Université de Montréal
Faculté des Arts et des Sciences.
Département de Sciences Économiques.

Trade Creation, Trade Diversion and Investment Flows: Evidence from the Canada-Chile Free Trade Agreement.

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Professeurs:
Emanuela Cardia Ph.D.
Leonard Dudley Ph.D.

Étudiant:
Guillermo Yanez

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Abstract.

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Guillermo Yanez

M.Sc.(C) in Economics

Université de Montréal

Sous la perspective du nouveau régionalisme décrit par Ethier (2001), cet article examine les changements sur le patron du commerce entre le Canada et le Chili avec l'accord de libre échange signé en 1997. Des équations de gravité dynamiques sont employées pour évaluer l'effet de création du commerce ou de détournement des échanges pour un échantillon pour la période 1994 à 2002. Les données utilisées correspondent au système harmonisé au niveau de deux chiffres. Aucune évidence catégorique en faveur du détournement des échanges n'a été trouvée, ce qui permet d'ajouter une note optimiste sur les effets des accords bilatéraux du type nord-sud, du point de vue des échanges. En outre, cette étude se concentre également sur l'augmentation systématique de l'investissement direct canadien au Chili dans les années 90 dues à cet accord. Des rendements ajustés négatifs et significatifs ont été trouvés et ils ont été expliqués fondamentalement par le ralentissement économique qui a affecté l'Amérique latine et la plupart du monde vers la fin des années 90.

Under the perspective of the new regionalism described by Ethier (2001), this paper examines the changes in trade patterns introduced with the Canada – Chile Free Trade Agreement signed in 1997. Dynamic gravity equations are used to appraise the trade creation or trade diversion effect for a sample period beginning in 1994 and ending in 2002. Commodities at the two digits Harmonized System level are included. No categorical evidence in favor of trade diversion has been found, adding some positive insight in north-south type of bilateral agreements, from the trade perspective. Furthermore, this study also focuses on the systematic increase in Canadian direct foreign investment in Chile in the nineties due to this agreement. Significant adjusted negative returns were found and they were mainly explained by the slowdown that affected Latin-America and the world in the late nineties.

To my wife, Ingrid.

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Introduction.

Canada and Chile signed a Free Trade Agreement in July 1997. This important event may be considered as the paradox of the world's northernmost economy (Canada) signing a free trade agreement[1] (FTA) with the world's southernmost country (Chile), considering that the former is a G7 economy and the latter an emerging one. What may have caused that these two apparently heterogeneous economies engage in a FTA? What are the welfare effects of such an agreement?

These interesting questions, still not documented at a thorough analytical level in the economic literature for these two partners, will be addressed in the following sections. Furthermore, the conclusions may provide some insight to what we may expect of new agreements such as the Chile-US FTA recently signed. Allow us first to start with some precisions about the referred paradox.

Indeed, Canada is one of the wealthiest economies in the world, accounting for a per capita GDP of US$24,000 in 2002. Chile in turn, is one of the world economies that evidenced the fastest growth in the 90s with an annual average of 5.9% for the decade. Furthermore, Chile is also one of the highest income economies in the emerging markets segment, with a purchasing power adjusted per capita GDP of roughly US$9,200 in 2002.

We must also recall that both countries are highly market oriented and may be considered two of the most opened economies in the world [Devlin & Ffrench-Davis (1999)[2]]. In 2002, the Chilean export to GDP ratio was almost 28% and Canada's ratio roughly 36%. Canada has proven to be engaged in the search for a regional integration since the automotive trade agreement with the United States in 1965. From the time when the NAFTA was operative (1992), Canada showed a favorable attitude towards the incorporation of other regional economies such as Costa Rica and Chile. Since at that time, the United States showed

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[1] In our context, we will use the term Free Trade Agreement and Preferential Trade Agreement indifferently. Under a purely semantic perspective, we may have to clarify that most deals should be considered PTAs since we never observe an agreement with no exceptions or long term timings for tariff liberalization. Nevertheless, since the main objective for these agreements is to free trade, we will simply refer to them as FTAs.

[2] Devlin, R. Ffrench-Davis, R. (1999). "*Towards and Evaluation of Regional Integration in Latin America in the '90s"*. The World Economy, Volume 22:2, PP.261-290.

some resistance to transform NAFTA into an ample regional agreement, Canada individually moved one step further and signed FTA's with both emerging economies. Chile in turn, initiated a foreign trade oriented growth strategy in the early 80s, after the so called "1982 financial crisis" was coming to an end. Subsidies to "untraditional" exports were established in those days in order to decrease the copper's relative importance in total foreign trade. In the following decade (the nineties), Chile signed FTA's with several of its most important partners, in what became the culmination of a process who's final objective was to turn Chile into one of most opened economies in the world.

Table 1: Canada and Chile's international trade and capital flows agreements[3].

	Canada	Chile
FTA's[4]:	NAFTA (USA, Canada and Mexico), **Chile**, Israel, Costa Rica	European Union, **Canada**, Mexico, Central America, MERCOSUR, ALADI, South Korea (in progress), United States (in progress), EFTA (in progress)
Cooperation agreements:	APEC, FTAA, Argentina, Barbados, Ecuador, El Salvador, Panama, Trinidad & Tobago, Uruguay, Venezuela.	APEC, FTAA, Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela.

Table I evidences the large number of agreements that both countries have signed to the date of this document, which proves that both have a very openly oriented foreign policy. Most of the Canadian cooperation agreements included in the list have as main purpose the increase in Canadian direct investment in the referred countries, as one may easily notice,

[3] Both countries are still actively negotiating new agreements, but only those already operative or very likely to be operative in the following months are included in the list.

[4] The Central America agreement involves the following countries: Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua. MERCOSUR, in turn involves Argentina, Brazil, Uruguay and Paraguay. FTAA accounts for the Free Trade Area of the Americas (ample regional agreement). APEC refers to the Pacific area agreement (mainly Asian countries, in America, this involves NAFTA, Peru and Chile). EFTA refers to Iceland, Norwegian, Switzerland and Liechtenstein.

those are all emerging economies. This fact will find an explanation in the next section, taking Chile as an example of this tendency.

In section II, we will present an analysis of the evolution of the Canada-Chile FTA, as an empirical framework for our model. Section III presents the theoretical and empirical evidence on trade creation, trade diversion, international financial flows and returns. Section IV, presents the methodology in which this study is based and describes the model we have developed for the estimations. Section V, in turn, shows the results for this study and finally, conclusions and recommendations are provided.

II. An overview of the Canada-Chile FTA.

As we mentioned in the previous section, Canada and Chile engaged in a FTA in July 1997. In the 5 years following this event, bilateral trade grew at a modest geometric average of 1.45%. This is mainly explained by a sharp decline of 24.4% in the Canadian exports to Chile in 2002. Nevertheless, even if we adjust for this year-specific effect, the appropriate analysis claims that Canada has not significantly increased its exports to Chile after the FTA. On the opposite side, Chile benefited from the Free Trade Agreement, with a geometric average of 9.2% growth in its exports to Canada between 1997 and 2002.

Under a traditional Vinerian perspective, our first conclusion would be that the effects of the FTA would be ambiguous, since one of the two partners benefited from the deal and the other did not. Well, such a simplistic analysis would probably lead us to an inaccurate conclusion, since under the new regionalism perspective, described by Ethier[5] (2001), we must also take into account the increase in the Canadian direct investment in Chile, which in turn grew at a yearly average of 11.7% for the 1997-2002 periods. This fact accounts for a 14.3% of total cumulated[6] foreign direct investment in Chile in 2002, which corresponds to a relevant third in rank investor in Chile after the United States and Spain. This result is particularly interesting since Kraay, Loayza, Servén and Ventura[7] (2001) found that only 8.5% of the world capital stock flows from North to South, which evidences the importance that such deal as FTAs North-South (Canada-Chile) would have in attracting additional financial flows towards the southern economies.

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[5] Ethier, W. (2001). "*The New Regionalism in the Americas: A Theoretical Framework*". Journal of Economics and Finance, Volume 12, PP.159-172.

[6] Base year for cumulated calculations: 1974.

[7] Kraay, A. Loayza N. Servén, L. Ventura, J. (2001). "*Country Portfolios*". Working Paper 91 (April issue), Central Bank of Chile.

Table 2: Canadian direct foreign investment in Chile.

a. Level	1996	1997	1998	1999	2000	2001	2002
Authorized	7806.31	8710.9	10142.05	10483.98	11867.82	12017.68	12642.58
Materialized	3446.8	4258.21	5157.33	5607.52	6320.71	6538.93	7433.94
b. Growth:	1996	1997	1998	1999	2000	2001	2002
Authorized	14.6%	11.6%	16.4%	3.4%	13.2%	1.3%	5.2%
Materialized	19.9%	23.5%	21.1%	8.7%	12.7%	3.5%	13.7%

Source: Foreign Investment Committee of Chile.

Level refers to cumulated investment (capital stock) in billon US$.

So far, the results of the Canada-Chile FTA lead us to think that the agreement has mainly caused an increase in the Chilean exports to Canada and in turn, an increase in Canadian direct foreign investment in Chile; but the opposite of both statements is not likely to be true.

This pattern is clearly consistent with the Ethier[8] (1998) theoretical approach, which states that an agreement between a small or less developed economy (Chile) and an industrial economy (Canada) would lead to structural reforms in the small country, as a condition stated by the big economy, in order to generate an increase in direct foreign investment flows. The small[9] economy would then benefit from strong financial flows and the big economy, after providing a modest effort reducing or eliminating tariff that affected the small economy's products, gets access to investing in the small economy for the productive phases that are cheaper to achieve in the latter country.

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[8] Ethier, W. (1998). "*Regionalism in a Multilateral World*". The Journal of Political Economy, Volume 106:6, PP.1214-1245.

[9] On a world perspective, we may state that both economies could be categorized as small. Indeed, Ethier (1998) defines Canada as a small economy compared to the USA. Nonetheless, in this context, we must define "big" and "small" on a relative basis. Consider that Canada had a GDP 11 times the Chilean GDP in 2002 and a similar result characterizes the entire period under analysis. In our context, it would be appropriate to associate the term "big" economy with an industrialized one and "small" for an emerging nation. In the same context, we may speak of "North" and "South" economies.

In this case (the Canada-Chile agreement) the previous statement appears to be perfectly valid, except that not only did Canada provide a "modest" effort in reducing tariff rates, but the Chilean economy also engaged in a low cost commitment, since tariff rates were already relatively low in both countries. This fact may lead us to a preliminary conclusion that there should not be significant trade diversion from the agreement. For instance, consider Canadian exports to Chile, even for commodities whose tariff rates were reduced to 0, they will not be in a particularly better position than imports from the rest of the world (ROW) at a tariff rate of 6% (which is the standard generalized 2003 rate). We will emphasize in the concept and implications of trade diversion in the next section.

To fully understand how Ethier's theory worked in this framework, let's briefly take an example. Considering the results in Table 2, allow us to emphasize that on average, more than 60% of the yearly investment corresponds to flows oriented to the mining sector in northern Chile, especially on the copper extraction process. Not in vain, one of the two main Canadian imports from Chile are precisely copper concentrates and copper anodes[10] which in turn are used for more human capital intensive productive processes in Canada.

Now let's focus on the reforms that the theory would have predicted for Chile. Indeed, those reforms did take place with the FTA, except that as we already know, Chile did not qualify as an autarky before the agreement, as Ethier's model would have suggested, but as an opened economy. So, Chile's efforts to engage in the reforms that Canada imposed would also qualify as modest. To understand why, let's have a look at those reforms.

The Canada-Chile FTA was based on three closely linked issues. First, there was the customs tariff, non-tariff protectionism[11] and capital flow issue. Second, the environmental issue and finally, the labor market reform issue.

Canada had an incentive to impose to Chile an environmental and labor market law and regulation reform, with the purpose of homogenizing regulations and eliminating any potential "un-loyal" comparative advantage for Chile due to weaker environmental and labor force protectionism relative to Canada. But in fact, Chile did not engage into such

[10] Copper concentrates attained an import peak of US$ 137.8 millions in 2000.

[11] Some authors would call it "creative tariff".

reforms at a high cost, since in those years this economy was also interested in doing all the structural reforms necessaries to achieve other FTA agreements with partners such as the European Union and the US. In accordance to this, by 1997, Chile had already made significant improvement in these areas, so no major reform was necessary at the time when Canada imposed its requirements.

Let's now have a closer look at the trade flows that took place between Chile and Canada before and after the FTA. The following table summarizes exports and imports to/from Chile, from the Canadian point of view.

Table 3: Canadian Exports and Imports to/from Chile and ROW.

		1994	1995	1996	1997	1998	1999	2000	2001	2002
Chile	Total Exports	230,246	282,284	304,739	283,456	228,959	242,545	299,225	238,341	180,103
	Total Imports	174,371	203,183	250,963	235,403	242,813	283,760	373,908	413,697	425,699
	Trade Balance	55,875	79,101	53,776	48,053	-13,854	-41,215	-74,683	-175,356	-245,596
	Total trade	404,617	485,467	555,702	518,859	471,772	526,305	673,133	652,038	605,802
ROW	Total Exports	164,989,320	190,778,921	201,981,047	215,013,950	214,497,838	238,955,320	277,905,203	260,646,599	252,069,845
	Total Imports	148,248,830	164,112,111	170,312,730	196,913,726	200,959,100	215,351,290	239,901,517	221,144,772	221,591,117
	Trade Balance	16,740,490	26,666,810	31,668,316	18,100,224	13,538,739	23,604,030	38,003,685	39,501,827	30,478,728
TOTAL (ALL COUNTRIES)	Total Exports	165,219,565	191,061,205	202,285,786	215,297,406	214,726,797	239,197,865	278,204,428	260,884,941	252,249,947
	Total Imports	148,423,201	164,315,293	170,563,693	197,149,129	201,201,912	215,635,050	240,275,425	221,558,469	222,016,816
	Trade Balance	16,796,364	26,745,912	31,722,093	18,148,277	13,524,885	23,562,815	37,929,003	39,326,472	30,233,132

Source: Statistics Canada: Trade Balance (excludes services). In thousands of US$.

As Table 3 shows, Canadian exports suffered a sharp decline in 2001 and 2002, which is a direct consequence of the world economic slowdown, especially affecting Canada's number one partner country (the United States), that was mainly caused by the NASDAQ

crisis initiated in 1999 and the September 11, 2001 terrorist attacks, that added significant incertitude to the markets.

In order to adjust the decline in Canadian exports to Chile due to the international economic downturn, and focus on the FTA effect, it would be helpful to analyze the evolution of the exports/imports to/from Chile on exports/imports to/from ROW ratio. Table 4 summarizes these results.

Table 4: Canadian exports and imports expressed by Chile to ROW ratio[12].

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total Exports	13.96	14.80	15.09	13.18	10.67	10.15	10.77	9.14	7.14
Total Imports	11.76	12.38	14.74	11.95	12.08	13.18	15.59	18.71	19.21

Source: Statistics Canada.

On the one hand, adjusted for the 2001 and 2002 effect, we can visualize a decline in total exports from Canada to Chile relative to ROW in both years. On the other hand, although imports from Chile declined in 1997 (year of the agreement), they systematically grew in the following years, which illustrates the positive effects that the FTA had on the Chilean trade towards Canada. For instance, consider the 2000-2001 result, where imports from Chile grew 20% and at the same time Canadian exports to Chile diminished 15%.

Among other factors that may have affected the Canada-Chile trade in those years, we observed a systematic real depreciation of the Chilean peso in relation to the Canadian dollar. Indeed, the Chilean peso depreciated 12.8% in 2001 (in real terms), year of the major shift between exports and imports for the two nations. In 2002, the depreciation persisted with a 6.4% increase.

[12] Let's express CE as Canadian exports to Chile and CI, Canadian Imports from Chile. Following the same nomenclature, let's express ROWE as Canadian exports to the rest of the world and ROWI, Canadian imports from the rest of the world. Then the formula expressed in table 4 would be: Total Exports = (CE/ROWE) x10,000 and Total Imports = (CI/ROWI)*10,000. Since Chilean trade accounts for less than 1% of total Canadian trade, it is useful to express the ratio in 10,000 unit terms.

Finally, let's have a close look at how the exports and imports to/from Chile and ROW behaved in the period under consideration. The following table summarizes the exports and imports yearly variations for Chile and ROW from 1994 to 2002 and we also compute their differences for each of the years.

Table 5: Chile and ROW yearly trade variations.

			CHILE	ROW	DIF	COND
1	EXP	1994	39.5	13.6	25.9	+
2	EXP	1995	22.6	15.6	7	+
3	EXP	1996	8	5.9	2.1	+
4	EXP	1997	-7	6.4	0.6	+
5	EXP	1998	-19.2	-0.3	18.9	+
6	EXP	1999	5.9	11.4	-5.5	-
7	EXP	2000	23.4	16.3	7.1	+
8	EXP	2001	-20.3	-6.2	14.1	+
9	EXP	2002	-24.4	-3.3	21.1	+
10	IMP	1994	7.5	12.6	-5.1	-
11	IMP	1995	16.5	10.7	5.8	+
12	IMP	1996	23.5	3.8	19.7	+
13	IMP	1997	-6.2	15.6	-9.4	-
14	IMP	1998	3.1	2.1	1	+
15	IMP	1999	16.9	7.2	9.7	+
16	IMP	2000	31.8	11.4	20.4	+
17	IMP	2001	10.6	-7.8	2.8	+
18	IMP	2002	2.9	0.2	2.7	+

Note: EXP accounts for Canadian exports to Chile and ROW. IMP, in turn, are Canadian imports from Chile and ROW.

Source: Statistics Canada.

Table 5 evidences that trade variations for Chile are wider than those for ROW. The COND column has a "+" sign when the absolute variation value for Chile exceeds the absolute value for ROW variation in the same year (a "-"sign is reported when the opposite is true). Under a nonparametric statistic sign test procedure, we found 15 "+" signs and 3 "-", we obtained an adjusted for continuity Z statistic of 2.59, which at a single tailed 95% confidence interval, is statistically significant. We may then reject the null hypothesis in favor of stating that Chile presents systematically higher variations in exports and imports

from a Canadian point of view than the rest of the world. This result is not surprising but interesting since it is an empirical application of Markowitz's (1952) [13] portfolio theory. Canada's trade balance is considered diversified from Chile's point of view, since it has historically registered trade with almost every nation in the world and Chile's share in trade has an atom-sized effect. Consequently, it is not unexpected that a single small country like Chile presents higher variance in its trade with Canada than the ROW. Furthermore, Chile marginally contributes to lower the world trade variance with Canada since it presents a correlation of 0.5844 with ROW (lower than one), as portfolio theory would predict for a "single asset with diversifying power".

[13] Markowitz, Harry (1952). "*Portfolio Selection: Efficient diversification of investments*". Journal of Finance, Volume 7, PP.77-91.

III: Theoretical and Empirical Evidence on Trade Creation and Trade Diversion with a Particular Note on Direct Foreign Investment Returns.

One of the most recurring terms in the recent international trade literature is "trade diversion". In order to understand this concept, it is useful to begin with a simple example. The following table summarizes a hypothetical world with 3 countries X, Y and Z, that trade a single homogeneous commodity i (so for simplicity, we will now omit the index i since it is all based on this unique good) and internal markets for commodity i are perfectly competitive. Let Ck be the marginal cost (constant, for our purpose) of a unit of the commodity produced in country k, where k = (X, Y, Z) and cjk is the unit import tariff that applies country j to imports from k for $\forall k$ where $k \neq j$, except if country k has an FTA with j, in which case the tariff rate reduces to 0. We will suppose that all countries share a single international currency or monetary unit (M.U.). Finally, let Pjk be the consumer final price of the commodity produced in country k and commercialized in country j, which is determined by Pjk = Ck + cjk.

Table 6: Trade diversion example.

Country (j,k)	Ck (M.U.)	cjk (M.U.)	Pjk
X, X	100	-	100
X, Y	80	30	120
X, Z	60	30	90

It is clear from the table that country X will import commodity i from country Z, since Z offers the best price (90). No trade for commodity i will take place between X and Y in our example. Next, let's suppose that country X engages in a FTA with country Z, in which case cxz = 0. The new price Pxz' = 60 is considerably lower than the earlier price Pxz=90, so depending on market conditions, it will likely imply an increase in trade between X and Z (of course, still no trade between X and Y). Consequently, trade creation takes place and no trade diversion is registered. In this case, the deal takes place between two "natural" partners, so the agreement is likely to be desirable.

Now, if country X and Y engage in a FTA, excluding country Z, country Y's price would then be 80, which is lower than the price of Z (90). Now country X would import

commodity i from Y and no trade would take place between X and Z, neglecting the fact that Z has a comparative advantage in the production of commodity "i". Trade diversion would then have occurred. In simple words, trade diversion occurs when a FTA shifts imports from a more efficient supplier to a less efficient producer which by itself causes a reduction in national welfare.

This concept was first rigorously documented by Viner[14] (1950). The author studied customs unions under a small economy and constant returns to scale framework, analyzing the effect of such agreements in countries welfare. The main question is whether it is optimal to eliminate an economic friction such as customs tariff to one country if we do not eliminate all customs tariff outstanding with the rest of the world. The problem that arises is precisely that it is not necessarily efficient to incur into a customs union, since not only trade creation might take place but trade diversion may be a direct consequence of such an agreement too.

Further insight on this regard was provided by Krugman[15] (1991). The creation of new trading blocks is more likely to be a sign of protectionism than a move towards an open world. Let's consider, for instance, the controversy that arises with the creation of the European Union. For several analysts, it was mainly the creation of a hermetic block whose main intention was to protect member nations' major sectors from foreign substitutes. Krugman's model, as many others in modern macroeconomics, was based on a utility maximization approach, concluding that utility is maximized only when the number of blocks tend to be very large (as many blocks as countries or provinces are in the world) or tend to unity (there is only one block composed of all the provinces in the world)[16]. In summary, consumers from any of the provinces in the world get a maximum level of utility only when the world turns out to be in a perfectly competitive environment. When the world is reduced to three trading blocks, welfare reduces to a minimum.

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[14] Viner, J. (1950). « *The Customs Union Issue* ». Carnegie Endowment for International Peace, New York.

[15] Krugman, P. (1991). « *Is Bilateralism Bad?* ». International Trade and Trade Policy, in E.Helpman and A. Razin (eds.) Volume 9:23, MIT Press, Cambridge Massachusetts.

[16] In simple words, we obtain a U shaped curve when we plot the number of trading blocks and utility.

A new alternative to the traditional trade creation and trade diversion approach that we just described took place with what Ethier (1998) called the "New Regionalism". The rationale behind this new perspective is based on three issues. The first one deals with the notion that regionalism is an endogenous process rather than exogenous, so most of the literature would have analyzed it erroneously as exogenous. The second point is to understand that regionalism facilitates integration and liberalization of trade. Finally, the third point is that emerging countries can have a successful entry in the multilateral arena by first integrating regional agreements. We already analyzed the implications of Ethier's new regionalism in section II, considering the Canada-Chile case, so we can state that the main point of this approach is that the small country "buys" (with reforms) its pass to multilateral trade by first engaging in bilateral and regional agreements as a first step.

Ethier (2001) established a fundamental framework for the new regionalism in the Americas. The main emphasis is focused on the direct investment in the small reforming economy that results from economic integration. This theoretical result is the motivation for the present study; since we are going to analyze the traditional Vinerian trade creation and trade diversion issue but we will also make special considerations to direct Canadian investment in Chile, as an empirical verification of Ethier's perspective.

An important part of recent literature emphasizes on the negative effects that regionalism among emerging economies has on the economies excluded from the deal. The argument, once again is that trade diversion usually takes place in those cases.

For instance, Yeats[17] (1996) argued that MERCOSUR established a discriminatory import policy that does not permit an efficient allocation of imports. "*If the Mercosur countries had achieved an equivalent degree of liberalization on a nondiscriminatory basis, they would have maintained a more efficient import structure, paying less or obtaining better goods, and they would have purchased more from their trading partners outside the block*".

This concludes that not only trading partners outside the block, mostly neighboring countries, experienced loss of trade from this protectionist policy applied by MERCOSUR

[17] Yeats, A. (1996). "*Does MERCOSUR Trade Performance Raise Concerns about the Effects of Regional Trade Arrangements?"* World Bank Economic Review, Volume 2:1, PP.1-28.

but the block's member countries also did, by not having access to products of the highest quality to price ratio as would be available to them on a multilateral trade basis.

On the same line, Chang and Winters[18] (2002) studied the price effects of MERCOSUR and how this block affected non member countries. They concluded that these regional agreements do affect prices of traded goods and that it negatively affects non member countries. Indeed, they appraised trade losses for major MERCOSUR partners, such as the USA, Japan, Germany, Korea and Chile. Although the previous price effect was considerable for Chile[19], those losses were partly reduced by signing a FTA with MERCOSUR in the mid nineties[20]. This strategy, which was also implemented by Bolivia, is very interesting since those countries chose not to integrate the customs union but instead, they decided to sign a FTA with this major market. Once again, these cases may be an application of Ethier's description of regionalism. As an extension, to Chang&Winters (2002), Yeats[21] (1997) found that the highest trade growth in intra-MERCOSUR commodities corresponded precisely to products where member countries did not display comparative advantage, confirming the trade diversionary effect of MERCOSUR. A likely different scenario may be expected for future years, since the Andean Community Market[22] is also expected to sign a FTA with Mercosur during late 2003 or early 2004.

Several other researchers have found trade diversion under regionalism that involves emerging countries, such as Nicholls[23] (1998), but others have a more optimistic view of

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[18] Chang, W. Winters, A. (2002). « *How Regional Blocs Affect Excluded Countries: The Price Effects of MERCOSUR"*. American Economic Review, Volume 92:4, PP.889-904.

[19] The authors found a loss of trade of US$ 17.3 millions with Brazil. They did not consider the later FTA that Chile signed with MERCOSUR since their study considered only the 1991-1996 period.

[20] The agreement was signed in August 1994. During the same period, Bolivia also engaged in a similar agreement with MERCOSUR.

[21] Yeats A. (1997), "*Does Mercosur's Trade Performance Raise Concerns about the Effects of Regional Trade Arrangements?*", World Bank Policy Research Working Paper No. 1729.

[22] This block is integrated by Bolivia, Colombia, Ecuador, Peru and Venezuela.

[23] Nicholls, S. (1998). "*Measuring Trade Creation and Trade Diversion in the Central American Common Market: A Hicksian Alternative"*. World Development, Volume 26:2, PP.323-335.

regionalism among these nations, such as Cernat[24] (2001) and Fernandez &. Spiegel[25] (1998). These authors emphasize in the positive financial flows that arise when the FTA involves north-south partners, once again, just as Ethier would have predicted.

Many authors have focused on the NAFTA issue and whether trade diversion was present after Mexico, Canada and the USA signed the agreement in 1992. A frequently quoted paper that analyzed NAFTA under the traditional Vinerian approach is Krueger[26] (1999). The author finds an important increase in trade among NAFTA members but it does not necessarily imply trade diversion. Nevertheless, Ms. Krueger suggests further research with more years in the sample period to facilitate a more accurate empirical conclusion. In turn, Clausing[27] (2001) puts some additional insight on the question, focusing on the Canada-USA bilateral trade. She finds that the gains in trade (some US$20 billion) were not at the expense of other countries but corresponded to trade creation. This result encourages new north-north type of agreements.

But on a less optimistic perspective, Fukao, Okubo and Stern[28] (2002) evaluated the trade creation and trade diversion issue on the US imports market at the two digit HS level (with only some selected commodities at the 4 digit level) from Canada and Mexico between 1992 and 1998. They focused their work on manufactured goods (codes 30 to 99). They found that NAFTA has resulted in significant trade diversion, especially in textiles, apparel and some footwear products from Mexico, and these products were imported mainly at the expense of Asian manufacturers.

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[24] Cernat, L. (2001). "*Assessing Regional Trade Arrangements: Are South-South RTAs More Trade Diverting?"* Policy Issues in International Trade and Commodities, Volume 16, PP.1-24.

[25] Fernandez, E. Spiegel, M. (1998). « *North-South Customs Unions and International Capital Mobility* ». Journal of International Economics, Volume 46, PP.229-251.

[26] Krueger, A. (1999). « *Trade Creation and Trade Diversion Under NAFTA* ». NBER Working Papers 7429.

[27] Clausing, K. (2001). "Trade Creation and Trade Diversion in the Canada-United States FTA". Revue Canadienne d'Économique, Volume 34:3, PP. 677-696.

[28] Fukao, K., Okubo, T. Stern, R (2002). "*An Econometric Analysis of Trade Diversion Under NAFTA* ». Research Seminar in International Economics. U.Michigan Ann Arbor.

Romalis[29] (2001) provides an elegant approach to trade diversion under NAFTA analysis. The author found that US imports from Canada and Mexico present a significant sensibility to tariff preferences. On the one hand, imports from Canada declined for goods excluded from the preferential tariff and the Mexican origin imports experienced only a slight increase on those excluded commodities. On the other hand, exports of preferential goods from Canada and Mexico to the USA experienced a sharp increase after tariff liberalization and that increase was a substitution of imports from other economies rather than displacing US production. This may be interpreted as evidence in favor of the trade diversion hypothesis.

The papers revised so far, focus exclusively on the trade creating and trade diverting characteristics of FTAs. But to be consistent with Ethier's new regionalism, we require some additional analysis on the financial flows that arise from an agreement, like the Canada-Chile FTA. In order to do so, let's have a look at the main literature regarding the international cost of capital, as an important ingredient for measuring returns of Canadian financial flows towards Chile[30].

In the international arena, one of the most popular papers is Ibbotson, Carr and Robinson[31] (1982). In simple words, the authors made an extension to traditional CAPM with the purpose of calculating international betas, considering the world as the market portfolio and individual economies as market securities. The main critiques that affected this paper is that they did not consider capital barriers among countries; the lack of availability of some assets to foreign investors; domestic currencies change the perspective of investors, so they do not construct the same portfolio efficient frontier; consumer utility function may differ among countries and, inflation risk is also inherent to each economy. These and other issues, evidenced that an international CAPM would be quite complex to obtain and might easily lose popularity among practitioners. Considering this, the trend indicates that Ross[32]

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[29] Romalis, J. (2001). "*NAFTA's Impact on North American Trade*". Chicago GSB Working Paper.

[30] In the next section, we will provide the methodology for measuring these returns.

[31] Ibbotson, R. Carr, R. Robinson, A. (1982). "*International Equity and Bonds Returns*". Financial Analysts Journal, Volume 38:4. PP. 61-83.

[32] Ross, S. (1976). "*Return, Risk and Arbitrage*". In I.Friend and J.Bicksler (eds.). Ballinger Cambridge Mass.

(1976) APT, multifactor models and index models may be preferred. Solnik[33] (1983) provided a theoretical framework in favor of an international APT rather than CAPM, confirming the latter problems with CAPM. Under an empirical perspective, Korajczyk & Viallet[34] (1989) analyzed the performance of international versions of CAPM (and single index variations) and APT (and multi index variations), for the US, UK, France and Japan. They found evidence against all models, stating that the floating foreign exchange policy that was adopted by several countries from early 1974, added price effects that are not well captured by the models. Nonetheless, multifactor models tend to outperform single index models internally and internationally.

Since most international index models are only applied to industrialized countries[35], for instance Solnik[36] (1974), but are not to emerging markets, such as Chile, we require a model that takes into account the historical financial rigidities that characterizes the emerging countries. An interesting approach is provided by Erb, Harvey and Viskanta[37] (1995) and Harvey[38] (2001). The authors provide a simple model to calculate expected returns for emerging countries based on credit risk rating for those countries. They suggest linear, logarithmic and hyperbolic models for the estimates, where time t+1 expected return is determined by period t credit rating. This approach, which may be categorized as an ad-hoc model, tends to outperform economic based models like CAPM or APT [Harvey (2001)] and permits an easy approach to compare country expected returns. Considering the

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[33] Solnik, B. (1983). "*International arbitrage pricing model*". The Journal of Finance, Volume.38:2, PP.449-457.

[34] Korajczyk, R. & Viallet, C. (1989). "*An Empirical Investigation of International Asset pricing*". The Review of Financial Studies, Volume 2:4, PP. 553-585.

[35] Since those economies show similar consumers' utility functions, more homogeneous exchange rates volatility, inflation and portfolio efficient frontiers.

[36] Solnik, B. (1974). "*An international market model of stock price behavior*". The Journal of Financial and Quantitative Analysis, Volume 9:4, PP.537-554.

[37] Erb, C. Harvey, C. Viskanta, T. (1995). "*Expected Returns and Volatility in 135 Countries"*. Working Paper, Duke University.

[38] Harvey, C. (2001). "*The International Cost of Capital and Risk Calculator (ICCRC)"*. Working Paper. Duke University.

log and hyperbolic equations, the authors found a 6.8% (680 bp) and 4.4% (440 bp) risk return for Chile over Canada, respectively[39]. These findings may be considered as an overestimation of Chile's risk premium but the result is not surprising, since it accounted for the 1982 financial crisis and the mid-eighties political changes that were about to take place, adding a degree of incertitude about the behavior of the economy. In the next section, we will provide additional comments on these findings and suggest an appropriate estimation model for the present study.

[39] The sample period goes from October 1979 to March 1995.

IV: Methodology and the Model.

This research will follow two related empirical testing phases. On one hand we will deal with the traditional trade creation and trade diversion issue that may have arise with the Canada-Chile FTA and on the other hand, we will analyze the financial flows from Canada to Chile with the purpose of checking if it compensated any eventual trade diverting effect.

The possibility of trade diversion will be estimated by analyzing Canadian imports from Chile and the ROW (Rest Of the World). Our model is similar to that used by Clausing (2001) (i.e., based on supply-demand equilibrium equations), although no formalization was provided in her research. So let's begin with a simple mathematical derivation of our resulting dynamic estimation model.

Let's first consider any single traded good i, where i = 1..n.

Let's also suppose a demand function of the kind: $Di = C \times Pi^{\lambda pd} \times (\Pi k\ zk^{\lambda zkd})$ (1)

Where Di is the demand for good i and Pi the market price of i. The other k variables also affect demand for commodity i and they are expressed as the multiplication of the zk variables at power λ_{zkd} each.

Expressing in logs equation (1), we get a linear expression:

$\ln Di = \ln C + \lambda pd \ln Pi + \Sigma k\ \lambda zkd \ln zk$ (2)

Let's define $\boldsymbol{\lambda zd}$ is a row vector of coefficients factors that may affect demand for commodity i $\boldsymbol{\lambda zd} = (\lambda_{z1d}\ \lambda_{z2d}\ \lambda_{z3d}\ ..\ \lambda_{zkd})'$ of dimension 1xk.

In turn, those factors are represented by column vector

$$\mathbf{Zi} = \begin{bmatrix} \ln z1i \\ \ln z2i \\ \ln z3i \\ \dots \\ \ln zki \end{bmatrix}$$ of dimension kx1.

Let's also consider $\lambda 0d = \ln C$. Finally, let's suppose that all customs tariff are *Ad Valorem*, then the price of commodity i would be: Pi (1 + Ti), where Ti is Ad Valorem tariff for good i.

Now equation (2) may be expressed as[40]:

$$\ln Di = \lambda 0d + \lambda pd \ln Pi + \lambda pd \ln(1 + Ti) + \boldsymbol{\lambda zd\ Zi} \quad (3)$$

We may also state that an equation for commodity i supply would be:

$$\ln Si = \lambda 0s + \lambda ps \ln Pi + \boldsymbol{\lambda zs\ Zi} \quad (4)$$

Now $\boldsymbol{\lambda zs} = (\lambda_{z1s}\ \lambda_{z2s}\ \lambda_{z3s}\ ..\ \lambda_{zks})'$

Resolving equation (4) for ln Pi, replacing this result in equation (3), and adding a time subscript, yields,

$$\ln Dit = \beta 0 + \beta 1 \ln(1 + Ti)t + \boldsymbol{\pi\ Zi} \quad (5)$$

Where $\beta 0$, $\beta 1$ and $\boldsymbol{\pi}$ coefficients are constant parameters:

$$\beta 0 = \frac{\lambda ps\ \lambda 0d - \lambda pd\ \lambda 0s}{\lambda ps - \lambda pd} \qquad \beta 1 = \frac{\lambda pd\ \lambda ps}{\lambda ps - \lambda pd} \qquad \boldsymbol{\pi} = \frac{\lambda ps\ \boldsymbol{\lambda zd} - \lambda pd\ \boldsymbol{\lambda zs}}{\lambda ps - \lambda pd}$$

We expect from Equation (5) that $\lambda ps > 0$ and $\lambda pd < 0$, so we exclude the possibility that $\lambda ps = \lambda pd$ which assures that all β parameters have real solutions for all i commodities markets. If $\boldsymbol{\pi = 0'}$, $\boldsymbol{\lambda zd}$ and $\boldsymbol{\lambda zs}$ are linearly dependent, in which case, all k variables in vector **Zi** would have no effect in commodity i market equilibrium. As in most panel data applications, we will consider vector **Zi**'s elements as fixed effects (i.e., they do not change over time and consequently, vector **Zi** does not have a time subscript), such as distance or language differences (the latter is time constant at least in the short run). Let's now state our gravity equation, based on equation (5).

$$\ln Dit = \beta 0 + \beta 1 \ln(1 + Ti)t + \boldsymbol{\pi\ Zi} + \boldsymbol{\beta'\ X_{it}} + vit \quad (6)$$

[40] Let's not forget that the last term of the equation is in matrix notation and the remaining terms are scalars. This facilitates algebraic manipulation, which permits to avoid summation notation.

We have supposed that vector **Zi** contains fixed and mostly unobserved factors, but we have also explicitly accounted for matrix **Xit** that accounts for all time varying variables excluding ln(1 + Ti) and the constant term (such as real exchange rate, revenue and other similar economic conjuncture variables), so vector **Xit** has dimension 1x(n-1), in order to sum the n+1 factors that affect Dit (if we include the constant term). Finally, vit is an error term of mean zero and uncorrelated with all explanatory variables. Nevertheless, to allow the possibility that vector **Zi**'s elements to be correlated with Ti and vector **Xit** elements, we will expose the model under a dynamic perspective:

$$\ln Dit - \ln Dit_{-1} = \alpha 0 + \beta 1 \, [\ln(1 + Ti)t - \ln(1 + Ti)t_{-1}] + \boldsymbol{\beta}' \, (\mathbf{X_{it}} - \mathbf{X_{it-1}}) + \mu it \quad (7)$$

$$\mu it = \Delta vit$$

$$\text{cov}(\mu it, Ti) = \text{cov}(\mu it, \mathbf{X_{it}}) = \text{cov}(\mu it, \mathbf{X_{it-1}}) = 0$$

$$\mu it \text{ iid } N(0, V(\mu i))$$

We have added to equation (7) a new intercept ($\alpha 0$) in order to have a useful interpretation of R^2 from OLS. For small time variations, equation (7) may also be expressed in simpler terms as[41]:

$$\Delta Dit = \alpha 0 + \beta 1 \, \Delta(1 + Ti)t + \boldsymbol{\beta}' \, \Delta \mathbf{X_{it}} + \mu it \quad (7')$$

Now, for the second phase of this research, we require an estimation of return from a Canadian portfolio of direct cumulated investment in Chile, compared with the same portfolio invested in the domestic market (Canada). This estimation would permit to conclude on the wealth effect of investing in Chile after the FTA took place.

We first need an ex-ante asset return model to obtain risk adjust expected Chilean returns (compared with Canadian returns for the N periods under study). Korajczyk & Viallet (1989) as most other empirical research papers on international cost of capital, did not provide us with concluding evidence in favor of any economic model, but fairly showed us that multifactor models tend to beat single factor ones in the international arena. An exhaustive estimation of ex-ante cost of capital is beyond the scope of the present study, so it is preferred for our purpose to find a "well-behaved" ad-hoc model that would provide us

[41] Different estimation specifications for equation (7) or (7') will be provided in the next section.

with conclusive exploratory results on expected Canadian investment in Chile return. Following Harvey's (2001) methodology, we will state as our first estimate, the Erb, Harvey and Viskanta (1995) risk premium for Chile over Canada of 440 bp according to their hyperbolic equation. This first result may be considered as corresponding to a very "conservative" scenario. Next, so as to obtain estimation for a less "pessimistic" scenario, we will consider the geometric average of the risk premium for the first Chilean sovereign bond issued in 1999, which yields 182 bp average over US treasury bonds. We will assume that this will also be the ex-ante risk premium for Chile over Canada on our second estimate[42], or as our most likely scenario[43]. The following table presents the Chilean sovereign bond premium for all issued securities over a selected sample period.

Table 7 : Chilean Sovereign Risk Premium over US 10 years Treasury Bonds.

	Jun-99	Dic-99	Jun-00	Dic-00	Jun-01	Dic-01	Jun-02	Dic-02	Mar-03
Sovereign Spread-Chile 09 (Bid, bp over US Treasury)	189	153	205	226	170	164	200	118	191
Sovereign Spread-Chile 12 (Bid, bp over US Treasury)						184	220	156	153
Sovereign Spread-Chile 07 (Bid, bp over US Treasury)							197	156	134
Sovereign Spread -Chile 05 Euros (Bid, bp over OBL)							218	138	80
Sovereign Spread-Chile 13 (Bid, bp over US Treasury)									158

Source: Ministry of Finance, Chile.

We then calculated the actual returns (ex-post) obtained in the sample period for three alternative portfolios (that will be described in section V) in each local market (Canada and Chile). We will then appraise and compare the difference of the Chilean returns obtained, with a similar risk adjusted portfolio in Canada. The latter result will allow us to judge on a

[42] Considering that Canada presents the highest correlation (0.7) with the US financial market in the world, based on Geoffrey A. Hirt and Stanley B. Block estimates from 1991 to 1996 (Mc Graw Hill, 1996).

[43] We have neglected the possibility of using the Chilean Central Bank's US$ denominated bonds issued since 1998 (PRD rate) as a third alternative, since the issuing and trade of such instruments is unsystematic. Those bonds are intended to be used only for foreign exchange rate stabilization purposes.

preliminary basis, the positive or negative wealth effect of the FTA on Canadian investment in Chile.

Table 8 summarizes the evolution of the main Chilean Central Bank's (CCB) Bonds yield rate. This is intended for helping the reader to familiarize with the evolution of the Chilean interest rates during the sampling period and who account to be the lowest risk long term Chilean instruments.

Table 8: Evolution of the main Chilean Central Bank's Bonds Yield Rate.

Date	PRC 8 yrs.	PRC 20 yrs.	BCU 10 yrs.	BCU 20 yrs.
1994	6.07	5.88	-	-
1995	6.21	6.11	-	-
1996	6.32	6.11	-	-
1997	6.46	6.31	-	-
1998	7.47	7.18	-	-
1999	6.51	6.44	-	-
2000	6.37	6.40	-	-
2001	5.09	5.52	-	-
Aug2002	4.36	5.03	-	-
2002	2.70	3.20	3.94	4.75

Source: Central Bank of Chile.

Note 1: All rates reported are yearly geometric mean effective annual real rates. These are inflation indexed instruments, by a variable called "Endorsement Unit" (UF in Spanish) which value depends on monthly past inflation.

Note 2: In September 2002, CCB implemented the denominated "nominalization process", issuing long term nominal peso, dollar and UF bonds. PRC's changed to BCU's (accounting for "Central Bank's UF bonds"). No more 8 years denominations instruments were issued since then.

We can see from Table 8 that in 1998, interest rates experienced a sharp increase, which was a direct consequence of speculative attacks against Latin-American currencies due to the Asian Crisis (especially against the Brazilian Real but that also affected the Chilean Peso, since roughly 30% of Chile's exports were oriented to Asian markets). Later in 2002, interest rates significantly declined as the CCB actively tried to expand aggregate internal demand.

Returns will be reported in Canadian dollars, so the appropriate formula to calculate the Canadian origin investments in Chile returns (that are obtained in Chilean Peso) is provided by the International Fisher Effect:

$$(1 + \rho_{ca\$}) = (1 + \rho_{ch\$}) (e_0 / e_1) \quad (8),$$

Where in this case e_t (t=0 or t=1) accounts for the Peso denominated price of Canadian dollar or conversely, the volume notation from the Canadian point of view. $(1 + \rho_{ca\$})$ refers to the one period Canadian dollar gross return rate of portfolio cumulated investments in Chile and $(1 + \rho_{ch\$})$ is the Chilean Peso portfolio gross return rate. As it is expected from equation (8), the Canadian gross return rate is a combination of the Chilean Peso gross returns and the foreign exchange gross return (e_0 / e_1). Equation (8) implicitly considers both: Foreign exchange risk and portfolio risk.

The following section provides the empirical results found in accordance to the methodology described above.

V: Empirical Results.

At the first stage of the research, we have obtained data from Statistics Canada (strategis and trade analyzer), for all the trade between Canada, Chile and the rest of the world (ROW) at the 2 digit HS codes. For the second stage, data was provided from Statistics Canada, Bank of Canada, Toronto Stock Exchange, Central Bank of Chile, Santiago Stock Exchange and the DIRECON ("Dirección General de Relaciones Económicas Internacionales") of Chile.

We will first focus on Canadian imports from Chile, its main competitors and the rest of the world[44]. Equation (7) stated our base model for this stage. We must first emphasize that the Ti variable in equation (7) poses some econometric problems for our estimations. Although some exceptions were present at the beginning of the FTA, that affected selected commodities at the 8 digit HS level, on the overall basis, most of the trade was free of customs tariff upon the implementation of the agreement. Consequently, most tariff variations were concentrated between 1997 and 1998. Considering this fact, it is preferable to use a dummy variable for the implementation of the FTA as a proxy[45] for Ti. So, our alternative gravity equations will consider the variable DUMFTA (dummy for FTA between Canada and Chile) to assess the FTA effect on Canadian imports.

Before we analyze those results under a world perspective, it is appropriate to have a close look at the relation between Canadian imports from Chile and Canadian imports from Chile's main competing economies. Indeed, we have considered all the countries that share a frontier with Chile (i.e., Argentina, Bolivia, Peru), added Brazil, Uruguay and Paraguay, so as to include all Mercosur partners and also considered South Africa, Australia and New

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[44] Table 4 evidenced that no considerable trade diversion may have arise at the 2 digit HS level from Canadian exports to Chile (further analysis at the 4 digit level confirmed that), since no clear trade creation was present in the first place. Consequently, in the present study we will only focus on Canadian imports from Chile, as possible source of trade diversion.

[45] Authors that also worked at a 2 digit HS level, such as Fukao, Okubo and Stern (2002), used the simple mean chapter's tariff as the Ti variable. Although that methodology may be useful under some scenarios, it is not the case with Canada, since not all customs tariff is ad-valorem, but some at 4 digit level are specific amounts per quantity imported. Using a simple average may distort the real value of Ti.

Zealand, because those economies produce similar goods[46] and share similar seasonality in exports (since they present similar latitudes and climatology to Chile). The following table presents the correlations between the latter countries, under the scope of Canadian imports annual variation.

Table 9: Canadian Imports Correlations among Chile's Closely Competing Economies.

PANEL A:	DLOG_IMP_ARG	DLOG_IMP_AU	DLOG_IMP_BOL	DLOG_IMP_BRA	DLOG_IMP_CH
DLOG_IMP_ARG	1.0000	(0.0115)	(0.0127)	0.0297	0.0038
DLOG_IMP_AU	(0.0115)	1.0000	0.0245	0.0836	0.0518
DLOG_IMP_BOL	(0.0127)	0.0245	1.0000	(0.0179)	0.0011
DLOG_IMP_BRA	0.0297	0.0836	(0.0179)	1.0000	0.0705
DLOG_IMP_CH	0.0038	0.0518	0.0011	0.0705	1.0000
DLOG_IMP_NZ	0.0329	0.0129	0.1379	(0.0069)	(0.0058)
DLOG_IMP_PAR	0.0188	0.0047	0.0394	(0.0060)	(0.0021)
DLOG_IMP_PER	(0.0247)	(0.0576)	0.0175	(0.0156)	0.0034
DLOG_IMP_SAF	(0.0003)	0.0197	0.0006	0.0422	0.0115
DLOG_IMP_URU	0.0260	(0.0147)	(0.0274)	0.0510	0.0249

PANEL B:	DLOG_IMP_NZ	DLOG_IMP_PAR	DLOG_IMP_PER	DLOG_IMP_SAF	DLOG_IMP_URU
DLOG_IMP_ARG	0.0329	0.0188	(0.0247)	(0.0003)	0.0260
DLOG_IMP_AU	0.0129	0.0047	(0.0576)	0.0197	(0.0147)
DLOG_IMP_BOL	0.1379	0.0394	0.0175	0.0006	(0.0274)
DLOG_IMP_BRA	(0.0069)	(0.0060)	(0.0156)	0.0422	0.0510
DLOG_IMP_CH	(0.0058)	(0.0021)	0.0034	0.0115	0.0249
DLOG_IMP_NZ	1.0000	(0.0160)	(0.0233)	0.1016	(0.0264)
DLOG_IMP_PAR	(0.0160)	1.0000	0.0943	0.0141	0.0159
DLOG_IMP_PER	(0.0233)	0.0943	1.0000	(0.0073)	0.0441
DLOG_IMP_SAF	0.1016	0.0141	(0.0073)	1.0000	0.0378
DLOG_IMP_URU	(0.0264)	0.0159	0.0441	0.0378	1.0000

Note: DLOG_IMP_k accounts for ln Dkt – ln Dkt-1, for country k, where Dkt are Canadian imports from country k at time t

As we can see from Table 9, none of the considered countries show a real close relation between their exports to Canada and Chile's exports to Canada, which may result as counterintuitive. An interesting exception is Chile's correlation with Brazil that is over 7%, although Brazilian exports to Canada are basically in industrialized goods (auto-parts, semi-finished products, etc) and Chile's are mainly agricultural and mining. Australia's

[46] Basically on goods with no considerable value added, such as those from chapters HS01 to HS30.

correlation is also over 5%, and the remaining correlations are all positive except for New Zealand and Paraguay.

In Table 10, we have considered a regression that verifies the impact of the CC-FTA[47] on Chile's main competing economies (focused on Canadian imports). Two slightly different models were tested and the results of each of the models are presented in Panel A and Panel B, respectively.

Table 10: How CC-FTA affects Chile's main Competing Economies[48].

Panel A:	$DLOG\_IMP\_itk = \beta^*_0 + \delta^*_1 DUMFTAit + \beta^*_1 DLOG\_IMP\_CH_{it} + \varepsilon_{it}$			
Country k	Obs.:768	β^*_0	δ^*_1	β^*_1
Argentina	R2: 0.0289	0.279852**	-0.195958*	0.001753
	DW: 2.0713	(0.093824)	(0.110854)	(0.035744)
Australia	R2: 0.0485	0.169239**	-0.10725	0.034279
	DW: 2.0641	(0.062765)	(0.07435)	(0.024625)
Brazil	R2: 0.0762	0.036206	-0.012892	0.087658**
	DW2.0993	(0.070673)	(0.084155)	(0.028959)
Bolivia	R2: 0.0252	-0.044748	0.11668	-0.012908
	DW: 2.1545	(0.071847)	(0.084576)	(0.026483)
New Zealand	R2: 0.0774	0.145299**	-0.037744	-0.020624
	DW: 2.1567	(0.068893)	(0.082156)	(0.028786)
Paraguay	R2: 0.0748	0.010306	0.07484	0.009711
	DW: 2.0785	(0.056739)	(0.067811)	(0.024108)
Peru	R2: 0.1229	0.172367**	-0.100319	0.001355
	DW: 2.0858	(0.083669)	(0.100348)	(0.036917)
South Africa	R2: 0.0897	0.24901**	-0.109486	0.029211
	DW: 2.2347	(0.077768)	(0.092841)	(0.032769)
Uruguay	R2: 0.1479	0.000268	0.056589	0.031626
	DW: 2.0449	(0.066974)	(0.080706)	(0.030915)

[47] CC-FTA accounts for Canada-Chile Free Trade Agreement.

[48] All R2 reported in this document, are adjusted R2.

Panel B:	$DLOG\_IMP\_itk = \pi^*_0 + \delta^*_1 DUMFTAit + \pi^*_1 DLOG\_IMP\_CH_{it} + \delta^*_2 DUMFTA_{it} * DLOG\_IMP\_CH_{it} + \nu_{it}$				
Country k	Obs.: 768	π^*_0	δ^*_1	π^*_1	δ^*_2
Argentina	R2: 0.0292	0.2747**	-0.189849*	0.042322	-0.047486
	DW: 2.0715	(0.094429)	(0.111575)	(0.093511)	(0.101298)
Australia	R2: 0.0489	0.165154**	-0.102396	0.066277	-0.037508
	DW: 2.0622	(0.063192)	(0.07486)	(0.064362)	(0.069669)
Brazil	R2: 0.0807	0.018606	0.007984	0.222584**	-0.158102*
	DW: 2.0957	(0.07089)	(0.08442)	(0.075538)	(0.081861)
Bolivia	R2: 0.0252	-0.04506	0.117046	-0.010086	-0.00338
	DW: 2.1549	(0.072277)	(0.085085)	(0.069278)	(0.075037)
New Zealand	R2: 0.0798	0.132812*	-0.022841	0.073889	-0.111028
	DW: 2.1569	(0.069423)	(0.08278)	(0.074763)	(0.080989)
Paraguay	R2: 0.0750	0.013198	0.071384	-0.01204	0.025567
	DW: 2.0781	(0.057251)	(0.068418)	(0.062773)	(0.068137)
Peru	R2: 0.1233	0.165829**	-0.092443	0.049574	-0.056811
	DW: 2.0869	(0.084407)	(0.101253)	(0.095623)	(0.104003)
South Africa	R2: 0.0898	0.245382**	-0.105149	0.05648	-0.032006
	DW: 2.2333	(0.078479)	(0.093689)	(0.085228)	(0.092496)
Uruguay	R2: 0.1505	0.015543	0.038167	-0.079201	0.131089
	DW: 2.1549	(0.067658)	(0.081527)	(0.079136)	(0.086146)

Note: SUR estimation (Heteroskedasticity robust). DUMFTA is a dummy variable with value 1 from 1997 to 2002 (CC-FTA is operative). All variables expressed in log first difference start with DLOG. CH accounts for Chile and IMP for Canadian Imports. Adjusted R2 are reported.

* Statistically significant at 10% level

** Statistically significant at 5% level.

According to both models, constant terms are statistically significant for most countries, so they may be capturing effects not considered by the remaining variables. Although not statistically significant for all parameters, it is interesting to note from Panel A that for most countries, the dummy parameter δ^*_1 (coefficient dummy) is negative. Same thing happens in Panel B for δ^*_2 which is the slope dummy parameter. This evidences that there tends to be a slight negative effect of the CC-FTA on Chile's main competitors, but not in an irrefutable way. Briefly, some insight is provided but not clear evidence in favor of trade diversion can be inferred from Table 10 for the selected sample of countries.

Now let's focus on the overall effect of the Canada-Chile FTA. Three models have been used, based on equation (7). Results for Canadian imports from Chile (DLOG_IMP_CH)

and Canadian Imports from the rest of the world (DLOG_IMP_ROW) as dependent variables are quoted. Each model is described in the following table.

Table 11: Model Specifications.

	$DLOG\_IMP\_CH_{it}$	$DLOG\_IMP\_ROW_{it}$
Model 1	$= \pi'_0 + \delta'1*D1996 + \delta'_2*D2001 + \delta'_3*DUMFTA_t + \pi'_1*DLOG\_PIBPC\_CA_t + \nu_{it}$	$= \alpha'_0 + \delta'1*D1996 + \delta'_2*D2001 + \delta'_3*DUMFTA_t + \alpha'_1*DLOG\_PIBPC\_CA_t + \nu_{it}$
Model 2	$= \pi'_0 + \delta'_4\ DUMFTA_t*DLOG\_IMP\_ROW_{it} + \pi'_2 DLOG\_IMP\_ROW_{it} + \pi'_3 SHARE_{t-1} + \nu_{it}$	$= \alpha'_0 + \delta'1*D1996 + \delta'_2*D2001 + \delta'_3*DUMFTA_t + \alpha'_2*DLOG\_IMP\_CH_t + \alpha'_3 SHARE_{t-1} + \nu_{it}$
Model 3	$= \pi'_0 + \delta'1*D1996 + \delta'_2*D2001 + \delta'_5*DUMFTA_t*DLOG\_RER_t + \pi'_3 SHARE_{t-1} + \pi'_4*DLOG\_RER_t + \nu_{it}$	$= \alpha'_0 + \delta'1*D1996 + \delta'_2*D2001 + \delta'_4*DUMFTA_t*DLOG\_RER\_ROW_t + \alpha'_3 SHARE_{t-1} + \alpha'_4*DLOG\_RER\_ROW_t + \nu_{it}$

D1996 and D2001 are the year dummy variables. It was considered not convenient to add dummies for all years due to the reduced sample period (risking excessive variables for the accounted number of individuals) and besides, under a dynamic perspective, it is necessary to assure that considerable change has occurred from one period to the next. One year prior to the FTA was chosen as the first year dummy and the 5 years following the FTA as the second. As before, DUMFTA is the Canada-Chile FTA dummy, with value 1 for 1997 and the following years and 0 for the previous years. $DLOG\_GDPPC\_CA_t$ is the per capita GDP for Canada. $SHARE_{t-1}$ is the share of total Canadian imports originated in Chile in the previous year. This variable was first introduced by Clausing (2001) as a mean to measure the degree in which two eventual natural partners would tend to increment their trade. Nevertheless, we will later provide a somewhat different interpretation. Finally, $DLOG\_RER_t$ accounts for the real exchange rate between Chile and Canada; similarly,

$DLOG\_RER\_ROW_t$ is the real exchange rate between Canada and a basket of currencies that represent nearly 99.9% of total Canadian trade with the rest of the world[49].

Table 12 synthesizes the results for the Canadian imports from Chile as the dependent variable, for the three models described in Table 11.

Table 12: Canadian Imports from Chile Gravity Equations.

Variable:	Model 1	Model 2	Model 3
Constant	0.1784	0.1132**	0.0526
	(0.1269)	(0.0503)	(0.0817)
$DLOG\_PIBPC\_CA_t$	2.7287		
	(1.9058)		
$DLOG\_IMP\_ROW_{it}$		0.7902*	
		(0.4715)	
$SHARE_{t-1}$		-0.0549*	-0.0569*
		(0.0304)	(0.0306)
$DLOG\_RER_t$			-5.1608**
			(2.5763)
D1996	-0.3452**		-0.1012
	(0.1675)		(0.1569)
D2001	0.2430		-0.0355
	(0.2028)		(0.2454)
$DUMFTA_t$	-0.1735		
	(0.1178)		
$DUMFTA_t$*$DLOG\_RER\_ROW_t$		-0.9199	
		(0.5760)	
$DUMFTA_t$*$DLOG\_RER_t$			8.9939*
			(5.0966)
Adj.R2	0.0566	0.0542	0.0560
DW	2.1733	2.1708	2.1720
Observations	768	768	768

Note: Estimated coefficients reported in the last three columns. White Heteroskedasticity-Consistent Standard Errors reported in parentheses. Adjusted R2 reported.

* Statistically significant at 10% level

** Statistically significant at 5% level.

Model 1 tests the impact of the income effect of Canada on imports change from Chile, considering the FTA dummy (DUMFTA). The low variability of income would have caused this variable's coefficient variance to be high and consequently, although positive, not significant. The only parameter statistically significant is the 1996 year dummy but with

[49] It is a weighted value basket, where the US dollar has a coefficient of 87%.

a negative sign. Among other factors, the appreciation of the Chilean Peso on that year may have caused the negative effect.

In model 2, all parameters are statistically significant except for the FTA dummy. Although with a higher variance as we may recall from Table 5, the Canadian imports from the ROW have a positive and significant effect on imports from Chile. The SHARE variable evidenced a negative effect, which is consistent with Clausing (2001) findings for US imports from Canada. The author attributed this result to global tariff liberalization, permitting to Canadian companies to increase their market share in countries where it was smaller. While that may also be a possibility for Chile, it would also be useful to argument that the negative sign was expected because of marginally decreasing effect in exports. For instance, we may expect that the exports growth rate after introducing a product in a new market (other variables fixed) should be higher than when it attains maturity. So, exports should grow at a decreasing rate as share augments.

Model 3 accounts for the real exchange rate on Canadian imports from Chile as the main difference from the previous model. Once again and, as expected, the SHARE's coefficient has a statistically significant negative sign. But, opposed to what we expected, the real exchange rate's (RER's) coefficient also presents a negative and statistically significant sign of -5.16 (a real depreciation of the Chilean Peso would decrease Chilean exports to Canada). Yet, the interesting part is that the slope dummy coefficient (δ'_5) is significantly positive and corrects the counterintuitive real exchange rate effect. Indeed, after the FTA takes place, the sign of the RER's coefficient becomes a positive 3.83 (8.9939 – 5.1608), or, a 1% real depreciation of the Chilean Peso would lead to an increase in the Canadian imports from Chile of 3.83% which is consistent with what we expected.

In order to discuss the possibility of trade diversion on a global perspective (using ROW variable), Table 13 summarizes the results for the three models specified for DLOG_IMP_ROW as dependent variable in Table 11.

Table 13: Canadian Imports from ROW Gravity Equations.

Variable:	Model 1	Model 2	Model 3
Constant	0.0851**	0.1035**	0.0464**
	(0.0142)	(0.0122)	(0.0069)
$DLOG\_PIBPC\_CA_t$	0.3957**		
	(0.1584)		
$DLOG\_IMP\_CH_t$		0.0018	
		(0.0029)	
$SHARE_{t-1}$		0.0009	0.0011
		(0.0028)	(0.0027)
$DLOG\_RER\_ROW_t$			3.6160**
			(1.2961)
D1996	-0.0640**	-0.0708**	0.0319
	(0.0215)	(0.0211)	(0.0266)
D2001	-0.0775**	-0.0975**	-0.0906**
	(0.0203)	(0.0178)	(0.0181)
$DUMFTA_t$	-0.0467**	-0.0541**	
	(0.0144)	(0.0140)	
$DUMFTA_t$*$DLOG\_RER\_ROW_t$			-3.9800**
			(1.3313)
Adj.R2	0.0648	0.0645	0.0736
DW	2.0641	2.0662	2.0735
Observations	768	768	768

Note: Estimated coefficients reported in the last three columns. White Heteroskedasticity-Consistent Standard Errors reported in parentheses.

* Statistically significant at 10% level

** Statistically significant at 5% level.

All coefficients in model 1 are statistically significant. The year dummies are negative, just as in our previous case, which may indicate that Canadian imports slowdown anticipated the Asian crisis. More interestingly, the FTA dummy (DUMFTA) is also negative, which again, may be the Asian crisis effect (since the agreement was implemented in 1997) and/or it was due to the CC-FTA. The income effect is positive but reduced from the year of the FTA.

Model 2 has an apparently less clear statement than our previous model. But let's have a close look at the results. The dummy variables are all negative and significant but the opposite is true for the Canadian imports from Chile and Chilean share in Canadian imports coefficients. Model 2 is important since it puts some light on the previous results (model 1). It appears that Chile has no significant impact in ROW exports to Canada and that the negative signs are in turn, due to the global slowdown in trade that took place after 1997

and not to the CC-FTA. This enables us to conclude that due to the reduced size of Chile's share in world trade[50], seemingly it does not harm in any significant way other countries' exports after a FTA takes place between Chile and an industrialized country such as Canada[51].

Model 3 has less clear cut results. The SHARE coefficient is not significant, so no apparent impact of Chile's share in Canadian imports and ROW exports to Canada is evidenced, as in our previous model. But the ROW RER has a positive and significant sign, which is opposed to what we expected (the ROW RER is expressed as the Canadian price of foreign currencies basket). Noticeably, accounting for the FTA dummy, the sign is reverted, just as we found for the Canadian imports from Chile equation.

As an overall result, we may state that relevant parameters evidenced a trade downturn after the CC-FTA took place for ROW. It is important to take this fact into account since the FTA was implemented at the time the Asian crisis was taking place (late 1997), so it appears that the effects of the CC-FTA are clearly contaminated with this event. Furthermore, the second stage of this research that focuses on the Canadian investment returns in Chile will evidence not only the effects of the Asian crisis and the resulting speculative attacks against Latin-American currencies, but also the liquidity crisis that affected most Latin-American securities exchanges since 1996, the NASDAQ decline in 1999 and 2000, and September 11, 2001 events as major factors that explain the Canadian returns overseas and, in this case particularly, in Chile.

Let's have a close look at these findings. Table 14 presents the returns on Canadian investments in Chile, based on three alternative portfolios that replicate the Canadian asset position in Chile. All three portfolios are different weighted average returns between the publicly traded mining companies in Chile, as an estimation of the mining sector return, a

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[50] For instance, according to the International trade Center (WTO/UNCTAD), Chile accounted for more than 10% of world trade share in only 8 sub-chapters at the 4 digit HS level in 2001. Chilean exports of copper concentrates accounted for almost 40% of world trade in 2001, which is the only commodity in which Chile may be considered with a clear dominant position.

[51] Further insight will be provided to this statement after carefully analyzing the evolution of the Chile-EU FTA and the Chile-US FTA. But, we will have to wait for several years to have an adequate sample period.

diversified Chilean shares portfolio, based on the Santiago stock exchange IGPA market composite index and the mid term and long term Central Bank of Chile bonds return. Based on Caputo, Galarce and Radrigán[52] (2002) and personal calculations, almost 65% of Canadian investment in Chile is in the mining sector, mostly located in northern Chile. On the one hand, taking that fact into account, we have considered portfolio 3 as a 65% investment in the mining sector and 17.5% in the diversified stock and the bonds market, respectively. On the other hand, portfolio 1 and 2 are two alternatives less concentrated in the mining sector. Portfolio 1 is a 1/3 investment in mining, diversified stocks and bonds, respectively. Portfolio 2, in turn, is a 50% investment in the mining sector, 30% in the diversified stock portfolio and 20% in bonds[53].

Returns in Panel B of Table 14 were obtained according to equation (8).

Table 14: Canadian Investments in Chile Nominal Returns.

Panel A: Nominal Chilean Peso annual returns.

Year	Portfolio 1	Portfolio 2	Portfolio 3
1993			
1994	36.06%	43.57%	47.06%
1995	34.92%	55.74%	69.96%
1996	-15.13%	-20.11%	-24.11%
1997	-9.15%	-14.13%	-19.00%
1998	-14.71%	-18.15%	-19.21%
1999	23.97%	25.84%	23.44%
2000	-4.36%	-7.77%	-9.83%
2001	10.22%	10.59%	10.70%
2002	2.52%	3.29%	5.15%
Geom. Average	**5.49%**	**5.82%**	**5.42%**

[52] Caputo L., Galarce, G. and Radrigán, J. (2002). "*Análisis crítico del tratado de libre comercio Chile-Canadá en la perspectiva del ALCA*". Draft discussion paper. Red de Estudios de la Economía Mundial. Seminario 2002. México.

[53] Detailed tables with calculations and methodology are available upon request.

Panel B: Nominal Canadian Dollar annual returns.

Year	Nom. Exchange Rate	Portfolio 1	Portfolio 2	Portfolio 3
1,993	Ch$321.55			
1,994	302.53	44.61%	52.60%	56.31%
1,995	289.11	41.18%	62.97%	77.85%
1,996	302.37	-18.86%	-23.61%	-27.44%
1,997	302.84	-9.30%	-14.27%	-19.12%
1,998	310.28	-16.76%	-20.11%	-21.15%
1,999	342.46	12.32%	14.01%	11.84%
2,000	363.21	-9.82%	-13.04%	-14.98%
2,001	409.96	-2.35%	-2.02%	-1.92%
2,002	438.75	-4.20%	-3.48%	-1.75%
Geom. Average		**1.91%**	**2.23%**	**1.84%**

As we earlier argued, the liquidity crisis, the Asian crisis and the NASDAQ downturn, among other factors, clearly affected Canadian returns in Chile for the sample period. For instance, the Canadian dollar return average declined to 1.91% for portfolio 1, from 5.49% in Chilean Peso, which is a direct consequence of the depreciation of the Chilean currency especially after the speculative attacks of late 1997 and early 1998.

Table 15: Risk Adjusted Equivalent Canada's Portfolio.

	Risk adjusted Canada's Portfolio RP1			Risk adjusted Canada's Portfolio RP2		
	Port1	Port2	Port3	Port1	Port2	Port3
1994	12.11%	14.42%	17.25%	9.53%	11.84%	14.67%
1995	17.08%	18.73%	19.79%	14.50%	16.15%	17.21%
1996	17.31%	16.97%	14.59%	14.73%	14.39%	12.01%
1997	-0.17%	-4.24%	-10.15%	-2.75%	-6.82%	-12.73%
1998	-1.88%	-5.13%	-7.76%	-4.46%	-7.71%	-10.34%
1999	30.35%	37.35%	40.36%	27.77%	34.77%	37.78%
2000	2.42%	-0.70%	-4.06%	-0.16%	-3.28%	-6.64%
2001	4.68%	6.84%	10.10%	2.10%	4.26%	7.52%
2002	-0.96%	-1.96%	-1.32%	-3.54%	-4.54%	-3.90%

Table 15 presents the risk adjusted Canadian portfolio return of equivalent portfolios to those considered in Chile but this time, invested in the local Canadian security markets. We considered the Toronto Stock Exchange metals and minerals closing quotations to assess the mining sector return in Canada, the TSE300 composite for the diversified stock portfolio and the Government of Canada marketable mid term and long term bonds (5 to 10 years and over 10 years, respectively). The results were adjusted for country risk (Chile

over Canada risk), considering the two different approaches described in section IV. RP1 is the Erb, Harvey and Viskanta (1995) hyperbolic model estimate of 440 bp and RP2 corresponds to the risk premium of 182 bp based on Chile's sovereign bonds.

We will consider the results from Table 15 as the expected returns for Canadian investment in Chile, on a yearly basis. If Canadian actual returns in Chile are above Table 15's estimate, excess positive return would have been found. If the opposite is true, excess negative return would take place. Combining Panel B of Table 14 with Table 15, we obtain the following excess returns for the Canadian investment in Chile.

Table 16: Canadian's Investment in Chile Excess Return.

	Actual - Expected return RP1			Actual - Expected return RP2		
	Port1	Port2	Port3	Port1	Port2	Port3
1993						
1994	32.51%	38.17%	39.06%	35.09%	40.75%	41.64%
1995	24.10%	44.24%	58.05%	26.68%	46.82%	60.63%
1996	-36.17%	-40.58%	-42.03%	-33.59%	-38.00%	-39.45%
1997	-9.13%	-10.03%	-8.97%	-6.55%	-7.45%	-6.39%
1998	-14.88%	-14.98%	-13.39%	-12.30%	-12.40%	-10.81%
1999	-18.03%	-23.34%	-28.52%	-15.45%	-20.76%	-25.94%
2000	-12.24%	-12.34%	-10.92%	-9.66%	-9.76%	-8.34%
2001	-7.03%	-8.86%	-12.02%	-4.45%	-6.28%	-9.44%
2002	-3.24%	-1.52%	-0.43%	-0.66%	1.06%	2.15%
1994-2002	**-44.13%**	**-29.25%**	**-19.17%**	**-20.91%**	**-6.03%**	**4.05%**
1997-2002	**-64.56%**	**-71.08%**	**-74.25%**	**-49.08%**	**-55.60%**	**-58.77%**

Note: Cumulated excess returns are reported with bold characters, for the 1994-2002 period and 1997-2002, or the post CC-FTA period. It is the simple sum of the yearly Actual – Expected returns.

Results from Table 16 are clear and we may state that considerable losses are reported for the sampling period[54], or that Canadian investors experienced negative excess return in Chile between 1994 and 2002. Although it would be tempting to conclude that the cumulated 7433.94 billion US$ that Canadian companies invested in Chile should have remained in Canada, we may still have to find an explanation for the systematic increase of Canadian investment in Chile reported in Table 2 in spite of such negative returns.

[54] No statistical inference analysis is provided for the losses, but they appear to be considerable, which allows us to affirm qualitatively that they were present, although not specifying their most likely real magnitude.

Two non exclusive hypotheses arise from our findings. The first one would claim that losses in Table 16 do not reflect long term expected returns from the investments in Chile. Economic conjuncture effects would explain the negative returns[55] and therefore, should not remain in the long term, since the Chilean economic structure is strong (Institutions, regulations, politics, fundamental variables and growth variables). If international investors do not suffer from myopia, they would be capable to anticipate better long term results. Furthermore, the Chilean economic slowdown of the latest years would have provided low priced or undervalued securities in the local market that would have attracted foreign investment[56], and that certainly includes Canada.

The second hypothesis deals with Ethier's regional framework. Canadian investment in Chile would be profiting from the FTA, by implementing the first stage of production of Canadian value added products in Chile. Then benefiting from exports of those products to Canada duty free and achieving the second stage of production (more human capital intensive) in the latter economy. If this hypothesis holds, the negative returns reported would be a fair price to pay for low investment barriers in Chile and the zero customs tariff effect in the Ethier's capital-goods flow model described earlier.

[55] For the reasons that we discussed earlier: Asian crisis, currency speculation, liquidity crisis, NASDAQ bubble.

[56] Several Santiago Stock Exchange listed companies' attained market values close to their book value in the late nineties.

Conclusions.

We have tested Ethier's new regionalism framework under the Canada-Chile free trade agreement perspective. Chile's exports to Canada experienced a 9.2% growth between 1997 and 2002, but no considerable increase has been observed in Canadian exports towards Chile. Nevertheless, Canada's direct investment in the southern country averaged an 11.7% yearly growth for the 1997-2002 periods. Considering Chile's closest competing economies, no clear statistical evidence of trade diversion has been found. Under the world perspective, results are not favorable to trade diversion either. We have found that Chile does not have a significant effect on Canadian imports from the rest of the world. Global trade growth with Canada experienced a slowdown in the 1997-2002 periods, where the FTA between Canada and Chile was operative. The negative effect was mainly caused by the international economic conjuncture but not necessarily by Chile's FTA with Canada. The small share of Chilean trade in the international context would mainly explain why no substantial trade diversion took place.

Although Canadian investment in Chile experienced a systematic growth in the sample period, it also evidenced significant negative returns when compared with equivalent local market (Canadian) asset portfolios' risk adjusted returns. Two alternative explanations could put light the growth in investment associated with negative returns issue. The first one deals with the fact that such negative returns are due to mid term economic slowdown that affected the Chilean economy but that investors are considering fundamental variables in their investment decisions, that permits more optimistic valuation of Chile's businesses in the long term. The second explanation is a direct application of Ethier's model, since Canadian companies would be "paying" with negative returns the option to implement an early production phase in Chile and then benefit from the FTA to export the semi-manufactured products to Canada (duty free) for more human capital intensive phases in the production chain. An increased sample period will be available in a few years, in order to verify which (if any) of the referred explanations (hypothesis) hold.

Further analysis on more disaggregated data (for instance, 4 digit HS level), could also be suggested for future research. Furthermore, a comparison between the Chilean FTA's with Canada, the US and the European Union would be valuable for more insight on North-South type of FTA's.

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