an enhanced relationship in the short term (less than five years) and the willingness to participate in an enhanced relationship. The regression results presented a significant relation on 5% level (coefficient 0.336). Based on the sample the perception of the short term obligation of an enhanced relationship is an incentive for companies to participate in an enhanced relationship. Hypothesis 2 is accepted.

Hypothesis 3 suggested a relationship between the perception of the Netherlands as a tax haven and the willingness to participate in an enhanced relationship. The regression results presented no significant relation for this hypothesis. Based on the sample the perception of the Netherlands as a tax haven is no incentive for companies to participate in an enhanced relationship. Hypothesis 3 is rejected.

Table 1. Descriptive statistics for dependent and independent variables.

	Average	Min	Max	Std. Dev.
Dependent variable				
Willingness	4.100	3	5	0.788
Independent variables				
Business environment	2.421	1	3	0.838
Short term	3.000	1	4	1.076
Tax haven	2.500	1	4	0.889
Control variable				
Number of employees	9.548	5.74	12.47	1.661

Table 2. Pearson correlation with independent variables.

Variabe	Business environment	Short term	Tax Haven	Employees
Business environment	1.000			
Short term	0.712***	1.000		
Tax haven	0.131	0.275	1.000	
Number of employees	0.154	0.047	0.061	1.000

*** Correlation is significant on the 1% level, (two-way).

Table 3. Enhanced relationship willingness regression results.

	(1)	(2)	(3)	(4)	(5)
Constant	2.813 (1.039)	1.395 (0.645)	1.483 (0.833)	2.260 (1.109)	0.701 (0.556)
Number of employees	0.135 * (0.107)	0.093 * (0.063)	0.120 * (0.079)	0.127 (0.106)	0.106 * (0.051)
Business environment (H1)	--	0.729 *** (0.128)	--	--	0.435 *** (0.146)
Short term (H2)	--	--	0.336 ** (0.117)	--	0.293 ** (0.115)
Tax haven (H3)	--	--	--	0.252 (0.197)	0.152 (0.096)
R-squared	0.081	0.704	0.530	0.161	0.837
Adjusted R-squared	0.030	0.667	0.474	0.063	0.791
F-value	1.580	18.997 ***	9.569 ***	1.635	18.029 ***

The dependent variable in every regression is enhanced relationship willingness. ***, **, * Coefficient is statistical significant at respectively 1, 5, and 10% level.

DISCUSSION

The first part of this paper discussed relevant guidelines for implementing a TCF. International guidelines were described and Dutch guidelines for an enhanced relationship were mentioned. It was noticed that the Dutch

guidelines stated could easily be replaced by another national guideline for having a universal framework for implementing TCF. Important contributions to the literature have been made by giving an overview of the relevant literature usable universally. For every company implementing a TCF, the guideline mentioned is the basis

for implementation.

The second part of this paper presented the analysis of a survey with tax directors employed at Dutch multinationals quoted on the largest Dutch stock exchanges. Two important incentives influencing the willingness of companies to participate in an enhanced relationship has been identified: a (perceived) positive impact on the business environment and the expectation that an enhanced relationship will be an obligation in the short term (less than five years). This finding is very important for tax authorities and scholars. For the tax authorities the fundamental has been put for a tax policy stimulating large multinationals to participate in an enhanced relationship. Future regulations should focus more on the benefits for companies to stimulate participation in an enhanced relationship. First we recommend that a financial incentive be given to companies, for example, by lower compliance cost for government regulations charged to companies. Second, we recommend that a reputation incentive be put in place, for example, by obliging the disclosure of the state of the TCF in the annual report. For scholars an important insight has been presented: not a purely theoretical approach has been used for the explanation why an enhanced relationship is or is not a success in a country; but with this paper the beginning of an understanding of company perception/motivation towards an enhanced relationship has been presented.

This paper has limitations giving possibilities to further scientific research. First, as this paper is limited to the relevant framework for an enhanced relationship in the Netherlands, further investigation could focus on another country or identify the differences between the national guidelines to build further on a (international) framework for a TCF. Second, this paper focused only on a limited amount of incentives influencing the willingness of companies to participate in an enhanced relationship. Additional incentives could be the topic of further research. Besides, the context could also be changed; this paper focused on the largest organizations, while it is possible smaller organizations or organizations in other countries would give other outcomes. Third, the sample in this paper is small (20). A small sample is very sensitive for movement in the outcome of one or more items limiting the generalization of this paper. Further research could be focused on overcoming this limitation.

Conclusion

This paper presented the relevant guideline for implementing a TCF with a focus on the Netherlands. Besides, this paper identified two important incentives for companies to participate in an enhanced relationship: the perception of a positive effect on the business environment and the expectation that an enhanced relationship will be an obligation in the short term.

Conflict of Interests

The authors have not declared any conflict of interests.

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