The Effect of the US–Chile Free Trade Agreement on the Earnings Quality of Chilean Firms

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ABSTRACT

The general aim of this thesis is to examine whether a change in trade policy that significantly increases the interaction of domestic firms with a foreign product market can affect the financial reporting quality of those domestic firms. I focus on Chile, where the US–Chile Free Trade Agreement (FTA) came into effect on January 1, 2004. The FTA resulted in significant increases in US exports and imports for Chilean companies.

The hand-collected sample consists of Chilean firms for the period 2002–2008 and earnings quality is measured by discretionary accruals and meeting or beating earnings benchmarks. Proxies for product market interaction are the change in Chilean exports to the US, being a member of an industry sector identified by the Chilean government as a likely beneficiary of the FTA, and having a subsidiary in the US.

Specifically, I examine the pre-/post-FTA changes in earnings quality for Chilean firms most affected by the FTA. Results indicate that the FTA led to improvements in accounting quality, particularly for those Chilean companies that have the largest increases in interaction with the US product market. As hypothesised, the establishment of a trade agreement positively affects the financial reporting quality of firms in the country that has lower accounting quality and weaker institutions.

Additionally, I analyse whether the change in earnings quality around the FTA is affected by ownership structure. I include family businesses and institutional investors because they dominate the Chilean economy. In general, the findings show some evidence that family and institutional ownership influence the change in earnings quality due to the FTA; however, the results are not consistent.

For my Lelita

Juanita Isabel

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CHAPTER 1

INTRODUCTION

1.1 Research objective

The signing of a Free Trade Agreement (FTA) with the United States in Miami on June 6, 2003 was a significant achievement for Chile. At the time, the Chilean president Ricardo Lagos said the signing was a '…historical moment, it is the first time the US signed a trade agreement with a South American country…' (*El Mercurio*, 2003a). The FTA particularly benefitted Chilean firms exporting to the US because, as the Chilean ambassador in the US pointed out, those firms would now have 'secure and preferential access to the largest market in the world' (*El Mercurio*, 2003b). The economic benefits for Chile were immediate and substantial. Between 2004 and 2008, the average growth of Chilean exports to the US was 13.9% (Dirección General de Relaciones Económicas Internacionales [DIRECON], 2010).

In a 2004 study, Khanna, Palepu and Srinivasan find that non-US firms with greater interaction with US product, capital and labour markets have higher quality accounting disclosures. These findings suggest that, in order to compete in US markets, non-US firms have to provide more information to reduce information asymmetry and meet the expectations of participants in US markets.

My study extends Khanna et al. (2004) in two important ways. First, rather than examine disclosure quality, I examine whether interaction with US markets lead to improvements in earnings quality. Second, while Khanna et al. (2004) examine firms from different countries that voluntarily decide to enter the US market, I examine firms from a

single country, Chile, that increased their interaction with the US market because of newly adopted government policy, the US–Chile FTA.

The FTA between the US and Chile enabled more interaction between both markets. Thus, an interesting question is to what degree interactions of Chilean firms with the US market affect the financial reporting of the Chilean firms. Analogous to the cross-listing literature where firms can upgrade their reporting by being exposed to a more stringent reporting environment (e.g., Lang, Raedy and Yetman, 2003), the general objective of this study is to examine whether a country can significantly upgrade its financial reporting by exposing its firms to a foreign market with a tradition of higher quality reporting. Specifically, I examine how a change in a government trade policy that significantly increased interaction with the US market affects the financial reporting of Chilean firms.

1.2 Motivation

Chile provides an attractive setting to examine this issue because, like other South American countries, it has traditionally been seen as having weak institutions and weak accounting. For example, Chile's legal system is based on code law. In a direct comparison to the US, Chile rates a 3 in terms of investor protection while the US obtains a score of 5 (DeFond and Hung, 2004). Similarly, in terms of law enforcement, Chile has 6.5 while the US exhibits 9.5. Francis, Khurana and Pereira (2005) use a measure of market structure in which Chile's score is -0.75 while the US's score is -0.24, indicating that Chile's financial system relies much more on banks rather than markets.

Bhattacharya, Daouk and Welker (2003) construct an earnings opacity proxy by combining three measures of financial reporting (earnings aggressiveness, loss avoidance and earnings smoothing) and indicate that the most transparent out of the 34 countries in the study is the US, which has the least opaque earnings. On the other hand, Chile appears at the

opposite end of the earnings opacity ranking, placing 30th out of 34. Bhattacharya et al. (2003) also point out that in Chile there are only 87 auditors per 100,000 population, but in the US this number is 168, a signal of stronger auditing and better enforcement of accounting standards in the US. This is consistent with a previous ranking by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) in which the US has a score of 71 for accounting standards while Chile has a score of 52. Finally, Bae, Tan and Welker (2008) find 13 differences between the International Financial Reporting Standards (IFRS) and Chilean Generally Accepted Accounting Principles (GAAP) but only 4 differences between IFRS and US GAAP, implying higher quality standards in the US. Thus, Chilean firms have ample room to improve their accounting quality.

Another feature of Chile is its high level of ownership concentration and high proportion of family controlled firms, which contrasts with the diluted ownership and lower frequency of family firms in the US.

Linking ownership structure and earnings quality has been an area of interest for many researchers. For example, Fan and Wong (2002) examine the effect of ownership structure on the informativeness of earnings while Chau and Gray (2002), Arcay and Vázquez (2005) and Chen, Chen and Cheng (2008) analyse the effect of ownership structure on voluntary disclosure.

Prior studies indicate that the effect of ownership on earnings quality depends on the form of the concentrated ownership. For instance, Chen et al. (2008) find lower-quality accounting disclosures in family firms and Jaggi, Leung and Gul (2009) note more earnings management when control resides with a family. On the other hand, Burns, Kedia and Lipson (2010) observe less financial misreporting when institutional ownership is high, and Choi and Seo (2008) report a positive relation between institutional ownership and accounting

transparency. Koh (2003), and Hsu and Koh (2005) note less earnings management when institutional ownership is high.

Thus, I conduct two additional analyses. First, I examine whether any improvements in financial reporting due to the FTA differ for family controlled firms. Second, I consider the influence of institutional ownership on the relationship between the FTA and changes in earnings quality. Since family firms are expected to have lower earnings quality in the pre-FTA period, I expect family controlled firms to experience greater improvements in earnings quality due to the FTA. Conversely, Chilean firms with institutional ownership would have had higher quality earnings to start with and would have less room for improvement.

1.3 Summary of results

This study covers a period from 2002 to 2008 to assess whether a change in a government trade policy that boosts the involvement in the US product market affects the financial reporting quality in Chilean firms. Two non-market-based measures are used to proxy earnings quality. The first one is discretionary accruals values from the Jones (1991) model and the second one is an indicator representing whether the firm has small positive earnings (i.e., just above the zero earnings threshold). In order to capture involvement with US product markets, three metrics are utilized. These are related to the change in export levels to the US experienced by the firm, whether the firm is included in a sector identified by the Chilean government as a potential benefactor of the FTA and whether the firm has a subsidiary in the US.

In terms of Hypothesis 1 (H1), the empirical results provide some evidence to support a positive impact by the FTA on the financial reporting quality in Chilean companies – in particular, Chilean firms having more product market interaction with the US exhibiting more improvements in earnings quality. This is in line with the results by Khanna et al. (2004),

who note that foreign companies with more interaction in the US market have more incentives to improve disclosure quality. As hypothesised, the quality of financial reporting by firms in a country with weaker accounting and a poor institutional environment (Chile) improves after an FTA is signed with a country that has more transparent and a strong institutional environment (the US), consistent with the former having to reduce information asymmetry and build trust to be able to engage in business relations in the latter.

Specifically, using the first measure of financial reporting quality, the findings provide evidence that around the FTA period, Chilean companies with larger US product market involvement through greater increases in exports to the US and belonging to an industry identified as likely beneficiary of the FTA – i.e., a 'targeted' industry – have better earnings quality in comparison to Chilean companies with smaller increases in US exports and not in a targeted industry. Further analysis suggests that these results, based on changes in US exports, are driven by firms with high capital intensity, a common characteristic of Chilean exporting firms (Alvarez and López, 2005). On the other hand, companies with a subsidiary in the US improve accounting quality only for those with lower capital intensity. One explanation is that the subsidiaries for firms with high-capital intensity (e.g., mining companies) are likely to be sales offices rather than operating subsidiaries, suggesting that the involvement of these firms with the US product market is actually limited.

For the second proxy of earnings quality, it is also observed that after the FTA, Chilean companies having greater changes in US exports exhibit more improvement in financial reporting quality relative to firms that have smaller changes in US export values. This is consistent with the notion that more product market interaction with the US implies better earnings quality. Moreover, the positive relationship between US product market interaction and earnings quality improvements due to the FTA are robust after diverse sensitivity analyses, e.g., using an alternative linear estimation technique, other variables to

assess the involvement with the US market and additional measures to capture financial reporting quality.

In summary, the findings that support my H1 suggest that after the FTA period, Chilean firms with larger increases in product market interaction with the US experience larger improvements in their accounting quality than firms with smaller increases in product market interaction with the US, although the results are sensitive to the level of the firm's capital intensity.

Hypothesis 2 (H2) includes the effect of Chilean family firms on the relationship between earnings quality and the FTA. In general, the results indicate that low-capital intensity family firms have less opportunity to boost their reporting quality due to the FTA than high-capital intensity family firms, because the former may have had better accounting quality to start with. Specifically, high-capital intensity family controlled firms belonging to a target industry and low-capital intensity family businesses with a US subsidiary report better earnings quality once the FTA became effective. These results imply that for those specific groups of family firms, more involvement in the US product market has a positive impact on accounting quality. In contrast, family-owned firms with more changes in exports to the US exhibit a decrease in their financial reporting quality after the FTA.

Given the mixed evidence, a further analysis is required to understand the family ownership effect on the earnings quality–FTA relationship. The findings suggest that the improvement in quality reporting in the post-FTA period is relatively weak for family businesses with more product market interaction in the US.

Hypothesis 3 (H3) investigates whether institutional ownership influences the change in accounting quality during the pre-/post-FTA period in Chilean firms. On the whole, these results provide some evidence that companies with institutional ownership have more room to enhance earnings quality around the FTA than companies without institutional ownership.

For example, firms in the low-capital intensity subsample with institutional ownership and in the targeted industries boost their earnings quality during the post-FTA period. Also, after the FTA came into force, financial reporting improvements are observed for high-capital intensity firms with institutional ownership and with US subsidiaries. However, the opposite is true for the high-capital intensity subsample with institutional ownership and with more changes in US exports. As a result, the empirical evidence for this hypothesis is inconsistent.

Further analyses are conducted to disentangle the relationship between ownership structure, earnings quality and the FTA. In summary, ownership and earnings quality have a potential non-linear relationship. Additionally, in general, Chilean firms with more concentrated ownership, whether by family owners or institutions, and with more involvement with greater US exports changes or in a target industry, have larger increments in reporting quality. The findings from these additional analyses, together with the results from H2 and H3, provide some evidence about the influence of family firms and institutional ownership on the relationship between reporting quality and the trade agreement. However, the results are not consistent.

1.4 Contribution

My study makes several contributions to the literature. First, this thesis expands the literature in accounting research by examining the intersection between financial reporting quality and a broad, non-accounting related government policy. I am not aware of any studies that examine how a nation's trade policy affects the earnings quality of firms affected by that trade policy. I focus on a specific government policy, i.e., the FTA between Chile and the US. FTAs and their benefits have been discussed in the economic literature and mainly studied under an economic viewpoint (e.g., Hertel, Walmsley and Itakura, 2001; Trefler, 2004), but no research has been conducted to examine whether this type of pact has an effect on

accounting quality. In a world where globalisation and FTAs are becoming increasingly important, understanding whether such agreements can affect the quality of financial reports of the country with weaker accounting is a relevant and unexplored question.

Second, I contribute to an emerging line of research that analyses the effect of cross-border economic interaction in accounting properties. Only a few studies consider interactions with foreign markets – other than capital market interactions (i.e., cross-listings). Khanna et al. (2004) were to first examine this area, finding a positive relationship between market interaction and disclosure quality. They conclude that foreign firms with more voluntary interaction in product, capital and labour in US markets are more associated with better disclosure practices. Two other studies – Cahan, Rahman and Perera (2005) and Webb, Cahan and Sun (2008) – look at the broader issue of globalisation. They find that the more globalised firms (i.e., with interactions with numerous foreign markets) have higher accounting quality, although like Khanna et al. (2004), they focus on disclosure quality, rather than earnings quality.

This thesis complements the results presented by Khanna et al. (2004). These researchers explore whether interactions of non-US firms with US markets lead to the non-US firms improving their disclosure practices. My study includes firms from only one country, Chile, and I concentrate on interactions in product markets due to the US–Chile FTA, and rather than examining disclosure, consider a different accounting property, i.e., earnings quality. To my knowledge, this is the first thesis to provide empirical evidence of a positive impact of the FTA on financial reporting quality of Chilean firms. My findings suggest that due to the US–Chile FTA, Chilean companies with extensive US product market interaction experience larger improvements in earnings quality.

Third, I contribute to the literature on ownership and accounting quality applied in emerging markets settings. For instance, Fan and Wong (2002) note that concentrated

ownership is associated with low informativeness of accounting earnings in the East Asian region. Although Latin American countries are characterised by high levels of ownership concentration, there is little evidence about the effects of ownership structure (e.g. Céspedes, González and Molina, 2010; Santiago-Castro and Brown, 2007), and none of the prior studies have investigated the relationship between ownership and quality of reported accounting information. In the Chilean context, scholars have focused on family firms and business groups and their relationship with company performance (Bonilla, Sepulveda and Carvajal, 2010; Martínez, Stöhr and Quiroga, 2007; Silva, Majluf and Paredes, 2006). There is no research studying whether ownership concentration has an effect on accounting quality in Chile.

Fourth, I provide evidence that may be useful to government officials and policymakers who are interested in assessing the indirect benefits of the US–Chile FTA. The results of this thesis suggest that regulators can affect the quality of a country's financial reporting through its trade policy, especially if a country has low accounting quality to start with. Using a Chilean setting, my results indicate that the US–Chile FTA indirectly led to reporting quality improvements, principally for those having more interaction with the US product market. This is consistent with the conclusion raised by Alvarez and López (2005), who study Chilean exporting companies. They point out that the encouragement of international trade policies is particularly important in emerging countries, since the involvement with stronger foreign markets can lead to considerable benefits.

Furthermore, this research adds to the body of knowledge about indirect benefits of an FTA. Direct effects, particularly from a trade perspective, have been investigated previously, but the indirect effects of the establishment of trade pacts have received little attention in the literature.

In addition, this research has practical implications for Chilean companies, especially firms that export or plan to export to the US. While the FTA provides greater access to the US product market, Chilean firms need to ensure that not only their product quality is high, but also that their accounting quality is high if they wish to compete against US firms.

Fifth, I extend the research on family businesses and institutional investors in Chile. Family firms are the most frequent form of ownership structure in Chile while institutional owners also have a substantial effect on the market. Therefore, the former are relevant agents to include in the analysis when Chilean data is utilised, but most importantly because they dominate the Chilean economy. Despite this significant role, Chilean literature is limited in exploring the role of family and institutional ownership.

1.5 Thesis structure

The structure of this thesis is as follows. Chapter 2 provides a general background on the US–Chile FTA and examines the relevant theory regarding product market interaction. In addition, Chapter 2 develops Hypothesis 1, which analyses the relationship between product market interaction due to the US–Chile FTA and financial reporting quality in Chilean firms.

Chapter 3 reviews the literature about ownership structure and presents Hypotheses 2 and 3 in regard to the influence of ownership – family businesses and institutional investors – on earnings quality changes for the pre-/post-FTA period. Chapter 4 describes the methodology of this study containing the variables, models and sample. This chapter also provides descriptive statistics and preliminary analysis of the data.

Chapter 5 contains the empirical results and robustness tests for Hypothesis 1. Chapter 6 discusses the results for Hypotheses 2 and 3, and provides the findings for the supplementary analysis about ownership structure. Lastly, Chapter 7 presents the conclusions, limitations and possible extensions of this research.

CHAPTER 2

PRODUCT MARKET INTERACTION AND HYPOTHESIS 1

This chapter has four sections. Section 2.1 provides a brief background to the US–Chile FTA, section 2.2 reviews the literature background about product market interaction, section 2.3 examines motivations to improve financial reporting quality by Chilean firms and section 2.4 develops Hypothesis 1.

2.1 Free Trade Agreement background

A Free Trade Agreement (FTA) is a commercial contract between two or more countries that decide to have wider product access by establishing tariff reductions in goods and services, setting permanent trading rules and continuing exchange cooperation. These types of trade pacts are part of economic integration and market interaction.

The signing of an FTA with the US was a goal that had been sought by Chile since 1990. However, it was not until the Asia-Pacific Economic Cooperation (APEC) in 2000 meeting that the presidents of the two countries agreed to start negotiating a trade pact. Subsequently, on November 29, 2000, formal commercial negotiations between the two countries began, and in 2002, after 14 rounds of meetings and discussions, the negotiations concluded. The FTA between Chile and the US was signed in Miami on June 6, 2003 and became effective on January 1, 2004 in both countries.

The US–Chile FTA is different from others trade agreements because it can be defined as a third generation pact[1] under the World Trade Organization[2] (WTO) Agreement by including macroeconomics, institutions and microeconomics areas. In general terms, it removes goods tariffs, decreases boundaries in exchange services, promotes government procurement, encourages investment, protects intellectual property, guarantees regulatory transparency and ensures trade competition. It also incorporates themes such as electronic commerce, telecommunications, environmental and labour issues.

The US–Chile FTA was a historic event for governmental officials and business leaders in Chile because it was the first time that the US had signed a trade pact with a South American country. It came into effect only seven months after it was signed.[3] For Chile, the signing of the FTA with the US was an important step in its programme to integrate internationally and was a signal of its intention to become a global trader in the future. It facilitated the entrance to the largest economy[4] in the world, which created many opportunities for expansion and economic development in Chile.

While the US–Chile FTA was the fifth trade agreement for Chile, following those signed with Canada in 1996, Mexico in 1998, Central America in 1999 and Korea in 2003, it was by far the most important. It also set a precedent for other countries in Latin America to open their markets to the US. The *Los Angeles Times* (2001) wrote: ‘A free-trade pact with

[1] First generation agreements refer to only tariff reductions (e.g., European Union, EU), second generation agreements introduce investment and other institutional themes (e.g., North American Free Trade Agreement, NAFTA), and the third generation agreements include social and microeconomic topics such as intellectual property, environmental, labour, among others.

[2] The WTO is a global international organisation that promotes international trade between countries. It assists the members in the trade negotiation process, provides a system regarding trade rules, supervises the correct implementation of commercial agreements and settles in case of trade disputes.

[3] In comparison, the times taken to implement other FTAs between the US and other Latin America countries include Costa Rica, 53 months; Dominican Republic, 31 months; El Salvador, 19 months; Guatemala, 23 months; Honduras, 20 months; Mexico, 13 months; Nicaragua, 20 months; and Peru, 34 months (Hornbeck, 2009).

[4] In 2012, the US had 19.5% of world gross domestic product (GDP), a population of 314 million inhabitants and a GDP at purchasing power parity per capita of US$51,704.

Chile would show other countries in the hemisphere the huge benefits of putting their economies houses in order: unimpeded access to the biggest and richest market in the world.'

Similarly, the Chilean ambassador to the US stated that the Chilean export sector would be the biggest beneficiary since the FTA gave it 'secure and preferential access to the largest market in the world, opening perspectives that until now had not existed' (*El Mercurio,* 2003b). In addition, Rosales (2003), in his presentation to the American Chamber of Commerce indicated that 'the FTA with the US generates certainty and clear rules in trade and investments, reducing transaction costs and favouring new exporters and investors in both parties.'

The commercial relationship between Chile and the US is highly complementary. Chile exports mainly agricultural, mining, food, forest and wood products, while it imports predominantly industrial and capital goods from the US. The US is the largest trading partner for Chile, and during 2004–2006 period the US was the first destination for Chilean exports. More recently, according to the Dirección General de Relaciones Económicas Internacionales[5] (DIRECON), the US has the second place in the ranking of Chilean exports after the EU, even though the EU includes numerous and diverse member countries. In addition, Chilean industrial products are firstly exported to the US market (DIRECON, 2010). This is relevant for increasing expansion of the industry sector in terms of product diversity, added product value and position development in this target market. Also, product diversity in the industrial sector is larger than the mining and agricultural ones; thus the former have more opportunities to grow. Since the FTA came into effect, the US became the Chile's largest and most important trading partner, a fact that demonstrates the importance for Chile of this trade agreement.

[5] www.direcon.cl

The impact of the FTA was immediate. Chilean exports to the US market grew by 31.8% in 2004, reaching historical levels (US$4,569 million). In fact, this result beat DIRECON expectations by three times, as the first-year growth due to the FTA was estimated to be only 10.2%. In 2005, exports to the US were $6,247.9 million, an annual increase of 36.7%. Exports to the US reached $8,947.6 million in 2006, a further 43.2% increase. In 2006, 16% of Chile's total exports went to the US. Thus, from 2004 – the year the FTA came into effect – to 2006, US exports grew by a staggering 158%. Since 2006, US exports have declined somewhat as a result of the global financial crisis and diversification of Chile's trading partners. However, in 2010, Chile exported $6,532.8 million to the US, displaying an annual increase of 15.7% in comparison to 2009, and during 2011, a further boost of 34.5% ($8,787.7 million) was achieved.

Chile's US export to total exports ratio has been increasing consistently with values of 9.7%, 10.88%, 11.71% and 12.69% for the years 2010, 2011, 2012 and 2013 respectively. By 2014, tariffs had been eliminated on 99.3% of Chile's current export basket to the US, and products will be tariff free by January 1, 2015 (DIRECON, 2014).

In terms of Chilean imports from the US market, these grew substantially from 2004, after two years of negative growth rates during 2001 and 2002 and with unchanged variation in 2003. In 2004, Chile imported from the US a total of $3,402 million, a 32% increase over 2003, and by 2005, US imports had increased another 38.8% to $4,723 million. Additionally, US imports increased by 18.4%, 30.4% and 50.6% in 2006 ($5,592 million), 2007 ($7,291 million) and 2008 ($10,982 million) respectively (DIRECON, 2007; DIRECON, 2009).

The FTA led to a dramatic shift in the composition of exported goods from Chile to the US. In particular, the historical dependence on exports from agricultural and mining declined, while industrial exports increased significantly. For example, in 1991, exports to the

US were mainly mining (34.3%), agricultural (33.1%) and industrial (32.5%). In 2004, the figures were mining (25.1%), agricultural (16.6%) and industrial (57.2%). In fact, during the first year of the US–Chile FTA's operation, the annual growth rate of exports for the industrial sector increased considerably, showing an increment of 24.5% (DIRECON, 2005). For Chile, the FTA with the US has brought huge benefits, creating new possibilities to different economic sectors and providing opportunities for export companies to be able to be involved in the US market.

Chile's export growth is acknowledged internationally. A report from the Economic Commission for Latin America and the Caribbean (ECLAC) indicates that during 2003, export growth in Chile (13%) exceeded the Latin American average (8.3%). This result was emphasised in 2004 when Chile showed an increase in exports to the world of 52.1% while the projected growth for Latin America was only 22.4% for that year (Comisión Económica para América Latina [CEPAL], 2004). These results are related to Chile's efforts to consolidate its export and trade policy at an international level. The FTA signed with the US gave Chile's trade approach a stronger footing internationally.

Finally, due to the FTA with the US, Chile obtained recognition as a country with an international quality image. This is reflected in positive evaluations from the World Economic Forum with its Economic Freedom Heritage Foundation Index,[6] in which Chile took 11th place in 2005, and was identified as the Latin American country with the highest degree of economic freedom and lowest risk. Currently, Chile's economy is the seventh freest in the 2014 Index.

[6] The Index covers 186 countries and is based on 10 quantitative and qualitative factors including four categories: rules of law (property rights and freedom from corruption), limited government (fiscal freedom and government spending), regulatory efficiency (business freedom, labour freedom and monetary freedom) and open markets (trade freedom, investment freedom and financial freedom). http://www.heritage.org/index

In summary, the US–Chile FTA became effective in 2004 and was the first US–South America FTA. Due to this trade pact, Chile has experienced extensive benefits. First, there were new opportunities to expand the Chilean economy with greater access to the US market. Second, from the first year of the FTA, exports to and imports from the US grew significantly, reaching historic levels and beating all projections. Third, the composition of Chilean exported goods changed by targeting industrial products and sectors with higher prospects for development, thus decreasing the dependence on the agricultural and mining sectors. Finally, the trade pact with the US consolidated the Chilean policy for integration in global markets and recognition as a leader in the region.

2.2 Product market interaction

In this section, I review the literature on product market interaction. The section has four parts. First, I examine the relationship between product market competition and international trade. Second, I review several studies about product market competition in emerging countries. Third, I provide background on the relationship between product market competition and corporate governance. Finally, I discuss the association between product market competition and accounting.

2.1.1 Product market competition and international trade

Adam Smith (1776) defines competition as a free system where resources are allocated efficiently and used more profitably. The microeconomic theory argues that in a competitive market environment, only the firms that are able to maximise their production factors skilfully have a higher likelihood of survival and success (Alchian, 1950; Stigler, 1958). Moreover, market competition can be viewed as a social institution that coordinates

and decentralises the economic system (Rosen, 1988), leading to greater economic efficiency (Shleifer and Vishny, 1997).

As a result of competition, noticeable benefits have been observed. For example, firms are more efficient (Caves and Bailey, 1992; Caves and Barton, 1990; Green and Mayes, 1991), increase growth productivity (Nickell, 1996), develop innovation (Blundell, Griffith and Reenen, 1995), have higher stock returns (Hou and Robinson, 2006), exhibit better performance (Habib and Ljungqvist, 2005), increase managerial effort and align incentives of managers and shareholders (Alchian, 1950; Nickell, 1996; Stigler, 1958).

Competition is enhanced by international trade allowing countries to access global exchanges of products and factors. Grossman and Helpman (1989) develop a product innovation and international trade model in which companies augment their comparative trade advantages with foreign markets through research and development investment (R&D) and thus contribute to economic growth. At a country level, comparative advantage refers to specialisation in the production of goods that can be produced more efficiently than in other countries as long as there is free trade (Ricardo, 1817).

Using a Ricardian trade model, Andersen and Sørensen (2008) show that product specialisation increases due to the reduction of international trade frictions; as a result, the level of exporting and importing also increases. In another theoretical approach, Jørgensen and Schröder (2011) note that trade liberalisation has a positive impact on welfare, where this effect is more pronounced when there are high levels of tariff reduction and industry product differentiation.

Hummels and Klenow (2005) examine 129 exporting and 59 importing countries[7] in 1995 and conclude that larger economies export more than smaller ones. Furthermore, richer

[7] Albania, Angola, Argentina, Australia, Austria, Bangladesh, Barbados, Belgium, Belize, Benin, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Cape Verde IS, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Costa Rica, Cyprus, Denmark, Dominica, Dominican Republic,

countries export more at higher prices than poorer ones, consistent with better quality production (better quality-higher price), and countries with more workers export more than nations with fewer workers but not at higher price. According to Schneeweis (1985), productivity and product development investment are the two important factors influencing high levels of exports. Stern and Maskus (1981) emphasise that employees' skills and technology strongly promote exporting.

These abovementioned cross-country studies suggest the existence of differences between high exporting and low exporting countries. At a firm level, high exporting countries are more capital and technology intensive (Bernard and Jensen, 1999), are larger and more productive (Bernard, Eaton, Jensen and Kortum, 2003), pay higher wages and employ more skilled workers (Serti, Tomasi and Zanfei, 2010) compared to low exporting countries. Bernard and Jensen (1999) examine US plants from 1984 to 1992 and conclude that good firms become exporters, i.e., companies with larger employment, more shipments, better labour productivity and higher wages. Clerides, Lach and Tybout (1998) find that efficient plants in Colombia, Mexico and Morocco are more likely to start exporting. These exporters' advantages, in comparison to non-exporting firms, improve companies' market survival likelihood and thus the possibility for success.

These results are consistent with the self-selection hypothesis where more productive firms are more likely to enter overseas markets. The alternative view is the learning-by-exporting hypothesis, where a firm's productivity increases due to the acquired knowledge of

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Ecuador, Egypt, El Salvador, Ethiopia, Fiji, Finland, France, Gabon, Gambia, Germany, Ghana, Greece, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Ivory Coast, Jamaica, Japan, Jordan, Kenya, Lesotho, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritania, Mauritius, Mexico, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russia, Rwanda, Senegal, Seychelles, Sierra Leone, Singapore, Slovak Republic, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Vincent and the Grenadines, Sweden, Switzerland, Syria, Taiwan, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Uganda, the UK, the US, Uruguay, Venezuela, Yemen, Zaire, Zambia and Zimbabwe.

being exposed to international markets. Clerides et al. (1998) claim that exporting plants are more efficient, particularly by having lower average variable costs and higher labour productivity than their non-exporters counterparts, and that their efficiency does not change after entering in international markets.

One important branch of international trade that promotes economic integration and market interaction is the establishment of FTAs. An FTA is a commercial contract between two or more countries that decide to have wider product access by establishing tariff reductions in goods and services, setting permanent trading rules and continuing exchange cooperation.

These types of trade pacts provide noticeable benefits. For instance, Trefler (2004) analyses the FTA between the US and Canada and observes positive effects. First, labour productivity improves substantially, for the most impacted Canadian industries, labour productivity increases by 14% in the export-oriented group and 15% in the import-oriented group. Within the manufacturing industry, labour productivity improves by around 6%. Second, trade creation is sufficiently larger than trade diversion. Trade creation occurs when trade is redirected from a higher cost exporter to a lower cost one while the opposite occurs in a trade diversion – trade is diverted from a more efficient producer to a less efficient one. As a result, aggregate welfare is also boosted in the Canadian sample.

Another FTA, between Japan and Singapore, is studied by Hertel et al. (2001) who find considerable improvements in investment, capital accumulation and economic growth. Specifically, they note an increase in rates of return and GDP in both countries with high increments in foreign and domestic investments. Other countries also perceive some benefits from the Japan–Singapore FTA; for example, all Asian economies[8] considered in the study

[8] China, Hong Kong, Indonesia, Korea, Malaysia, Philippines, South Asia, Taiwan, Thailand and Vietnam.

grow their real GDP, with the largest enhancements by 33% and 31% in Thailand and Malaysia respectively.

On the whole, economy integration and trade agreements significantly boost competition, allowing countries to improve specialisation, raise imports and exports, and increase welfare. Exporting firms generally are more successful than non-exporting ones, and usually they are larger, more productive, with bigger growth rates, and more capital and technology intensive. Productivity, good development investment, employees' skills and technology are the main elements identified that contribute companies to become exporters.

2.2.2 Product market competition and emerging countries

Competition has become an important force in emerging markets and several countries have established policy agreements about pro-competition and international trade with positive results. Van-Biesebroeck (2005), examining exporting versus non-exporting companies, and using a dataset from nine African countries[9] for the period 1992–1996, concludes that exporting firms have greater economic advantages than non-exporting partners. In particular, they are more productive, have larger outputs, are more capital-intensive investment, and pay higher wages. In general, the findings are consistent with both self-selection and learning-by-exporting hypotheses.

Another study in the emerging area is by Aw, Chung and Roberts (2000). After analysing Korean and Taiwanese markets, they find that exporters have higher total factor productivity than non-exporters in both countries. Production changes in Korea are more related to the learning-by-exporting thesis while such variations in Taiwan are more associated with the self-selection argument.

[9] Burundi, Cameroon, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Tanzania, Zambia and Zimbabwe.

Pangarkar and Wu (2012) consider the case of China. They utilize a total of 166 firms and 963 firm-year observations from 1996 to 2001 and show that industry globalisation increases corporate performance. They use the cumulative impact of export and import intensities to estimate industry globalisation, while return on assets (ROA) and return on equity (ROE) to proxy for performance. The authors conclude that, due to industry globalisation, there are greater improvements in performance for firms with more organisational slack in their resources than for firms with less slack. The external pressure of competition forces companies with extra resources to invest more efficiently and thus improve their foreign market strategy.

Pant and Pattanayak (2010) study the relationship between product market competition, corporate governance and firm performance in India. They show substantial improvements in Indian firms after the implementation of government policies and institutional reforms to increase competition. They use 1,807 listed firms between 2000 and 2003 and various measures of product market competition including company concentration ratio, the Herfindahl-Hirschman index, and rent and market share. Firm performance is the gross value added in factor productivity, and corporate governance consists of proxies for ownership structure, business group affiliation and capital structure. The authors find a positive relationship between competition and productivity in the Indian market; in particular, better performance exhibited by more competitive firms is boosted when the company has a high concentration of inside owners.

Chile also has experienced benefits from competition and international trade. Pavcnik (2002) reveals that during the period from 1979 to 1986 – a time in which considerable trade liberalisation was adopted in Chile – the productivity of Chilean manufacturing plants in the import-competing sector grow from 3% to 10% more than the productivity of plants in the non-traded goods sectors. However, consistent with Alchian (1950) and Stigler (1958), only

the most efficient plants survived during this period of liberalised trade. For example, 35% of the plants that operated in 1979 had stopped their production by 1986 and had exited the market.

Another study that shows a positive impact of liberalised trade on firm's productivity in Chile is by Alvarez and López (2005). Using a time period 1990–1996 and a total of 35,000 plant-year observations, they note that exporter plants have superior characteristics to non-exporter ones. On average, 20.6% of the plants are exporters, but these exporters have a significant role in the Chilean economy. The share of exporters increased from 40% to more than 50% in employment, from 56% to 62% in value-added and from 63% to 73% in capital stock during the period. The researchers conclude that exporter plants are better in employment, value-added and capital in comparison to non-exporter plants. Specifically, Chilean exporters are 19% more productive (total factor productivity), 60% larger (sales and value added) and 60% more capital intensive than non-exporters. The difference in wages between exporters and non-exporters averages 20%, and exporters pay higher salaries to skilled employees than non-exporters.

Alvarez and López (2005) also point out that Chilean plants trading in international markets exhibit higher initial production in comparison to those that do not do, suggesting that better firms become exporters. In accordance with the self-selection argument, Chilean plants improve in terms of productivity, size and human capital prior to engaging in exporting activities with the aim of trading their products overseas. However, the authors also find support for the learning-by-exporting hypothesis as Chilean plants boost their productivity after starting exports. Finally, they provide evidence that Chilean plants consciously raise their productivity when they target foreign markets. Firms buy new technology and make capital investments to improve quality or reduce costs with the objective of becoming exporters. Therefore, self-selection in emerging countries could reflect a conscious decision

to be involved in overseas markets. The authors highlight the policy implications about the positive effect of export markets on productivity growth in developing countries, arguing that legislators should focus on policies that increase the access of domestic firms to international economies.

In addition, following the trade liberalisation process, Chile has signed several FTA and commercial agreements with other countries and regions. For example, it signed an FTA with Canada in 1996, Mexico in 1998 and Central America[10] in 1999, Korea, the US and EFTA (Iceland, Liechtenstein, Norway and Switzerland) in 2003, China in 2005, Peru and Colombia in 2006, Panama in 2006, Australia in 2008, Turkey in 2009, Malaysia in 2010 and Hong Kong, Thailand and Vietnam in 2012. Also, Chile has economic associations and complementary agreements with Venezuela, Bolivia, India, Japan, Cuba, Ecuador, the Pacific-4 (Brunei, New Zealand and Singapore), the European Union (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the Netherlands and the United Kingdom) and the Mercosur group (Argentina, Paraguay and Uruguay). This Chilean open-economy approach has brought new opportunities and greater market access with significant productivity growth and welfare effects. The numerous tariff reductions implemented have allowed more product market competition and international integration.

However, the FTA signed with the US was by far the most important one. Chilean exports to the US grew considerably since the agreement's first year of operation, reaching historically high levels. For example, Chilean exports to the US increased by 31.8%, 36.7% and 43.2% in 2004, 2005 and 2006 respectively. The US is the first trading partner for Chile and is the second destination for Chilean exports after the EU, although the EU involves

[10] Costa Rica in 1999, El Salvador in 2000, Honduras in 2005, Guatemala in 2007 and Nicaragua in 2011.

many countries. Also, the US is the primary destination for Chilean industrial products (DIRECON, 2010). This is very important because the industrial sector has more variety in terms of products than mining and agricultural ones and more possibilities of expansion in the future. According to DIRECON, '…the US–Chile FTA was a major step in the strategy of international insertion, because it opened the door to one of the largest economies in the world which has generated ample opportunities for growth and economic development of our country. Additionally, many of our industries have access to US markets while benefiting from access to new technologies and resources…' (DIRECON, 2013).

In summary, previous findings in emerging settings reveal several economic advantages due to more competence through trade liberalisations and commercial agreements. Some positive effects are, for example, more production, higher efficiency, better performance, more capital investment and higher wages. Self-selection and learning-by-exporting are the main arguments that support the empirical evidence that firms with international commercial relationships are better than firms trading only in domestic markets. Finally, access to better and more developed economies by the establishment of cooperation contracts is an important benefit for emerging markets.

2.2.3 Product market competition and corporate governance

Product market competition also has an effect on corporate governance. It is argued that minimising the cost of better governance structures is an important element to consider in order to compete more efficiently (Shleifer and Vishny, 1997). Pant and Pattanayak (2010) point out that as a firm's internal governance mechanism includes its long-term financial structure, participation in more competitive markets can improve funding decisions and debt-equity distribution. The authors claim that product market competition can be considered a relevant external governance structure to restrict managerial discretion. Likewise, Chou,

Sibilkov and Wang (2011) indicate that competition contributes to monitor markets and encourages managers to work hard.

These arguments are in line with the findings of Bloom and Van Reenen (2007), who conclude that higher levels of product market competition (degree of import penetration, competition Lerner's index and number of a firm's competitors) are associated with better management practices. They use surveys in 732 medium-sized firms in the US, France, Germany and the UK, and divide managerial practices in four areas: operation (production process and technical improvements), monitoring (performance and evaluation), target (type and characteristics) and incentives (promotions, penalties and rewards). In this study, European firms display weaker management practices, consistent with lower levels of competition in Europe.

More recently, Giroud and Mueller (2010) analyse the effect of business combination laws on corporate governance and conclude that competition diminishes managerial slack. They use ROA as a measure of operating performance, both Herfindahl and Lerner's indexes as proxies for competition and a sample of 10,960 US firms during the period from 1976 to 1995. The authors note that ROA decreases after the business combination law's passage and the drop is more pronounced in non-competitive industries. Indeed, this effect is almost zero and statistically insignificant in industries that are highly competitive. Additionally, they find similar results when estimating the impact of business combination laws on stock prices in competitive versus non-competitive industries. There is an insignificant stock price decline around the date of the first newspaper report in relation to business combination law in competitive industries; in contrast, the reduction in stock price is significant in non-competitive ones. They conclude that more competitive environments obligate the improvement in management practices, a view consistent with the argument that less competitive environments weaken management (Smith, 1776) and create incentives for

managers to prefer a quiet life and thus work less hard (Hicks, 1935). Finally, the authors suggest that in order to develop high quality corporate governance, policymakers could mostly concentrate on enhancing competition.

Similarly, Chou et al. (2011), examining the period 1990–2005 in a US sample of 357 non-regulated industries, also find that competition have a significant impact on the quality of corporate governance. They use two indexes to estimate corporate governance quality – the G-index and the E-index – and product market competition is proxied by the Herfindahl index and the industry-adjusted-price-cost margin. Their results suggest that because competition is an exogenous component, it provides an efficient mechanism to oversee markets and thus managers are motivated to work tirelessly.

Lastly, another study that reviews the relationship between product market competition, corporate governance and firm performance is by Januszewski, Köke and Winter (2002). The data includes 491 listed and non-listed manufacturing German firms between 1986 and 1994. Variables for competition are the firm's rents from production, market share and the Herfindahl index. The ratio of imports to total market size assesses foreign competition and productivity growth measures firms' performance. Their measures of corporate governance include the ultimate controlling owner and ownership concentration. They find a positive association between competition and performance while firms having a single ultimate owner report higher productivity growth. More interestingly, their study provides evidence that intense product market competition leads to better performance improvements in companies with concentrated ownership.

The study of the relationship between competition and corporate governance in developing countries is very limited. Claessens and Yurtoglu (2013), in a survey study, point out the positive impact of competition in emerging markets, indicating that corporate governance problems are less severe when competition in the real factor market is high.

When competition is stronger, firms are more likely to adjust their operations and management to maximise their value. This is consistent with Estrin and Bevan (2003), who examine a Russian sample during 1999. With a total of 303 observations, they find a positive association between competition and managerial effort, e.g., managers are more likely to restructure and increase investments. The authors emphasise the necessity of policies that expose the Russian economy to open international competition.

Pant and Pattanayak (2010), studying the Indian market, conclude that as well as in developed markets, competition in emerging economies – in product and factor markets – disciplines insiders. Therefore, competition can be viewed as a strong external governance mechanism in firms in emerging countries (this study was previously mentioned in subsection 2.2.2).

To sum up, exposure to more competitive markets can improve firms' corporate governance and managerial decisions by limiting management's discretion and promoting superior practices. Although the literature is more extensive for developed countries, the positive relationship between product market competition and corporate governance can also be observed in emerging ones. The direct external mechanism role that product market competition has on companies and in their governance structure can indirectly affect their accounting system through the promotion of better accounting reporting and financial disclosure.

2.2.4 Product market competition and accounting

The literature claims a relationship between competition and accounting information (Dye, 1985b; Dye, 1986), arguing that companies in more competitive industries are more likely to provide high quality of accounting reporting (Harris, 1998). As competition encourages corporations to provide more information to the market (Hart, 1983) and

managers also are willing to release more companies' information to investors in order to disclose a signal of their own abilities and performance (Trueman, 1986), competition can be considered a useful mechanism to promote transparency. More disclosure and transparency reduces information asymmetry and cost of capital (Diamond and Verrecchia, 1991), which in turn mitigates the adverse selection and agency problems. Adverse selection occurs when there is asymmetric information between agents in that one of them possesses relevant information whereas the other does not have it (Akerlof, 1970). The agency dilemma refers to the conflict of interests between the principal and agent because there is a possibility that the agent seeks to achieve personal objectives to the detriment of the principal (Jensen and Meckling, 1976).

Darrough and Stoughton (1990) develop a model in which voluntary revelation of a company's proprietary information contributes to the financial market assessing more precisely the company's value. They conclude that such voluntary disclosure is encouraged by more product market competition. Following this theory, Li (2010) finds evidence that product market competition not only increases the voluntary disclosure quantity but also the quality. The study uses data from the US with a sample of 27,053 industry-years observations during the period 1977–2007. Nine measures for competition are utilized: the Herfindahl index, four-firm concentration ratio, industry PPE, product market size, price-cost margin, industry R&D, industry capital expenditures, total number of firms by industry and industry ROA. Disclosure quantity is measured as the industry pervasiveness of forecasting (ratio of forecasters to total number of firms by industry), disclosure quality is proxied by the industry average forecasting accuracy, and voluntary disclosure is measured by management forecasts on future earnings and capital expenditures. The author points out that product market competition has an important effect on a company's disclosure strategy, particularly in enhancing disclosure quality.

Balakrishnan and Cohen (2009) examine the effect of product market competition on financial reporting quality and find a positive relationship. They use US data of 1,564 observations between 2002 and 2006, the Herfindahl index, normalised Herfindahl index and inverse number of firms in the industry as measures of product market competition and earnings restatements frequency as proxy for financial reporting quality. The authors note that lower ratios of industry concentration variables – i.e., more competition – are associated with a lower frequency of earnings misreporting and better accounting reporting quality. They conclude that product market competition has a disciplinary monitoring role and is an efficient mechanism in corporate governance. This finding is consistent with the argument that competition motivates managers to work hard and thus reduces their incentive to slack (Alchian, 1950; Stigler, 1958).

However, Balakrishnan and Cohen (2009) provide evidence that the relationship between product market competition and earnings restatements is non-linear, where earnings restatements rise specifically in environments that are highly competitive and have strong capital market pressure. There are two reasons for this result: first, in more competitive industries, firms have to compete not only in the product market to sell their products but also in the capital market to obtain limited funds; and second, severe competition increases pressure on managers to perform better than their peers, while such pressure encourages executives to mainly focus on pursuing their own interests rather than the company's goals.

Likewise, Dhaliwal, Huang, Khurana and Pereira (2011), using a US sample of 99,315 firm-year observations from 1964 to 2006, identify a positive relationship between product market competition and conditional accounting conservatism. As a relevant accounting property, conditional accounting conservatism refers to the fact that earnings reflect bad news more quickly than good news (Basu, 1997). It is commonly used in accounting literature to proxy for earnings quality (e.g., Francis, LaFond, Olsson and

Schipper, 2004). The authors use variables such as concentrated industry (Herfindahl index), product differentiation (industry price-cost ratio), market size (customer demand) and barriers to entry (entry cost) to measure product market competition while timely loss recognition and persistence are chosen for conditional accounting conservatism. The authors conclude that as strong competition increases the bankruptcy risk, the agency problem between bondholders and shareholders also increases, and as a result bondholders demand more accounting conservatism in order to protect themselves from expropriation by shareholders. An increment in the risk of bankruptcy due to intense competition also affects auditors' litigation risk, so they require more timely loss recognition in order to reduce their liability exposition. These results are related to the notion that accounting conservatism is demanded as a response to the conflict of interest between parties and litigation risk (Watts, 2003).

Altogether, product market competition serves a disciplining function (Balakrishnan and Cohen, 2009; Pant and Pattanayak, 2010) by improving managerial practices (Bloom and Van Reenen, 2007), enhancing the effectiveness in the decision-making process (Pant and Pattanayak, 2010) and discouraging managerial slack (Alchian and Demsetz, 1972; Giroud and Mueller, 2010; Stigler, 1958). Product market competition also reduces misreporting in accounting information and increases conservatism (Balakrishnan and Cohen, 2009; Dhaliwal et al., 2011). In addition, product market competition has impacted positively on emerging markets (Alvarez and López, 2005; Aw et al., 2000; Januszewski, 2002; Pant and Pattanayak, 2010; Pavcnik, 2002; Pangarkar and Wu, 2012; Van-Biesebroeck, 2005), suggesting that it has a larger effect on companies from developing countries with weaker corporate governance and lower accounting quality.

2.3 Motivations to improve financial reporting quality

This section reviews the general motivations for Chilean companies to improve financial reporting quality and discusses reasons why US trading partners can require more information disclosure quality from their Chilean counterparts. The US–Chile FTA, which considerably increased interaction with US markets, may also have affected accounting quality in Chile. In this sense, improving earnings quality by Chilean firms can be considered an indirect result of more US product market interaction.

2.3.1 Earnings quality improvements in Chilean firms

Chilean companies have several motivations to improve their reporting quality. First, the FTA entails a significant opportunity to enter in the US market and increase competition; hence, Chilean managers will work hard and augment their effort to make beneficial connections and extend their networks. This is very important, especially considering the strong requirements in the US for international business. For example, only taking into account product market exigency, Hallak (2006) confirms that product quality (price indices from export unit values) is a key factor in international trade where richer nations import more from countries having better quality in their products. This finding is consistent with Linder (1961), who points out that wealthier economies tend to consume higher-quality goods than poorer ones. Taking this into account, it is expected that Chilean firms will strive to improve product quality by being more efficient and developing better technological processes in order to compete in the US.

In particular, the Government Trade Commission (ProChile)[11] and DIRECON created an exporters' manual to encourage and guide all the firms that wanted to take advantages of

[11] This is a government institution responsible for implementing and enhancing Chile's trade policy through promoting improvements in exports as well as the diversification of products and services in Chilean companies.

the FTA and export for the first time to the US. In addition, the Chilean Federation of Industry (SOFOFA[12]) and the Chilean–American Chamber of Commerce (AmCham[13]) launched the first interactive manual[14] about the US–Chile FTA, with the aim of providing better tools to new and older exporters so they could obtain benefits from this trade agreement opportunity. In this sense, managers' efforts, together with the assistance provided to Chilean companies, helped Chilean firms become more prepared to compete in the US market. Such a joint effort was in line with the Chilean AmCham's president who said the commercial agreement '...obligates to Chilean producers to work hard and offer better prices...' (*El Mercurio*, 2004).

However, better operational activities as a direct mechanism to improve product quality may not be sufficient to be attractive overseas. In order to draw US attention, Chilean firms may need to display superior corporate governance and higher quality financial reporting. First, considering that product market competition is promoted by the US–Chile FTA and, given that corporate governance improves through more competition as discussed in the subsection 2.2.3 (e.g., Bloom and Van Reenen, 2007; Chou et al., 2011; Giroud and Mueller, 2010; Pant and Pattanayak, 2010), Chilean firms with poor corporate governance can upgrade their governance practices more generally by being exposed to the US market. Further, when shareholders can observe their rival firms' performance, they can utilise those performance levels as a benchmark, and thus create incentive mechanisms to evaluate and compensate managers (Aggarwal and Samwick, 1999; DeFond and Park, 1999). Given that competition provides a benchmark to measure companies and managers' performance, the

[12] This is a private and non-profit trade association representing the views and interests of Chilean industries. It has 2,500 corporate members in which 37 sector association affiliates represent 80% of Chilean industrial output and 30% of GDP.
[13] This is a professional association whose mission is to promote free trade and business between the US and Chile. It has almost 700 company members and represents 90% of US investment in Chile.
[14] www.manualtlc.cl

comparison to peers can motivate steady improvements in corporate governance attributes at a general level.

Second, based on the argument by Cullinan (1999), who emphasises that exporting companies can be perceived as riskier suppliers by their international business partners, exporting firms have more motivation to prove their financial strength in the accounting statements. Analogously, more exporting activities due to the FTA can increase the incentives of Chilean firms to provide better financial reporting and thus decrease their US partners' perceptions of being risky companies to do business with.

Fama (1980) emphasises that for a company to survive in the market, it needs to act as an integrated system incorporating several elements that must work together. Therefore, by including relevant elements, i.e., corporate governance structure and the accounting system, Chilean firms are not only more prepared to address the stricter US market requirements but also they may experience greater benefits from the higher product market interaction. Summarizing, due to the US–Chile FTA, competition increases, corporate governance also improves leading to better financial reporting quality augments in Chilean firms.

Further, Chilean corporations are interested in constructing well-established mercantile connections as well as long-term relationships with US stakeholders. In order to achieve that, Chilean firms need to engage new corporate stakeholders and thus create market space in the US. For this reason, they have larger incentives to improve their information disclosure and financial accounting reporting quality. Simultaneously, US partners, with stricter requisites to do business and coming from a stronger accounting environment, also have incentives to require more information from Chilean firms to build such long-term relationships. Raman and Shahrur (2008) point out that earnings management negatively influences the relationship between customers and suppliers, finding that the duration of customer-supplier relationship is shorter when the level of discretionary accruals is high.

Cremers, Nair and Peyert (2008) highlight that stakeholders – such as customers and suppliers – are more motivated to perform a monitoring role when they have a closer relationship with the company. In this case, US stakeholders act as a monitor, leading Chilean firms to improve their organisational structures, information systems and reporting mechanisms.

Signalling contract theory also points out that one agent reveals to another some important information, as a signal, in order to ameliorate the asymmetric information problem, and then the agent who receives the signal reacts accordingly to the disclosed information (Spence, 1973). Applying this economic theory to an accounting scenario, Chilean companies, trying to differentiate from other firms, could be motivated to convey a signal to the market about their business trustworthiness and financial strength by the improvement of their reporting quality. This is similar to the argument of Gonedes (1974), who indicates that accounting decisions can be interpreted as signals to the market. This is very important in order to reduce asymmetric information, especially when US firms do not have enough information to evaluate their Chilean peers.

Dye (1985a, p. 141) mentions that 'every firm will disclose its information completely to distinguish itself from other firms with worse information'. For example, Verrecchia (1983) and Dye (1985a) note that companies with good performance disclose higher level of information to differentiate themselves from other companies with bad performance, and thus reduce adverse selection problem. This implies that greater disclosure would help Chilean firms to distinguish themselves from other firms with poor disclosure, thereby reducing their US counterparts' negative selection associated to asymmetric information. As a result, the firm's credibility and reputation increase, characteristics particularly important to enter in a foreign market.

In sum, Chilean firms have numerous motivations to improve their reporting quality obtaining more benefits from the FTA. In order to build a long-term relationship with US counterparts and also to fulfil their stricter requirements, Chilean companies have to provide better information. In addition, being exposed to US markets motivates corporate governance improvements that in turn can indirectly encourage development of earnings quality. A further reason is to provide a signal of financial strength and business trustworthiness, and thus decrease the perception of being risky suppliers.

2.3.2 US market demanding better earnings quality

In addition to the motivation of improving accounting reporting by Chilean firms, US trading partners also could demand more and better information – mainly from accounting statements – in order to assess solvency, profitability and financial strength. Such disclosure is determined by the type of agent; for instance, creditors and lenders are more interested in indicators regarding debt, solvency and bankruptcy likelihood, whereas other investors tend to focus on firm value and profits (Holthausen and Watts, 2001).

Ball, Robin and Sadka (2008) note that financial reporting characteristics, such as timely loss recognition, overall timeliness and conditional conservatism, are significantly valuable for creditors in debt contracting. The role of financial reporting quality in debt contracts is also corroborated by Costello and Wittenberg-Moerman (2011). Bondholders, in order to protect their borrowed funds, are likely to require more accounting conservatism (Ball and Shivakumar, 2005; Watts, 2003). This generates advantages for both lenders and borrowers, with the consequence of efficiency improvements in the debt contracting process (Zhang, 2008). Indeed, the majority of debt contract clauses – i.e., covenants – created to ameliorate shareholder–bondholder problems are based on accounting numbers. For example, maintenance of specific working capital and ratios such as interest coverage, net tangible

assets-funded debts and financial leverage (Smith and Warner, 1979). More recently, Hui, Klasa and Yeung (2012) find evidence that customers and suppliers also influence in the firm's accounting practices demanding more accounting conservatism.

Other types of information could be also required by different parties to complement the financial statement analysis and make stronger evaluations. This can include reports from audit firms and credit rating agencies as well as other companies' internal documentations. Holthausen and Watts (2001) mention that audited financial accounting reports are considered a valuable informative element in contracting arrangements – not only for insiders agents such as managers and shareholders, but also for external parties such as banks and private debt holders. This is because the information contained in audited reports provides evidence of company's financial credibility that augments the confidence of different users of financial statements.

Ball, Kothari and Robin (2000), studying some accounting income properties, conclude that common-law countries (e.g., the US) are more timely and more conservative than code-law ones (e.g., Chile). In addition, the monitoring by external markets – debt and equity – and the demand for timely public disclosure are stronger in common-law nations than in code-law ones (La Porta, Lopez-De-Silanes, Shleifer and Vishny, 1997). Thus, it is expected that US markets demand better accounting quality from Chilean firms in order to reduce asymmetric information and do business. This is analogous to Hallak's (2006) findings – that richer nations import more from countries with better quality products – if applied to reporting quality. The US will import products from Chile only if this emerging country provides good quality products; in turn, US partners will trust in Chilean firms as long as Chilean companies are able to display more transparency, disclosure and higher credibility through better financial reporting. As a result of Chilean firms upgrading earnings

quality, trusted and long-term commercial relationships can be built between US and Chilean corporations.

Summarising, US markets can require more and better quality information from Chilean firms due to the FTA. With the aim of assessing financial strength and building trust, different US agents – creditors, lenders, investors, customers and suppliers – could demand particular types of information in Chilean financial statements. In addition to information from accounting statements, other reports, such as audited and credit rating reports, can be requested to evaluate companies.

2.3.3 Summary and implications

By improving their products and process, together with having better governance and financial reporting quality, Chilean companies can compete more effectively in the US market and take advantage of the opportunities provided by the FTA. Likewise, by improving their accounting quality, Chilean firms can fulfil the stricter US stakeholders' requirements, particularly those from managers, investors, auditors, bondholders and customers. These competition effects suggest that instead of focusing on changing standards or accounting rules, legislators could concentrate on increasing competition with countries that demand higher reporting quality as a way to improve financial reporting quality.

2.4 Hypothesis 1

Globalisation decreases entry barriers, allowing flexible factor mobility and the integration of economies and markets. Such economic integration between countries augments cross-border interaction and competition in products, capital and labour markets. One consequence of this globalisation is convergence (Williamson, 1996), i.e., economies tend to be similar each other in income, institutions and corporate governance rules (Ben-

David, 1993; Hansmann and Kraakman, 2001). Some of the effects due to globalisation are, for example, convergence in corporate governance (Khanna and Palepu, 2004) and greater voluntary disclosure (Cahan et al., 2005; Webb et al., 2008).

The main mechanism for increasing capital market interaction is the cross-listing of shares, in which companies list their securities in its domestic exchange market and in one or more foreign stock market.[15] Prior research suggests that cross-listing can increase accounting disclosures (Khanna et al., 2004), improve investor protection (Coffee, 2002) and increase ownership by US institutions (Bradshaw, Bushee and Miller, 2004).

Lang et al. (2003) examine the relationship between cross-listing and accounting quality from 1990 and 2001 in 21 countries.[16] Using a sample of 813 cross and non-cross-listed companies in the US market, they find that cross-listed firms have less earnings management and report more conservative accounting numbers than their non-cross-listed counterparts, and as a result, exhibit better earnings quality. One explanation for this is that the incentives between managers and shareholders are better aligned in cross-listed firms, and therefore managers have more incentive to improve transparency in reported earnings. Because the US market has stronger rules, demands more mandatory disclosure and has better investor protection, foreign companies that decide to cross-list are exposed to all the US market's rules and regulations.

Other types of market interaction are in product and labour markets, although these market interactions have not been studied deeply in the literature. Khanna and Palepu (2004), in a case study about the software industry in India, conclude that globalisation in product and labour markets have a positive effect in corporate governance convergence in the India's leading software company.

[15] Examples are American Deposit Receipt (ADR), European Depositary Receipt (EDR), International Depositary Receipt (IDR) and Global Registered Shares (GRS).

[16] Australia, Belgium, Brazil, Chile, Finland, France, Germany, Hong Kong, India, Italy, Japan, Korea, Netherlands, Peru, Russia, South Africa, Spain, Sweden, Switzerland, Taiwan and the UK.

A more comprehensive study is by Khanna et al. (2004). They examine product and labour market interactions as well as capital market interactions. Using a sample of 794 non-US firms from 24 countries,[17] they study the effect of involvement with the US market on the firm's disclosure practices. They find that the level of a firm's disclosure is positively associated with interactions with the US market. They use several firm-level and country-level variables to measure the US market interactions, and their dependent variable is a transparency and disclosure index developed by Standard & Poor.

First, to capture capital market interactions, one firm-level and two country-level variables are utilized. The firm-level variable is whether the firm is cross-listed, while proxies at the country-level are the amount of equity investment by the US market in those foreign companies and the level of direct investment in those firms by US investors. Similar to Lang et al. (2003), they find a positive relationship between disclosure quality and capital market interactions, suggesting that in order to engage more US investors, who demand more information according to accounting standards, firms need to increase their disclosure level.

Second, two firm-level variables and one country-level variable are chosen to estimate product market interactions. The ratio of the firm's US exports to total sales and the proportion of firm's assets in the US are the firm-level variables. The total trade between the US and the firm's home country is the country-level variable. The researchers find the amount of disclosure also increases with cross-border product market interaction, suggesting that shareholders such as customers and suppliers require more informative disclosures before they can assess and trust a product's quality and enter into transactions with that firm.

Finally, only one country-level variable is utilised to proxy for labour market interactions, i.e., the number of granted business visas for travel to the US. The researchers

[17] Australia, Belgium, China, Denmark, France, Germany, Hong Kong, India, Indonesia, Italy, Japan, Korea, Malaysia, Netherlands, Pakistan, Philippines, Portugal, Singapore, Spain, Sweden, Switzerland, Taiwan, Thailand and the UK.

again find a positive relation, indicating greater labour market interaction is associated with better disclosure. Because there is intense competition for well-qualified employees in the US, foreign companies are motivated to boost their disclosures to attract this labour force.

More recently, Webb et al. (2008) examine the effect of capital, product and labour market interactions on foreign firm's voluntary disclosures. They consider globalisation more broadly so they do not limit their investigation to only US market interactions. They measure globalisation using the foreign sales ratio, the number of firm's foreign subsidiaries and number of foreign list exchanges, while disclosure is measured by a self-constructed index. With a total sample of 643 firms from 30 countries,[18] they find a positive relationship between voluntary disclosure and globalisation, and the globalisation impact is more accentuated in civil law countries. Due to involvement with markets characterised by having stronger demand for disclosure, firms from weaker institutional environments experience more benefits as they provide more disclosure.

In my study, I focus on product market interactions because I am interested in the effects of trade policy. A consequence of globalisation at the country level is the establishment of free trade agreements. Trade grows as a result of barrier exchange reduction and economy integration, and according to economic theory, wealth and wellbeing increase in countries that are members of a cooperation contract. Ben-David (1993) reveals a positive association between trade reforms and income convergence among countries. He finds that income differences among members of the European Economy Community (EEC) started decreasing at the time they eliminated trade barriers through policy reforms such as Kennedy Round and EFTA-EEC (European Free Trade Association) agreements.

[18] Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Denmark, Finland, France, Germany, Hong Kong, India, Ireland, Israel, Japan, Korea, Malaysia, Mexico, Netherlands, New Zealand, Philippines, Singapore, Spain, Sweden, Taiwan, Thailand, South Africa, Switzerland and the UK.

While prior studies focus on the convergence of income, corporate governance and accounting disclosures due to product market interaction (Ben-David 1993; Khanna and Palepu, 2004; Lang et al., 2003), I examine whether increases in product market interactions brought about by an FTA affect financial reporting quality.

Applying prior findings to a financial reporting scenario, it is expected that an FTA will positively affect the quality financial reporting in countries with weaker institutional environments. In the case of the US–Chile FTA, as discussed above, Chile had poorer accounting and weaker institutions than the US at the start of the FTA. As a result, I expect that US trading partners will demand for better quality financial reporting from their Chilean counterparts in order to assess their financial strength and to build trust. More formally:

H1a *Chilean firms report better earnings quality after the FTA with the US.*

Moreover, I expect larger increases in earnings quality for Chilean firms that experienced the largest increases in interaction with US markets. Thus, I test a related hypothesis:

H1b *Chilean firms having larger increases in product market interactions with the US after the FTA have better earnings quality.*

However, there are also reasons that suggest the improvements in earnings quality will not be related to the level of product market interactions due to the FTA. Specifically, based on the informational cascade phenomenon, all Chilean companies could be motivated to adopt better financial reporting practices. Informational cascade occurs when an agent observes the actions of others preceding individuals, and, rationally as well as optimally, decides to follow their behaviour (Bikhchandani, Hirshleifer and Welch, 1992). Thus, if Chilean firms improve their accounting quality to engage with US markets, then other firms observing this behaviour can be encouraged to do the same. Bikhchandani et al. (1992) argue that in the presence of informational cascade, individuals promptly converge to one action.

Therefore, if better earnings quality is advantageous for both markets and corporations, Chilean companies will emulate the actions of first-mover counterparts, resulting in the convergence of financial reporting improvements. Imitation as a relevant social phenomenon can increase the possibilities of disclosing better earnings quality when leader firms determine to boost their reporting, and subsequently the rest just follow them. In such a case, H1a would be supported while H1b is not.

CHAPTER 3

OWNERSHIP STRUCTURE AND HYPOTHESES 2 AND 3

This chapter has three sections. Section 3.1 provides the literature review of ownership structure, section 3.2 develops Hypothesis 2 about family firms and section 3.3 presents Hypothesis 3 regarding institutional investors.

3.1 Ownership structure

In this subsection, I review the literature on ownership structure. The section has five parts. First, I provide a general background about the topic. Second, I examine studies about ownership structure in developed countries and, third, in emerging countries. Fourth, I discuss ownership structure and its relation with firm value. Finally, I provide background on the association between ownership structure and accounting.

3.1.1 Ownership structure background

Corporate ownership structure refers to the distribution of a firm's equity, e.g., between large and small shareholders, and between insiders (individuals who have substantial connections with the firm, such as directors, the CEO and top executives) and outsiders (investors who have no direct corporate relationship). Coase (1960), Alchian and Demsetz (1972) and Jensen and Meckling (1976) were among the first to consider this issue.

A company in its ownership structure can have large shareholders only, small shareholders exclusively or a combination of both. Large owners, usually called controlling

shareholders – e.g., holding companies and blockholders – are characterised by owning a high proportion of the company's shares and controlling the firm. Holding companies are usually owned by families or wealthy investors while typical blockholders are mainly portfolio investors, e.g., mutual funds, insurance companies, investment companies and pension funds. In contrast, small owners are investors who have a small ratio of the company's shares and are commonly called minority shareholders. Due to the small owners holding a small fraction of shares, they cannot exert control over the company. However, a blockholder can effectively control a company if it is the largest shareholder even if its shareholding is less than 50%. In addition, there are cases when the blockholder can act as a minority shareholder and is therefore not able to control the company.

Jensen and Meckling (1976) point out that when there is a separation of ownership and control (Fama and Jensen, 1983a; Fama and Jensen, 1983b), the agency problem arises because the interests of insiders and outsiders are not aligned. In this case, insiders can carry out actions and achieve personal objectives that are detrimental to the outsiders' interests. Some examples of these actions are misallocating company's funds, selling company assets, transferring prices, consuming extra perquisites and investing in non-profitable projects (Shleifer and Vishny, 1997). According to the cash flow theory of Jensen (1986), inside managers prefer to reinvest the company's free cash flow instead of redistributing it to the outside investors.

When there is a separation between ownership and control, shareholders' property rights can be divided into two types: specific and residual rights. Specific rights are those well specified by contracts, while residual rights are the rights of control, i.e., the right to control the assets when all the conditions of their use are not established by a contract. In this sense, ownership is the acquisition of this residual rights of control (Grossman and Hart, 1986). This is opposite to the older property rights theory, which defines ownership as the

rights to residual income (Alchian and Demsetz, 1972). Thus, ownership relates to two underlying types of rights: voting rights and cash flow rights. Voting rights refer to the decision rights to utilise the assets, while cash flow rights are the rights to a share of the income from those assets. When separation of ownership and control rights exists, the controlling shareholders do not have to be burdened with all of the responsibility and costs of their decisions. Although this shareholders' rights split can cause agency problems, the company owners can decentralise their decision rights and delegate them to individuals who possess adequate knowledge and abilities, and thus the firm becomes a professional business (Jensen and Meckling, 1995).

In addition, the literature identifies two types in corporate ownership in terms of concentration: dispersed and concentrated companies. A company has dispersed ownership when it does not have owners with significant control rights, i.e., when it is widely held and no shareholder or group of shareholders is able to exert the control because they do not hold a sufficient percentage of the shares to do so. These companies are common in developed countries such as the US and the UK (Baumol, 1967; Berle, 1993; Demsetz and Lehn, 1985) and the agency conflict (type I) is normally between outside shareholders and managers (Jensen and Meckling, 1976).

On the other hand, in concentrated ownership corporations, the company's equity belongs to one or various controlling shareholders and the agency problem (type II) is focused between controlling owners and minority shareholders (Dharwadkar, George and Brandes, 2000). Although this organisational structure is more common in developing countries (La Porta et al., 1998; La Porta, Lopez-de-Silanes and Shleifer, 1999), firms in developed economies also have concentrated ownership (Holderness Kroszner and Sheehan, 1999; Morck, Shleifer and Vishny, 1988; Shleifer and Vishny, 1997). Pyramids, cross-holding and multiples classes of stocks are the most common mechanisms to separate cash

flow and voting rights and exert control in concentrated ownership (Almeida and Wolfenzon, 2006; Claessens, Djankov, Fan and Lang, 2000; Lemmon and Lins, 2003). Usually in these structures the voting rights exceed the cash flow ones.

Pyramid structures are formed when a shareholder or shareholders own shares through a chain of ownership relations. This chain mechanism allows the separation between ownership and control, because the shareholder at the end of the chain could have different levels of cash flow rights and voting rights. Cross-holding exists when a company owns stocks in another firm in the same business group. The separation between cash flow and voting rights can arise when shares have different voting classes.[19] In complex ownership structures that include pyramidal holdings, cross-holdings and/or multiple classes of stock, controlling shareholders can have private control benefits that exceed their cash flow benefits (Almeida and Wolfenzon, 2006; Claessens et al., 2000; Lemmon and Lins, 2003).

These differences in concentrated and dispersed ownership structure can exist for different reasons including legal origin, investor protection and capital market development. La Porta et al. (1998) analyse the first level of ownership for the 10 largest public traded firms in 49 countries[20] from Europe, North and South America, Africa, Asia and Australia. They observe that ownership concentration, measured as the average percentage of common shares owned by the three largest shareholders, depends on a country's legal basis. Companies from countries with a basis in civil law have higher levels of ownership concentration than firms with a common law foundation.

[19] An example of multiple stock classes is dual-class shares, where one class has normal voting rights while the other has limitations on voting rights or no voting rights. They are frequently classified with the letters 'A' and 'B'.

[20] Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Denmark, Ecuador, Egypt, Finland, France, Germany, Greece, Hong Kong, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kenya, Mexico, Malaysia, Netherlands, New Zealand, Norway, Nigeria, Peru, Pakistan, Philippines, Portugal, Singapore, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, Turkey, the UK, the US, Uruguay, Venezuela and Zimbabwe.

Another factor is investor protection. The authors present evidence that when an economy offers weak protection to shareholders, it is more probable that companies have a concentrated rather a diluted structure; hence, ownership concentration and legal protection become substitutes. Countries with a basis on civil law tend to provide lower levels of legal investor protection in comparison to common legal countries.

Finally, another aspect that determines this difference in ownership concentration is economy development. Developed economies have a more dispersed structure than undeveloped markets, which exhibit higher levels of concentration. Moreover, accounting standards and anti-director rights are negatively associated with ownership concentration, while mandatory dividend rule has a positive effect on it. Using a US sample, Demsetz and Lehn (1985) find that other possible determinants of the variation in ownership concentration are firm size, instability of profit rate and firm regulation.

On the whole, the structure of company ownership can include large (controlling) and small (minority) shareholders that, in turn, can be families, institutional investors, the state, individuals and others institutions. Ownership can be divided into voting rights and cash flow rights. The separation of ownership and control causes agency problems where business structures such as pyramids, cross-holding and multiples stock classes are commonly used to separate voting and cash flow rights and thus to exert control. In addition, factors such as legal basis, investor protection and capital market development influence the level of company concentration. Firms with dispersed ownership are frequently in developed countries, and the agency problem is between outside shareholders and managers. In contrast, firms with concentrated ownership are typically in emerging countries where the agency conflict is between controlling and minority shareholders.

3.1.2 Ownership structure and developed countries

Since La Porta et al. (1998), several empirical studies regarding ownership structure have been conducted. One of them is by La Porta et al. (1999), who examine the ultimate controlling shareholding across 27 rich economies[21] in 1995. They find that the controlling shareholder has control rights in excess of its cash flow rights by utilising control mechanisms such as pyramids and management affiliations. In addition, concentrated firms are controlled by family groups or the state while widely held corporations are more common in environments that offered strong investor protection.

Faccio and Lang (2002), for the 1996–1999 period, also study the ultimate owner in 13 Western European countries.[22] Their general findings are that 36.93% of the firms are widely held and 44.29% are controlled by families. Financial and large companies are mainly widely held whereas non-financial and small firms are typically family controlled. They explain that widely held corporations are more common in the UK and Ireland while in continental European companies, control is exerted predominately by families. Dual class shares and pyramids are the instruments to increase the control power by the largest shareholders.

In other research, Yen and André (2007) examine 287 firms acquisitions in 11 English law origin countries[23] between 1997 and 2001. They observe that the average of ownership concentration is 60%. In particular, the mean is 72% in Australia, 64% in Canada, 51% in the UK and 74% for the remaining countries. In Japan, ownership structure is characterised by large shareholdings of *keiretsus* – groups of firms from different industries where the largest

[21] Argentina, Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Portugal, Singapore, South Korea, Spain, Sweden, Switzerland, the UK and the US.
[22] Austria, Belgium, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland and the UK.
[23] Australia, Canada, India, Republic of Ireland, Israel, Malaysia, New Zealand, Singapore, South Africa, Thailand and the UK.

shareholder is a financial institution, usually a bank. Claessens et al. (2000) and Claessens, Djankov and Lang (2002) note that Japanese firms have higher diluted ownership when the largest shareholders are widely held financial institutions.

In summary, stronger economies generally feature diluted ownership; however, there are cases where concentrated ownership is also found in developed countries. Firms with concentrated structures are mainly controlled by families or the state in which pyramids, management affiliations and dual class shares are the common mechanisms to increase control.

3.1.3 Ownership structure and emerging countries

Ownership structure also has been examined in the context of developing markets. A study by Claessens et al. (2000) analyse the separation of ownership and control in eight East Asian countries.[24] They evaluate 2,980 companies and provide evidence that control rights excel cash flow rights through pyramids and cross-holding structures. The authors define ownership in terms of cash flow rights and control in terms of voting rights where control arises if an owner has over 5% of the votes. This dissociation between ownership and control is most pronounced in family controlled and small firms, with some evidence of large family controlled ones in countries such as Korea, Singapore and Taiwan. Moreover, older firms are usually controlled by family groups and the level of ownership concentration diminishes with country development. Finally, although the separation between management and control is not common in East Asian firms, the researcher note a separation between management and ownership.

Another study in the Asian region is by Xu and Wang (1999). Using a sample of 316 listed Chinese companies in 1995, they notice that firms are strongly concentrated, with a

[24] Hong Kong, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand.

mean of 58.1% for the outstanding stocks owned by the five largest shareholders. They distinguish the state, individuals and domestic institutions as the predominant types of shareholders.

In Latin American countries, the ownership structure is also concentrated (La Porta et al., 1998, La Porta et al., 1999). For instance, Lefort (2005) study six countries[25] in Latin America and present evidence that in 2002, ownership concentration (percentage of total shares held by shareholders) is around 53% for the largest shareholder and 79% for the five largest shareholders. Cueto (2008), using a sample of 329 firms in five Latin American countries[26] over the period 2000–2006, finds that the average voting right concentration of the dominant shareholder is 55.8%. More recently, Céspedes et al. (2010), with a sample of 806 Latin American firms from seven countries[27] and a time period from 1996 to 2005, observe that companies in Latin America are highly concentrated with an overall Herfindahl index of 0.33. The authors argue that company stockholders are not willing to share control rights and issue debt rather than equity when the firm needs funds as a mechanism to maintain their control. This is consistent with the argument presented by Nenova (2003).

Santiago-Castro and Brown (2007) evaluate 97 companies from Chile, Brazil and Mexico that list American Deposit Receipts (ADRs) on US exchanges between 2000 and 2002. They classify the major shareholders with the following categories: family-management, non-affiliated company, government, institutional, individuals and miscellaneous. They then identify that 58.2% of the firms have a family as an ultimate owner. They also note that 74% of the Latin American firms are controlled by business groups. In addition, by including an ownership concentration variable (largest five controlling shareholders who have at least 5% of the firm's shares), the findings suggest that control is

[25] Argentina, Brazil, Chile, Colombia, Mexico and Peru.
[26] Brazil, Chile, Colombia, Peru and Venezuela.
[27] Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

appreciated in Latin America because it allows the shareholder to possess substantial private benefits in excess of the shareholder cash flow rights. This positive valuation of control result supports Nenova (2003) who points out that, on average, the value of control-block votes is 4.5% and 25.4% for countries with common law and French legal origin respectively.

According to Céspedes et al. (2010), company ownership concentration in Chile is over the Latin American average (0.33) showing a Herfindahl index of 0.35. Santiago-Castro and Brown (2007) indicate that the expropriation of minority shareholders' rights – measured as the sum of squares of the top share blockholders holding at or above the 5% level – is 32.9% in Chile. The mean of expropriation for the whole sample is 39.1% while the same index is 37.3% for Brazil and 45.5% for Mexico. Lefort and Urzúa (2008) note that the ownership concentration average in Chile is around 70%.

In addition, management ownership through stock options is regulated in Chile, but this executive remuneration system is not commonly used. However, there is a high proportion of family firms and business groups. For instance, on average, 68% of Chilean companies are family firms (Bonilla et al., 2010) while 64% are affiliated to business groups (Silva et al., 2006). It is argued that in developing nations, concentrated ownership, family firms and business groups exist as a response to market failures such as poor institutions, weak corporate governance and incomplete disclosures (Burkart, Panunzi and Shleifer, 2003; Khanna and Palepu, 2000a; Khanna and Palepu, 2000b). Lastly, institutional investors also have a significant influence in the Chilean market due to the large amount of resources they manage. The dominant institutional owner are the AFP (private pension funds managers), and their assets investments can be seen as an indicator of the firm's financial strength and appeal. In fact, a firm's stock price is likely to increase once an AFP buys shares or increases its portfolio investment proportion in that firm (Bonilla et al., 2010).

To sum up, emerging economies are characterised by highly concentrated ownership. Family groups, the state and blockholders are the most common controlling shareholders where structures such as pyramids and cross-holdings are utilised to maintain control. In general, high ownership concentration in emerging markets may be a natural mechanism to deal with their market imperfections. Particularly in Chile, there is a large proportion of family firms and business group associations while institutional investors also have an important role in the market.

3.1.4 Ownership structure and firm value

The relationship between ownership structure and firm value has been studied with a theoretical and an empirical approach, and mixed results have been found. Morck et al. (1988) note an inverse U-shaped relationship between management ownership and firm value in the US market. Initially, interests between managers and outside equity holders are aligned due to the incentives provided to executives – e.g., stocks and options – to maximise firm value. Any action carried out by managers not only has an effect on the firm value but also on their own wealth. Thus managers are discouraged from consuming perquisites beyond an optimal level. As a result, there is a positive relationship between managerial ownership concentration and firm performance (Jensen and Meckling, 1976). Nevertheless, concentration and entrenchment occurs as managers who hold a significant fraction of the firm's equity regard only their own objectives without considering other shareholders' interests. This management behaviour has an unfavourable effect on firm performance, causing that the relationship between managerial ownership and firm value to turn negative. These results are consistent with the model developed by Stulz (1988), who points out that the value of a firm is positively associated to small values of controlling manager voting rights but negatively related as management ownership increases.

Another investigation in the US is by McConnell and Servaes (1990) who find a curvilinear relationship between insider equity owners and performance. Holderness et al. (1999) confirm the positive relationship between firm performance and managerial ownership for low ownership levels and a negative one for higher levels of board ownership.

In a global approach, La Porta, Lopez-de-Silanes, Shleifer and Vishny (2002) also analyse whether ownership structure is related to firm performance. They use a sample of 539 large firms in 27 wealthy economies[28] and find that the valuation of the firms (Tobin's Q) is superior in markets with stronger minority investor protection and when the controlling shareholder possesses higher cash flow rights. The researchers claim that cash flow rights, as a measure of management incentives, have a positive effect on firm value consistent with the incentive alignment argument (Jensen and Meckling, 1976). These results emphasise the importance of the protection of minority outside investors from the expropriation carried out by controlling shareholders.

Lins (2003) conducts a study about ownership structure and firm value in undeveloped countries. Analysing 18 emerging markets[29] in 1995, with data from 1,433 firms and a wider definition of management ownership by including officers, directors, top-level managers and their families, he finds that the largest blockholders in two-thirds of the sample are the managers and their families. An equivalent finding can be observed in previous studies (e.g., Claessens et al., 2002; La Porta et al., 1999). Also, the level of firm value (Tobin's Q) is negatively associated to management control rights and positive related to non-management blockholding control rights, where these findings are much stronger in countries with lower shareholder protection. The negative relationship between ownership

[28] Argentina, Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Portugal, Singapore, South Korea, Spain, Sweden, Switzerland, the UK and the US.

[29] Argentina, Brazil, Chile, Czech Republic, Hong Kong, Indonesia, Israel, Malaysia, Peru, Philippines, Portugal, Singapore, South Africa, South Korea, Sri Lanka, Taiwan, Thailand and Turkey.

and firm value indicates that incentives are not aligned and suggests the presence of managerial entrenchment. In this case, large non-management blockholdings can attenuate the discount since they act as external monitors.

In an analogous analysis but using a crisis time period, Lemmon and Lins (2003) examine the variation of stock returns and ownership structure in 800 firms from eight East Asian countries[30] between 1997 and 1998. They point out that the separation between cash flow and control rights (ratio of control rights to cash flow rights) negatively affects the firm value. This separation between ownership and control increases the agency problem in East Asian countries because the crisis period augments the incentive for expropriation to minority shareholders. Similar results that utilise 1,301 publicly traded firms in eight East Asian countries[31] are shown in Claessens et al. (2002). They find that firm value is positively associated with the largest shareholder's cash flow rights due to the positive incentive effect. However, the value of the firm decreases when the largest shareholder's control rights exceed its cash flow rights. This is consistent with the entrenchment argument.

Studies in a Latin American setting are very limited and only focus on the analysis of ownership structure as a main topic but not related with firm performance, for example, Santiago-Castro and Brown (2007) and Céspedes et al. (2010) (both discussed in the previous subsection). However, in a Chilean context, there are some studies that review the association between ownership structure and firm performance. One of them is Bonilla et al. (2010). With data of 2,505 firm-year observations during the period 1998–2007, they conclude that family firms perform (ROA) better than non-family firms. This is consistent with previous work done by Martínez et al. (2007) who use ROA, ROE and Tobin's Q to proxy financial performance in a sample of 175 Chilean corporations between 1995 and 2004, finding that

[30] Hong Kong, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan and Thailand.
[31] Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand.

family controlled firms have higher performance than non-family controlled ones. Bonilla et al. (2010) note that after controlling for AFP, the most important institutional investor in Chile, the results remain the same. They also provide evidence that family firms are less risky than non-family ones by showing less volatility in their returns.

Silva and Majluf (2008), utilising a sample of 331 firm-year observations for the years 2000 and 2003, point out that family control affects firm performance depending on the level of ownership concentration. Firm performance is measured by Tobin's Q and ROA, ownership concentration is proxied by the voting rights of the majority shareholder and family ownership is a dummy variable. The authors observe a positive relationship between family ownership and firm performance at lower levels of ownership concentration, but an opposite association when the ownership concentration is high.

Summarising, the relationship between ownership structure and firm value is not clear. Two important theories explain the effects of higher ownership, the positive incentive effect (Jensen and Meckling, 1976) and the negative entrenchment effect (Morck et al., 1988), when examining the association between ownership structure and firm value. Some researchers find evidence of a positive relationship (La Porta et al., 2002), others show a negative association (Lins, 2003) while other studies provide mixed results (Claessens et al., 2002; Holderness et al., 1999; McConnell and Servaes, 1990).

3.1.5 Ownership structure and accounting

Another line of research examines the association between ownership structure and accounting. The literature emphasises that ownership influences accounting information (Francis, Schipper and Vincent, 2005; Wang, 2006; Warfield, Wild and Wild, 1995). For example, companies with concentrated ownership show low levels of earnings informativeness (Fan and Wong, 2002) and are negatively related to voluntary disclosure

(Arcay and Vázquez, 2005). On the other hand, there is a positive relationship between outside ownership and voluntary disclosure, mainly because these type of investors possess high standards regarding the quality of firm-initiated information (Chau and Gray, 2002).

Guedhami and Pittman (2006) examine 190 firms from 31 countries[32] during the period 1980 to 2001 and note a negative association between ownership concentration and the quality of disclosure. They measure ownership concentration as the percentage of shares held by the three largest shareholders and an approximation of the Herfindahl index while a disclosure standards index is used to proxy for disclosure quality. The authors find that companies have lower ownership concentration in countries with stricter disclosure regulation.

A study about ownership structure and accounting disclosure in an emerging setting is by Fan and Wong (2002). Using data of 977 companies from seven East Asian countries[33] for the period 1991–1995, they claim that concentrated ownership and mechanisms such as pyramidal and cross-holding structures cause agency problems between controlling owners and outside investors. As a result, outsider investors' concerns about the reliability of reported earnings increase because these investors are aware of the owners' self-interest purposes in disclosing accounting information. This is consistent with the managerial entrenchment argument presented by Morck et al. (1988), but in this case it is applied to controlling owners. Additionally, concentrated ownership is related to low levels of earnings informativeness, which is consistent with the proprietary knowledge and specific human capital hypotheses. Those hypotheses state that decision rights are given to those who have specific knowledge (Jensen and Meckling, 1995). Rent-seeking companies, dominating the

[32] Australia, Austria, Brazil, Chile, Colombia, Egypt, India, Finland, France, Germany, Indonesia, Italy, Japan, Jordan, Korea, Malaysia, Mexico, New Zealand, Nigeria, Norway, Pakistan, Peru, Philippines, Portugal, Singapore, South Africa, Spain, Sweden, Thailand, Turkey and Venezuela.
[33] Hong Kong, Indonesia, Malaysia, Singapore, South Korea, Taiwan and Thailand.

East Asian region, are reluctant to reveal specific knowledge about their inner procedures, which could be captured by competitors and general public.

Chau and Gray (2002) examine ownership structure and voluntary disclosure using a sample of 60 companies in Hong Kong and 62 companies in Singapore in 1997. Ownership structure is proxied by the proportion of outsider equity owned and accounting information is measured by a disclosure index. The authors find a positive relationship between outside ownership and voluntary disclosure, supporting the agency theory hypothesis (Fama and Jensen, 1983a; Jensen and Meckling, 1976). In addition, companies controlled by family and insiders generally provide lower levels of voluntary information, because the demand for this type of disclosure is weaker in concentrated firms than in widely held ones.

Previous research suggests that family owners exert a significant influence in the information revealed to the market. Accordingly, Chen et al. (2008) point out that family firms have a lower disposition to provide voluntary accounting information than non-family firms. Because family owners bear more costs than benefits from disclosure, they decide to reveal less. Another structure that influences the level of disclosure are business groups, due to their complicated structures they are associated with less transparency and more opportunities to extract benefits from minority shareholders compared to non-business ones. Jeong-Bon and Cheong (2006), using South Korean data, find that discretionary accruals, proxy for earnings management, are higher for companies affiliated to groups in comparison to non-group affiliated firms, suggesting that controlling shareholders affiliated with business groups have more opportunities and motivations to engage in earnings management activities.

These previous findings are consistent with the view of Leuz, Nanda and Wysocki (2003) that earnings management is more severe in countries with weaker investor protection where there are more opportunities for insiders to obtain private control benefits, indicating that the institutional environment where the firm is located influences its accounting quality.

Rahman, Yammeesri and Perera (2010), using a sample of 49,454 firm-year observations from 1994 to 2005, compare the financial reporting quality, measured by abnormal accruals, across five countries.[34] They note that accounting plays different roles depending on the institutional setting in each nation. Due to firms preparing their accounting reports based on their country's institutional environment, they have different levels of accruals, implying that the institutional idiosyncrasies affect accounting practices.

Bushman and Piotroski (2006) find that firms in more protective environments and with high-quality judicial systems report bad news about earnings in a more timely fashion than firms in countries with poor investor protection and low quality judicial systems. This is in line with Bushman, Piotroski and Smith (2004), who indicate that financial company transparency is more related to political economy and is higher when both the state ownership and its level of expropriation are low. With a similar point of view, Jaggi and Low (2000) conclude that companies in countries with a civil code origin are related to lower levels of financial disclosure than their common law counterparts. Hope (2003) notes that not only country legal origin, but also its cultural values are closely related to firm level disclosure. In the case of emerging countries, Patel, Balic and Bwakira (2002) compare 19[35] of them based on their transparency and the disclosure Standard & Poor score index. The best index score is for Asian companies, which score 43, then European and Middle East firms, which obtain a score of 36, and finally companies in Latin America, which score 29.

The relationship between ownership structure and accounting has not been studied in Latin America. As discussed before in subsections 3.1.3 and 3.1.4, in Chile, family firms are the most common ownership structure and institutional investors are important participants in the market. Thus, family businesses and institutional owners can influence the quality of

[34] Germany, France, Japan, Thailand and the US.
[35] Argentina, Brazil, Chile, China, Czech Republic, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Thailand, Turkey and South Africa.

accounting information. As such, it is important to incorporate them into an analysis. The following sections discuss how family and institutional ownership may affect the relationship between the free trade agreement and earnings quality.

Overall, ownership structure affects the extent and quality of the information provided to different stakeholders. Concentrated ownership, family controlled companies and business groups are associated with revealing weaker accounting quality and less voluntary information than diluted ownership, non-family firms and companies not associated with business groups. In addition, a country's institutional environment is an important determinant of financial reporting in which companies in countries with strong institutional settings are more transparent and disclose better information than firms in poor institutional ones.

3.2 Hypothesis 2

Family controlled firms are the subject of numerous studies. The definition of a family business can vary widely from study to study; however, the most common definition used in empirical ones is based on the level of family ownership or the number of family members holding directorships or filling key management posts (Dyer, 2006).

Jensen and Meckling (1976) explain that family firms perform better than non-family ones because their greater ownership concentration reduces the agency costs of monitoring which, in turn, mitigates free-riding. Also, family firms are likely to look beyond short-term economic interests and are more protective of the family's long-term fortune (Gomez-Mejia, Nuñez-Nickel and Gutierrez, 2001; McConaughy, 2000). Lee (2006) points out that family firms create more employment and revenue growth. As a result, some scholars predict that family firms will be more profitable than non-family ones (Allouche, Amann, Jaussaud and Kurashina, 2008; Anderson and Reeb, 2003; Lee, 2006). McConaughy, Matthews and Fialko

(2001) find family firms have superior performance in terms of efficiency, capital structure and company value due to lower monitoring costs, longer investment horizons and less propensity to take on risk.

Allouche et al. (2008) also show that family firms have stronger financial structure. The family's aim to transfer the business to successive generations is associated with a conservative management approach that leads to a better reputation and relationships with suppliers. Family firms also are stronger in the development of social capital due to their ability to cultivate and nurture relationships across generations (Dyer, 2006). Beehr, Drexler and Faulkner (1997) add that family businesses are better at managing conflicts, thereby offering greater job satisfaction and harmony in the workplace.

An opposite view highlights the disadvantages associated with family businesses. One drawback is the difficulty in monitoring and evaluating family members. According to Schulze, Lubatkin, Dino and Buchholtz (2001), the atmosphere in these companies is such that personnel are treated in terms of who they are – meaning their family status – rather than what they do at work. This can lead to leadership irresponsibility and excessive risk-taking by family members (Miller and Le Breton-Miller, 2006). Also, family firms have an incentive to take actions that benefit the family at the expense of company financial results and of external (non-family) investors. This expropriation of benefits is known as 'tunnelling' (Faccio, Lang and Young, 2001). Some specific examples include the redistribution of wealth from non-family employees to the family (Burkart et al., 2003), excessive compensation of family members (DeAngelo and DeAngelo, 2000) and diversion of resources into non-pecuniary benefits instead of income-producing activities (Demsetz, 1983).

In addition, family businesses are limited in their ability to recruit specialised professionals, particularly when the firm is relatively large, complex or requires specific knowledge that cannot be supplied from within the pool of family members. Hiring external

employees to address business needs may create problems in integrating non-family staff into the firm (Dyer, 1989), suggesting that companies whose managers are restricted to family members will have less-developed human capital.

In terms of accounting, researchers are interested in the association between ownership concentration and the quality of accounting information. Two main approaches have been chosen in the literature to measure accounting information. The first one is to measure voluntary disclosure through specific rankings score (Brown and Hillegeist, 2007; Sengupta, 1998) or self-constructed indexes (Francis, Nanda and Olsson, 2008; Shalev, 2009). The second approach is to measure the quality of the company's reported earnings.

The relationship between family firms and accounting quality is not clear. Some researchers argue that family firms have a higher quality of earnings because family businesses have superior monitoring of managerial behaviour. Also, having long-term investment horizons, family firms have less pressure to reach short-term profits, which can impact positively on earnings quality. For example, Wang (2006) finds that founding-family ownership is associated with higher earnings quality, and specifically with lower abnormal accruals, greater earnings informativeness and less persistence of transitory loss components in earnings. This finding is corroborated by Ali, Chen and Radhakrishnan (2007), who note family firms are less likely to manipulate earnings than non-family firms, leading to superior earnings quality. However, both Wang (2006) and Ali et al. (2007) focus on family controlled firms in the US.

On the other hand, Faccio et al. (2001) point out that earnings management is higher in countries with lower investor protection (such as Chile), where controlling shareholders can direct expropriate benefits from outside minority shareholders. Leuz et al. (2003) conclude that the manipulation of accounting information is exacerbated when control is concentrated in a family. Further, the type II agency problem prevalent in family firms

directly affects in disclosure practices, where family firms are associated with less voluntary disclosure (Chau and Gray, 2002, Chen et al., 2008). The long-term investment horizon and the active management role of family members could allow family owners to negatively influence the firm's voluntary disclosure and, hence, the level of accounting information revealed to the market. Fan and Wong (2002) find that controlling shareholders may misstate financial information and make decisions to the detriment of minority shareholders.

Family controlled businesses dominate the Chilean economy. For example, Martínez et al. (2007) note that family controlled firms are 57% of their sample. Similarly, Bonilla et al. (2010), who use 2,505 firm-year observations from Chilean firms, classify 68% of the businesses as family controlled. In contrast, in the US market, the percentage of family firms is 35% in a sample size of 403 firms (Anderson and Reeb, 2003), and 39.55% from a total of 3,456 firm year observations (Wang, 2006).

The relationship between family control and earnings quality has not been studied in the Latin America region or in Chile specifically. Thus, I first examine this relation using Chilean data. According to the literature that examines the effects of family ownership in other regions (e.g., East Asia), I expect a negative association, i.e., family firms report poorer earnings quality than non-family ones. More formally,

H2a *In Chile, family firms experience lower earnings quality than non-family firms.*

However, my main interest is in whether family ownership affects changes in earnings quality around the start of the FTA. Since I expect that family controlled firms have lower accounting quality to start with, I predict that the FTA will lead to larger increases in earnings quality for family firms. I examine the interaction with the following hypotheses:

H2b *Family firms in Chile show larger improvements in earnings quality after the FTA.*

H2c *Family firms in Chile that have larger increases in product market interactions with the US after the FTA have better earnings quality.*

3.3 Hypothesis 3

Institutional investors include mutual funds, insurance companies, commercial banks, pension funds and other financial institutions. Generally, they are viewed as sophisticated investors (Walther, 1997), demanding more information than other shareholders to fulfil investment goals and legal requirements (Jarrell and Poulsen, 1987).

There are two opposing views regarding the effect of institutional ownership. The first points out that there are some benefits for companies that have institutions as owners. For instance, Gugler, Mueller and Yurtoglu (2008) show that institutional ownership is positively associated with firm performance in the US market. Lee and Park (2009) argue that institutional activism improves shareholders' wealth. In addition, Choi and Seo (2008) reveal that companies with higher level of institutional ownership display better accounting transparency and larger earnings response. In this case, institutional investors can directly influence in the firm by playing an active role in monitoring (Agrawal and Gershon, 1990). As a consequence, institutional investors can limit managers' opportunistic behaviour regarding financial and accounting report activities.

The second view concentrates on the negative aspects about the investing behaviour of institutions. For example, institutional organisations have myopic perspectives about company's earnings and have a preference for short-term rather than long-term earnings (Graves and Waddock, 1990; Porter, 1992). This implies that institutional investors act as traders instead of owners. One significant impact is that managers feel pressure to achieve those short-term earnings goals and as a consequence have more incentives to manipulate accounting numbers (Bushee, 2001).

In order to distinguish between preferences for short-term and long-term earnings, Bushee (1998) classifies institutions based on their past investment patterns based on trading frequency and level of diversification. He divides institutional investors into three categories:

transient, dedicated and quasi-indexer. Transient institutions are characterised by having short investment horizons, high portfolio turnover, diversified smallholdings and frequent trading. Dedicated institutional owners, on the other hand, prefer longer horizons and large investments concentrated in few firms. Dedicated institutional ownership also has low turnover rates and usually plays a monitoring role. Finally, quasi-indexer investors have small and diversified holdings, and low portfolio turnover.

Bushee (1998) studies the influence of the different groups of institutional ownership in manipulating earnings by reducing research and development investment. He finds that when dedicated institutional ownership is high, there is a lower probability that managers cut research and development to boost earnings. In this case, the pressure for myopic behaviour is reduced by the presence of these institutional investors, who serve as monitors.

However, transient institutions, which have high portfolio turnover and engage in momentum trading, are associated with reduction of research and development in order to counter earnings reduction. Therefore, earnings management is strongly influenced when institutions with short investment horizons and myopic perspective have a high proportion of company's ownership.

From a similar perspective, Bushee (2001) analyses myopic pricing and finds that there is a positive relationship between transient institution ownership and overweighting of near-term earnings, and a negative relationship with long-term earnings. Transient institutions with short investment horizons are not only associated with near-term earnings preferences, but also with misvaluation.

Koh (2003) find a non-linear concave relationship between institutional ownership and aggressive earnings management strategies. For low levels of institutional ownership, there is a positive relationship between institutional ownership and income increasing discretionary accruals, whereas for high levels of institutional ownership, a negative

association between them is observed. The positive relationship is consistent with the transient investor argument, which maintains that institutions with short-term horizons influence managers to manipulate earnings upward. Conversely, the negative relationship between institutional ownership and aggressive earnings management strategies is related to long-term dedicated investors who diminish accrual management with their monitoring roles.

Following Koh's (2003) study, Hsu and Koh (2005) note that transient institutions are associated with greater accruals management whereas long-term investors limit this. These findings suggest that institutions with a long-term orientation play a role in corporate governance to discourage earnings management. In addition, Burns et al. (2010) present evidence that financial misreporting is positively related to short investment horizons investors. More misreporting is observed in companies with high levels of institutional shareholders classified as transient and quasi-indexing while dedicated institution ownership is more associated with better financial reporting.

The most important institutional investors in Chile are pension fund managers (AFP), i.e., private institutions responsible for collecting social security contributions, managing pension funds and providing retirement benefits. Chile was a pioneer in the model, adopted in 1981, which changed from a pay-as-you-go system to one based on individual capitalisation. Around 30 countries in Latin America, Europe and Central Asia have imitated in part or in full this Chilean-style pension. Some reforms have been enacted in order to improve the system, e.g., multi-fund reform in 2002 and introduction of voluntary social security savings in 2004.

The amount of assets managed by this type of institutions is substantial. For instance, between 1981 and 2001, accumulation of pension funds contributed 30% to financial asset growth (Corbo and Schmidt-Hebbel, 2003), and by the end of 2004, fund assets reached US$60,799 million, corresponding to 59% of GDP (De Mesa and Mesa-Lago, 2006). AFP is

considered to be the major contributor to the development of Chilean capital market and improvement in corporate governance (De Mesa and Mesa-Lago, 2006; Lefort, 2007).

Other institutional investors are banks, mutual funds, insurance companies, investment companies and other financial institutions. According to the Chilean Pension Fund Administrators Association,[36] of a total of US$301,824 million of managed financial assets in June 2007, the highest proportion was administered by banks (49%) and AFP (33%). Lower proportions were administered by insurance companies (9%), mutual funds (7%) and other investment institutions (2%).

Institutional investors have an important influence in the Chilean market not only because they manage a significant amount of financial assets, but also their decisions have a large impact on the public opinion. Therefore, I first examine the influence of institutional investors on the earnings quality of Chilean companies. Given the importance of AFP in Chile, I expect a positive effect. Thus, I hypothesise:

H3a *In Chile, institutional ownership is positively related to earnings quality.*

Focusing now on the change in earnings quality around the FTA, it is expected that institutional ownership will be associated with less improvement in a firm's earnings quality, since these firms would have had better accounting quality before the FTA due to monitoring role of the institutional investors. Consequently, two related hypotheses are:

H3b *Chilean firms with institutional investor shareholdings show smaller improvements in earnings quality after the FTA.*

H3c *Chilean firms with institutional investor shareholdings that have larger increases in product market interactions with the US after the FTA have better earnings quality.*

[36] http://www.afp-ag.cl

CHAPTER 4

METHODOLOGY AND DESCRIPTIVE STATISTICS

This chapter describes the research design to test the three hypotheses presented in the Chapters 2 and 3, and provides some preliminary analysis. Section 4.1 includes the variables used to measure the relation between product market interaction, ownership structure and earnings quality. Section 4.2 presents the models developed by hypothesis and section 4.3 describes the sample utilised. Section 4.4 provides descriptive statistics and preliminary analysis of the data.

4.1 Variables

This section presents the variables used. The first subsection explains the two measures of financial reporting quality. The next subsection presents the main test variables that capture the extent of product market interaction with the US as well as ownership concentration regarding family firms and institutional investors. The last subsection defines several control variables included to control for other factors that may affect the level of earnings quality.

4.1.1 Dependent variables

The dependent variable in each hypothesis is earnings quality (EQ) using non-market based measures. These measures use accounting information mainly from financial

statements. The non-market-based proxies of earnings quality chosen in this study are discretionary accruals (DAC) and benchmark meeting (MEET).

4.1.1.1 Discretionary accruals

The first proxy of earnings quality is discretionary accruals. This metric is based on the Jones (1991) model, which uses total and normal accruals levels to obtain the corresponding discretionary portion. Several studies utilise this measure to capture the quality of financial reporting (Cahan et al., 2008; Haw, Hu, Hwang and Wu, 2004; Hsu and Koh, 2005; Leuz et al., 2003).

Total accruals are composed by discretionary and nondiscretionary elements, and the residuals from equation (1) are the estimated discretionary accruals. Discretionary accruals levels are used to assess earnings manipulation because these abnormal elements reflect a distortion that is interpreted as lower earnings quality. Therefore, low values of discretionary components (the residuals) imply better earnings quality.

Total accruals:

$$TA_{it}/Assets_{i,t-1} = \beta_1\, 1/Assets_{i,t-1} + \beta_2\, \Delta REV_{it}/Assets_{i,t-1} + \beta_3 PPE_{it}/Assets_{i,t-1} + \varepsilon_{it} \qquad (1)$$

Normal accruals:

$$NA_{it} = \hat{\beta}_1\, 1/Assets_{i,t-1} + \hat{\beta}_2\, \Delta REV_{it}/Assets_{i,t-1} + \hat{\beta}_3\, PPE_{it}/Assets_{i,t-1} \qquad (2)$$

Discretionary accruals:

$$DA_{it} = \left(TA_{it}/Asset_{i,t-1}\right) - NA_{it} \qquad (3)$$

TA_{it} : Total accruals (earnings less operating cash flows) for firm i in year t

ΔREV_{it} : Revenues in year t less revenues for firm i in year t-1

PPE_{it} : Gross value of property, plant and equipment for firm i in year t

$Assets_{i,t-1}$: Total assets for firm i in year t-1

ε_{it} : Error term for firm i in year t.

In general, this expectations model controls for the effects of economic circumstances on accruals levels. Gross property, plant and equipment is included to control for the portion of total accruals related to nondiscretionary depreciation expense, while change in revenues is added to control for the firm's economic environment. In order to reduce heteroscedasticity variables are scaled by lagged assets.

A cross-sectional model is selected because it is considered more efficient than a time-series approach in capturing accrual manipulation (Haw et al., 2004). In addition, because firm's characteristics differ across industries (Maletta and Wright, 1996; Himmelberg, Hubbard and Palia, 1999) and such features can affect the levels of discretionary accruals, it is better to estimate the model for each year and industry group. Also, the data requirements for this model are less restrictive.

4.1.1.2 Benchmark meeting

The second earnings quality measure is related to meet the positive earnings target and also is a common proxy used in the literature (Ayres, Jiang and Yeung, 2006; Degeorge, Patel and Zeckhauser, 1999; Frankel, Johnson and Nelson, 2002). MEET, just above the zero earnings threshold proxy, takes the value of 1 when net income deflated by the book value of equity is between 0 and 0.01; 0 otherwise.

4.1.2 Test variables

This subsection presents the test variables: first, the FTA variable, second, the proxies for US product market interaction and finally the ownership measures of family firms and institutional investors.

4.1.2.1 Pre and post FTA period

In order to analyse the effect of the US–Chile FTA, a dummy variable (POST) is created. It is equal to 1 for 2004 and years after 2004, and 0 otherwise. 2004 is chosen because the FTA became effective on January 1, 2004. A negative value for this variable would indicate better earnings quality for Chilean firms after the FTA.

4.1.2.2 Product market interaction

There are four proxies to measure the extent of interaction with US product markets – one of these is based on Khanna et al. (2004) and the remaining three are calculated following this study with a slight modification.

The first one is the level of the company's export change to the US (ΔUS_EXP), calculated as the difference from the previous year in the ratio of exports to the US divided by total sales. Second, in order to determine whether specific industries with more interaction with the US market exhibit better earnings quality, a dummy variable (T_IND) is included. It is equal to 1 if the firm is within the list of industries or sectors[37] that have been more positively impacted in their exports level due to the FTA, and 0 if the firm does not belong to the target group. This target group consists of sectors of agricultural and fisheries, basic and fab metal, chemical, food and beverages, mining, non-metallic mining, pulp and paper, and

[37] The list of industries and sectors most positively affected by the FTA is obtained from DIRECON.

textiles. The third measure is an indicator for a US subsidiary (US_SUB). It takes the value of 1 when the company has subsidiaries or operations in the US and 0 if not.

It is expected that companies with more product market interaction with the US – i.e., firms with more changes in export levels, in the target group of industries or a subsidiary there – would experience more improvement in earnings quality. Therefore, for all these three variables, a negative relation with discretionary accruals and benchmark meeting would indicate that earnings quality is increasing in the level of interaction with the US product market.

Finally, an indicator variable for the top US exporters (HI_US_EXPD) is included to capture the effect of companies with the most extensive involvement in the US market. It takes the value of 1 when the company belongs to the top 10% group of companies that sell products to the US and 0 otherwise. HI_US_EXPD is based on the US exports to total sales ratio.

4.1.2.3 Ownership concentration

Chilean firms have very concentrated ownership. For example, in 2009 the average concentration for the first, second and third largest shareholder was 48.41%, 14.31% and 6.46% respectively. Another objective of this study is to examine whether concentrated ownership affects the improvements in financial reporting due to the FTA, with a focus on family ownership and institutional ownership.

As in previous studies, family controlled companies are identified using an indicator variable (FAM) that is equal to 1 for family firms and 0 for non-family ones (Ali, Chen and Radhakrishnan, 2007; Anderson and Reeb, 2003; Chen et al., 2008). The criterion for this classification is similar to that utilised by Bonilla et al. (2010), who study the Chilean market.

A positive sign for this variable indicates that family ownership has a negative impact on earnings quality.

In order to identify firms with institutional shareholders, an indicator variable is included (INST). This variable takes the value of 1 when an institutional investor is one of the top five shareholders. The relationship between institutional investors and earnings quality will be positive if earnings quality improves because of the monitoring role of institutional investors; therefore, it is expected that the sign for institutional ownership will be negative (Agrawal and Gershon, 1990; Choi and Seo, 2008; Hsu and Koh, 2005; Koh, 2003).

4.1.3 Control variables

In order to control for other factors that might influence the level of earnings quality, several variables based on previous studies are considered.

4.1.3.1 Performance

Return of assets (ROA) is used to capture firm's performance (Ali et al., 2007) and it is defined as net income divided by total assets. A positive relation with the earnings quality proxy is predicted; specifically, negative discretionary accruals are found in companies with low firm performance while positive ones in companies with high firm performance (Kasznik, 1999).

4.1.3.2 Size

Size of the firm (SIZE) is measured as the natural logarithm of total assets (Jaggi et al., 2009; Koh, 2003). A negative relationship between SIZE and EQ is expected due to larger firms are more stable with stronger control structures and hence they report better quality of accounting (Dechow and Dichev, 2002).

4.1.3.3 Leverage

In order to control for the effect of liquidity, firm's financial leverage (LEV) is added and calculated as total debts divided by total assets (Ali et al., 2007; Burns et al., 2010; Fan and Wong, 2002; Koh, 2003). Since Chilean companies have a highly concentrated ownership, firms with a larger proportion of debt-equity financing may have better reporting quality. Therefore, LEV is predicted to have a negative coefficient.

4.1.3.4 Sales growth

This is defined as the increase in sales over the previous year (SG) and is included to control for variation in company's earnings growth and growth opportunities (Ali et al., 2007; Burns et al., 2010). McNichols (2000) finds that firms growing fast are more likely to manipulate their earnings; thus a positive relation between SG with EQ is expected.

4.1.3.5 US stock exchange

A dummy variable (ADR) that is equal to 1 for companies with shares traded on an US stock exchange as American Deposit Receipts is created with the value being 0 otherwise. This is included to control for the interactions of Chilean firms with US capital markets, which could also influence earnings quality. Given that the requirements for listing in the US stock exchange are stricter and Chilean companies need to provide better disclosure based on the US regulation, a negative sign for this variable is predicted.

4.1.3.6 Industry

I include industry indicators to control for industry fixed effects.

4.1.3.7 Capital Intensity

The full sample is divided by capital intensity (CAP_INT) and is equal to 1 when net PPE scaled by lagged total assets is above the median; 0 otherwise. This variable is created to examine whether there is a difference in earnings quality between low- and high-capital intensity firms. In general, Chilean companies are highly capital intensive, specially the exporter ones (Alvarez and López, 2005).[38]

4.2 Models

This section describes the multivariate regressions equations using the variables defined in the previous section. Models are presented separately for each hypothesis elaborated in the Chapter 2 section 2.4 and Chapter 3 sections 3.2 and 3.3 respectively.

4.2.1 Models for Hypothesis 1

In order to test H1a, the following model is used to examine the change in earnings quality between pre- and post-FTA periods:

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + controls + \varepsilon_{it} \quad (4)$$

I expect the coefficient for POST to be negative and significant if the FTA led to a general improvement for Chilean firms.

To capture the magnitude of the increase in interactions with the US product market and its effect in the change in earnings quality, I focus only on firms that have involvement in

[38] I consider to control for auditor characteristics but since 95% of the listed companies in Chile are audited by the Big 4 this variable is not included in the model. The Big 4 refers to the four largest international accounting firms: Deloitte Touche Tohmatsu Limited, Ernst & Young (E&Y), PricewaterhouseCoopers (PwC) and Klynveld Peat Marwick Goerdeler (KPMG).

the US and I use one of three alternative proxies, as described above, and interact these with POST:

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 POST_{it} * \Delta US\_EXP_{it} + controls + \varepsilon_{it} \quad (5)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \quad (6)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 POST_{it} * US\_SUB_{it} + controls + \varepsilon_{it} \quad (7)$$

Since ΔUS_EXP, T_IND and US_SUB indicate greater involvement with US product markets, I expect β_4 to be negative and significant if Chilean firms with greater involvement due to the FTA experience more improvement in earnings quality. A negative and significant β_4 would support H1b.

4.2.2 Models for Hypothesis 2

The second hypothesis analyses whether family ownership affects the improvements in earnings quality due to the FTA. Recall that H2a examines the earnings quality of family firms in Chile in the pre-FTA period while H2b examines the incremental change in earnings quality for the family firms around the FTA. The following model is used to test H2a and H2b:

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 FAM_{it} + \beta_3 POST_{it} * FAM_{it} + controls + \varepsilon_{it} \quad (8)$$

In equation (8), I am interested in two coefficients. β_2 represents the incremental effect of family ownership on earnings quality in the pre-FTA period. If H2a is supported, β_2 will be

positive and significant. H2b predicts larger improvements for family controlled firms after the FTA, suggesting that β_3 will be negative and significant.

H2c predicts that the post-FTA earnings quality increase for family firms will be larger for family firms with more US product market interaction. Consequently, I use the following three models to test H2c:

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 FAM_{it} + \beta_5 POST_{it} * \Delta US\_EXP_{it} + \beta_6 POST_{it} * FAM_{it} + \beta_7 \Delta US\_EXP_{it} * FAM_{it} + \beta_8 POST_{it} * \Delta US\_EXP_{it} * FAM_{it} + controls + \varepsilon_{it} \quad (9)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 FAM_{it} + \beta_5 POST_{it} * T\_IND_{it} + \beta_6 POST_{it} * FAM_{it} + \beta_7 T\_IND_{it} * FAM_{it} + \beta_8 POST_{it} * T\_IND_{it} * FAM_{it} + controls + \varepsilon_{it} \quad (10)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 FAM_{it} + \beta_5 POST_{it} * US\_SUB_{it} + \beta_6 POST_{it} * FAM_{it} + \beta_7 US\_SUB_{it} * FAM_{it} + \beta_8 POST_{it} * US\_SUB_{it} * FAM_{it} + controls + \varepsilon_{it} \quad (11)$$

In each model, I am interested in the coefficient for the three-way interaction, i.e., β_8. If H2c is supported, this coefficient will be negative and significant, indicating a larger incremental change for family controlled firms with greater US product market interaction.

4.2.3 Models for Hypothesis 3

The third hypothesis examines whether institutional ownership has an effect on earnings reporting quality after the FTA. Similar to H2a, I first examine the relationship between institutional ownership and earnings quality in the pre-FTA period. Then, I examine the incremental change once the FTA came into effect. The following model will test these relationships:

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 INST_{it} + \beta_3 POST_{it} * INST_{it} + controls + \varepsilon_{it} \qquad (12)$$

H3a predicts a negative and significant β_2 since institutional ownership should lead to better earnings quality in the absence of the FTA. H3b predicts a positive and significant β_3 since Chilean firms with institutional ownership would have less room for improvement if their earnings quality is already high.

To test H3c, three models are used:

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 INST_{it} + \beta_5 POST_{it} * \Delta US\_EXP_{it} + \beta_6 POST_{it} * INST_{it} + \beta_7 \Delta US\_EXP_{it} * INST_{it} + \beta_8 POST_{it} * \Delta US\_EXP_{it} * INST_{it} + controls + \varepsilon_{it} \qquad (13)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 INST_{it} + \beta_5 POST_{it} * T\_IND_{it} + \beta_6 POST_{it} * INST_{it} + \beta_7 T\_IND_{it} * INST_{it} + \beta_8 POST_{it} * T\_IND_{it} * INST_{it} + controls + \varepsilon_{it} \qquad (14)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 INST_{it} + \beta_5 POST_{it} * US\_SUB_{it} + \beta_6 POST_{it} * INST_{it} + \beta_7 US\_SUB_{it} * INST_{it} + \beta_8 POST_{it} * US\_SUB_{it} * INST_{it} + controls + \varepsilon_{it} \qquad (15)$$

If H3c is supported, I expect β_8 to be negative and significant in each case.

4.3 Sample

All non-financial companies listed on the Chilean stock exchanges are selected and data are manually collected from a variety of sources. First, financial statements are obtained from the Chilean SVS from 2001 to 2008. Second, exports values to the US are collected from ProChile for the same period. Third, information about subsidiaries is partially obtained

from Amcham. Fourth, the Economatica[39] database is used to obtain additional information about companies. Finally, information from company financial reports, credit rating agencies, market data and other company sources is used to create the rest of variables.

The sample period for this study is 2002–2008. The last year chosen is 2008 because in 2009 Chile adopted IFRS and some items are not reported in the new format; for example, financial statements under IFRS only provide net PPE where the accumulated depreciation is reported in the footnotes. These items are used in the discretional accruals measure of EQ. Also, to avoid the impact the change from Chilean GAAP to IFRS could have in financial statements and therefore be consistent with the same accounting standards.

The initial sample includes 208 non-financial listed companies with a total of 1,456 observations. There are 89 companies having at least one export activity to the US during the period. Firms with no information regarding test and control variables are excluded from the sample. Thus, the final sample to test H1a, H2a, H2b, H3a and H3b consists of 993 observations for DAC while 538 observations for MEET respectively.

In addition, the number of observations to test H1b, H2c and H3c are 284, 294 and 271 for the empirical model 1 (ΔUS_EXP), model 2 (T_IND) and model 3 (US_SUB) respectively using both types of EQ measures. The amount of observations used decreases considerably for models 1 to 3 due to only 42.8% of Chilean firms have exporting activities to the US. All continuous variables are winsorised at the 5 and 95% level in order to reduce influence of extreme outliers. Table 4.1 provides a summary of the variables and their definitions.

[39] The Economatica database has financial and statistical information of all companies listed on the stock exchanges of Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

TABLE 4.1
Variable definitions

Dependent variables	
DAC	Discretionary accruals level based on the Jones (1991) model.
MEET	Dummy variable that is equal to 1 if net income deflated by the book value of equity is between 0 and 0.01; 0 otherwise.
Test variables	
POST	Dummy variable that is equal to 1 for 2004 and years after 2004; 0 otherwise.
HI_US_EXPD	Indicator that takes the value of 1 when the company belongs to the top 10% exporter group; 0 otherwise. It is based on the US exports to total sales ratio.
ΔUS_EXP	Difference from the previous year in the ratio of exports to the US divided by total sales.
T_IND	Indicator variable that is equal to 1 if the firm is within the list of industries or sectors whose export levels have been more positively impacted by the FTA; 0 if the firm does not belong to the target group.
US_SUB	Dummy variable that takes the value of 1 when the company has subsidiaries or operations in the US; 0 if not.
FAM	Dummy variable that is equal to 1 for family firms and 0 for non-family ones.
INST	Indicator variable that takes the value of 1 when an institutional investor is one of the top five shareholders; 0 otherwise.
Control variables	
ROA	Ratio of net income divided by total assets.
SIZE	Natural logarithm of total assets.
LEV	Ratio of total liabilities to total assets.
SG	Increase in sales over the previous year.
ADR	Indicator that is equal to 1 for companies with shares traded on a US stock exchange as American Deposit Receipts; 0 otherwise.
CAP_INT	Dummy variable that is equal to 1 when net PPE scaled by lagged total assets is above the median; 0 otherwise.

4.4 Descriptive statistics and preliminary analysis

Table 4.2 shows the descriptive statistics for variables where the mean, standard deviation, first quartile (Q1), median and third quartile (Q3) are reported. The mean and median for DAC is 0.007 and 0.001 respectively. ΔUS_EXP product market interaction proxy has a mean of -0.002 and a median of 0.000. Chile's total exports to the US grew considerably after the FTA came into effect until 2005; however, since 2006 exports to the US decreased in part because the financial crisis and diversification of Chilean trading partners. According to DIRECON (2010), the average increment in US exports for the 2004–2008 period was 13.9%. The media of the ratio of US export to total sales is 0.072. On average, Chilean companies report a ROA of 0.040, SIZE of 17.100, LEV of 0.351 and SG of 0.045 during the period.

TABLE 4.2
Descriptive statistics

Variable	N	Mean	Std. Deviation	Q1	Median	Q3
DAC	1,051	0.007	0.128	-0.027	0.001	0.044
MEET	1,168	0.033	0.180	0.000	0.000	0.000
POST	1,456	0.714	0.452	0.000	1.000	1.000
HI_US_EXPD	298	0.104	0.306	0.000	0.000	0.000
ΔUS_EXP	343	-0.002	0.027	-0.005	0.000	0.002
T_IND	1,456	0.380	0.486	0.000	0.000	1.000
US_SUB	1,456	0.109	0.312	0.000	0.000	0.000
FAM	1,453	0.648	0.478	0.000	1.000	1.000
INST	1,456	0.407	0.491	0.000	0.000	1.000
ROA	1,166	0.040	0.080	0.005	0.049	0.088
SIZE	1,168	17.100	2.516	15.578	17.572	18.957
LEV	1,168	0.351	0.212	0.184	0.349	0.510
SG	1,020	0.045	0.267	-0.012	0.075	0.167
ADR	1,456	0.059	0.236	0.000	0.000	0.000
CAP_INT	1,117	0.472	0.499	0.000	0.000	1.000

All variables are defined in Table 4.1.

The Spearman correlation between variables is documented in Table 4.3. DAC is positively related with the change in exports to the US (ΔUS_EXP), but is not significantly related to the target group of companies (T_IND) and having a subsidiary or operations in the US (US_SUB). There is a positive correlation between DAC and ROA while a negative correlation with LEV. MEET is negatively associated with ROA, SIZE, LEV and SG.

There is a positive relationship between POST and SG. HI_US_EXPD is positively related to T_IND and capital intensity (CAP_INT) while negatively associated with family ownership (FAM) and institutional ownership (INST). A positive correlation is observed between T_IND and US_SUB, but a negative one is seen between T_IND and ΔUS_EXP. T_IND and US_SUB are negatively associated with CAP_INT. There is a negative relationship between FAM and CAP_INT, and between INST and CAP_INT. FAM is positively associated with T_IND and US_SUB. The same positive relationships are found between INST with T_IND and US_SUB. There are positive correlations between FAM and ROA, INST and SIZE, INST and LEV, INST and SG, and INST and ADR.

ROA is negatively related to HI_US_EXPD and T_IND. SIZE is negatively related to HI_US_EXPD while positively associated with US_SUB. Finally, there is a positive relationship between ADR and T_IND, and ADR and US_SUB.

TABLE 4.3
Spearman correlation

	DAC	MEET	POST	HI_US_ EXPD	ΔUS_EXP	T_IND	US_SUB	FAM	INST	ROA	SIZE	LEV	SG	ADR	CAP _INT
DAC	1	-0.028	0.028	0.013	*0.125*	-0.043	0.008	0.012	-0.039	**0.239**	0.033	**-0.121**	0.000	0.024	-0.030
MEET		1	-0.031	0.092	-0.037	-0.048	-0.034	-0.030	-0.044	**-0.163**	**-0.082**	**-0.087**	*-0.075*	-0.016	0.011
POST			1	-0.006	-0.078	0.000	0.012	0.011	0.050	0.053	0.025	-0.026	**0.107**	-0.022	0.002
HI_US_EXPD				1	0.029	**0.172**	0.013	**-0.154**	*-0.143*	*-0.131*	**-0.328**	-0.095	-0.005	0.104	**0.156**
ΔUS_EXP					1	*-0.119*	0.008	-0.040	0.066	0.096	0.025	-0.022	-0.016	-0.024	-0.022
T_IND						1	**0.243**	**0.132**	**0.113**	**-0.082**	0.025	0.003	-0.052	**0.104**	**-0.170**
US_SUB							1	**0.083**	**0.105**	0.016	*0.068*	0.052	0.020	**0.211**	**-0.120**
FAM								1	0.031	*0.074*	0.025	-0.028	-0.030	0.020	**-0.080**
INST									1	0.051	**0.306**	*0.069*	*0.073*	**0.267**	**-0.113**
ROA										1	**0.283**	*-0.060*	**0.242**	0.002	-0.002
SIZE											1	**0.113**	**0.103**	**0.241**	**-0.211**
LEV												1	**0.139**	**0.147**	**0.107**
SG													1	0.020	0.058
ADR														1	**-0.159**
CAP_INT															1

All variables are defined in Table 4.1.

Correlations significant at 0.01 and 0.05 levels are presented in bold and italic typeface respectively, based on two-tailed tests.

Correlation matrix includes the same number of observations as Table 4.2.

CHAPTER 5

RESULTS: HYPOTHESIS 1

In this chapter I discuss the empirical results for Hypothesis 1. H1a examines the effect of the US–Chile FTA on reporting quality in Chilean firms while H1b tests the FTA and earnings quality relationship by including variables that capture the extent of interaction with US product markets. Two types of earnings quality measures are used as dependent variables.

Section 5.1 provides the analysis of the results using the discretionary accruals levels based on Jones (1991) model and section 5.2 using the dummy variable of meeting earnings target. Section 5.3 then presents the robustness tests for the hypothesis.

5.1 Dependent variable – discretionary accruals

Tables 5.1 to 5.7 document the OLS regressions results. Table 5.1 displays the results for H1a while Tables 5.2 to 5.7 for H1b. Tables 5.2 to 5.7 present the results for three individual models. Each model uses a different proxy for the product market interaction with the US (the test variable). Tables 5.2 and 5.3 display the estimation results using the ΔUS_EXP variable (changes in exports to the US), Tables 5.4 and 5.5 utilise the T_IND dummy variable (equal to 1 if the firm is within the list of industries or sectors that have been targeted as benefactors of the FTA), and Tables 5.6 and 5.7 use the US_SUB dummy variable (1 when the company has subsidiaries or operations in the US). These three variables, together with HI_US_EXPD, (1 when the firm belongs to the top 10% exporter group) aim to capture the magnitude of the increase in interactions with US product markets. All these

models use discretionary accruals based on Jones (1991) model as a measure of earnings quality (EQ).

For H1a, estimation results for the full and split sample of low- and high-capital intensity firms are reported together in one table. For H1b, in each model the first table provides estimation results using the full sample while the second table shows the estimation results for the subsamples. The full sample is divided by capital intensity because some Chilean companies are highly capital intensive, specially the exporting ones (Alvarez and López, 2005). The classification criterion is based on the median of net PPE scaled by lagged total assets. Companies above this ratio are considered high-capital intensity firms, while companies below the median are classified as low-capital intensity firms.

In each table, column 2 reports the hypothesis expected sign and the following column shows the coefficient values for the usual ordinary least squares estimation. The t-statistics and p-values are based on a heteroscedasticity consistent covariance matrix.

5.1.1 FTA period: H1a

Results for H1a are reported in Table 5.1 for the full and split sample. Using the full sample the POST coefficient is not significant. Only ROA is statistically significant, showing a positive coefficient (0.387) and indicating higher levels of discretionary accruals to start with for companies that are more profitable.

In order to capture differences in the relationship between the FTA and accounting quality between low- and high-capital intensity firms, the full sample is divided in two groups. For the split sample, although the sign for variable POST is negative as expected in the high-capital intensity group, it is not statistically significant. Again, only control variable ROA is positive and significant with coefficients of 0.396 and 0.266 for the low- and high-

capital intensity subsamples respectively. In general, no evidence is found to support H1a that Chilean companies report better earnings quality after the FTA with the US.[40]

TABLE 5.1
Regression results using full and split sample for FTA period, discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + controls + \varepsilon_{it} \qquad (4)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		-0.064	-1.570	-0.089	-1.450	-0.070	-1.320
POST	-	0.002	0.310	0.000	-0.010	-0.001	-0.090
ROA		0.387	4.950***	0.396	4.510***	0.266	2.640***
SIZE		0.003	1.310	0.005	1.450	0.004	1.250
LEV		-0.013	-0.680	-0.031	-1.580	-0.019	-0.570
SG		-0.024	-1.260	-0.031	-1.410	-0.030	-1.010
ADR		0.001	0.070	0.005	0.480	0.000	0.020
Industry fixed effect		Yes		Yes		Yes	
N		993		503		489	
Adjusted R^2		0.046		0.056		0.015	
F-statistic		3.190***		2.350***		1.450	

Only the variable POST p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.1.2 Product market interaction: H1b

5.1.2.1 Model 1: ΔUS_EXP

The results for equation (5) using the full sample and ΔUS_EXP product market interaction variable are displayed in Table 5.2. In general, the model is significant and explains 11.3% of the variation in discretionary accruals. The coefficient for the interaction variable (POSTxΔUS_EXP) is -0.588 and significant at the 5% level, consistent with the

[40] A dummy variable for US exports (US_EXPD), that takes the value of 1 when the company sells products to the US and 0 otherwise, is initially considered in the model to distinguish between exporter and non-exporter firms. Results are not significant indicating that there is no differences in discretionary accruals between exporter and non-exporter Chilean companies.

hypothesis. This result suggests that Chilean companies that have larger increases in exports to the US exhibit higher earnings quality after the FTA with the US. This result is consistent with Khanna et al. (2004), who note a positive association between interactions with the US market and disclosure quality for non-US companies.

The coefficients for variables POST and HI_US_EXPD are positive (0.006) and negative (-0.002) respectively, but not significant. ΔUS_EXP has a positive coefficient (0.355) and is significant at the 5% level, meaning that, in the pre-FTA period, companies experiencing more changes in their export levels also have higher values of discretionary accruals during the period which may be reflect the increases in capital investments needed to support higher export levels.

TABLE 5.2
Regression results using full sample for product market interaction Model 1, US export change and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 POST_{it} * \Delta US\_EXP_{it} + controls + \varepsilon_{it} \quad (5)$$

Variable	Exp. Sign	Coef.	t-stat.
Intercept		-0.061	-1.240
POST		0.006	0.680
HI_US_EXPD		-0.002	-0.130
ΔUS_EXP		0.355	2.050**
POSTxΔUS_EXP	-	-0.588	-1.700**
ROA		0.314	3.430***
SIZE		0.003	1.280
LEV		-0.017	-0.560
SG		-0.011	-0.380
ADR		0.010	1.190
Industry fixed effect		Yes	
N		284	
Adjusted R^2		0.113	
F-statistic		2.570***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

ROA, a proxy for firm's performance, is positively and significantly related to discretionary accruals (coef. 0.314, p-value 0.001). The rest of control variables coefficients (SIZE, LEV, SG and ADR) are not statistically significant.

The subsample results are reported in Table 5.3. Overall, the models for low- and high-capital intensity companies are significant and explain 19.8% and 22.3% of variation in accounting quality respectively.

For the low in capital intensity sample, HI_US_EXPD and ΔUS_EXP are negatively related to discretionary accruals; however, only HI_US_EXPD (coef. -0.116) is statistically significant at the 10% level implying that companies with extensive involvement in the US market, specifically the top 10% of the exporter group, have higher financial quality in general. Additionally, the variable POST is positive but not significant.

The coefficient of POSTxΔUS_EXP is positive (1.167) and statistically significant at the 10% level, meaning that firms with more changes in their exports to the US have higher values of discretionary accruals after the FTA. This is contrary to the notion that greater involvement in the US market through exports led to improvements in earnings quality, although the significance is marginal (p = 0.098).

Regarding the control variables, the coefficient of ROA is positive (0.397) and statistically significant at the 1% level. The financial leverage (LEV) coefficient is negative (-0.101) and significant (p = 0.029), suggesting that firms with higher leverage have lower discretionary accruals and thus better earnings quality.

Examining the results for the high-capital intensity subsample, POSTxΔUS_EXP is related negatively to discretionary accruals, showing a coefficient of -1.155 and a p-value of 0.004. This result is consistent with my hypothesis and suggests that high-capital intensity companies with more interaction with the US product market have better reporting quality during the post-FTA period in comparison to the pre-FTA period. One possible reason for the

difference between the effect of the FTA on high- and low-capital intensity firms is that the former have a large proportion of fixed assets and higher levels of depreciation expenses that can be opportunistically managed. Given this added flexibility, high-capital intensity firms have more room to improve their earnings quality once the FTA came into effect.

The coefficient of ΔUS_EXP is positive (0.557) and significant (p = 0.004), indicating a positive relationship between changes in US exports and discretionary accruals levels in the pre-FTA period. This indicates that prior to the FTA, highly capital intensive companies have higher discretionary accruals, possible reflecting higher depreciation expenses resulting from a build-up of their fixed assets.

TABLE 5.3
Regression results using subsamples for product market interaction Model 1, US export change and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 POST_{it} * \Delta US\_EXP_{it} + controls + \varepsilon_{it} \quad (5)$$

Variable	Exp. Sign	Low capital intensity Coef.	Low capital intensity t-stat.	High capital intensity Coef.	High capital intensity t-stat.
Intercept		0.083	0.950	-0.071	-1.160
POST		0.004	0.320	0.019	1.590
HI_US_EXPD		-0.116	-1.830*	-0.013	-0.880
ΔUS_EXP		-0.225	-0.530	0.557	2.940***
POSTxΔUS_EXP	-	1.167	1.300*	-1.155	-2.690***
ROA		0.397	3.250***	0.480	3.410***
SIZE		-0.002	-0.450	0.002	0.610
LEV		-0.101	-2.210**	0.031	0.760
SG		-0.038	-0.980	-0.024	-0.550
ADR		0.022	1.570	-0.020	-1.370
Industry fixed effect		Yes		Yes	
N		141		143	
Adjusted R^2		0.198		0.223	
F-statistic		2.500***		3.140***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

HI_US_EXPD shows a negative coefficient (-0.013), but is not significant. In regard to control variables, only ROA is significant (p = 0.001) and reports a positive sign (0.480).

5.1.2.2 Model 2: T_IND

The regression results for the full sample using T_IND as the product market interaction proxy are reported in Table 5.4. Companies belonging to any of the following economic sectors are allocated in the target group, i.e., industries targeted as being most likely to benefit from the FTA: agricultural and fisheries, basic and fab metal, chemical, food and beverages, mining, non-metallic mining, pulp and paper, and textiles. In this model, only ROA has a significant coefficient (coef. 0.311, p = 0.000).

TABLE 5.4
Regression results using full sample for product market interaction Model 2, target industry and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \quad (6)$$

Variable	Exp. Sign	Coef.	t-stat.
Intercept		-0.063	-1.350
POST		0.019	1.170
HI_US_EXPD		0.001	0.090
T_IND		0.011	0.440
POSTxT_IND	-	-0.016	-0.900
ROA		0.311	3.620***
SIZE		0.003	1.260
LEV		-0.018	-0.620
SG		-0.017	-0.630
ADR		0.012	1.480
Industry fixed effect		Yes	
N		294	
Adjusted R^2		0.113	
F-statistic		2.690***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Table 5.5 reports the results for the sample divided based on low and high capital intensity. Overall, the models are significant and explain 18.7% (low capital intensity) and 19.8% (high capital intensity) of the variation in accounting quality. In this model, the variable POST is negative (-0.015) for the low-capital intensity subsample while positive (0.045) for the high-capital intensity group, and only significant for the latter one.

TABLE 5.5
Regression results using subsamples for product market interaction Model 2, target industry and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \quad (6)$$

Variable	Exp. Sign	Low capital intensity		High capital intensity	
		Coef.	t-stat.	Coef.	t-stat.
Intercept		0.001	0.020	-0.093	-1.510
POST		-0.015	-0.850	0.045	2.240**
HI_US_EXPD		-0.062	-1.550	-0.003	-0.230
T_IND		0.014	0.310	0.026	1.040
POSTxT_IND	-	0.020	0.960	-0.039	-1.700**
ROA		0.490	4.800***	0.446	3.300***
SIZE		0.001	0.320	0.002	0.670
LEV		-0.085	-2.040**	0.043	1.080
SG		-0.041	-1.160	-0.028	-0.630
ADR		0.023	2.020**	-0.016	-1.230
Industry fixed effect		Yes		Yes	
N		147		147	
Adjusted R^2		0.187		0.198	
F-statistic		2.530***		3.010***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Using the low-capital intensity subsample, the variables of interest are not significant. However, significant coefficients are found for some of the control variables; for example, ROA (coef. 0.490, p < 0001) and LEV (coef. -0.085, p = 0.044). The coefficient of ADR is 0.023 and significant (p-value 0.045), indicating that companies with shares traded on a US exchange as American Deposit Receipts would have fewer possibilities to enhance their

earnings quality. This could be because these companies could already have high levels of quality reporting due to their involvement with the stringent US stock market. This is consistent with the hypothesis that more interaction with the US market leads better accounting improvements in foreign companies (Khanna et al., 2004).

In the high-capital intensity group, the interaction term coefficient (POSTxT_IND) is -0.039 significant at the 5% level, suggesting that companies in the industry target group report better earnings quality after the FTA due to their larger involvement with the US product market. The finding also supports my hypothesis in which companies with more interaction in the US product market – in this case sectors more positively impacted by the trade agreement – are more exposed to greater market forces in the US, which lead them to improve their earnings quality. This result is similar to Table 5.3 for the high-capital intensive group using ΔUS_EXP product market interaction variable where the coefficient is negative and significant. In addition, ROA remains positive and significant (coef. 0.446, $p < 0.001$).

5.1.2.3 Model 3: US_SUB

The third measure of product market interaction, US_SUB, focuses on the presence of a subsidiary in the US. In order to examine the effect of having a US subsidiary on earnings quality, to be included in the sample the firm needs to have at least one US subsidiary for the whole test period. As a result, five companies are deleted from the full sample since they opened or closed their US subsidiary during the test period. After deleting these five firms, 20 firms have a subsidiary or office sales in the US in every year in the test period.

Table 5.6 presents the results of the regression using the product market interaction proxy US_SUB. The model for the full sample is significant and explains 12.4% of the variation in accounting quality. In this model, variable POST remains positive and not significant. All the US interaction variables, HI_US_EXPD, US_SUB and, most importantly,

POSTxUS_SUB are not significant. HI_US_EXPD and US_SUB have coefficients with positive signs (0.006 and 0.017 respectively) while the interaction term shows a negative coefficient of -0.019. The only significant coefficient among the control variables is for ROA (p = 0.000) and the sign remains positive (coef. 0.324).

TABLE 5.6
Regression results using full sample for product market interaction Model 3, US subsidiary and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 POST_{it} * US\_SUB_{it} + controls + \varepsilon_{it} \quad (7)$$

Variable	Exp. Sign	Coef.	t-stat.
Intercept		-0.072	-1.560
POST		0.010	0.930
HI_US_EXPD		0.006	0.480
US_SUB		0.017	1.280
POSTxUS_SUB	-	-0.019	-1.220
ROA		0.324	3.700***
SIZE		0.004	1.510
LEV		-0.017	-0.570
SG		-0.010	-0.380
ADR		0.013	1.630
Industry fixed effect		Yes	
N		271	
Adjusted R^2		0.124	
F-statistic		2.740***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Results for the split sample are presented in Table 5.7. Generally, the models for low- and high-capital intensity companies are significant and explain 18.8% and 22.6% of variation in earnings quality respectively. In this model, variable POST is positive and not significant in both subsamples.

In the low-capital intensity subsample, the coefficient of POSTxUS_SUB is negative (-0.033) and significant (p-value 0.066), implying that exporter companies with a subsidiary in the US improve their reporting quality after the FTA. Coefficients for HI_US_EXPD and

US_SUB are negative (-0.062) and positive (0.014) respectively, but not significant. Regarding the control variables for this subgroup, ROA coefficient is positive and significant (coef. 0.495, p <.0001), LEV remains negative (-0.076) and statistically significant (p = 0.089) while the coefficient of ADR is 0.026 and significant (p-value 0.019).

TABLE 5.7
Regression results using subsamples for product market interaction Model 3, US subsidiary and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 POST_{it} * US\_SUB_{it} + controls + \varepsilon_{it} \quad (7)$$

Variable	Exp. Sign	Low capital intensity Coef.	Low capital intensity t-stat.	High capital intensity Coef.	High capital intensity t-stat.
Intercept		0.005	0.080	-0.072	-1.050
POST		0.013	0.710	0.016	1.210
HI_US_EXPD		-0.062	-1.420	0.000	-0.030
US_SUB		0.014	0.710	-0.009	-0.460
POSTxUS_SUB	-	-0.033	-1.520*	0.000	0.010
ROA		0.495	4.780***	0.432	3.410***
SIZE		0.001	0.350	0.002	0.530
LEV		-0.076	-1.710*	0.036	0.880
SG		-0.041	-1.180	-0.013	-0.340
ADR		0.026	2.380**	-0.014	-1.040
Industry fixed effect		Yes		Yes	
N		140		131	
Adjusted R^2		0.188		0.226	
F-statistic		2.470***		3.000***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

In Table 5.7 for the high-capital intensity subsample, the coefficient of HI_US_EXPD is 0.000 and US_SUB is -0.009, but both are statistically not significant. Also, the coefficient for the interaction term (POSTxUS_SUB) is 0.000 and not significant. This result shows no evidence to support my hypothesis. This result is opposite to that shown by Tables 5.3 and 5.5 for the high-capital intensive subsample where the ΔUS_EXP and T_IND, post FTA interaction variables are negative and significant. One possible explanation could be that for

high-intensity firms, the subsidiaries in the US are more likely to be sales offices rather than subsidiaries. The US sales offices are probably small and, under this scenario, would not expose the firm to considerable involvement in the US product market. Said differently, while Chilean firms with high-capital intensity improved their earnings quality after the FTA, this decision was not driven by whether those firms had a sales office in the US or not.

In this subgroup, ROA remains significantly and positively related to discretionary accruals (coef. 0.432, p = 0.001). The rest of control variables coefficients are not statistically significant.

5.1.3 Summary

To sum up, the POST variable in H1a is utilised to test the change in financial reporting quality of Chilean companies before and after the FTA where Jones (1991) model is used to estimate the level of discretionary accruals, which is my first proxy for earnings quality. However, I do not find evidence to support H1a.

Then, three product market interaction variables – i.e., the interaction between ΔUS_EXP, T_IND or US_SUB – are included to measure the incremental changes in earnings quality due to exposure to US product markets from the pre-FTA to post-FTA period. Using the three product market, POST interactions, overall, I find evidence to support my hypothesis H1b for each variable in at least one model for each product market proxy. A negative and significant interaction term coefficient is reported in Table 5.2 for the full sample, Table 5.3 for the high-capital intensive subsample, Table 5.5 for the high-capital intensive subsample and Table 5.7 for the low-capital intensive subsample.

These results suggest that Chilean firms with larger increases in product market interaction with the US – measured by the changes in exports or target industry status – due to the FTA experience larger improvements in earnings quality than firms with smaller

increases in product market interaction with the US due to the FTA, supporting hypothesis H1b, although the results are driven by firms with greater capital intensity. When product market interaction is measured by the existence of a US subsidiary, the interaction is significant but only for low-capital intensity firms. A possible reason for the difference is that, for high-capital intensity firms, US subsidiaries are often sales offices that are just satellites of the home offices, and thus do not lead to an incremental increase in interaction with the US market.

5.2 Dependent variable – benchmark meeting

The second earnings quality measure is related to meeting the positive earnings target. This company's profits meet target dependent variable, MEET, takes the value of 1 when net income deflated by the book value of equity is between 0 and 0.01; 0 otherwise.

Table 5.8 shows the logistic estimation results for H1a and Tables 5.9 to 5.16 for H1b. Similar to the first earnings quality measure, discretionary accruals, Tables 5.9 to 5.16 report the logistic regressions results for three individual models using different proxies of product market interaction. Tables 5.9 and 5.10 use the ΔUS_EXP variable, Tables 5.11 to 5.14 use the T_IND measure, and Tables 5.15 and 5.16 utilise the US_SUB proxy.

For H1a, estimation results for the full and split sample of low- and high-capital intensity firms are reported in one table. For H1b, in each model the first table provides estimation results using the full sample while the second table shows the estimation results for the subsamples. The full sample is divided by capital intensity because of Chilean company characteristics and also to be consistent with previous results using the first earnings quality proxy. Each table provides the expected sign for the hypothesis, coefficient values and Wald-statistics.

5.2.1 FTA period: H1a

Regression results for H1a are reported in Table 5.8 for the full and split sample. For the full sample, the coefficient of interest, POST, is negative as predicted but is not significant when MEET is the measure of earnings quality.

Regarding control variables, ROA, SIZE and LEV present significant coefficients. ROA is negative, showing a coefficient of -5.539, meaning that more profitable companies have a lower likelihood of meeting earnings targets and thus those firms report higher levels of earnings quality. Firm size (SIZE) is negatively associated with the probability of meeting an earnings target with a coefficient of -0.192. This result indicates that larger companies exhibit better levels of reporting quality. LEV also displays a negative coefficient (-2.823), suggesting that highly leveraged firms have a lower likelihood of meeting an earnings target and thus have better reporting quality. The remaining control variables are not significant.

TABLE 5.8
Regression results using full and split sample for FTA period, benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + controls + \varepsilon_{it} \qquad (4)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		1.029	0.520	0.742	0.099	-0.396	0.020
POST	-	-0.125	0.117	-0.384	0.673	-0.043	0.007
ROA		-5.539	6.079**	-3.315	1.466	-16.863	10.591***
SIZE		-0.192	4.174**	-0.185	2.442	-0.111	0.785
LEV		-2.823	8.449***	-1.726	1.792	-4.193	11.371***
SG		0.444	0.386	-0.046	0.003	0.068	0.003
ADR		0.625	0.878	0.764	1.211	0.522	0.141
Industry fixed effect		Yes		Yes		Yes	
N		1,000		503		489	
Likelihood ratio		30.940*		9.597		30.959**	

Only the variable POST p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Results for the split sample indicate that for the low-capital intensity subsample POST is negative but not significant. Test and control variables are not significant.

In relation to the high-capital intensity group, POST again is negative but not significant. ROA control variable reports a negative coefficient of -16.863 and LEV remains negatively associated to the likelihood of meeting earnings targets, showing a coefficient of -4.193. The rest of control variables display insignificant coefficients. Based on the results from Table 5.8 using the full and split sample, there is no evidence to support H1a that Chilean companies in general, have better earnings quality after the FTA came into effect.

5.2.2 Product market interaction: H1b

5.2.2.1 Model 1: ΔUS_EXP

Results are displayed in Table 5.9 for the full sample and ΔUS_EXP product market interaction measure. The coefficient for POSTxΔUS_EXP is negative (-36.774) and statistically significant at the 10% level. This result suggests that due to the FTA, the likelihood of meeting the profits target is lower for firms with more changes in exports to the US and therefore companies show better reporting quality. This supports H1b where companies with more US product market interaction exhibit larger improvements in earnings quality after the trade agreement and are similar to those using discretionary accruals levels as earnings quality measure. The results are also consistent with Khanna et al. (2004). The control variables ROA and LEV are negative and statistically significant (coef. -16.305, p-value 0.004; coef. -7.586, p-value 0.010).

Table 5.10 shows the results for the low- and high-capital intensity subsamples. No test or control variables are statistically significant for the low-capital intensity group.

TABLE 5.9
Regression results using full sample for product market interaction Model 1, US export change and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 POST_{it} * \Delta US\_EXP_{it} + controls + \varepsilon_{it} \quad (5)$$

Variable	Exp. Sign	Coef.	Wald-stat.
Intercept		-3.385	0.416
POST		-1.054	2.224
HI_US_EXPD		0.729	0.586
ΔUS_EXP		15.353	0.895
POSTxΔUS_EXP	-	-36.774	2.337*
ROA		-16.305	8.389***
SIZE		0.345	1.461
LEV		-7.586	6.603**
SG		2.737	1.820
ADR		-0.217	0.051
Industry fixed effect		Yes	
N		284	
Likelihood ratio		15.454	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

In the high-capital intensity group, POSTxΔUS_EXP is related negatively to the likelihood of beating the earnings target. The coefficient for the interaction term is -35.090 (p-value 0.086). The result is consistent with H1b, implying that highly capital intensive companies with more changes in their export values to the US have a lower likelihood of meeting the profits target after the FTA than before. This suggests that highly capital intensive companies with more interaction in the US product market report better earnings quality during the post-FTA period in comparison to the pre-FTA period. This is consistent with the hypothesis and similar to the results obtained using discretionary accruals as proxy for earnings quality. ROA is negative and statistically significant (coef. -28.144, p-value 0.013) and LEV also remains negative and significant (coef. -7.486, p-value 0.018).

TABLE 5.10
Regression results using subsamples for product market interaction Model 1, US export change and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 POST_{it} * \Delta US\_EXP_{it} + controls + \varepsilon_{it} \quad (5)$$

Variable	Exp. Sign	Low capital intensity		High capital intensity	
		Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		2.597	0.157	-3.975	0.370
POST		-0.815	0.987	-0.772	0.735
HI_US_EXPD		0.350	0.019	-0.164	0.025
ΔUS_EXP		-12.639	0.375	17.023	0.660
POSTxΔUS_EXP	-	15.935	0.265	-35.090	1.857*
ROA		-0.802	0.012	-28.144	6.201**
SIZE		-0.121	0.174	0.316	0.903
LEV		-0.389	0.019	-7.486	5.597**
SG		-1.978	0.936	3.757	1.801
ADR		0.885	0.728	0.201	0.018
Industry fixed effect		Yes		Yes	
N		141		143	
Likelihood ratio		5.432		11.741	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.2.2.2 Model 2: T_IND

The full sample results based on equation (6) with T_IND as the product market interaction proxy are reported in Table 5.11. The interaction term coefficient (POSTxT_IND) is positive (3.119) and significant (0.018). This indicates that companies classified in the list of industries of sectors targeted as benefactors of the FTA have higher probabilities to meet profits targets and thus show poorer levels of reporting quality after the trade agreement. This result does not support H1b and is the opposite of those obtained using the previous product market interaction measure (ΔUS_EXP). The result is also different from those using discretionary accruals as the accounting quality variable, where a negative but not significant coefficient is found.

The coefficient for T_IND is negative and statistically significant, showing a coefficient of -7.558 with a p-value of 0.025. Based on this table, companies within the target group are less likely to beat their earnings target and thus have better reporting quality during the pre-FTA period. POST is negative and statistically significant (coef. -2.078, p-value 0.038), meaning that companies in the non-target industry group have a lower probability of beating the earnings threshold and hence have better earnings quality after the FTA.

Significant coefficients are reported for some control variables. ROA (-14.527, p-value 0.009), SIZE (coef. 0.512, p-value 0.089) and LEV (coef. -7.115, p-value 0.009). Three of them maintain the sign of previous results.

TABLE 5.11
Regression results using full sample for product market interaction Model 2, target industry and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \quad (6)$$

Variable	Exp. Sign	Coef.	Wald-stat.
Intercept		-4.764	0.581
POST		-2.078	4.318**
HI_US_EXPD		1.547	2.666
T_IND		-7.558	5.022**
POSTxT_IND	-	3.119	4.403**
ROA		-14.527	6.744***
SIZE		0.512	2.897*
LEV		-7.115	6.769***
SG		-0.433	0.059
ADR		-0.142	0.020
Industry fixed effect		Yes	
N		294	
Likelihood ratio		18.582	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Regression results for the split sample are displayed in Table 5.12. Within the low-capital intensity subsample, no significant results are found for both tests and control variables.

For the high-capital intensity subsample, POSTxT_IND is positive (2.409) and significant (p-value 0.088), implying that the likelihood of meeting profits target for companies in the high-capital intensity subsample is higher in the post-FTA period. This suggests that companies in the high-intensity group have less opportunity for improving reporting quality after the trade agreement. T_IND is negative but statistically not significant. Also, the POST coefficient is negative but not significant.

Only the control variables ROA and LEV remain negatively significant. ROA coefficient is -21.418 and LEV coefficient is -6.058, both significant at 5% level.

TABLE 5.12
Regression results using subsamples for product market interaction Model 2, target industry and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \qquad (6)$$

		Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-1.183	0.076	-1.213	0.049
POST		-1.626	1.778	-1.492	1.767
HI_US_EXPD		0.942	0.199	0.339	0.124
T_IND		-1.286	0.171	-2.168	0.599
POSTxT_IND	-	1.573	0.971	2.409	1.827*
ROA		-2.848	0.176	-21.418	4.655**
SIZE		0.005	0.000	0.254	0.693
LEV		-0.507	0.034	-6.058	4.646**
SG		-1.002	0.315	0.983	0.188
ADR		0.598	0.338	0.452	0.101
Industry fixed effect		Yes		Yes	
N		147		147	
Likelihood ratio		5.318		12.101	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Further analysis of the product market interaction proxy T_IND reveals that results in Tables 5.11 and 5.12 are driven by two companies. When the regression equation (6) is estimated again without those firm observations, results for the interaction term (POSTxT_IND) become insignificant using both the full and split samples. Results are reported in Table 5.13 and 5.14 for the full and split sample respectively.

TABLE 5.13
Regression results using full sample for product market interaction Model 2, target industry and benchmark meeting, smaller sample

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \qquad (6)$$

Variable	Exp. Sign	Coef.	Wald-stat.
Intercept		-5.319	0.707
POST		-1.607	3.037*
HI_US_EXPD		1.348	0.995
T_IND		-4.613	2.071
POSTxT_IND	-	1.428	1.071
ROA		-10.194	3.227*
SIZE		0.416	2.115
LEV		-3.564	1.845
SG		-0.251	0.019
ADR		0.597	0.424
Industry fixed effect		Yes	
N		280	
Likelihood ratio		11.108	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

Two companies that may have affected the results shown in Table 5.11 are deleted from the sample.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

TABLE 5.14
Regression results using subsamples for product market interaction Model 2, target industry and benchmark meeting, smaller sample

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \quad (6)$$

Variable	Exp. Sign	Low capital intensity		High capital intensity	
		Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-1.199	0.079	-0.953	0.037
POST		-1.629	1.784	-0.871	0.793
HI_US_EXPD		0.934	0.196	-0.009	0.000
T_IND		-1.322	0.180	-1.055	0.144
POSTxT_IND	-	1.591	0.992	-0.102	0.004
ROA		-2.861	0.180	-9.704	1.663
SIZE		0.007	0.001	0.109	0.163
LEV		-0.529	0.037	-3.044	1.316
SG		-1.014	0.323	1.346	0.277
ADR		0.586	0.325	0.298	0.042
Industry fixed effect		Yes		Yes	
N		146		134	
Likelihood ratio		5.261		5.589	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

Two companies that may have affected the results shown in Table 5.12 are deleted from the sample.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.2.2.3 Model 3: US_SUB

Table 5.15 shows the results using the full sample and product market interaction based on US_SUB. The significant variables are limited to a few control variables, where the coefficient signs continue to be the same as those previously reported. ROA (coef. -16.991, p-value 0.008) and LEV (coef. -8.515, p-value 0.008) are negative and significant. SIZE is positive and significant (coef. 0.590, p-value 0.090).

Regarding the split sample, Table 5.16 exhibits no significant results either for the test or control variables for the low-capital intensity firms. Regarding control variables for the

high-capital intensity subsample, only LEV remains negative and statistically significant (coef. -5.262, p-value 0.063). The rest variables are not significant.

TABLE 5.15
Regression results using full sample for product market interaction Model 3, US subsidiary and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 POST_{it} * US\_SUB_{it} + controls + \varepsilon_{it} \quad (7)$$

Variable	Exp. Sign	Coef.	Wald-stat.
Intercept		-7.608	1.482
POST		-0.395	0.229
HI_US_EXPD		0.935	0.872
US_SUB		-2.173	1.539
POSTxUS_SUB	-	0.470	0.068
ROA		-16.991	6.981***
SIZE		0.590	2.873*
LEV		-8.515	7.141***
SG		-0.420	0.055
ADR		-0.035	0.001
Industry fixed effect		Yes	
N		271	
Likelihood ratio		16.843	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

TABLE 5.16
Regression results using subsamples for product market interaction Model 3, US subsidiary and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 POST_{it} * US\_SUB_{it} + controls + \varepsilon_{it} \quad (7)$$

		Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		0.027	0.000	-2.527	0.180
POST		-1.311	1.541	1.259	1.349
HI_US_EXPD		1.424	0.449	-0.176	0.029
US_SUB		-1.074	0.560	1.287	0.412
POSTxUS_SUB	-	1.177	0.514	-2.016	0.787
ROA		-4.290	0.424	-14.730	2.542
SIZE		-0.006	0.001	0.168	0.274
LEV		-1.360	0.235	-5.262	3.462*
SG		-0.848	0.217	0.413	0.030
ADR		0.408	0.167	-0.325	0.045
Industry fixed effect		Yes		Yes	
N		140		131	

Likelihood ratio	4.919	11.831

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.2.3 Summary

Using another proxy for earnings quality, the likelihood of meeting a positive earnings target, together with the three measures of US product market interaction (ΔUS_EXP, T_IND and US_SUB), supporting evidence is found for hypothesis H1b that more product market involvement with the US has a positive effect on firms' reporting quality. However, results provide no evidence for H1a.

Negative and significant coefficients for the interaction term are reported in Table 5.9 for the full sample and Table 5.10 (high capital intensive) for ΔUS_EXP. Results that do not support the hypothesis are when US_SUB and T_IND variables are used. However, it is found that initial results for T_IND are driven by two companies. When those companies are excluded from the sample, coefficients are no longer significant.

In general, the results suggest that Chilean companies with more interaction in US product markets, specifically those firms with more changes in their exports level to the US, exhibit better earnings quality during the post-FTA period in comparison to the pre-FTA period. Overall, this is consistent with the conclusion by Khanna et al. (2004) that foreign companies with more involvement in the US market have better disclosure quality. As was expected, the establishment of a trade agreement affects positively the quality of financial reporting in countries with weaker institutional environment, e.g., Chile.

5.3 Robustness tests: Hypothesis 1

5.3.1 Dependent variable – discretionary accruals

Several sensitivity checks are conducted to generate more robust results. First, in order to address outliers and non-normality issues, the same models are examined utilising ranked data. Results are consistent with the previous ones. Particularly significant results are found for the product market interaction proxies ΔUS_EXP and T_IND. The interaction term POSTxΔUS_EXP is negative and significant using the full sample and the high-capital intensity subsample while POSTxT_IND is negative and significant for the high-capital intensity subsample. Results of this robustness test are presented in Tables 5.17 to 5.20.

5.3.1.1 Only POST

TABLE 5.17
Regression results using full and split sample for FTA period and discretionary accruals, ranked data

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + controls + \varepsilon_{it} \qquad (4)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		420.953	10.820***	148.009	5.670***	261.850	9.650***
POST	-	6.746	0.370	15.420	1.290*	-13.003	-0.960
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		993		472		520	
Adjusted R^2		0.066		0.190		0.022	
F-statistic		4.190***		6.030***		1.690**	

Only the variable POST p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.1.2 Model 1: ΔUS_EXP

TABLE 5.18
Regression results using full and split sample for product market interaction Model 1, US export change and discretionary accruals, ranked data

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 POST_{it} * \Delta US\_EXP_{it} + controls + \varepsilon_{it} \quad (5)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		91.495	3.990***	54.381	3.680***	27.270	1.580
POST		1.474	0.150	-1.267	-0.190	9.552	1.300
HI_US_EXPD		20.789	1.300	-15.566	-1.080	10.580	1.110
ΔUS_EXP		0.198	2.590**	0.134	1.190	0.213	2.060**
POSTxΔUS_EXP	-	-0.174	-1.960**	-0.092	-0.660	-0.179	-1.530*
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		284		128		156	
Adjusted R^2		0.139		0.299		0.193	
F-statistic		2.980***		3.360***		2.950***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.1.3 Model 2: T_IND

TABLE 5.19
Regression results using full and split sample for product market interaction Model 2, target industry and discretionary accruals, ranked data

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \quad (6)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		96.683	2.890***	75.234	3.450***	18.835	0.930
POST		0.435	0.030	-20.337	-1.500	18.269	1.770*
HI_US_EXPD		25.094	1.460	-16.194	-1.420	15.693	1.600
T_IND		4.615	0.150	-18.609	-0.770	23.640	1.390
POSTxT_IND	-	1.826	0.090	22.360	1.500*	-21.919	-1.570*
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		294		133		161	
Adjusted R^2		0.132		0.322		0.177	
F-statistic		3.030***		3.840***		2.910***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.1.4 Model 3: US_SUB

TABLE 5.20
Regression results using full and split sample for product market interaction Model 3, US subsidiary and discretionary accruals, ranked data

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 POST_{it} * US\_SUB_{it} + controls + \varepsilon_{it} \quad (7)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		96.202	4.390***	59.794	3.930***	32.191	2.080**
POST		-0.363	-0.030	-5.312	-0.590	5.975	0.770
HI_US_EXPD		24.599	1.530	-13.663	-1.100	14.730	1.530
US_SUB		-10.776	-0.650	-13.446	-1.270	-4.296	-0.320
POSTxUS_SUB	-	0.564	0.030	4.852	0.440	-1.807	-0.130
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		271		126		145	
Adjusted R^2		0.146		0.311		0.195	
F-statistic		3.100***		3.570***		2.830***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

The next sensitivity analysis examines the influence of three types of joint effects on EQ using combinations of the product market interaction proxies. I create these new measures to assess the effect when companies have more than one way to be involved in US product markets. The first measure is JOINT1, an indicator variable that takes the value of 1 if the company belongs to the top 10% exporter group and simultaneously to the target group

and 0 otherwise. The second proxy, JOINT2, is a dummy variable that it is equal to 1 if the firm is above the median of ΔUS_EXP and also it is classified into the target group and 0 otherwise. The last variable, JOINT3, is an indicator proxy that takes the value of 1 if the company's exports are above the median and at the same time it is part of the target group and 0 otherwise.

5.3.1.5 JOINT1

TABLE 5.21
Regression results using full and split sample, product market interaction joint effect 1 and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 JOINT1_{it} + \beta_4 POST_{it} * JOINT1_{it} + controls + \varepsilon_{it}$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		-0.062	-1.360	0.021	0.320	-0.099	-1.690*
POST		0.013	1.390	0.002	0.130	0.027	1.950*
HI_US_EXPD[41]		-0.034	-1.230				
JOINT1		0.078	2.310**	-0.001	-0.010	0.029	1.960*
POSTxJOINT1	-	-0.046	-1.990**	-0.066	-1.190	-0.020	-1.020
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		294		147		147	
Adjusted R^2		0.117		0.192		0.191	
F-statistic		2.680***		2.570***		2.920***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: JOINT1, indicator variable that is equal to 1 when the company belongs to the top 10% exporter and simultaneously to the target group; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels respectively.

[41] HI_US_EXPD is excluded from the split sample analysis in order to avoid the linear combination issue with the rest of variables.

In general, results are similar and support those observed in the earlier section. The interaction term is negative and statistically significant using the three joint effect product market interaction measures in at least the full or split sample. Specifically, negative and significant coefficients are found in the full sample using JOINT1 and in the high-capital intensive subsample for JOINT2 and JOINT3. Tables 5.21 to 5.23 report the results of these tests.

5.3.1.6 JOINT2

TABLE 5.22
Regression results using full and split sample, product market interaction joint effect 2 and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 JOINT2_{it} + \beta_4 POST_{it} * JOINT2_{it} + controls + \varepsilon_{it}$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		-0.063	-1.330	0.026	0.410	-0.093	-1.590
POST		0.012	1.050	-0.010	-0.760	0.034	2.060**
HI_US_EXPD		-0.001	-0.080	-0.073	-1.540	-0.007	-0.520
JOINT2		0.025	1.790*	-0.011	-0.630	0.047	2.350**
POSTxJOINT2	-	-0.015	-0.860	0.031	1.050	-0.039	-1.670**
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		284		141		143	
Adjusted R^2		0.110		0.162		0.192	
F-statistic		2.520***		2.170***		2.770***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: JOINT2, indicator variable that is equal to 1 when the firm is above the median of ΔUS_EXP and also is classified into the target group; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels respectively.

5.3.1.7 JOINT3

TABLE 5.23
Regression results using full and split sample, product market interaction joint effect 3 and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 JOINT3_{it} + \beta_4 POST_{it} * JOINT3_{it} + controls + \varepsilon_{it}$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		-0.079	-1.610	0.032	0.470	-0.105	-1.590
POST		0.015	1.130	-0.012	-0.900	0.045	2.490**
HI_US_EXPD		-0.001	-0.040	-0.062	-1.570	-0.003	-0.200
JOINT3		0.018	1.190	-0.017	-0.910	0.045	1.730*
POSTxJOINT3	-	-0.013	-0.780	0.025	1.110	-0.055	-2.610***
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		294		147		147	
Adjusted R^2		0.110		0.183		0.203	
F-statistic		2.570***		2.420***		2.960***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: JOINT3, indicator variable that is equal to 1 when the company's exports are above the median and at the same time is part of the target group; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels respectively.

In addition, as another measure of earnings quality, the absolute value of discretionary accruals from the Jones (1991) model is included. Regression results (untabulated) of the models remain similar but weaker to the previous reported. Finally, also utilising the absolute value of discretionary accruals as a dependent variable, I consider an expanded version of equation (4) to test whether firms with some product involvement in the US have larger changes in pre-/post-FTA earnings quality than firms with no product involvement in the US. Two metrics are used. The first one is US_INVOLVE1, an indicator that is equal to 1 for any firm that exports to the US, is in a target industry or has a US subsidiary; 0 otherwise. The second one, US_INVOLVE2, is a dummy variable that takes the value of 1 for any firm with export change levels to the US, is in a target industry, or has a US subsidiary; 0 otherwise.

The results are presented in Tables 5.24 and 5.25 for each US integrated product market interaction proxy respectively. Using US_INVOLVE1 and US_INVOLVE2, the interaction term is negative and significant in the full and split sample, suggesting that companies with some type of exposure in the US product market experience larger increments in earnings quality after the FTA period in comparison to companies with no exposure in the US product market after the FTA period. These findings are in line with the main results.

5.3.1.8 US_INVOLVE1

TABLE 5.24
Regression results using full and split sample, US product market involvement 1 and discretionary accruals absolute value

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 US\_INVOLVE1_{it} + \beta_3 POST * US\_INVOLVE2_{it} + controls + \varepsilon_{it}$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		0.111	2.730***	0.047	0.910	0.082	1.680*
POST		0.038	4.310***	0.043	2.600***	0.042	4.300***
US_INVOLVE1		0.027	3.530***	0.020	1.940*	0.040	3.290***
POSTxUS_INVOLVE1	-	-0.025	-2.340***	-0.032	-1.810**	-0.026	-1.970**
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		965		492		472	
Adjusted R^2		0.091		0.142		0.066	
F-statistic		5.570***		4.880***		2.850***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: US_INVOLVE1, indicator variable that is equal to 1 for any firm that exports to the US, is in a target industry, or has a US subsidiary; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels respectively.

5.3.1.9 US_INVOLVE2

TABLE 5.25
Regression results using full and split sample, US product market involvement 2
and discretionary accruals absolute value

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 US\_INVOLVE2_{it} + \beta_3 POST * US\_INVOLVE2_{it} + controls + \varepsilon_{it}$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		0.109	2.700***	0.052	1.000	0.082	1.700*
POST		0.039	4.510***	0.037	2.380**	0.045	4.710***
US_INVOLVE2		0.031	4.110***	0.018	1.760*	0.042	3.790***
POSTxUS_INVOLVE2	-	-0.027	-2.530***	-0.023	-1.390*	-0.034	-2.540***
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		965		492		472	
Adjusted R^2		0.091		0.140		0.068	
F-statistic		5.620***		4.810***		2.890***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: US_INVOLVE2, indicator variable that is equal to 1 for any firm with export change levels to the US, is in a target industry, or has a US subsidiary; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at 0.01, 0.05 and 0.10 levels respectively.

5.3.2 Dependent variable – benchmark meeting

Sensitivity analyses also are conducted for the benchmark meeting earnings quality measure. In order to increase the number of observations for the just meet category, the MEET variable is extended in its definition. First, the variable takes the value of 1 when net income deflated by the book value of equity is between 0 and 0.02; 0 otherwise. Results are consistent to the previous ones where the interval for the ratio is between 0 and 0.01 and the interaction term shows a negative and significant coefficient for the full and split samples.

For this new interval, 0–0.02, there is a significant coefficient for the product market interaction variable ΔUS_EXP using high-capital intensity subsample, where the interaction

terms with POST is negative and statistically significant. Tables 5.26 to 5.29 present the results.

When T_IND product market interaction is used, and in terms of comparison to the previous analysis, the two companies that drive the results are deleted from the sample. Results not tabulated show that POSTxT_IND is no longer significant, particularly for the high-capital intensity subsample. Negative coefficients are found for the interaction term using US_SUB in the full and subsamples, but they are not statistically significant.

5.3.2.1 Only POST

TABLE 5.26
Regression results using full and split sample for FTA period and extended earnings threshold 0-0.02, benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + controls + \varepsilon_{it} \qquad (4)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-0.075	0.005	1.614	0.851	-1.073	0.188
POST	-	0.089	0.101	-0.326	0.836	0.344	0.604
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		1,000		503		489	
Likelihood ratio		48.594***		20.246		39.614***	

Only the variable POST p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.02; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.2.2 Model 1: ΔUS_EXP

TABLE 5.27
Regression results using full and split sample for product market interaction Model 1, US export change and extended earnings threshold 0-0.02, benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 POST_{it} * \Delta US\_EXP_{it} + controls + \varepsilon_{it} \quad (5)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-8.023	2.828*	3.130	0.237	-33.961	5.201**
POST		0.122	0.047	-0.019	0.001	0.049	0.003
HI_US_EXPD		2.385	10.612***	-1.041	0.202	3.271	6.101**
ΔUS_EXP		13.123	0.644	-2.919	0.020	28.257	1.379
POSTxΔUS_EXP	-	-18.512	0.947	24.963	0.695	-37.156	1.808*
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		284		141		143	
Likelihood ratio		35.430**		10.912		27.490*	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.02; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.2.3 Model 2: T_IND

TABLE 5.28
Regression results using full and split sample for product market interaction Model 2, target industry and extended earnings threshold 0-0.02, benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \quad (6)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-6.472	1.509	-0.369	0.007	-27.608	4.361**
POST		-0.234	0.105	-0.122	0.014	-0.824	0.721
HI_US_EXPD		2.373	10.674***	1.257	0.347	3.485	6.414**
T_IND		-5.366	2.969*	-2.109	0.564	-3.654	1.533
POSTxT_IND	-	1.071	0.938	-0.091	0.005	2.830	2.365*
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		294		147		147	
Likelihood ratio		36.302**		10.231		29.036**	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.02; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.2.4 Model 3: US_SUB

TABLE 5.29
Regression results using full and split sample for product market interaction Model 3, US subsidiary and extended earnings threshold 0-0.02, benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 POST_{it} * US\_SUB_{it} + controls + \varepsilon_{it} \quad (7)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-8.926	2.439	0.207	0.002	-22.102	3.553*
POST		0.366	0.254	0.278	0.086	1.071	1.383
HI_US_EXPD		2.666	10.020***	1.402	0.410	2.891	4.834**
US_SUB		-1.601	0.995	-0.263	0.040	2.693	1.447
POSTxUS_SUB	-	-1.868	1.199	-1.427	0.954	-2.979	1.442
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		271		140		131	
Likelihood ratio		38.849**		12.082		21.592	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.02; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Second, MEET takes the value of 1 when net income deflated by the book value of equity is between 0 and 0.03; 0 otherwise. The results are similar to the earlier reported. Specifically, for this 0–0.03 interval, a negative and statistically coefficient is found for POSTxΔUS_EXP using the full sample while for POSTxT_IND and POSTxUS_SUB in the low-capital intensity group. Results can be seen in Tables 5.30 to 5.33.

Consistently with the previous outputs, when the two companies are deleted from the sample, the POSTxT_IND coefficient for the high-capital intensity subsample becomes insignificant. Results for this analysis are not reported.

5.3.2.5 Only POST

TABLE 5.30
Regression results using full and split sample for FTA period and extended earnings threshold 0-0.03, benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + controls + \varepsilon_{it} \qquad (4)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-0.510	0.273	1.216	0.568	-2.397	1.037
POST	-	0.223	0.834	-0.231	0.504	0.592	2.364*
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		1,000		503		489	
Likelihood ratio		66.180***		30.065**		62.123***	

Only the variable POST p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.03; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.2.6 Model 1: ΔUS_EXP

TABLE 5.31
Regression results using full and split sample for product market interaction Model 1, US export change and extended earnings threshold 0-0.03, benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 POST_{it} * \Delta US\_EXP_{it} + controls + \varepsilon_{it} \quad (5)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-2.327	0.694	10.720	2.505	-3.392	0.676
POST		0.290	0.372	-0.532	0.579	0.862	1.587
HI_US_EXPD		1.716	9.039***	-2.543	1.176	1.478	4.645**
ΔUS_EXP		17.399	1.691	16.184	0.630	9.072	0.285
POSTxΔUS_EXP	-	-28.063	3.322**	14.218	0.228	-22.831	1.407
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		284		141		143	
Likelihood ratio		47.837***		25.053		35.613***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.03; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.2.7 Model 2: T_IND

TABLE 5.32
Regression results using full and split sample for product market interaction Model 2, target industry and extended earnings threshold 0-0.03, benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \quad (6)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		0.031	0.000	6.580	1.933	-0.379	0.011
POST		0.034	0.003	0.487	0.198	-0.824	0.931
HI_US_EXPD		1.639	8.939***	-0.895	0.150	1.475	4.746**
T_IND		-3.906	1.748	0.654	0.050	-1.608	0.506
POSTxT_IND	-	0.234	0.078	-2.073	2.265*	2.825	4.725**
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		294		147		147	
Likelihood ratio		43.644***		24.735		36.292***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.03; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.2.8 Model 3: US_SUB

TABLE 5.33
Regression results using full and split sample for product market interaction Model 3, US subsidiary and extended earnings threshold 0-0.03, benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 POST_{it} * US\_SUB_{it} + controls + \varepsilon_{it} \quad (7)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		1.771	0.371	16.408	4.304**	-2.953	0.427
POST		0.404	0.523	0.745	0.514	0.947	1.472
HI_US_EXPD		2.108	11.712***	1.207	0.271	1.936	6.641**
US_SUB		-0.733	0.526	-3.025	2.802*	1.381	0.561
POSTxUS_SUB	-	-1.252	1.158	-3.219	2.751**	-0.252	0.018
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		271		140		131	
Likelihood ratio		52.165***		27.787		31.460**	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.03; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Third, a new benchmark meeting variable is created. MEET2 is similar to MEET, but scaled earnings smaller than -0.10 and bigger than 0.11 are deleted from the sample due to being considered extreme values. Results remain consistent where the interaction term is negative and significant, particularly utilising ΔUS_EXP for the full and the high-capital intensity subsample and US_SUB high-capital intensity subsample. Tables 5.34 to 5.38 show

the regression results including those tests where the two companies driving the results are deleted from the sample. POSTxT_IND becomes not significant for the full and the high-capital intensity subsample.

5.3.2.9 Only POST

TABLE 5.34
Regression results using full and split sample for FTA period, benchmark meeting 2

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + controls + \varepsilon_{it} \qquad (4)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		2.821	3.175*	1.270	0.212	2.068	0.810
POST	-	-0.216	0.300	-0.094	0.032	-0.082	0.023
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		538		264		269	
Likelihood ratio		39.045***		16.815		18.943	

Only the variable POST p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET2, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.01; 0 otherwise. Scaled earnings smaller than -0.10 and bigger than 0.11 are excluded from the sample. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.2.10 Model 1: ΔUS_EXP

TABLE 5.35
Regression results using full and split sample for product market interaction Model 1, US export change and benchmark meeting 2

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 POST_{it} * \Delta US\_EXP_{it} + controls + \varepsilon_{it} \quad (5)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-5.512	0.481	-3.345	0.179	-44.380	3.776*
POST		-1.371	2.358	-1.066	1.110	-4.349	3.529*
HI_US_EXPD		-0.726	0.283	3.070	0.408	0.068	0.001
ΔUS_EXP		47.632	3.793*	0.514	0.000	154.700	4.850**
POSTxΔUS_EXP	-	-86.500	5.741***	-20.418	0.139	-252.200	5.495***
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		168		77		91	
Likelihood ratio		16.439		3.691		12.749	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET2, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.01; 0 otherwise. Scaled earnings smaller than -0.10 and bigger than 0.11 are excluded from the sample. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.2.11 Model 2: T_IND

TABLE 5.36
Regression results using full and split sample for product market interaction Model 2, target industry and benchmark meeting 2, smaller sample

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \quad (6)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-6.799	0.949	-2.209	0.151	-2.126	0.098
POST		-2.294	3.656*	-1.568	1.232	-1.491	1.347
HI_US_EXPD		1.264	1.393	1.300	0.273	0.455	0.188
T_IND		-7.190	6.435**	-1.663	0.203	-3.633	1.742
POSTxT_IND	-	3.676	4.562**	1.109	0.374	2.304	1.460
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		175		82		93	
Likelihood ratio		16.916		4.057		9.685	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value

results are based on two-tailed tests.

Variable definitions: MEET2, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.01; 0 otherwise. Scaled earnings smaller than -0.10 and bigger than 0.11 are excluded from the sample. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

TABLE 5.37
Regression results using full and split sample for product market interaction Model 2, target industry and benchmark meeting 2, smaller sample

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 POST_{it} * T\_IND_{it} + controls + \varepsilon_{it} \qquad (6)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-10.978	2.578	-2.170	0.143	-1.890	0.108
POST		-2.013	3.110*	-1.563	1.225	-0.951	0.636
HI_US_EXPD		0.879	0.395	1.322	0.281	-0.106	0.005
T_IND		-4.971	3.628*	-1.663	0.203	-2.128	0.619
POSTxT_IND	-	1.919	1.436	1.085	0.352	0.476	0.064
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		162		81		81	
Likelihood ratio		10.216		4.024		4.655	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET2, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.01; 0 otherwise. Scaled earnings smaller than -0.10 and bigger than 0.11 are excluded from the sample. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

Two companies that may have affected the results shown in Table 5.36 are deleted from the sample.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

5.3.2.12 Model 3 US_SUB

TABLE 5.38
Regression results using full and split sample for product market interaction Model 3, US subsidiary and benchmark meeting 2

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 POST_{it} * US\_SUB_{it} + controls + \varepsilon_{it} \quad (7)$$

		Full sample		Split sample			
				Low capital intensity		High capital intensity	
Variable	Exp. Sign	Coef.	Wald-stat.	Coef.	Wald-stat.	Coef.	Wald-stat.
Intercept		-4.395	0.284	-1.786	0.088	-43.297	5.061**
POST		-0.554	0.304	-1.281	1.184	0.517	0.100
HI_US_EXPD		-0.187	0.020	1.464	0.353	2.898	3.110*
US_SUB		-2.803	2.264	-0.505	0.067	7.196	3.595*
POSTxUS_SUB	-	1.877	0.811	0.794	0.148	-6.159	2.708**
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		153		75		78	
Likelihood ratio		14.776		3.541		10.148	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: MEET2, dummy variable equals to 1 if net income deflated by the book value of equity is between 0 and 0.01; 0 otherwise. Scaled earnings smaller than -0.10 and bigger than 0.11 are excluded from the sample. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Further, MEET2 is used for the extended intervals 0–0.02 and 0–0.03. Results untabulated are similar to the previous ones (negative and significant coefficients for the interaction term).

The last sensitivity analysis carried out is to calculate the just meet proxies – MEET and MEET2 – scaling by total assets instead of total equity for the three thresholds (0.01, 0.02 and 0.03). Unreported results are consistent with those observed previously, but weaker.

5.3.3 Summary

Several sensitivity checks for each variable of earnings quality are conducted to provide more robust results. For the discretionary accruals measure, following the Jones

(1991) model, the results are consistent with the main findings using ranked data, combinations of the product market interaction variables (JOINT1, JOINT2 and JOINT3), absolute value of discretionary accruals and global product market involvement proxies (US_INVOLVE1 and US_INVOLVE2). For the benchmark meeting variable, the results are also robust and support those reported previously utilising a broader definition of MEET with extended intervals (0–0.02 and 0–0.03), another profits meet target proxy (MEET2) considering different targets (0–0.01, 0–0.02 and 0–0.03), and MEET and MEET2 deflated by total assets using the three intervals. After those robustness tests, in general, the coefficient of POST – interacted with one of the measures of product market interaction with the US (ΔUS_EXP, T_IND and US_SUB) – is negative and statistically significant for the full and split sample. These sensitivity findings support the main results for H1b.

CHAPTER 6

RESULTS: HYPOTHESES 2 AND 3

In this chapter I present the analysis of the regression results for Hypotheses 2 and 3 in section 6.1 and 6.2 respectively. Section 6.3 provides an additional analysis regarding ownership structure.

6.1 Regression results: Hypothesis 2

In this section I discuss the findings for Hypothesis 2. Recalling, H2a refers to the comparison of changes in earnings quality for family versus non-family controlled firms and H2b includes the FTA period to this examination. H2c tests whether family businesses with larger involvement in the US product market lead to improvements in financial reporting due to the US–Chile FTA.

Tables 6.1 to 6.9 provide the ordinary least squares and logistic regression results. Testing H2a and H2b simultaneously, Tables 6.1 and 6.2 show the results for the relationship between the FTA and changes in earnings quality including a family indicator (FAM). Tables 6.3 to 6.8 display the regressions results for H2c in three individual models. Each model uses a different proxy for product market interaction with the US. Tables 6.3 and 6.4 reports the estimation results using ΔUS_EXP, Tables 6.5 and 6.6 utilise T_IND, and Tables 6.7 and 6.8 use US_SUB. The dependent variables for each model are discretionary accruals (DAC) and benchmark meeting (MEET) as proxies of earnings quality.

For each model, the first table provides the estimation results using the full sample and the second table shows the estimation results for subsamples of low- and high-capital

intensity firms in Panels A and B respectively. In each table, column 2 reports the expected sign for the tested hypothesis. The following columns present the coefficients, t-statistics and Wald-statistics for the ordinary least squares and logistic models respectively. The t-statistics and p-values for OLS estimations are based on a heteroscedasticity consistent covariance matrix.

6.1.1 FTA period and family ownership: H2a and H2b

Table 6.1 displays the results for the full sample. Using DAC, FAM is positive and significant with a coefficient of 0.008. In this case, family firms have higher values of discretionary accruals than non-family firms, which is consistent with hypothesis H2a that family firms have lower levels of reporting quality than non-family ones. FAM is negative (coef. -1.238) and significant for MEET. These results suggest that the probability of meeting earnings target is lower for family firms than for non-family businesses and therefore, there is better reporting quality for family enterprises. Using the MEET proxy H2a is not supported.

TABLE 6.1
Regression results using full sample and family ownership effect for FTA period, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 FAM_{it} + \beta_3 POST_{it} * FAM_{it} + controls + \varepsilon_{it} \qquad (8)$$

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.070	-1.700	1.871	1.591
POST		0.008	0.640	-1.024	3.575*
FAM	+	0.008	0.970*	-1.238	3.700**
POSTxFAM	-	-0.009	-0.650	1.618	4.495**
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		993		1,000	
Adjusted R^2		0.045			
F-statistic		2.930***			
Likelihood ratio				34.296**	

Only the interaction term and FAM p-values are based on one-tailed tests where a negative and positive sign is predicted respectively. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

POSTxFAM is negative for DAC but not significant while is positive and significant for MEET (coef. 1.618). There is a higher probability of meeting an earnings target for family firms in comparison to non-family ones after the FTA became effective and thus lower levels of earnings quality. This result does not support H2b that family firms have better reporting quality after the FTA.

For brevity, control variable coefficients are not reported. General results show that ROA is positively related to discretionary accruals but negatively associated with benchmark meeting target for the full and split sample. Other control variables present no significant results when DAC is the dependent variable. Using MEET, SIZE and LEV are negative and significant for the full and split sample (specifically for low- and high- capital intensive companies for SIZE and LEV respectively), implying that larger and more leveraged companies have a lower probability of meeting an earnings target and therefore have better earnings quality. Other variables present no significant results.

Table 6.2 Panels A and B show the results for the low- and high-capital intensity subsamples. In Panel A, the interaction term POSTxFAM is positive and significant for MEET (coef. 3.010), suggesting that after the FTA low-capital intensity family-owned companies have a higher probability of reaching their earnings target, corresponding with worse financial reporting quality than non-family controlled companies. The FAM variable shows no significant results.

Panel B, for the high-capital intensity group, documents that the interaction term, POSTxFAM, is negative (-0.024) and significant at the 10% level using DAC. This is consistent with H2b that family firms have larger improvements in earnings quality as compared to non-family firms in the post-FTA period. Specifically, this result suggests that

within the high-capital intensive company group, family controlled firms have more opportunities to improve their reporting quality after the FTA than non-family ones. Using the MEET proxy, no significant result is reported for this interaction term. FAM is positive using DAC but not significant, while FAM is negative and significant for MEET (coef. -1.359).

TABLE 6.2
Regression results using subsamples and family ownership effect for FTA period, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 FAM_{it} + \beta_3 POST_{it} * FAM_{it} + controls + \varepsilon_{it} \qquad (8)$$

Panel A: Low capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.097	-1.600	2.078	0.721
POST		-0.008	-0.410	-2.646	4.939**
FAM	+	0.011	0.970	-0.830	1.068
POSTxFAM	-	0.011	0.580	3.010	5.062**
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		503		503	
Adjusted R^2		0.056			
F-statistic		2.250***			
Likelihood ratio				14.958	

Panel B: High capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.068	-1.230	0.223	0.006
POST		0.014	0.970	-0.698	1.031
FAM	+	0.007	0.590	-1.359	2.079*
POSTxFAM	-	-0.024	-1.310*	1.335	1.560
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		489		489	
Adjusted R^2		0.015			
F-statistic		1.380			
Likelihood ratio				32.378**	

Only the interaction term and FAM p-values are based on one-tailed tests where a negative and positive sign is predicted respectively. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

6.1.2 Product market interaction and family ownership: H2c

6.1.2.1 Model 1: ΔUS_EXP

The first model using ΔUS_EXP as a proxy for US product market interaction is displayed in Table 6.3 for the full sample. In general, the model is significant and explains 10.8% of the variation in discretionary accruals. The coefficient for the three-way interaction term is positive (0.935) and significant implying that, after the FTA, family controlled companies with more changes in their export activity to the US have larger discretionary accruals than family firms with fewer changes in their export levels to the US. This is opposite to H2c, which specifies that more interaction in US product markets is positively related to better reporting quality for family controlled companies after the trade agreement entry into force. Using the MEET variable, the sign for the interaction term is negative but statistically not significant.

The coefficient for ΔUS_EXPxFAM is negative and significant (coef. -0.544) for DAC. This result suggests that during the pre-FTA period, family controlled companies with larger increases in US export have lower levels of discretionary accruals, and consequently better earnings quality than family firms with lower changes in exporting. For the MEET variable, the coefficient for ΔUS_EXPxFAM is not significant.

Taking together the results of POSTxΔUS_EXPxFAM and ΔUS_EXPxFAM, they may indicate that family-owned firms with higher export changes have higher earnings quality level to start with, i.e., in the pre-FTA period; therefore, during the post-FTA period these companies do not have much room to improve the quality of their financial reporting.

Results for control variables are not reported for brevity purposes. Those indicate that ROA shows a positive and significant coefficient for DAC while a negative and significant result for MEET, using the full and split sample for the three product market interaction models. SIZE and LEV remain negative and significant.

TABLE 6.3
Regression results using full sample and family ownership effect for product market interaction
Model 1, US export change, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 FAM_{it} + \beta_5 POST_{it} * \Delta US\_EXP_{it} + \beta_6 POST_{it} * FAM_{it} + \beta_7 \Delta US\_EXP_{it} * FAM_{it} + \beta_8 POST_{it} * \Delta US\_EXP_{it} * FAM_{it} + controls + \varepsilon_{it} \quad (9)$$

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.092	-1.910*	0.392	0.007
POST		0.015	0.810	-1.692	2.287
HI_US_EXPD		0.006	0.460	0.506	0.299
ΔUS_EXP		0.750	3.770***	9.018	0.179
FAM		0.021	1.160	-0.941	0.787
POSTxΔUS_EXP		-1.209	-2.720***	-16.932	0.332
POSTxFAM		-0.013	-0.610	1.055	0.595
ΔUS_EXPxFAM		-0.544	-1.950*	9.878	0.124
POSTxΔUS_EXPxFAM	-	0.935	1.640*	-28.412	0.544
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		284		284	
Adjusted R^2		0.108			
F-statistic		2.270***			
Likelihood ratio				16.006	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

For DAC, ADR reports positive and significant coefficients for the low-capital intensity subsample, which displays negative and significant coefficients for the high-capital intensity one for the ΔUS_EXP and T_IND product market interaction measures. The results suggest that low-capital intensive Chilean companies with an ADR in the US stock exchange market have better earnings quality to start with and as a result less flexibility to enhance their financial reporting. Results for the highly capital intensive companies imply that companies with ADR have better reporting quality than companies without stocks traded in such markets. One possible explanation for the difference in signs between the two subsamples is because, on the whole, highly capital intensive companies have more flexibility

to commit earnings management mainly through their depreciation expenses, and thus they have more opportunities to improve earnings quality by being exposed to the strict US capital market via ADR than low-capital intensive companies. Therefore, because low-capital intensive companies probably have a higher level of accounting quality to start with, they would have fewer options for reporting improvements. ADR is not significant when MEET is the dependent variable.

Regarding the split sample, Table 6.4 Panel A (low capital intensity firms) exhibits no significant results for family and product market interaction variables. Although the three-way interaction term reports the expected sign, it is not statistically significant.

The results for the highly capital intensive subsample results are presented in Panel B. The coefficient of interest, the three-way interaction term, has a negative coefficient using MEET but is not significant in this model. FAM reports a positive and significant association with DAC (coef. 0.056), meaning that family businesses without exporting activities to the US have higher levels of discretionary accruals in the pre-FTA period and thus poorer earnings quality. The coefficient for POSTxFAM of -0.070 is significant at the 5% level and suggests that family-owned firms with no involvement in the US product market boost their accounting quality by showing lower levels of discretionary accruals during the post-FTA period.

TABLE 6.4
Regression results using subsamples and family ownership effect for product market interaction
Model 1, US export change, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 FAM_{it} + \beta_5 POST_{it} * \Delta US\_EXP_{it} + \beta_6 POST_{it} * FAM_{it} + \beta_7 \Delta US\_EXP_{it} * FAM_{it} + \beta_8 POST_{it} * \Delta US\_EXP_{it} * FAM_{it} + controls + \varepsilon_{it} \quad (9)$$

Panel A: Low capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		0.103	1.090	6.828	0.827
POST		-0.005	-0.260	-1.517	1.239
HI_US_EXPD		-0.106	-1.600	-0.832	0.096
ΔUS_EXP		-0.870	-1.400	-31.077	0.425
FAM		0.007	0.390	-1.169	0.737
POSTxΔUS_EXP		1.711	1.430	39.611	0.401
POSTxFAM		0.010	0.440	1.345	0.661
ΔUS_EXPxFAM		0.769	1.190	28.781	0.309
POSTxΔUS_EXPxFAM	-	-0.642	-0.680	-36.757	0.310
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		141		141	
Adjusted R^2		0.180			
F-statistic		2.140***			
Likelihood ratio				6.564	

Panel B: High capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.141	-2.150**	-1.244	0.044
POST		0.075	2.710***	-3.525	2.600
HI_US_EXPD		-0.006	-0.390	-0.066	0.003
ΔUS_EXP		0.918	2.730***	10.958	0.201
FAM		0.056	2.260**	-1.303	0.532
POSTxΔUS_EXP		-1.514	-2.470**	-33.101	0.957
POSTxFAM		-0.070	-2.380**	3.002	1.676
ΔUS_EXPxFAM		-0.608	-1.500	20.240	0.287
POSTxΔUS_EXPxFAM	-	0.613	0.910	-17.714	0.165
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		143		143	
Adjusted R^2		0.224			
F-statistic		2.790***			
Likelihood ratio				11.801	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

6.1.2.2 Model 2: T_IND

Table 6.5 presents the results using the second variable of product market interaction with the US, T_IND. In the full sample, test variables are not significant.

Results for the split sample are presented in Table 6.6 Panels A and B. Generally, the models for low- and high-capital intensity companies are significant and explain 18.6% and 20.9% of the variation in earnings quality respectively when DAC is used in the model.

TABLE 6.5
Regression results using full sample and family ownership effect for product market interaction
Model 2, target industry, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 FAM_{it} + \beta_5 POST_{it} * T\_IND_{it} + \beta_6 POST_{it} * FAM_{it} + \beta_7 T\_IND_{it} * FAM_{it} + \beta_8 POST_{it} * T\_IND_{it} * FAM_{it} + controls + \varepsilon_{it} \quad (10)$$

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.061	-1.190	-4.655	0.826
POST		0.016	0.580	-1.203	0.890
HI_US_EXPD		0.004	0.290	1.519	2.704
T_IND		-0.009	-0.260	-4.436	2.510
FAM		-0.004	-0.120	0.465	0.103
POSTxT_IND		-0.004	-0.120	0.792	0.124
POSTxFAM		0.005	0.130	-1.050	0.305
T_INDxFAM		0.026	0.720	-1.547	0.470
POSTxT_INDxFAM	-	-0.017	-0.390	2.411	0.702
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		294		294	
Adjusted R^2		0.103			
F-statistic		2.290***			
Likelihood ratio				16.478	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Table 6.6 Panel A shows that POSTxT_INDxFAM is positive and significant (coef. 0.074) for DAC, suggesting that after the FTA, low-capital intensity companies that are family controlled and considered in the target industry group have higher levels of discretionary accruals than family companies not in the targeted industry group. The

interaction term T_INDxFAM is negative (-0.066) using DAC, suggesting that during the pre-FTA period family enterprises in the industry target group have lower levels of discretionary accruals and therefore report better earnings quality. These results are not consistent with H2c that more involvement in the US product market due to the FTA has an effect in reporting quality improvement in family firms and are similar to those presented in Table 6.3 using ΔUS_EXP as proxy for US product market interaction for the full sample. Similar to model 1, utilising ΔUS_EXP, a possible explanation could be that family firms can have boosted their financial reporting before the FTA period and thus after the FTA have fewer opportunities to improve earnings quality.

When DAC is the dependent variable, FAM reports a positive and significant result (coef. 0.072) implying that family-owned companies not classified in the target group have higher levels of discretionary accruals before the FTA become into effect, and thus poorer earnings quality. POSTxFAM shows a negative and significant coefficient (-0.056) suggesting that during the post-FTA these family companies do not targeted in the industry group improve their financial reporting quality (by disclosing lower levels of discretionary accruals).

Examining the results for the high-capital intensity subsample in Panel B, POSTxT_INDxFAM is related negatively to discretionary accruals, reporting a significant coefficient of -0.120. This means that in the post-FTA period, family firms targeted in the industry group have better reporting quality than family firms from other industries or sectors that are not targeted as benefactors of the FTA. As a consequence, highly capital intensity companies that in turn are family-owned firms with more involvement in US product markets have more opportunities to report better earnings quality once the FTA came into effect. Hence, more interaction with the US product market due to the FTA enhances reporting quality in family firms, consistent with H2c.

TABLE 6.6
Regression results using subsamples and family ownership effect for product market interaction
Model 2, target industry, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 FAM_{it} + \beta_5 POST_{it} * T\_IND_{it} + \beta_6 POST_{it} * FAM_{it} + \beta_7 T\_IND_{it} * FAM_{it} + \beta_8 POST_{it} * T\_IND_{it} * FAM_{it} + controls + \varepsilon_{it} \quad (10)$$

Panel A: Low capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.052	-0.890	0.363	0.006
POST		0.010	0.500	-1.908	1.216
HI_US_EXPD		-0.054	-1.200	0.391	0.032
T_IND		0.063	1.480	-1.706	0.184
FAM		0.072	2.470**	-1.166	0.267
POSTxT_IND		-0.016	-0.500	1.805	0.520
POSTxFAM		-0.056	-1.830*	1.120	0.208
T_INDxFAM		-0.066	-1.950*	0.887	0.089
POSTxT_INDxFAM	-	0.074	1.680**	-1.399	0.183
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		147		147	
Adjusted R^2		0.186			
F-statistic		2.280***			
Likelihood ratio				5.024	

Panel B: High capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.143	-2.200**	-0.397	0.006
POST		0.045	1.010	-0.530	0.064
HI_US_EXPD		0.003	0.200	0.555	0.329
T_IND		-0.047	-0.910	-0.900	0.074
FAM		-0.003	-0.090	0.762	0.137
POSTxT_IND		0.062	1.030	-1.287	0.174
POSTxFAM		0.000	0.000	-0.831	0.102
T_INDxFAM		0.090	1.810*	-2.593	0.763
POSTxT_INDxFAM	-	-0.120	-1.730**	3.660	0.987
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		147		147	
Adjusted R^2		0.209			
F-statistic		2.750***			
Likelihood ratio				11.415	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

T_INDxFAM is positive (0.090) and statistically significant, meaning that within the target industry group family firms have higher levels of discretionary accruals during the pre-FTA period and thus lower levels of reporting quality. These two results, i.e., the two and three-way interaction terms, are consistent with the idea that highly capital intensity firms have more room to improve earnings quality than low-capital intensive ones. The rest of test variables display no significant results. Test variables are not significant for the MEET proxy.

6.1.2.3 Model 3: US_SUB

Table 6.7 presents the results for the third model using US_SUB product market interaction proxy and the full sample. Again, the three-way interaction term reports a negative coefficient but it is not statistically significant.

TABLE 6.7
Regression results using full sample and family ownership effect for product market interaction
Model 3, US subsidiary, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 FAM_{it} + \beta_5 POST_{it} * US\_SUB_{it} + \beta_6 POST_{it} * FAM_{it} + \beta_7 US\_SUB_{it} * FAM_{it} + \beta_8 POST_{it} * US\_SUB_{it} * FAM_{it} + controls + \varepsilon_{it} \quad (11)$$

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.082	-1.450	1.993	0.159
POST		0.016	0.760	-2.289	2.753*
HI_US_EXPD		0.008	0.530	0.394	0.165
US_SUB		0.012	0.500	-1.094	0.243
FAM		0.011	0.510	-1.564	1.045
POSTxUS_SUB		-0.014	-0.500	2.645	0.780
POSTxFAM		-0.009	-0.370	2.965	2.676
US_SUBxFAM		0.002	0.070	0.231	0.007
POSTxUS_SUBxFAM	-	-0.003	-0.090	-3.834	1.187
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		271		271	
Adjusted R^2		0.111			
F-statistic		2.300***			
Likelihood ratio				18.470	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Regression results for the split sample are displayed in Table 6.8 Panel A (low capital intensive) and Panel B (high capital intensive). Both panels exclude HI_US_EXPD in order to avoid the linear combination issue with the rest of variables. In Panel A, for DAC the three-way interaction term coefficient (POSTxUS_SUBxFAM) is -0.050 significant at the 10% level, meaning that after the FTA family businesses having a subsidiary in the US enhance their earnings quality more than family firms without a US subsidiary. This is consistent with H2c that Chilean family entities report better earnings quality due to the FTA, particularly for their greater involvement in US product markets. Using the MEET variable, POSTxUS_SUBxFAM also reports a negative coefficient but it is statistically insignificant. Other test variables display no significant results.

POSTxFAM shows a positive and statistically significant coefficient (2.647) for MEET, indicating that family firms with no product involvement in the US market have a higher probability of meeting the earnings target in the post-FTA period and thus report lower levels of earnings quality. Other test variables display no significant results.

For the high-capital intensity subsample, in Table 6.8 Panel B, the coefficient of interest, POSTxUS_SUBxFAM, displays a negative sign for both types of earnings quality variables as predicted, but it is not statistically significant.

FAM has a negative and significant coefficient of -2.663 using MEET, signifying that during the pre-FTA period family companies with no US subsidiary report better earnings quality (lower probability of meeting an earnings target). No significant results are observed for the rest of test variables. For MEET, POSTxFAM is significant with a positive coefficient (2.619) suggesting that after the FTA came into effect the likelihood of meeting earnings target increases for family-owned companies having no interaction in the US product market

and as a consequence lower reporting quality is observed. No significant results are found for the rest of test variables.

TABLE 6.8
Regression results using subsamples and family ownership effect for product market interaction
Model 3, US subsidiary, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 FAM_{it} + \beta_5 POST_{it} * US\_SUB_{it} + \beta_6 POST_{it} * FAM_{it} + \beta_7 US\_SUB_{it} * FAM_{it} + \beta_8 POST_{it} * US\_SUB_{it} * FAM_{it} + controls + \varepsilon_{it} \quad (11)$$

Panel A: Low capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.088	-1.440	2.091	0.995
POST		-0.010	-0.500	-2.276	3.552*
US_SUB		0.002	0.130	2.062	2.003
FAM		0.005	0.430	-0.299	0.116
POSTxUS_SUB		0.029	1.120	0.351	0.024
POSTxFAM		0.018	0.820	2.647	3.745*
US_SUBxFAM		-0.001	-0.040	-2.348	1.383
POSTxUS_SUBxFAM	-	-0.050	-1.610*	-1.550	0.295
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		492		492	
Adjusted R^2		0.051			
F-statistic		2.010***			
Likelihood ratio				19.182	

Panel B: High capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.064	-1.120	1.544	0.423
POST		0.012	0.830	-0.685	0.928
US_SUB		-0.011	-0.160	0.682	0.100
FAM		0.007	0.570	-2.663	3.723*
POSTxUS_SUB		0.025	0.360	-1.255	0.232
POSTxFAM		-0.028	-1.500	2.619	3.118*
US_SUBxFAM		-0.004	-0.050	1.206	0.152
POSTxUS_SUBxFAM	-	-0.001	-0.010	-1.013	0.071
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		472		472	
Adjusted R^2		0.011			
F-statistic		1.240			
Likelihood ratio				36.247**	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

For further analysis, the subsample of the pre-FTA period, i.e., 2002 and 2003 and only HI_US_EXPD indicator variable to measure the extent of involvement in US product markets are considered in a separate model. Results are documented in Table 6.9 and confirm that family firms with more exports have better earnings quality than family firms with low exports before the FTA, which means that the former have less room for improvement after the FTA. The coefficient for the HI_US_EXPDxFAM is negative (-0.049) and statistically significant for DAC. Using MEET the interaction term is not significant. This could be a possible explanation why the results presented previously for the effect of family-owned firms on earnings quality post-FTA are not so strong.

TABLE 6.9
Regression results using full sample and family ownership effect for pre-FTA period, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 HI\_US\_EXPD_{it} + \beta_2 FAM_{it} + \beta_3 HI\_US\_EXPORTD_{it} * FAM_{it} + controls + \varepsilon_{it}$$

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.157	-2.020**	-2.627	0.291
HI_US_EXPD		0.052	2.050**	-0.311	0.018
FAM	+	0.020	0.960	-0.216	0.033
HI_US_EXPDxFAM	-	-0.049	-1.570*	1.688	0.323
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		84		84	
Adjusted R^2		0.091			
F-statistic		1.440			
Likelihood ratio				3.587	

Only the interaction term and FAM p-values are based on one-tailed tests where a negative and positive sign is predicted respectively. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Moreover, when DAC is the dependent variable, FAM reports a positive sign but is not significant while HI_US_EXPD is positive (coef. 0.052) and significant, indicating that non-family businesses have higher values of discretionary accruals and therefore poorer accounting quality in this pre-FTA period.

6.1.3 Summary

Another analysis tests whether the relation between pre-/post-FTA changes in earnings quality is different for family controlled firms. A dummy variable indicates if the company is family owned (FAM), the four measures of US product market interaction (ΔUS_EXP, T_IND, US_SUB and HI_US_EXPD) and the proxies for earnings quality (DAC and MEET) are utilised.

In general, the results for H2a using the full sample and DAC indicate that family firms have lower earnings quality than non-family firms while the opposite is found when MEET is utilised. The split sample based on capital intensity subsample shows no significant results for low-capital intensity family businesses. For high-capital intensity subsample and the MEET variable, results exhibit that family businesses have better financial reporting quality than non-family counterparts.

Regarding H2b, using the MEET and full sample, family firms have worse accounting quality after the FTA period than non-family firms. For the split sample, in the low-capital intensity group family firms also report poorer earnings quality than non-family ones in the post-FTA period when MEET is utilised. The result is different for the high-capital intensity group and DAC, family controlled companies increase their accounting reporting quality level compared to non-family ones after the FTA came into effect. These results suggest that in general, the low-capital intensity family-owned companies have less room to improve earnings quality in comparison to the high-capital intensity family-owned companies during

the post-FTA period, because the former could have better levels of earnings quality to start with.

Finally, H2c incorporates the product interaction with US markets into the analysis. Significant results are found for DAC only. Using ΔUS_EXP and the full sample, results show that family businesses with more export changes report lower levels of accounting quality than family businesses with fewer export changes during the post-FTA period.

When T_IND and DAC are used, results display that the low-capital intensity family firms considered in the industries targeted as being more likely to benefit from the FTA have fewer opportunities for improvements in earnings quality. In contrast, highly capital intensive family firms within this target group have more options to report better earnings quality due to the FTA. A negative and significant coefficient for the three-way interaction term is reported in the high-capital intensity subsample, suggesting that family firms with more involvement in the US product market due to the FTA have better reporting quality than family firms with less US product market involvement.

For US_SUB, the low-capital intensity family companies with subsidiaries in the US enhance more financial reporting quality in comparison to the low-capital intensity family companies with no subsidiary there when DAC is the dependent variable.

On the whole, and as the supplementary analysis reveals, the influence of family ownership on the relationship between changes in earnings quality and the FTA is not so strong due to Chilean family firms with extensive US product market interaction boosting their earnings quality before the FTA became effective.

6.2 Regression results: Hypothesis 3

In this section I provide the analysis for Hypothesis 3. H3a examines the relationship between institutional ownership and improvements in earnings quality, while H3b tests the

effect of the US–Chile FTA on this relationship. H3c reviews whether the change in financial reporting quality in companies with more US product market interaction around the FTA is influenced by institutional investor shareholdings.

Tables 6.10 to 6.17 display the results using ordinary least square and logistic regressions. Analogous to the approach for Hypothesis 2 respecting family ownership, Tables 6.10 and 6.11 provide the results of testing H3a and H3b together by incorporating a dummy variable of institutional ownership (INST). Tables 6.12 to 6.17 show the regressions results for H3c for the three individual models that use a different proxy for product market interaction with the US. Tables 6.12 and 6.13 exhibit the estimation results for ΔUS_EXP, Tables 6.14 and 6.15 for T_IND, and Tables 6.16 and 6.17 for US_SUB. Each model utilises DAC and MEET as proxies of earnings quality.

For each model, the first table provides the estimation results using the full sample and the second table shows the estimation results for subsamples of low- and high-capital intensity firms in Panels A and B respectively. In each table, column 2 reports the expected sign for the tested hypothesis. The following columns present the coefficients, t-statistics and Wald-statistics for the ordinary least squares and logistic models respectively. The t-statistics and p-values for OLS estimations are based on a heteroscedasticity consistent covariance matrix.

6.2.1 FTA period and institutional ownership: H3a and H3b

Table 6.10 reports the regression results for the full sample. INST is negative and significant (coef. -0.013) for DAC, consistent with H3a that Chilean firms with institutional investors have better earnings quality (lower levels of discretionary accruals) than firms without institutional investors. An opposite result is found for MEET, the coefficient is positive and significant (0.920), indicating that firms with institutional investors have a

higher probability of meeting their earnings target and thus reporting lower earnings quality than firms without institutional investors.

TABLE 6.10
Regression results using full sample and institutional ownership effect for FTA period, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 INST_{it} + \beta_3 POST_{it} * INST_{it} + controls + \varepsilon_{it} \qquad (12)$$

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.066	-1.740*	0.748	0.266
POST		-0.001	-0.120	0.388	0.532
INST	-	-0.013	-1.550*	0.920	1.947*
POSTxINST	+	0.008	0.610	-1.190	2.626*
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		993		1,000	
Adjusted R^2		0.045			
F-statistic		2.960***			
Likelihood ratio				32.224*	

Only the interaction term and INST p-values are based on one-tailed tests where a positive and negative sign is predicted respectively. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

POSTxINST is negative and significant for MEET (coef. -1.190), meaning that companies with institutional shareholdings have less likelihood of meeting an earnings target in comparison to companies with no institutional shareholdings in the post-FTA period. Therefore, the former improve their financial reporting quality due the FTA. The result does not support the view that companies with institutional investors have less room to boost their reporting quality because they have better levels to start with, i.e., H3b. The interaction term is positive but not significant for DAC.

Similar to the previous hypothesis, the control variable coefficients are not reported. In general, ROA is positive and significant for DAC but negative and significant for MEET. SIZE and LEV coefficients are negative and significant, suggesting that larger and high

leveraged companies are less likely to meet their earnings target and hence show better earnings quality. The other control variables are not significant.

TABLE 6.11
Regression results using subsamples and institutional ownership effect for FTA period, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 INST_{it} + \beta_3 POST_{it} * INST_{it} + controls + \varepsilon_{it} \qquad (12)$$

Panel A: Low capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.106	-1.780*	-0.283	0.014
POST		-0.005	-0.270	0.953	1.499
INST	-	-0.027	-2.500***	1.314	2.131*
POSTxINST	+	0.012	0.630	-2.615	6.417***
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		503		503	
Adjusted R^2		0.057			
F-statistic		2.260***			
Likelihood ratio				14.195	

Panel B: High capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.064	-1.280	0.009	0.000
POST		-0.007	-0.520	-0.116	0.030
INST	-	-0.004	-0.320	0.790	0.660
POSTxINST	+	0.013	0.750	-0.161	0.024
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		489		489	
Adjusted R^2		0.012			
F-statistic		1.320			
Likelihood ratio				31.309**	

Only the interaction term and INST p-values are based on one-tailed tests where a positive and negative sign is predicted respectively. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Split sample results are presented in Table 6.11 Panels A and B for the low- and high-capital intensity subsamples respectively. In Panel A, INST is negatively and significantly

related to discretionary accruals (coef. -0.027). In contrast, a positive (1.314) and significant sign is found when MEET is used as a measure of earnings quality.

POSTxINST is positive for DAC but not significant while it is negative and significant for MEET (coef. -2.615), implying that firms with institutions as owners report better earnings quality after the FTA than firms with no institutional ownership. In Panel B for the high-capital intensity subsample, no significant results are reported for the test variables.

6.2.2 Product market interaction and institutional ownership: H3c

6.2.2.1 Model 1: ΔUS_EXP

Table 6.12 presents the results for the first model that uses ΔUS_EXP as proxy for product market interaction with the US and the full sample. The coefficient of interest, the three-way interaction, is negative but not significant (coef. -14.056) for MEET.

TABLE 6.12
Regression results using full sample and institutional ownership effect for product market interaction
Model 1, US export change, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 INST_{it} + \beta_5 POST_{it} * \Delta US\_EXP_{it} + \beta_6 POST_{it} * INST_{it} + \beta_7 \Delta US\_EXP_{it} * INST_{it} + \beta_8 POST_{it} * \Delta US\_EXP_{it} * INST_{it} + controls + \varepsilon_{it} \quad (13)$$

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.070	-1.480	-0.246	0.003
POST		0.022	1.530	-0.613	0.277
HI_US_EXPD		-0.002	-0.120	0.972	1.120
ΔUS_EXP		0.357	1.900*	5.933	0.067
INST		0.015	0.910	0.767	0.433
POSTxΔUS_EXP		-0.562	-1.130	-18.481	0.412
POSTxINST		-0.026	-1.410	-0.524	0.150
ΔUS_EXPxINST		-0.055	-0.170	8.301	0.082
POSTxΔUS_EXPxINST	-	0.008	0.010	-14.056	0.128
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		284		284	
Adjusted R^2		0.105			
F-statistic		2.230***			
Likelihood ratio				14.814	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Control variable results not tabulated indicate that ROA is statistically significant, positive for DAC and negative for MEET. LEV and SIZE are negative and significant. ADR is positive and significant for the low-capital intensity group, while it is negative and significant for the high-capital intensity group.

Table 6.13 Panels A and B, show the results for the low- and high-capital intensity subsamples respectively. Panel A displays no significant results for the test variables.

Regarding Panel B for the high-capital intensity subsample, the coefficient for POSTxΔUS_EXPxINST is 0.322 and significant at the 5% level. Chilean companies with institutions as owners and experiencing more changes in exports to the US have higher values of discretionary accruals after the FTA came into effect in comparison to Chilean companies with institutions as owners and experiencing fewer changes in exports to the US. This result is not consistent with H3c and suggests that companies with institutional ownership and more US product market interaction have less opportunity to improve their accounting quality reporting post-FTA. The coefficient for the three-way interaction term for MEET is negative but not significant.

Using DAC, INST shows a positive and significant coefficient (0.052), indicating that companies with institutional investors and no US product market interaction have higher values of discretionary accruals in the pre-FTA period.

TABLE 6.13
Regression results using subsamples and institutional ownership effect for product market interaction
Model 1, US export change, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 \Delta US\_EXP_{it} + \beta_4 INST_{it} + \beta_5 POST_{it} * \Delta US\_EXP_{it} + \beta_6 POST_{it} * INST_{it} + \beta_7 \Delta US\_EXP_{it} * INST_{it} + \beta_8 POST_{it} * \Delta US\_EXP_{it} * INST_{it} + controls + \varepsilon_{it} \quad (13)$$

Panel A: Low capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		0.085	0.950	2.860	0.185
POST		0.033	1.230	0.087	0.004
HI_US_EXPD		-0.090	-1.480	-0.028	0.000
ΔUS_EXP		-0.300	-0.530	-10.924	0.177
INST		0.001	0.020	0.478	0.103
POSTxΔUS_EXP		1.567	1.320	9.444	0.067
POSTxINST		-0.041	-1.470	-1.232	0.561
ΔUS_EXPxINST		0.002	0.000	3.272	0.009
POSTxΔUS_EXPxINST	-	-0.562	-0.480	2.132	0.002
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		141		141	
Adjusted R^2		0.205			
F-statistic		2.330***			
Likelihood ratio				6.058	

Panel B: High capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.046	-0.790	-1.962	0.098
POST		0.029	1.840*	-0.763	0.343
HI_US_EXPD		-0.006	-0.370	0.539	0.250
ΔUS_EXP		0.453	2.350**	4.859	0.031
INST		0.052	2.510**	1.298	0.777
POSTxΔUS_EXP		-1.192	-2.190**	-21.559	0.450
POSTxINST		-0.025	-1.090	-0.290	0.035
ΔUS_EXPxINST		-0.047	-0.120	7.613	0.045
POSTxΔUS_EXPxINST	-	0.322	-2.190**	-3.493	0.007
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		143		143	
Adjusted R^2		0.231			
F-statistic		2.850***			
Likelihood ratio				11.492	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

6.2.2.2 Model 2: T_IND

Results for the second model using the T_IND product market interaction proxy for the full sample are presented in Table 6.14. The coefficient of interest, i.e., the three-way interaction term, is not significant. INST is negative (coef. -0.047) while T_INDxINST is positive and significant (coef. 0.093), both for DAC.

TABLE 6.14
Regression results using full sample and institutional ownership effect for product market interaction
Model 2, target industry, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 INST_{it} + \beta_5 POST_{it} * T\_IND_{it} + \beta_6 POST_{it} * INST_{it} + \beta_7 T\_IND_{it} * INST_{it} + \beta_8 POST_{it} * T\_IND_{it} * INST_{it} + controls + \varepsilon_{it} \quad (14)$$

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.037	-0.820	-1.249	0.083
POST		0.026	1.130	-1.255	0.500
HI_US_EXPD		-0.003	-0.240	1.088	1.329
T_IND		-0.038	-1.460	-3.883	1.837
INST		-0.047	-2.150**	1.703	1.321
POSTxT_IND		0.000	-0.020	1.420	0.385
POSTxINST		-0.002	-0.070	-0.973	0.241
T_INDxINST		0.093	3.450***	-2.224	0.998
POSTxT_INDxINST	-	-0.036	-0.960	1.324	0.237
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		294		294	
Adjusted R^2		0.143			
F-statistic		2.870***			
Likelihood ratio				17.391	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Results for the split sample are in Table 6.15 Panel A (low capital intensity) and Panel B (high capital intensity). Panel A shows significant results only using DAC. POSTxT_INDxINST is negative and significant (coef. -0.067), implying that after the FTA companies having institutional shareholders and considered in the targeted industry group report lower levels of discretionary accruals than companies having institutional shareholders

and not included in the targeted industry group. Therefore, the former disclose better earnings quality due to the FTA. This is consistent with H3c, suggesting that low-capital intensity Chilean companies with institutional ownership and more interaction with the US have better quality of reporting during the post-FTA period. The result using MEET is not significant.

TABLE 6.15
Regression results using subsamples and institutional ownership effect for product market interaction
Model 2, target industry, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 T\_IND_{it} + \beta_4 INST_{it} + \beta_5 POST_{it} * T\_IND_{it} + \beta_6 POST_{it} * INST_{it} + \beta_7 T\_IND_{it} * INST_{it} + \beta_8 POST_{it} * T\_IND_{it} * INST_{it} + controls + \varepsilon_{it} \quad (14)$$

Panel A: Low capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		0.079	1.700*	-1.574	0.126
POST		0.006	0.270	-0.740	0.113
HI_US_EXPD		-0.063	-1.630	1.139	0.255
T_IND		-0.055	-1.610	-0.610	0.040
INST		-0.081	-3.850***	0.755	0.148
POSTxT_IND		0.044	1.270	0.700	0.064
POSTxINST		0.005	0.190	-1.159	0.209
T_INDxINST		0.132	4.250***	-1.257	0.231
POSTxT_INDxINST	-	-0.067	-1.580*	0.899	0.078
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		147		147	
Adjusted R^2		0.247			
F-statistic		2.840***			
Likelihood ratio				5.099	

Panel B: High capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.081	-1.370	-1.397	0.055
POST		0.057	1.910*	-1.027	0.248
HI_US_EXPD		0.007	0.550	0.023	0.000
T_IND		0.005	0.150	-0.484	0.024
INST		0.009	0.330	2.937	2.185
POSTxT_IND		-0.044	-1.210	0.714	0.068
POSTxINST		-0.024	-0.520	-1.173	0.220
T_INDxINST		0.068	2.150**	-3.985	1.535
POSTxT_INDxINST	-	-0.003	-0.070	1.977	0.306
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		147		147	
Adjusted R^2		0.231			
F-statistic		3.000***			
Likelihood ratio				12.853	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

T_INDxINST displays a positive (0.132) and significant result, indicating that firms with institutional investors and belonging to the targeted group have a higher level of discretionary accruals before the FTA became effective. INST shows a negative and significant coefficient (-0.081), signifying that companies with institutional ownership and not included in the targeted industry group have lower levels of discretionary accruals during the pre-FTA period.

In Panel B for the highly capital intensity firms, T_INDxINST is positive and significant (coef. 0.068) for DAC and suggests that companies with institutional ownership and targeted in the industry group report higher values of discretionary accruals before the FTA came into force.

6.2.2.3 Model 3: US_SUB

The third model, using US_SUB as the proxy of US product market interaction for the full sample, is displayed in Table 6.16. The coefficient of interest, the three-way interaction term, is not significant in this model. The other test variables are not significant.

In Table 6.17 both panels exclude HI_US_EXPD for MEET in order to avoid the linear combination issue with the rest of variables. For the low-capital intensity subsample, Panel A, the three-way interaction term and the rest of test variables report no significant results.

POSTxINST is negative and significant when MEET is used (coef. -2.244), suggesting that firms with institutional investors as owners and without a subsidiary in the US have a lower probability of meeting earnings targets in the post-FTA period.

TABLE 6.16
Regression results using full sample and institutional ownership effect for product market interaction
Model 3, US subsidiary, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 INST_{it} + \beta_5 POST_{it} * US\_SUB_{it} + \beta_6 POST_{it} * INST_{it} + \beta_7 US\_SUB_{it} * INST_{it} + \beta_8 POST_{it} * US\_SUB_{it} * INST_{it} + controls + \varepsilon_{it} \quad (15)$$

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.084	-1.810*	-3.963	0.615
POST		0.029	1.720*	-0.027	0.000
HI_US_EXPD		0.003	0.210	1.429	2.007
US_SUB		0.020	0.860	1.543	0.567
INST		0.009	0.470	1.484	0.881
POSTxUS_SUB		-0.034	-1.300	-1.350	0.307
POSTxINST		-0.030	-1.350	-0.805	0.226
US_SUBxINST		-0.008	-0.280	-3.913	2.108
POSTxUS_SUBxINST	-	0.023	0.680	2.333	0.554
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		271		271	
Adjusted R^2		0.119			
F-statistic		2.410***			
Likelihood ratio				16.153	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Panel B (high capital intensity sample) exhibits a negative coefficient (-4.960) for POSTxUS_SUBxINST using MEET, statistically significant, meaning that in the post-FTA period, firms with institutional ownership and with a subsidiary in the US have less likelihood of meeting earnings targets and thus boost their earnings quality in comparison to firms with institutional ownership and without a subsidiary in the US. This result is consistent with the notion that more interaction with the US product market due to the FTA leads to improvements in reporting quality, and supports H3c.

TABLE 6.17
Regression results using subsamples and institutional ownership effect for product market interaction
Model 3, US subsidiary, discretionary accruals and benchmark meeting

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 HI\_US\_EXPD_{it} + \beta_3 US\_SUB_{it} + \beta_4 INST_{it} + \beta_5 POST_{it} * US\_SUB_{it} + \beta_6 POST_{it} * INST_{it} + \beta_7 US\_SUB_{it} * INST_{it} + \beta_8 POST_{it} * US\_SUB_{it} * INST_{it} + controls + \varepsilon_{it} \quad (15)$$

Panel A: Low capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.019	-0.310	1.736	0.659
POST		0.040	1.260	0.893	1.263
HI_US_EXPD		-0.048	-1.130		
US_SUB		0.013	0.380	0.028	0.000
INST		-0.019	-0.750	0.863	0.827
POSTxUS_SUB		-0.062	-1.560	-1.005	0.206
POSTxINST		-0.034	-1.040	-2.244	4.263**
US_SUBxINST		0.004	0.110	0.668	0.102
POSTxUS_SUBxINST	-	0.036	0.770	-0.015	0.000
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		140		492	
Adjusted R^2		0.201			
F-statistic		2.350***			
Likelihood ratio				16.271	

Panel B: High capital intensity

Variable	Exp. Sign	DAC Coef.	DAC t-stat.	MEET Coef.	MEET Wald-stat.
Intercept		-0.084	-1.300	0.763	0.108
POST		0.035	1.750*	-0.172	0.064
HI_US_EXPD		0.003	0.150		
US_SUB		0.006	0.240	0.059	0.001
INST		0.051	2.160**	-0.598	0.202
POSTxUS_SUB		-0.021	-0.700	-0.245	0.011
POSTxINST		-0.039	-1.580	1.260	0.845
US_SUBxINST		0.004	0.090	4.437	2.282
POSTxUS_SUBxINST	-	0.031	0.800	-4.960	1.741*
Control variables		Included		Included	
Industry fixed effect		Yes		Yes	
N		131		472	
Adjusted R^2		0.239			
F-statistic		2.770***			
Likelihood ratio				33.308**	

Only the three-way interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

All variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

The full sample is divided into low and high capital intensity.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

INST is positive and significant (coef. 0.051) for DAC, meaning that firms with institutional investors and without a subsidiary in the US report higher levels of discretionary accruals in the pre-FTA period.

6.2.3 Summary

An additional analysis examines whether the change in earnings quality around the FTA is affected by institutional ownership. A dummy variable that indicates if the company has institutional ownership (INST), the four measures of US product market interaction (ΔUS_EXP, T_IND, US_SUB and HI_US_EXPD) and the proxies of earnings quality (DAC and MEET) are utilised.

Results for H3a are inconclusive using both measures of earnings quality. For the full sample and using discretionary accruals, companies with institutional ownership report better levels of earnings quality than companies without institutional ownership; in contrast, when the benchmark meeting proxy is utilised, firms with institutional investors have a lower quality of financial reporting in comparison to firms with no institutional investors. Using the split sample based on capital intensity, the results are also mixed. They indicate that companies with institutional ownership have better reporting quality in the low-capital intensive subsample for DAC while the opposite is reported for MEET. Coefficients are not significant for the high-capital intensive subsample.

With regards to H3b, for the full sample and MEET, companies with institutions as owners improve their earnings quality more after the FTA came into effect than companies without institutions as owners. Split sample results indicate that low-capital intensive companies also boost their accounting reporting in the post-FTA period. The high-capital intensive companies do not exhibit significant results. In general, these results suggest that companies with institutional ownership, particularly the low-capital intensity ones, have more

opportunities for earnings quality improvements due to the FTA compared to companies without institutional ownership.

Lastly, H3c includes the product market interaction proxies to the analysis. Using ΔUS_EXP no significant results are reported for the full sample. However, for the high-capital intensive group, firms with institutions as owners and more export changes exhibit worse earnings quality due to the FTA compared to firms with institutions as owners and fewer export changes when DAC is the dependent variable.

T_IND results indicate that in the low-capital intensive subsample and using DAC, companies that have institutional owners and belong to the targeted industry group report better accounting quality after the FTA became effective in comparison to companies that have institutional owners and do not belong to the targeted industry group. Using US_SUB and the high-capital intensity subsample, results show that companies with institutional ownership and with a subsidiary in the US have better financial reporting quality after the FTA than companies with institutional ownership and with no subsidiary in the US when MEET is the dependent variable.

Considering this limited evidence, it is difficult to conclude whether institutional ownership has a positive influence on the Chilean market, particularly when related to company financial reporting during the pre-/post-FTA period.

Given the narrow evidence and mixed results to support H2 and H3 regarding family firms and institutional investors the next section provides an additional analysis that extends the understanding about the relationship among ownership structure, earnings quality and the FTA.

6.3 Ownership structure additional analysis

In this section I conduct several additional analyses to examine the effect of family and institutional ownership on earnings quality and its relationship with the trade agreement.

The first analysis studies whether there is a non-linear relationship between ownership and discretionary accruals. The percentage of shares held by the first largest shareholder and its square, SH1 and SH1_SQ respectively, and the absolute value of discretionary accruals following the Jones (1991) model are considered. Results shown in Table 6.18 suggest a convex relationship between ownership concentration and discretionary accruals absolute value, where the coefficient for the first one (SH1) is negative, while the second one (SH1_SQ) is positive. The interaction with POST is negative and significant for SH1 and SH1_SQ.

TABLE 6.18
Regression results using full sample for FTA period, ownership concentration and discretionary accruals absolute value

$$EQ_{it} = \beta_0 + \beta_1 SH1_{it} + \beta_2 SH1\_SQ_{it} + controls + \varepsilon_{it} \quad (1)$$

$$EQ_{it} = \beta_0 + \beta_1 SH1_{it} + \beta_2 SH1\_SQ_{it} + \beta_3 POST_{it} + \beta_4 POST_{it} * SH1_{it} + controls + \varepsilon_{it} \quad (2)$$

$$EQ_{it} = \beta_0 + \beta_1 SH1_{it} + \beta_2 SH1\_SQ_{it} + \beta_3 POST_{it} + \beta_4 POST_{it} * SH1\_SQ_{it} + controls + \varepsilon_{it} \quad (3)$$

	Exp.	(1)		(2)		(3)	
Variable	Sign	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept		0.1910	3.960***	0.1632	3.840***	0.1707	3.820***
SH1		-0.0010	-1.360*	-0.0007	-1.000	-0.0010	-1.370*
SH1_SQ		0.0000	1.370*	0.0000	1.390*	0.0000	1.710**
POST				0.0442	2.880***	0.0329	3.510***
POSTxSH1	-			-0.0004	-1.650**		
POSTxSH1_SQ	-					0.0000	-1.500*
Control variables		Included		Included		Included	
N		854		854		854	
Adjusted R^2		0.026		0.037		0.037	
F-statistic		4.280***		4.680***		4.620***	

Only the interaction terms, SH1 and SH1_SQ p-values are based on one-tailed tests where a direction of the coefficient is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: SH1, percentage owned by the first largest shareholder, SH1_SQ, square of SH1. All other variables are defined in Table 4.1.

For brevity, control variables coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

The previous analysis is then repeated by considering family firms only. For family businesses, FAM_OWN and FAM_OWN_SQ represent the ownership concentration by the largest shareholder and its squared hold. Results not tabulated are not significant for FAM_OWN, FAM_OWN_SQ and the interaction with POST.

Finally, INST_OWN and INST_OWN_SQ are included to examine the possible non-linear institutional ownership effect. INST_OWN is the percentage of total shares owned by the five largest shareholders that are institutional investors, while INST_OWN_SQ is the square of INST_OWN. The results in Table 6.19 using the absolute value of discretionary accruals also indicate a convex relationship between institutional shareholding and discretionary accruals. INST_OWN displays a negative sign while INST_OWN_SQ a positive one, both significant. When POST is included, the results (untabulated) remain significant for INST_OWN and INST_OWN_SQ reporting negative and positive signs, but the coefficient for the interaction term is not significant.

TABLE 6.19
Regression results using full sample, institutional ownership concentration and discretionary accruals absolute value

$$EQ_{it} = \beta_0 + \beta_1 INST\_OWN_{it} + \beta_2 INST\_OWN\_SQ_{it} + controls + \varepsilon_{it}$$

Variable	Exp. Sign	Coef.	t-stat.
Intercept		0.1008	4.150***
INST_OWN		-0.0021	-1.460*
INST_OWN_SQ		0.0001	1.640*
Control variables		Included	
N		514	
Adjusted R^2		0.047	
F-statistic		4.610***	

Only INST_OWN and INST_OWN_SQ p-values are based on one-tailed tests where a direction of the coefficient is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: INST_OWN, percentage held by the five largest shareholders that are institutional investors, INST_OWN_SQ, square of INST_OWN. All other variables are defined in Table 4.1.

For brevity, control variables coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

The second analysis considers the effect of more concentrated levels of ownership for family firms and institutional investors on earnings quality due to the FTA. For family firms, FAM_OWND takes the value of 1 when the first largest shareholder is above the median; 0 otherwise. Results are not tabulated and although POSTxFAM_OWND reports the predicted sign – i.e., a negative one – it is not statistically significant.

For companies with institutional owners, INST_OWND takes the value of 1 when the percentage of ownership held by the fifth largest institutional shareholders is above the median; 0 otherwise. Using discretionary accruals as the dependent variable, in Table 6.20 the coefficient for INST_OWND is positive while for POSTxINST_OWND is negative, both statistically significant. This result means that after the FTA, companies with high institutional ownership report better earnings quality than companies with low institutional ownership.

TABLE 6.20
Regression results using full sample for FTA period, institutional ownership concentration effect and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 INST\_OWND_{it} + \beta_3 POST_{it} * INST\_OWND_{it} + controls + \varepsilon_{it}$$

Variable	Exp. Sign	Coef.	t-stat.
Intercept		-0.0009	-0.030
POST		0.0174	1.910*
INST_OWND		0.0224	2.340***
POSTxINST_OWND	-	-0.0216	-1.680**
Control variables		Included	
N		514	
Adjusted R^2		0.042	
F-statistic		3.840***	

Only the interaction term and INST_OWND p-values are based on one-tailed tests where a direction of the coefficient is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: INST_OWND, indicator variable that is equal to 1 when the percentage of ownership by the five largest shareholders that are institutional investors is above the median; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

TABLE 6.21
Regression results using subsamples for FTA period, ownership concentration and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 SH1_{it} + \beta_3 POST_{it} * SH1_{it} + controls + \varepsilon_{it} \quad (1)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 SH1_{it} + \beta_3 SH1\_SQ_{it} + \beta_4 POST_{it} * SH1_{it} + controls + \varepsilon_{it} \quad (2)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 SH1_{it} + \beta_3 SH1\_SQ_{it} + \beta_4 POST_{it} * SH1\_SQ_{it} + controls + \varepsilon_{it} \quad (3)$$

Panel A: Non FTA affected

Variable	Exp. Sign	(1) Coef.	(1) t-stat.	(2) Coef.	(2) t-stat.	(3) Coef.	(3) t-stat.
Intercept		-0.0688	-1.220	-0.0832	-1.160	-0.0895	-1.180
POST		-0.0237	-0.900	-0.0233	-0.900	-0.0140	-0.820
SH1		-0.0002	-0.960	0.0004	0.360	0.0007	0.560
SH1_SQ				0.0000	-0.490	0.0000	-0.690
POSTxSH1	-	0.0004	0.980	0.0004	0.980		
POSTxSH1_SQ	-					0.0000	1.000
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		506		506		506	
Adjusted R^2		0.029		0.027		0.027	
F-statistic		2.850***		2.580***		2.570***	

Panel B: FTA affected

Variable	Exp. Sign	(1) Coef.	(1) t-stat.	(2) Coef.	(2) t-stat.	(3) Coef.	(3) t-stat.
Intercept		-0.0097	-0.280	-0.0136	-0.390	-0.0063	-0.180
POST		0.0287	1.610	0.0285	1.610	0.0185	1.770*
SH1		0.0004	1.670*	0.0008	1.060	0.0005	0.710
SH1_SQ				0.0000	-0.550	0.0000	-0.050
POSTxSH1	-	-0.0005	-1.400*	-0.0005	-1.400*		
POSTxSH1_SQ	-					0.0000	-1.530*
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		348		348		348	
Adjusted R^2		0.099		0.097		0.098	
F-statistic		3.550***		3.340***		3.360***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: SH1, percentage owned by the first largest shareholder, SH1_SQ, square of SH1. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

The third analysis carried out divides the sample in non-FTA affected and FTA affected subsamples, considering ownership concentration, family businesses and

institutional owners. The non-FTA affected subsamples are firms with negative export changes to the US that are not targeted in the industry group or that do not have subsidiaries there. FTA affected subsamples are firms with positive export changes to the US that are targeted in the industry group or that have a subsidiary there. In these models, the discretionary accruals value is the measure of earnings quality.

In Table 6.21 Panel B, the FTA affected subsample, the interaction term POSTxSH1, is negative and significant, indicating that companies affected by the FTA – in this case firms in the target group – have better earnings quality during the post-FTA period compared to the pre-FTA period. When SH1_SQ is interacted with POST, the interaction term coefficient is also negative and significant.

Regarding family ownership, significant coefficients are reported for the FTA affected group in Table 6.22 Panel B for POSTxFAM_OWN. These results suggest that family firms with positive changes in their exports to the US have more improvements in accounting reporting quality due to the FTA than family firms with negative changes in their US export due to the FTA. POSTxFAM_OWN_SQ shows a significant and negative interaction term.

TABLE 6.22
Regression results using subsamples for FTA period, family ownership concentration and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 FAM\_OWN_{it} + \beta_3 POST_{it} * FAM\_OWN_{it} + controls + \varepsilon_{it} \quad (1)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 FAM\_OWN_{it} + \beta_3 FAM\_OWN\_SQ_{it} + \beta_4 POST_{it} * FAM\_OWN_{it} + controls + \varepsilon_{it} \quad (2)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 FAM\_OWN_{it} + \beta_3 FAM\_OWN\_SQ_{it} + \beta_4 POST_{it} * FAM\_OWN\_SQ_{it} + controls + \varepsilon_{it} \quad (3)$$

Panel A: Non FTA affected

Variable	Exp. Sign	(1) Coef.	(1) t-stat.	(2) Coef.	(2) t-stat.	(3) Coef.	(3) t-stat.
Intercept		-0.1322	-2.360**	-0.1026	-1.990**	-0.1043	-1.990**
POST		-0.0032	-0.150	-0.0049	-0.230	-0.0024	-0.180
FAM_OWN		0.0002	0.750	-0.0020	-1.910*	-0.0019	-2.060**
FAM_OWN_SQ				0.0000	1.950*	0.0000	2.090**
POSTxFAM_OWN	-	0.0001	0.260	0.0001	0.340		
POSTxFAM_OWN_SQ	-					0.0000	0.370
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		468		468		468	
Adjusted R^2		0.073		0.082		0.082	
F-statistic		2.740***		2.890***		2.890***	

Panel B: FTA affected

Variable	Exp. Sign	(1) Coef.	(1) t-stat.	(2) Coef.	(2) t-stat.	(3) Coef.	(3) t-stat.
Intercept		-0.1016	-1.390	-0.1139	-1.510	-0.0942	-1.200
POST		0.0443	1.390	0.0384	1.130	0.0204	1.010
FAM_OWN		0.0007	1.440	0.0014	1.170	0.0006	0.460
FAM_OWN_SQ				0.0000	-0.650	0.0000	0.170
POSTxFAM_OWN	-	-0.0012	-1.850**	-0.0010	-1.490*		
POSTxFAM_OWN_SQ	-					0.0000	-1.850**
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		99		99		99	
Adjusted R^2		0.070		0.060		0.063	
F-statistic		1.350		1.280		1.300	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: FAM_OWN, percentage owned by the first largest shareholder that is a family firm, FAM_OWN _SQ, square of FAM_OWN. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Finally, firms with institutional ownership affected by the FTA also show higher levels of reporting quality. First, in Table 6.23 Panel B, the interaction term,

POSTxINST_OWND, is negative and statistically significant, meaning that after the FTA came into effect, companies with institutional investors and with the industry target status report better earnings quality than companies with institutional investors but without the industry target status.

TABLE 6.23
Regression results using subsamples for FTA period, institutional ownership concentration and discretionary accruals

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 INST\_OWND_{it} + \beta_3 POST_{it} * INST\_OWND_{it} + controls + \varepsilon_{it}$$

Panel A: Non FTA affected

Variable	Exp. Sign	Coef.	t-stat.
Intercept		-0.0521	-1.100
POST		0.0202	1.500
INST_OWND		0.0100	0.750
POSTxINST_OWND	-	-0.0174	-0.910
Control variables		Included	
Industry fixed effect		Yes	
N		280	
Adjusted R^2		0.033	
F-statistic		2.180**	

Panel B: FTA affected

Variable	Exp. Sign	Coef.	t-stat.
Intercept		0.0160	0.400
POST		0.0146	1.430
INST_OWND		0.0242	1.910*
POSTxINST_OWND	-	-0.0225	-1.530*
Control variables		Included	
Industry fixed effect		Yes	
N		234	
Adjusted R^2		0.101	
F-statistic		2.740***	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: INST_OWND, indicator variable that is equal to 1 when the percentage of ownership by the five largest shareholders that are institutional investors is above the median; 0 otherwise. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

TABLE 6.24
Regression results using subsamples for FTA period, institutional ownership concentration and discretionary accruals absolute value

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 INST\_OWND_{it} + \beta_3 POST_{it} * INST\_OWND_{it} + controls + \varepsilon_{it} \quad (1)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 INST\_OWN_{it} + \beta_3 POST_{it} * INST\_OWN_{it} + controls + \varepsilon_{it} \quad (2)$$

$$EQ_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 INST\_OWN\_SQ_{it} + \beta_3 POST_{it} * INST\_OWN\_SQ_{it} + controls + \varepsilon_{it} \quad (3)$$

Panel A: Non FTA affected

Variable	Exp. Sign	(1) Coef.	(1) t-stat.	(2) Coef.	(2) t-stat.	(3) Coef.	(3) t-stat.
Intercept		0.0701	2.530**	0.0744	2.680***	0.0698	2.540**
POST		0.0113	1.310	0.0045	0.470	0.0109	1.510
INST_OWND		-0.0143	-1.530				
INST_OWN				-0.0008	-1.280		
INST_OWN_SQ						0.0000	-1.230
POSTxINST_OWND	-	0.0148	1.290*				
POSTxINST_OWN	-			0.0016	1.860**		
POSTxINST_OWN_SQ	-					0.0001	1.690**
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		418		418		418	
Adjusted R^2		0.104		0.109		0.110	
F-statistic		3.300***		3.430***		3.450***	

Panel B: FTA affected

Variable	Exp. Sign	(1) Coef.	(1) t-stat.	(2) Coef.	(2) t-stat.	(3) Coef.	(3) t-stat.
Intercept		0.0021	0.040	-0.0202	-0.350	-0.0154	-0.250
POST		0.0285	1.950*	0.0408	2.370**	0.0281	2.170**
INST_OWND		-0.0057	-0.310				
INST_OWN				-0.0008	-0.790		
INST_OWN_SQ						0.0000	-0.500
POSTxINST_OWND	-	-0.0286	-1.550*				
POSTxINST_OWN	-			-0.0039	-2.570***		
POSTxINST_OWN_SQ	-					-0.0002	-2.580***
Control variables		Included		Included		Included	
Industry fixed effect		Yes		Yes		Yes	
N		96		96		96	
Adjusted R^2		0.075		0.114		0.054	
F-statistic		1.370		1.580*		1.260	

Only the interaction term p-value is based on one-tailed tests where a negative sign is predicted. The remaining p-value results are based on two-tailed tests.

Variable definitions: INST_OWND, indicator variable that is equal to 1 when the percentage of ownership by the five largest shareholders that are institutional investors is above the median; 0 otherwise, INST_OWN, percentage held by the five largest shareholders that are institutional investors, INST_OWN_SQ, square of INST_OWN. All other variables are defined in Table 4.1.

For brevity, control variables and industry dummy coefficients are not reported.

N refers to the number of observations used in each model.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels respectively.

Second, in Table 6.24 Panel B, the FTA affected subsample, the three interaction terms POSTxINST_OWND, POSTxINST_OWN and POSTxINST_OWN_SQ show negative and significant coefficients. In this case, using the discretionary accruals absolute value as the dependent variable, firms with institutional ownership and positive US export changes boost their accounting quality more than firms with institutional ownership and negative US export changes.

In summary, using different variables of ownership (SH1, SH1_SQ, FAM_OWN, FAM_OWN_SQ, FAM_OWND, INST_OWN, INST_OWN_SQ and INST_OWND) and earnings quality proxies following the Jones (1991) model (discretionary accruals and their absolute value), the results suggest a possible non-linear relationship between ownership and earnings quality. However, the results are not significant for family firms. In addition, when the data are divided in non-FTA affected and FTA affected subsamples, the results provide some evidence that in general, companies with high ownership concentration, family and institutional owners, and with more involvement with the US product market, particularly when they have positive changes in exports to the US and belong to the industry target group, have more improvements in earnings quality. These firms are more exposed to US product markets, which lead them to improve their reporting quality. However, no significant results are found for companies with subsidiaries in the US.

As a whole, this evidence, together with the results from H2 and H3, displays some insight into the effect of family firms and institutional ownership on the relationship between earnings quality improvements and the FTA. However, the results are inconsistent.

CHAPTER 7

CONCLUSION

7.1 Overview

This thesis examines the effect of product market interactions with the US on earnings quality in Chilean firms. Interaction in the US product market increased significantly as a result of the FTA between Chile and the United States that became effective in 2004 in both countries. This bilateral trade agreement was the first FTA between the US and a South American country, and it immediately led to increases in export and import levels, changes in the composition of Chile's export product basket and a strengthening of an open market approach in Chile. The access and engagement with the US economy contributed significantly to Chile's economic expansion during the first decade of the 2000s.

I argue that a nation known for having a poor institutional environment and weak accounting can upgrade its financial reporting by exposing its firms to a foreign market with a tradition for higher quality reporting. This inference is based on the notion that greater market interaction with countries with superior accounting can exert pressure on firms from countries with weaker reporting regimes because the latter need to improve if they wish to compete (Khanna et al., 2004; Lang et al., 2003).

Khanna et al. (2004) examine three types of cross-border economic interaction – capital, product and labour – and find a positive relationship between market interaction with the US and the quality of disclosure by foreign firms. This implies that by reducing information asymmetry through more and better information disclosure, non-US companies build trust and thus can compete in US markets. Additionally, Cahan et al. (2005) and Webb

et al. (2008) note that firms with extensive involvement in international markets – in this respect more globalised firms – are associated with better disclosure practices.

The historic event for Chile of establishing a trade pact with the US provides a natural laboratory for examining how a government's trade policy can affect the financial reporting quality of firms in its country. Because Chilean firms had poor accounting quality to start with, there was an ample room for reporting quality improvements. In this natural laboratory, I exploit two additional features of the Chilean environment: the high levels of ownership by families and institutional investors. Thus, I examine whether family and institutional ownership affect the changes in earnings quality around the time of the enactment of the US–Chile FTA.

7.2 Summary of research

The sample consists of 208 non-financial listed Chilean companies for the period 2002–2008. Discretionary accruals levels from the Jones (1991) model and an indicator for small positive earnings are the measures of earnings quality, while several metrics of product market interaction – values of the change in Chilean firm's exports to the US, whether the firm belongs to the economic sector group most likely receive the benefits of the treaty according to the Chilean government, and whether the Chilean company has a subsidiary in the US – are utilised to proxy the exposure of Chilean firms in the US product market.

I find that Chilean companies with high product involvement with US markets experience enhancements in earnings quality relative to Chilean companies having low product involvement with US markets. The results indicate that when the first measure of earnings quality is used – discretionary accruals – Chilean firms with larger increases in exports to the US and which are in an industry identified by the Chilean government as a likely benefactor of the FTA exhibit better quality of reporting in the post-FTA period. For

the second measure using a zero earnings threshold, the results are also consistent for firms with greater changes in their export levels to the US.

However, the findings are strongest for Chilean firms that have high capital intensity. Exporting companies in Chile are usually classified in the group of high capital intensive (Alvarez and López, 2005), i.e., firms having a high proportion of fixed assets and thus greater levels of depreciation expenses. In terms of the low-capital intensive group, better reporting quality is only observed in firms with a subsidiary in the US, implying that the US subsidiaries for high-capital intensive companies are sales offices, acting as satellites of the main business. Thus, their presence does not create the same kind of exposure to the US market as an operating subsidiary that may be more engaged with the US capital and labour markets in addition to the product market.

These results are consistent with US business partners demanding better financial information from Chilean firms to evaluate their financial strength and build trust. The results likewise suggest that the establishment of an FTA with a stronger economy such as the US can improve the reporting quality of Chile, a country with a weaker and less developed economy. Chilean firms, by being exposed to and interacting with a stricter reporting environment, are able to upgrade their accounting quality. These findings are consistent after a variety of sensitivity checks and confirm that more product market interaction with the US market due to the FTA is associated with larger improvements in reporting quality in Chilean firms.

I then investigate the effect of ownership structure on the relationship between improvements in earnings quality and product market interaction in two separate analyses. The first analysis examines family firms and the second considers institutional investors. For the former, I predict that Chilean family controlled firms with more US product market interaction would show larger improvements in earnings quality after the FTA because they

have poorer accounting quality prior to the FTA. However, the results are mixed and depend on the specific measure of US product market interaction used and the firm's capital intensity level. Generally, only high-capital intensity family firms improve financial reporting quality in the post-FTA period. For institutional ownership, I expect that firms with institutional investors would experience less improvement in accounting quality after the FTA, since these firms would have had better levels of financial reporting quality in the pre-FTA period. Again, the findings are somewhat inconclusive, depending on the US product market interaction proxy and whether the estimation uses the full or split sample. On the whole, the empirical evidence provides some insight into the effect of family and institutional ownership on earnings quality in Chile, but the results should be interpreted with caution, given the inconsistent nature of the findings.

7.3 Contribution

My study draws on three relevant areas of accounting research. The first is earnings quality, the second is product market interaction and the third is ownership structure. Therefore, this research contributes to the body of knowledge in a number of ways. First, by linking financial reporting quality – an extensive accounting research area – with a non-accounting one that is government policy, this thesis makes an important contribution to the accounting literature. The government policy considered is the FTA between Chile and the US, and I examine this from the perspective of Chilean firms. Globalisation is important because allows economies and markets to become more interconnected, and this is not only imperative for developed countries, but also for emerging ones. In this context, the establishment of FTAs can help countries become more integrated in international markets. To the best of my knowledge, there are no prior studies that examine the impact of a national trade policy on the quality of accounting reporting in that nation. In addition, the majority of

research focuses on the economic effects of trade pacts – for instance; Hertel et al. (2001) and Trefler (2004) – but the accounting effects have received no attention in the literature.

Furthermore, this study adds to the accounting literature by examining how a broad set of cross-border economic interactions can affect accounting quality. Studies regarding foreign market interaction typically focus on capital market interactions such as cross-listing, which is a common topic. On the other hand, other types of market interactions research, e.g., examining labour and product markets, are very limited. Further, prior research in this area has focused on disclosure quality rather than financial reporting quality. Khanna et al. (2004) analyse the effect of all market interactions – capital, labour and product – on disclosure quality, while Cahan et al. (2005) and Webb et al. (2008) use an integrated globalisation metric and examine disclosure quality. My study differs from these studies as I examine earnings quality rather than disclosure quality, focus on Chile exclusively and explore cross-border transactions initiated by a specific event, i.e., the adoption of the US–Chile FTA. To my knowledge, this is the first work to provide insights about the consequences of higher exposure in the US product market by Chilean firms as result of the trade pact, there is a boost in their accounting reporting.

The finding that financial reporting quality improved in Chile can be viewed as an indirect benefit of the FTA, and thus my study extends the literature on the benefits of trade policy. The indirect benefits of free trade agreements have not been extensively explored in the literature where researchers, mainly from economics and international trade, have examined the direct implications of trade agreements enactment.

Moreover, the empirical evidence of a positive relationship between product market interaction and earnings quality in the Chilean setting could have policy implications and suggests that instead of focusing in changing standards or accounting rules, legislators could concentrate on establishing trade agreements and thus could indirectly promote better

reporting quality especially in countries having lower quality levels, e.g., Chile. This is in line with the argument that the involvement with stronger economies can benefit emerging countries (Alvarez and López, 2005).

Additionally, my thesis has implications for companies in Chile. The FTA with the US presented a unique opportunity for Chilean firms to increase their involvement in a large, developed market. Having better operational processes or better quality products would not be sufficient to compete in the US market. In order to attract US trading partners, Chilean companies would need to improve the quality of their accounting reporting. By providing better information signals to US markets, information asymmetry is reduced and US counterparts may be more willing to do business with Chilean firms.

Further, I contribute by linking ownership structure to financial reporting quality using Chilean market data. The examination of ownership concentration in Latin America is very limited (e.g. Céspedes et al., 2010; Santiago-Castro and Brown, 2007) and no investigation has been conducted to explore the relationship between ownership and accounting quality there, or in Chile in particular. The relationship between firm performance and family firms has been analysed in a Chilean setting (e.g., Bonilla et al., 2010; Martínez et al., 2007; Silva et al., 2006); however, earnings quality has not been included as an experimental variable.

Lastly, this research contributes to the literature by examining whether family and institutional ownership affect the indirect benefits emanating from trade policy. Because family and institutional ownership are prevalent in Chile, I can provide a powerful test of these interactions.

7.4 Limitations

Even though this thesis makes several contributions to the accounting knowledge, it has number of limitations. First, there are constraints regarding the availability of data. For example, the period prior to the FTA includes two years because it was possible to collect data from 2001 only. While my study period refers to 2002–2008, another year of data collection is required since the Jones (1991) model uses one year lagged data and the first variable of US product market interaction – the change in US exports – needs an additional prior year. In addition, the process of obtaining the data was time consuming due to the information being collected manually.

Second, the sample includes companies listed in the Chilean stock exchange market; hence, it mainly comprises a small portion of the total universe of Chilean firms with exporting activities to the US. In Chile, there are numerous small and medium companies involved in the US product market, especially since the FTA came into force, but the inability to obtain their financial reporting statements because they are not available publicly makes not possible to incorporate them into my study.

Third, because I uniquely consider one country, Chile, and one particular type of government trade policy, the US–Chile FTA, it is difficult to generalise about whether the results about the positive relationship between product market interaction due to the trade pact and financial reporting quality in Chilean firms are applicable to other emerging economies. The similarities of Latin American nations with respect to their accounting quality and institutional environments mean that some inferences could be drawn. However, further investigation regarding other FTAs involving the US is necessary.

Fourth, in terms of the response variable, although other non-market (e.g., persistence, smoothness and predictability) and market-based (e.g., timely loss recognition and earnings response coefficient) measures of earnings quality were considered for this study, they could

not be used because of the data restrictions and the nature of Chilean firms. For instance, thin trading is common in the Chilean stock market. Further, some of these alternative measures require estimations over a rolling window technique, but I do not have sufficient time-series data.

Fifth, for the involvement in the US market by Chilean firms, although my study includes three types of interaction – ΔUS_EXP, T_IND and US_SUB – together with HI_US_EXPD, there could be other measures that capture the extent of Chilean companies' involvement with the US product market, e.g., through the participation by the Chilean firm in a US product convention or expo such as the PMA Fresh Summit[42] or the Summer Fancy Food Show.[43] This information either is not available or would require substantial time to collect by hand.

7.5 Future research

A natural extension of this research is to increase the number of years prior to my sample period. By gathering more data, the number of pre-/post-FTA years could be balanced and it would be possible to use other financial reporting quality proxies that require time-series estimations. Another option is to extend the study period beyond 2009. In this case, the information from financial statements after 2008 is more accessible, but a relevant accounting event affected the Chilean financial reporting since 2009 – the adoption of IFRS. Hence, if the period is expanded beyond 2009, the IFRS event should be incorporated into the research design.

This study could also be extended by analysing other FTAs signed by Chile with different countries. Those trade pacts could be the ones in which Chile has greater interaction

[42] PMA Fresh Summit is the most important horticulture trade show in the US market. http://www.pma.com
[43] The Fancy Food Show specialises in gourmet food and beverage in the US marketplace. http://www.specialtyfood.com

or is an important trading partner. There are two viable proposals: first, by taking each FTA with the respective nation individually in separate analyses, and second, by combining various FTAs and examining simultaneously whether the earnings quality changes depend on the product market interaction with the respective nation. If better accounting quality is noted due to involvement in countries having stronger financial reporting environments, the results would be in line with those I provide in this thesis.

Another future research avenue is to consider other US–Latin America FTAs such as those the US signed with Colombia and Peru in 2011 and 2006 respectively. For both countries, the FTA with the US was a significant event[44] that allowed more interaction with a developed market. Also, it may be interesting to analyse US FTA with other emerging countries outside the Latin American region, or different FTAs between a weak and a strong economy. If other countries are employed, it would be suitable to include other variables that could affect the results, e.g., institutional characteristics.

The results regarding family and institutional ownership are inconclusive, so more research is required to understand the effects of family firms and institutional investors on the relationship between the trade agreement and earnings quality in Chile. An approach could be to classify institutions according to the strictness of their fiduciary standards regulation, following Bushee (2001)[45] to test if there are differences in companies' reporting quality depending on the type of institutional investor. Future studies could also focus on other types of ownership structure such as business groups, given their relevance in the Chilean market.

[44] The Colombian Minister of Commerce referred to the FTA signed with the US as 'this treaty undoubtedly will transform our economy' (*El Espectador*, 2012). While to the same extent the Prime Minister of Peru pointed out 'the FTA with the US opens a huge opportunity to Peru, but also a great challenge for companies and population in general' (*La Republica*, 2009).

[45] He forms four groups depending on their legal condition: bank trust, insurance companies, investment advisers, and pensions and endowments in order to estimate their differences in investing preferences. He finds that investors who have more restrictive fiduciary responsibilities show preferences for short-term rather long-term earnings. Specifically, banks are the investors that face the strictest fiduciary restrictions so they tend to focus on near term horizons of earnings.

Finally, instead of looking at earnings quality, another accounting property could be investigated such as disclosure practices. Specifically, research could analyse whether greater involvement in the US product market by Chilean firms due to the US–Chile FTA leads to improvements in disclosure quality. Furthermore, in addition to the boost in reporting quality as an indirect benefit of the trade agreement, other feasible improvements could be explored in areas such as corporate governance and the quality of auditing process. These topics have not been linked with cross-border economic interaction in the literature and in particular with a change in government trade policy. Therefore, there is ample space for future research.

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