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Preface

The primary goal of the ILO is to contribute, with member States, to achieve full and productive employment and decent work for all, including women and young people, a goal embedded in the ILO Declaration 2008 on *Social Justice for a Fair Globalization, and*[1] which has now been widely adopted by the international community.

In order to support member States and the social partners to reach the goal, the ILO pursues a Decent Work Agenda which comprises four interrelated areas: Respect for fundamental worker's rights and international labour standards, employment promotion, social protection and social dialogue. Explanations of this integrated approach and related challenges are contained in a number of key documents: in those explaining and elaborating the concept of decent work,[2] in the Employment Policy Convention, 1964 (No. 122), and in the Global Employment Agenda.

The Global Employment Agenda was developed by the ILO through tripartite consensus of its Governing Body's Employment and Social Policy Committee. Since its adoption in 2003 it has been further articulated and made more operational and today it constitutes the basic framework through which the ILO pursues the objective of placing employment at the centre of economic and social policies.[3]

The Employment Sector is fully engaged in the implementation of the Global Employment Agenda, and is doing so through a large range of technical support and capacity building activities, advisory services and policy research. As part of its research and publications programme, the Employment Sector promotes knowledge-generation around key policy issues and topics conforming to the core elements of the Global Employment Agenda and the Decent Work Agenda. The Sector's publications consist of books, monographs, working papers, employment reports and policy briefs.[4]

The *Employment Working Papers* series is designed to disseminate the main findings of research initiatives undertaken by the various departments and programmes of the Sector. The working papers are intended to encourage exchange of ideas and to stimulate debate. The views expressed are the responsibility of the author(s) and do not necessarily represent those of the ILO.

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[1] See http://www.ilo.org/public/english/bureau/dgo/download/dg_announce_en.pdf

[2] See the successive Reports of the Director-General to the International Labour Conference: *Decent work* (1999); *Reducing the decent work deficit: A global challenge* (2001); *Working out of poverty* (2003).

[3] See http://www.ilo.org/gea. And in particular: *Implementing the Global Employment Agenda: Employment strategies in support of decent work, "Vision" document*, ILO, 2006.

[4] See http://www.ilo.org/employment.

Foreword

In the context of the ILO's broader goal of obtaining decent work for all, the Global Employment Agenda sets out the priority areas around which action is needed if the objective of full and productive employment is to be achieved.[5] The first of these core elements concerns action to *promote trade and investment for productive employment and market access for developing countries.*[6]

The gains from trade liberalization can be expected to have long-term positive effects for an economy in terms of the number of jobs and wages earned. However, the immediate impact on employment and associated distributional changes may be negative, depending on country specific factors such as the functioning of product and labour markets.

Understanding the employment implications of trade and foreign investment is a necessary step in designing effective and coherent employment and social policies that can help a country to maximize the positive employment effects of trade and address the challenges that may arise from economic adjustment. It is with this objective in mind that the present study was undertaken. The study is part of a broader effort to strengthen research on trade and employment. It was commissioned at the request of the Chile's department of economic relations abroad (*Dirección de Relaciones Económicas*, Direcon) in the Chilean Ministry of Foreign Affairs.

Chile is a country in which the first wave of trade liberalization during the 1970s and 1980s was associated with considerable social costs and economic decline for many domestic enterprises. However, democratic governments from 1990s onwards have continued the process of integration into the global economy and its trade regime is one of the most liberal in the world today. The study shows that after a difficult period of adjustment, Chile has begun to reap the gains of trade.

Progress with the new round of multilateral trade negotiations has been slow. In this context, Chile's strategy has been to conclude bilateral agreements with the largest number of significant trading partners. As the present study shows, not only did this result in an increase in trade overall, but Chile's economic integration into the world economy deepened and in 2005, it was more open than the world average. Chile's remarkable trade performance together with its high desirability as a destination for FDI in the region stimulated growth and the diversification of the export portfolio. This study provides an overview of these developments and assesses the employment effects of trade in Chile, particularly the effect of trade with countries with which Chile has signed trade agreements.

As we know, estimating the effects of trade and foreign domestic investment on employment is "more an art than a science". Results are often highly sensitive to theoretical assumptions and empirical methods. Apart from data constraints and difficulties in matching trade, output and employment data one of the major challenges

[5] See "Implementing the Global Employment Agenda: Employment Strategies in Support of Decent Work", 2006, which provides the policy framework for making operational the Global Employment Agenda.

[6] See also "Review of the Core Elements of the Global Employment Agenda", ILO Governing Body, March 2003, GB.286/ESP/1(Rev.), 286th Session and "Overview of the Global Employment Agenda implementation", Governing Body, November 2007, GB.300/ESP/2, 300th Session.

researchers face – which the present study acknowledges – is the difficulty in distinguishing between the different possible causes for observed changes in the levels of employment. A number of other policies, including macro economic and labour market policies, may also affect an economy's level of employment.

The present study uses an estimation method based on the input-output matrix for Chile. What is innovative about the study is that it not only estimates the impact that trade has had on employment in export sectors ("direct employment") but it also estimates the secondary effects ("indirect employment") in sectors producing inputs or supplying services as part of a production chain. The study combines this with more detailed analysis of the employment characteristics in the different sectors and production chains drawing on a number of different approaches. Regarding foreign direct investment, the study contains an estimate of the employment effect due to construction activities associated with productive investment projects.

The study finds that:

- Expanding total exports have been associated with an increase in direct employment and an even higher increase in indirect employment. The impact of total exports on salaried employment in 2003 amounted to 716,624 jobs, an increase of 28.6 per cent from 1996.
- Trade agreements with bilateral partners generated new jobs. Salaried employment generated by these trade agreements jumped from 241,000 in 1996 to 447,000 in 2003.
- Exports in the context of global supply chains have played a significant role in employment creation in recent years. Indirect employment now accounts for a larger share of total jobs created, rising from 38.6 per cent of total jobs in 1996 to 45.9 per cent in 2003.
- Some sectors experienced negative outcomes as a result of imports (textiles, apparel and footwear, metal products, furniture and other manufacturing) while others experienced gains in employment (metals, agriculture, livestock, fishing, forestry, wood and paper and manufacture of wine). However, the net effect of trade agreements on employment remains positive.
- Foreign direct investment has a considerable impact on employment creation. On average, US$ 1 million in investment projects (without counting mergers or short-term flows) created 58.5 jobs.

The picture that emerges in a context of an increasing number of bilateral and regional trade arrangements is that trade is generating positive employment effects and that this is also having important multiplier effects through production linkages with the rest of the economy. The study estimates a continued increase in employment as a result of trade for the 2006-2010 period.

In respect of the quality of the employment, the study finds that those sectors which had the highest proportion of indirect jobs within total employment were also those where the gap in the average wage for direct and indirect employment was greatest. The author suggests that changes in the structure of production in some sectors – essentially an increase in subcontracting (indirect employment) and supply chain activity associated with growing openness to trade – was linked with a rise in wage inequality. Other dimensions of employment quality are also important when considering the impact of trade. For example, workers in the main export sectors face specific health risks (such as accidents in mining, or the use of pesticides in agro exports) which need to be addressed although they are difficult to measure in quantitative studies.

The results of this study underline the need for a comprehensive approach to employment and social policies that focus not only on the direct employment effects in export sectors, but also consider the links in the production chain so that countries can maximize the positive secondary job creation effects. It also provides insight into the challenges in terms of equality that may arise from trade where a higher number of jobs are created in the production chain than in firms producing directly for exports.

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I. Introduction

The purpose of this study is to estimate the impact on job creation of exports to countries with which Chile has signed trade agreements and to explore the main characteristics of this phenomenon, and to identify the effect of foreign direct investment (FDI) on job creation. Interest in this kind of analysis has grown in recent years, given the significant rise in processes involving more openness to foreign trade worldwide.[7] This study explores the national-level impacts of this strategy, centred on integration into international markets, which has expanded in recent years through the signing of new trade agreements with major economies around the world.

There are many problems involved in developing a study of this nature, among them restrictions on information. Moreover, key factors limit the effectiveness of any method used to identify the relationships between foreign trade variables and productive activities, and the associated employment effects (both the quantity and quality of employment).

The method used here is based on input-output matrices available for the Chilean economy for 1996 and 2003. These make it possible to identify trade's effects on export-oriented production sectors (or import competing) and sectors forming part of the productive chain associated with the main economic sector. We also used this method to estimate FDI impacts on productive activity. To do so, we subtracted FDI used for company buy-outs and mergers from total FDI. By comparing this information with employment statistics we were able to estimate the effect on total employment, and the share held by direct and indirect employment. Moreover, using socio-economic surveys we were able to identify some of the characteristics of these jobs. Nonetheless, given the characteristics of the data sources used, employment estimates only reflect employment in the formal sector, so should be treated as tending toward the lower limit. This is especially relevant in the case of results based on the FDI effect, since this method estimates the impact of investment in construction on employment, without considering impacts associated with operations and production, once each project is completed.

The enormous openness of the Chilean economy in terms of both trade and finance is rooted in a process that began in the mid-1970s. It has consolidated over time and its expansion has been an explicit goal of the different governments in power since the return to democracy in the early 1990s.

Because Chile's exports are based primarily on natural resources, there is a tendency to assume that they have little impact on employment or may produce mainly low-productivity, low-wage jobs. This study's results contradict those assumptions, revealing a significant impact that has grown over time, and whose importance should rise in the medium term.

In fact, salaried employment associated with total exports reached 716,624 jobs in 2003, up to 28.6 per cent over 1996. If these results are compared to past studies, we find that for every million US dollars in exports (2003 figures), salaried employment generated has risen from 8.6 jobs in 1979 to 20 in 1996, and 33.1 in 2003. This suggests that total export-generated employment represented some 15.8

[7] See "*Comercio y Empleo. Los retos de la investigación sobre las políticas*" (Trade and Employment: Challenges for Policy Research."), carried out jointly with the World Trade Organization and the International Labour Office, 2007.

per cent of salaried employment in 1996, with this coefficient rising to 20.3 per cent of total salaried private sector jobs in 2003.

Meanwhile, FDI's impact on employment is significant, since every one million dollars (2003) in productive investment (using the corrected FDI that is the indicator minus buy-outs and mergers, described above) generates 58.5, mainly direct, jobs. This impact has fallen over time, however, since this investment generated 92.8 jobs in the 1990s. Thus, while FDI's impact on employment is significantly higher than that of exports (despite this decline), its impact on total salaried employment is marginal (no more than 2 per cent of the total for any case), since total corrected FDI only amounts to about 5 per cent of total exports. Thus, exports' and FDI's impact on salaried employment is estimated at 22 per cent.

Indeed, salaried employment associated with trade agreements rose from 241,000 in 1996 to 447,000 in 2003, while the share of total salaried employment increased from 43.3 per cent to 62.4 per cent during the same period.

For the 2007-2010 period, based on scenarios projected using trends in export growth to countries with trade agreements in recent years, minus any extraordinary effects that deviated from medium-term trends (such as the high growth posted by copper in recent years), we estimate that the relevant employment should rise to a figure between 223,000 and 446,000 new jobs. This means that in the most optimistic scenario (which includes China and Japan as new trading partners) the rise in new jobs could double levels apparent in 2003. These calculations, however, must be analysed in more detail, since they assume that investment will rise proportionately to the productive capacity required to meet additional demand for exports, and that factors such as the real exchange rate will not negatively affect exports.

The composition of total employment associated with export activities has changed over time, since indirect employment's share of total employment raised from 36.4 per cent in 1996 to 45.9 per cent in 2003. This shift paralleled a rise in the share of exports to countries covered by trade agreements.

Because employment is generated both directly, in mainstream economic activity, and indirectly, along the production chain, job characteristics vary enormously, revealing no common pattern. When we analyse wage levels for each sector, gaps between wages in direct and indirect sectors or average wages for direct over indirect employment, even greater differences appear, with indirect employment accounting for the largest share of total employment. This is the case, for example, for metal ore extraction activities (copper and iron), where large firms and high wages prevail in the main sector, while production chains involve specialized services, the wholesale and retail trade, and land transport sectors.

All this points to the need to explore this dimension more, through special studies of the different production chains, to characterize production relations and, on this basis, identify the specific demands governing both labour and working conditions.

Section II of this study reviews Chile's strategy of growing integration in recent years, analysing in detail the different trade agreements it has signed. Section III analyses information on trends in exports, by destination, and imports, by origin, as well as providing figures for foreign direct investment. Section IV estimates the impact of exports on employment and analyses its characteristics. Finally, the last chapter summarises the main results.

II. Openness and trade agreements

Over time, Chile has taken an open approach to foreign trade and sought to specialize in producing those goods for which it is the most efficient, thanks to either natural or acquired competitive advantages. The small size of the Chilean economy has therefore made the external market the centrepiece of its strategy for international integration.

1. The dimensions of openness to trade

This process of opening up to external markets has taken place in two stages: a unilateral process that began in the mid-1970s; followed by a commitment to the multilateral system and, since 1993, the development of additional bilateral agreements.

1.1 In the unilateral sphere

For Chile, the value of unilateral openness has become clear, as it has sped the growth of both traditional and non-traditional exports and encouraged a more diverse range of products and a much broader set of destination markets

Chile began this process in the 1970s, with high tariffs, which it steadily reduced during the second half of the decade. Thus, an average nominal tariff of over 100 per cent fell to an across-the-board 11 per cent by 1998, with a general tariff of 6 per cent in effect since 1 January 2003.

Successive governments applied measures that included a market-driven foreign exchange rate complemented by efforts to streamline the procedures involved in foreign trade, to develop export-friendly institutions and programmes, and to attract foreign investment.

Nonetheless, a unilateral opening to trade does not bring with it an equivalent openness on the part of trading partners' markets, nor does it change customs or technical barriers or automatically eliminate restrictive practices. This reality led Chile to a strategy of building trade agreements to fully develop trade, since making the most of the benefits of international trade goes beyond the domestic policies applied by a country, and above all reflects those applied by trading partners.

From this perspective, agreements develop reciprocal trade opportunities that make the most of rising trade between parties, since negotiations create new options for ongoing cooperation, once countries have identified joint strategies. Moreover, the more they lead to a stable and transparent set of rules through specific obligations that reduce the temptation to default on commitments, the more they help to reduce transaction costs.

1.2 Multilateral arrangements

Chile's interest in participating in multilateral agreements lies mainly in the economic concessions enjoyed by members, among them non-discrimination, equal treatment with local firms and most favoured nation clauses, independently of their size, relative weight or level of development.

The Government has made major efforts to support the liberalization of foreign trade in different multilateral fora. It has participated actively in the GATT/WTO negotiation rounds and belongs to APEC (Asia-Pacific Economic Cooperation Forum). It also belongs to two groups of countries that have played a leading role in recent negotiations, the Cairns Group,[8] formed during the Uruguay Round, and the G20,[9] which arose from the current Doha Round.

Chile's presence internationally dates back to 1947 when, along with 23 other countries, it signed the General Agreement of Tariffs and Trade (GATT), whose purpose was to boost trade by reducing tariffs and non-tariff restrictions. The GATT gave rise to the World Trade Organization (WTO), currently 148 member countries,[10] which regulates 90 per cent of world trade, and operates through rounds of multilateral trade negotiations. To date, it has held eight of these, the latest being the Uruguay Round in 1995. Chile has participated in every one and this has improved access to foreign markets for a large percentage of its export products.

Along with the rest of the multilateral agreements signed at the end of the Uruguay Round, Chile also signed the Agreement on Agriculture (AoA) to reduce distortions in agricultural trade caused by protectionism and subsidies.[11] Nonetheless, negotiations to establish new commitments, scheduled to start in 1999, have met with little consensus, essentially due to profound differences regarding the extent and pace of agricultural reform.

Another major multilateral initiative, in this case at the regional level, in which Chile participates, is the Forum for Asia-Pacific Economic Cooperation, APEC,[12] created in 1989 by Australia and Japan, during the first meeting of Asian-Pacific economies. At present, it has 21 members: one from Europe, five from America, nine from Asia and six from Oceania. Chile has participated since 1994. This is a non-institutional intergovernmental consulting forum for discussing issues involving regional economic cooperation. Its main goals are to support the region's growth and development, contribute to liberalization of the world economy, reinforce the positive effects of growing economic interdependence, and reduce barriers to trade in goods, services and investment.

Individual Action Plans, meanwhile, describe how each economy will attempt to meet APEC's trade and investment objectives. They are considered the most effective instrument for achieving trade liberalization and greater transparency, integrating real and up-to-date knowledge into the liberalization process. Chile presented its Individual Action Plan in November 1996, committing to unilaterally cut tariffs on most of its products to zero per cent in 2010, through balanced, reciprocal agreements, for most products.

[8] Currently 18 countries that support free trade and the elimination of subsidies involving agricultural goods.

[9] Currently 19 countries that seek the elimination of subsidies and tariffs applied by developed countries. Members include China, Brazil and India.

[10] Through February 2005.

[11] For more details, see ODEPA (2005).

[12] The Free Trade Area of the Americas should also be considered, but to date it is paralyzed due to differences between the governments of the United States and Brazil.

Despite Chile's longstanding and active participation in multilateral initiatives, results have been limited due to the difficulty in reaching agreements with a large number of countries. For example, the most-favoured nation clause, which is a pillar of the system and which has allowed Chile to benefit from more open trade negotiated with other countries, can also become a limiting factor when Chile is not a major producer of a given good at the world level. However, these initiatives remain a priority and have opened up new opportunities for negotiation with those countries or groups of countries with which Chile trades the most (the United States, Mercosur, Asia-Pacific and the European Union).

1.3 Bilateral agreements

The regional level has served as the starting point for bilateral agreements, especially through Chile's participation in the current *Asociación Latinoamericana de Integración* (the Latin American Integration Association, ALADI), which replaced the Latin American Free Trade Association. As a result of this commitment, Chile signed partial agreements (*Acuerdos de Alcance Parcial*, AAP) with: Argentina, Bolivia, Brazil, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela.

Note that as part of ALADI, Chile signed partial agreements with each member, limiting the list of products subject to tariff cuts, an approach used widely in the 1980s. In the 1990s, however, agreements between Chile and these countries broadened in terms of both trade and new issues covered, among them: services, transport, technical standards, and government acquisitions. Thus, Chile signed agreements with five Central American countries and the US and, carrying on its highly flexible approach, with the European Union, South Korea, the European Free Trade Association (EFTA) and, most recently, China, among others.

Harrison, Rutherford and Tarr (1997) have provided an initial estimation of the economic impact of Chile's policy of multilateral opening. They examined the impacts on social welfare, measured as an annual percentage of GDP, of the different trade options open to the country. The authors show how welfare is affected as new agreements are signed, and examine the impact of different policy options that exclude some products (such as sensitive agricultural products) or reduce the most-favoured nation tariff from 11 per cent to 6 per cent.

The main conclusions in this study support Chile's approach, since they indicate that the best strategy has been to include all products under these agreements and to sign agreements with the largest number of partners, as the following table indicates.

Table 1.1: Chile, estimating welfare gains from trade agreements (percentage of GDP)

Products covered	Mercosur	NAFTA	NAFTA and Mercosur	NAFTA, Mercosur and European Union	NAFTA, Mercosur, the European Union and the rest of South America	Canada, Mexico, Mercosur, the European Union and the rest of South America
No exceptions	-0.43	1.04	1.48	5.24	8.40	8.16
Exceptions	-0.43	1.04	1.48	2.02	2.48	0.44
Exceptions and zero tariff	0.35	1.70	2.01	2.29	2.66	0.87
Excluding only agricultural products in the European Union agreement	-0.43	1.04	1.48	2.02	5.48	3.90
Excluding only agricultural products in the European Union and a 6 per cent tariff.	0.35	1.70	2.01	2.29	5.71	4.44

Source: Harrison, Rutherford and Tarr (1997), quoted in Sáez and Valdez (1999).

2. Characteristics of Chile's trade agreements

This section describes and analyses the main characteristics of current trade agreements.

2.1 Nature and Type of Trade Agreements[13]

Chile's strategy for opening up to trade, developed from 1990 onward, has focused on achieving Economic Complementation Agreements and Free Trade Agreements, as listed in Table 2-1.

According to the type,[14] we can distinguish between *preferential trade* or *Economic Complementation Agreements* (ECA) on the one hand, which normally improve bilateral tariffs granted on a reciprocal basis through previous agreements, during the 1980s, within the framework of ALADI. These have been joined by *Free Trade Agreements* (FTA), which are more ambitious than the above, since they eliminate tariffs on established goods and within a specific timeframe, and tend to include investment and service market integration mechanisms.

[13] Based on Mideplan (2003).

[14] Refers solely to the type of agreements adopted by Chile. Customs unions, common markets and monetary unions are other options.

Table 2-1: Chile's trade agreements, 1993–2006

Country or Group of countries	Type of Agreement	Date signed	Date came into effect
Venezuela	Economic Complementation Agreement	02-04-1993	01-07-1993
Bolivia	Economic Complementation Agreement	06-04-1993	01-07-1993
Colombia	Economic Complementation Agreement	06-12-1993	01-01-1994
Ecuador	Economic Complementation Agreement	20-12-1994	01-01-1995
MERCOSUR	Economic Complementation Agreement	25-06-1996	01-10-1996
Canada	Free Trade Agreement	05-12-1996	05-07-1997
Peru	Economic Complementation Agreement	22-06-1998	01-07-1998
México	Free Trade Agreement	01-10-1998	01-08-1999
Costa Rica	Free Trade Agreement	18-10-1999	15-02–2002
El Salvador	Free Trade Agreement	18-10-1999	03-06-2002
Guatemala	Free Trade Agreement	18-10-1999	Bilateral, under negotiation
Honduras	Free Trade Agreement	18-10-1999	Awaiting congressional approval
Nicaragua	Free Trade Agreement	18-10-1999	Bilateral, under negotiation
European Union	Association Agreement	18-11-2002	01-02-2003
South Korea	Free Trade Agreement	15-02-2003	01-04-2004
United States	Free Trade Agreement	06-06-2003	01-01-2004
AELC (EFTA)	Free Trade Agreement	26-06-2003	01-12-2004
China	Free Trade Agreement	18-11-2005	01-10-2006
P4	Association Agreement	18-07-2005	17-10-2006
Panamá	Free Trade Agreement	27-06-2006	Not yet in effect
Peru	Free Trade Agreement	22-08-2006	Not yet in effect

Source: Direcon and www.sice.oas.org

2.2 Tariff reduction programmes and treatment of investment

In the agreements covering tariff liberalization and investment, signed by Chile from the 1990s onwards, the central feature is a tariff liberalization schedule, essential to analyse changes in the flows of exportable goods through bilateral trade, notwithstanding the growing importance of additional clauses, particularly those governing investment.

Table 2.2 presents the main characteristics of trade agreements signed by Chile from 1992-2005, marked by tariff reduction schedules in particular; both in general and specific terms, exclusions, and other specificities. Moreover, information is included on sections concerning the treatment of investment.

i) Agreements with Andean countries: Venezuela, Colombia, Ecuador, Bolivia and Peru

Agreements signed with Venezuela, Colombia and Ecuador were negotiated in a brief period between 1993 and 1995, and have similar formats and structures. Although contemporary with the others, the agreement with Bolivia has very limited coverage, while the agreement with Peru is broader and more recent (it came into effect in July 1998), and includes a more differentiated tariff structure, in terms of the pace and periods for tariff reduction, than the others.

Initial tariff levels when these five agreements came into effect all involved a reduction in Chile's uniform nominal tariff for the period, set at 11 per cent. Meanwhile, Bolivia faced a similar rate of 10 per cent, while Venezuela, Colombia and Ecuador had a simple shared nominal structure consisting of four scaled initial tariffs, according to the value added to the product.

The format used in tariff agreements with Venezuela, Colombia and Ecuador was similar, although the product lists covered by the same programme differed for each country in terms of the quantity and composition of items covered. These include a *general schedule* of tariff reduction covering all products not specifically included in product lists subject to tariff reduction schedules. They also include a programme applied to products included in a previous partial agreement (*Acuerdo de Alcance Parcial*, also called *historic heritage* or, in Spanish *patrimonio histórico*), signed bilaterally as part of ALADI, whose tariff preferences are respected and improved, until they reach full reduction, at their own pace and according to their own deadlines. Within this scheme, *special tariff reduction schedules* are included, which move ahead more slowly than the general schedule, due to greater sensitivity to competition.

A third category, where it exists, covers *products* that each country excludes from any future reduction, or at least until a new formal negotiation process. *Specific reduction schedules* are also included, for some economic sectors.

The pace of reductions varied, but by January 1998, at the latest all tariffs covered were reduced to zero. For products in the *historical heritage* category, tariff cuts were scheduled on a case-by-case basis. Ecuador, for example, reduced tariffs by 100 per cent on 394 items previously benefited by Chile's export supply. Colombia, meanwhile, favoured Chile with 459 items, of which 442 received an immediate reduction of 100 per cent, while the remaining 17 items were fully liberated in 1997. In Venezuela's case, tariff cuts were erratic, with reductions to some items being frozen and then abruptly unfrozen at the period's end, although the process was nonetheless completed by 1997. Moreover, the slow or *special* reduction schedule differed as the zero tariff was only achieved two years later.

Exception lists for Ecuador, Venezuela and Colombia included 238, 211 and 520 tariff items, respectively. In 1997 (Colombia) and 1998 (Venezuela), however, initial exceptions lists were replaced by ten new reduction schedules.

In the case of Peru, an immediate reduction, covering 2,600 items was approved for reciprocal trade once the agreement came into effect. Slower reductions taking five, ten, 15 and 18 years were established so tariffs will be fully reduced by 1 July 2016. The agreement also includes a liberalization schedule for textile sector products, over periods covering three, four, five and eight years, with full reduction on 1 July 2006.

Finally, the Chile-Bolivia agreement included non-reciprocal tariff concessions granted by Chile on imports from that country (32 items), preferences granted by Bolivia (153 items) and preferences granted by Chile (201 items). Unlike previous agreements, this one did not involve deepening preferential tariffs; in contrast, in 1997 both countries signed a seventh additional protocol (*Séptimo Protocolo Adicional del acuerdo*), setting the universe of tariff preferences Bolivia granted to Chile at 306 items and by Chile to Bolivia at 393 items.

Finally, in terms of the Andean countries, except for Peru, almost all of the items subject to tariff reduction have ended up with zero tariffs.

Table 2-2: Main features of tariff reduction and investment treatment in trade agreements signed by Chile: 1992 - 2006

Countries	Tariffs				Investment
	General Reduction	Scheduled Reduction	Main Exceptions	Other Considerations	
Mexico (ECA Nº 17) 01-01-1992	A common, maximum tariff is established. 10% ad valorem.	5-year period: from 10% to 0%, for general reduction. 8-year period: from 10% to 0% for special tariff reduction. Preferential tariffs from partial and regional agreements signed within ALADI continue.	Does not apply to 92 items from Mexico and 100 from Chile.		
Mexico (FTA) 01-01-1998	All customs duties on goods from each party eliminated.		Exception lists include 99 items in Chile's case (agriculture and forestry items subject to price bands) and 89 items in Mexico (dairy products, grapes, apples and corn).	Almost all Mexican items subject to reduction in the ECA Nº 1, later extended in this agreement have stood at 0 per cent since 2001.	Each party will grant the other party's investors equal treatment to that granted under similar circumstances to its own investors in terms of establishment, purchasing, expansion, administration, management, operations, sale or other rules regarding investment.
Bolivia (ECA Nº 22) 06-04-1993	Non-reciprocal tariff concessions to Bolivia: 32 items. Preferential tariffs to Chile: 153 items and to Bolivia: 201 items.	Preferential tariffs specified in partial and regional agreements within ALADI continue.	Only those specified previously applied.	An additional protocol (30-06-1997) added 306 items to Bolivia's preferential treatment of Chile and 393 items to Chile's preferential treatment of Bolivia.	Equal treatment of investment to those from the other country. Capital from signatory countries will enjoy no less favourable treatment than domestic capital.
Venezuela (ECA Nº 23) 01-06-1993	Reduced from 20% to 0% in 1996.	Products covered by "historic heritage" dealt with on a case-by-case basis: 33 items at a 0% tariff from the start and 423 in 1997. Slow reduction on 313 products to achieve zero tariffs in 2000.	211 items, with equivalent compensation from Chile.	A third additional protocol (01-09-1998) established 10 new reduction schedules for all items on the exception list. The automobile schedule favoured Chile in the case of three vehicle-related items. A second additional protocol (11-10-1995) boosted this by 16 items.	Fosters investment as much with capital from one or both countries as from possible third parties. Better treatment to capital from the other signatory country, whether capital is domestic or foreign.

Countries	Tariffs				Investment
	General reduction	Scheduled reduction	Main exceptions	Other considerations	
Colombia (ECA Nº 24) 01-01-1994	Reduced from 20% to 0% in 1997.	Products covered by "Historic heritage": 442 items with a zero tariff in 1998 and 17 in 1997. Slow reduction for 337 products to reach a zero tariff in 2000.	520 items with equivalent compensation on Chile's part.	An additional protocol (14-08-1997) established 10 new reduction schedules for all items on the exception list. An automobile schedule favoured Chile in the case of three vehicle-related items.	Fosters investment as much with capital from one or both countries as from possible third parties. Better treatment to capital from the other signatory country, whether capital is domestic or foreign.
Ecuador (ECA Nº 32) 01-01-1995	Reduced from 20% to 0% in 1998.	Products covered by "Historic heritage": 394 items with zero tariff from the start. Slow reduction for 31 products to reach zero tariff in 2000.	238 items with equivalent compensation on Chile's part.	An automobile schedule favoured Chile in the case of 91 vehicle-related items, which must include at least 60 per cent of nationally produced elements.	Fosters investment as much with capital from one or both countries as from possible third parties. Better treatment to capital from the other signatory country, whether capital is domestic or foreign.
Mercosur (ECA Nº 35) 01-10-1996	40% reduction for 5,242 items and (Chile) 5,616 items. Zero tariff in 2004.	Products covered by "historic heritage": from 40% to 100% for some products from the start. Total reduction by 2004.	For Chilean products benefited, the agreement differentiates between sensitive products (with a 30 per cent initial reduction) and especially sensitive ones, allowed three years without reduction.	A free trade zone to be created within ten years, through the application of a trade liberalization schedule.	Agreements for the reciprocal promotion and protection of investment reaffirmed, and willingness to establish agreements to avoid double taxation expressed. Domestic treatment for signatory's products.
Peru (ECA Nº 38) 01-07-1998	Immediate reduction for 2,600 items.	Slow reduction over 5, 10 (agriculture), 15 (wine, paper, footwear, etc.) and 18 years (meat from fowl, wheat flour and wine items), until a zero tariff reached in 2016 on the last items.	Includes an additional schedule for the textile sector.	Commitment to refrain from maintaining existing subsidies beyond 21 December 2002.	Fosters investment as much with capital from one or both countries as from possible third parties. Domestic treatment for investment from the other country. Willingness to sign agreements to avoid double taxation.
Canada (FTA) 05-07-1997	Immediate total reduction covering 6,824 items.	Slow reduction over 3, 5, 6, and 7 years, which ended in 2003.	Includes a total of 96 items.	At the end of 2002, the reduction was completed, especially for those items for which the draw back must be eliminated.	Each party will grant the other party's investors a treatment no less favourable than that accorded to its own, in similar circumstances, in terms of establishment, purchasing, expansion, administration, managed, operation, sale or other investment rules.

Countries	Tariffs				Investment
	General reduction	Scheduled reduction	Main exceptions	Other considerations	
Costa Rica (FTA) 15-02-2002	Goods with immediate reduction.	Slow reduction for 3, 10 and 14 years, which ends in 2015.	Planed wood and boards.	Establishes that each party will gradually eliminate customs tariffs on all originating merchandise.	Each party will grant the other party's suppliers of cross-border and other services no less favourable treatment that that accorded its own equivalent providers.
El Salvador (FTA) 03-06-2002	Goods with immediate reduction.	Slow reduction over 5, 8 and 16 which ends in 2017.	Sugar from cane and beets, mixtures, meat from fowl and beef.	Establishes that each party will steadily eliminate customs tariffs on all originating merchandise.	Each party will grant the other party's suppliers of cross-border and other services no less favourable treatment that that accorded its own equivalent providers.
European Union (FTA) 01-02-2003	Immediate reduction covering almost 85% of Chilean exports.	Slow reduction over 4, 7 and 10 years. Starting in the 4th year, total goods with zero tariff covering 96.2 per cent by value of exports to EU.	Almost 0. 3 per cent of trade with the EU.	Includes a review clause covering excepted products, every three years.	Each party will grant the other party's suppliers of cross-border and other services no less favourable treatment that that accorded its own equivalent providers.
United States (FTA) 01-01-2004	Immediate reduction covering almost 87% of Chilean exports.	Slow reduction over 2, 4, 8, 10 and 12 years.	Except dairy products (quota nine times less than the original request).	Within 12 years all shipments will pay no tariffs.	Each party will grant the other party's investors no less favourable treatment than that granted in similar circumstances to its own investors in terms of establishment, purchasing, expansion, administration, management, operation and sale or any other provision for investment in its territory.
Republic of Korea (FTA) 01-04-2004	Immediate reduction to 87% of Chilean exports.	Slow reduction over 5, 7, 9, 10 and 16 years (the last with six years' grace).	Reduced list of tariff-reduction except sensitive products: Chilean pears, apples and rice, and Korean washers and refrigerators.	After seven years, Chile will have tariff-free access for 97 per cent of exports by value to the Korean market.	Each party will grant the other party's investors a treatment no less favourable than that accorded to its own, in similar circumstances, in terms of establishment, purchasing, expansion, administration, management, operation, sale or other investment rules.
EFTA (FTA) 01-12-2004	Immediate reduction (defined for each country) for more than 90% of Chilean exports and almost 96% of Norway's and Iceland's.	Partial reduction covering a fixed percentage of agricultural products that does not change over time and quotas according to those in effect under the WTO.	Agricultural and manufactured products excluded according to a single list for the four countries.	Ongoing updating under four review clauses, including automatic improvements to the functioning of anything that EFTA negotiates with the EU in terms of agro-industrial products.	Each party will grant the other party's suppliers of cross-border and other services no less favourable treatment that that accorded its own equivalent providers.
China (FTA) 01-10-2006	Immediate reduction covering 92% of Chilean exports.	Slow reduction over 1, 5 and 10 years.	Products excluded amount to 1% of Chilean exports and 3% of shipments to China.		No agreements on these matters included.
P4 (FTA) 17-10-2006	Immediate reduction covering 79.1% of Chilean exports; 94% of New Zealand's and 100% of Singapore's.	Slow reduction over 3, 5 and 10 years.	Milk product imports to see reductions over 12 years, with a six-year grace period.	A section covering bilateral and trilateral strategic renegotiations.	Each party will grant the other party's suppliers of cross-border and other services no less favourable treatment than that accorded its own equivalent providers.

Source: Author's own calculations using information from Direcon.

ii) Mercosur: Argentina and Brazil

It is worth noting that before Chile joined Mercosur, as of 1 January 1992, ECA Nº 16 between Argentina and Chile came into effect, cutting tariffs considerably. This agreement extended and consolidated preferential tariffs previously agreed upon by the signatory countries in the 1980s, in a series of partial agreements (Nº 26, Nº 5, Nº 16 and Nº 21).

ECA Nº 36, signed later by states belonging to Mercosur and Chile, came into effect in October 1996. It called for the creation of a free trade zone within ten years, through application of a trade liberalization programme applicable to a universe of 6.933 products from signatory countries. It also established full liberalization using a universal tariff no later than 2014.

It involved a complementary general reduction along with one for historic heritage, sharing the same eight-year deadline for reduction (January 2004), covering in the case of both parties some 90 per cent of items. As for historic heritage, unlike the general regime, a preferential margin of from 40 per cent to 100 per cent was established, with the latter coming into effect for some products at the same time as the agreement.

As in previous cases, a gradual reduction over ten years was also called for, and the agreement distinguished between sensitive and especially sensitive products. For the former (for example, methanol, wooden panels, diapers, cardboard boxes, vacuum cleaners and bicycles), an initial 30 per cent reduction was decided, frozen for three years, with total reduction scheduled for 2006. For especially sensitive products, a three-year reduction-free period was set up, with full reduction scheduled for 2006, covering three per cent of Chilean products enjoying preferences within Mercosur (208 items, such as wearing apparel, footwear and refrigerators) and 2.8 per cent of products enjoying preferential treatment from Chile (194 items).

Reduction schedules over 15, 16 and 18 years were also established, along with preferential conditions for sensitive products and those with reductions of up to 15 years. For many highly sensitive products, special conditions provide preferential access. For example Mercosur countries provided bilaterally or multilaterally significant preferences (from 62 per cent to 100 per cent) for fresh fruit (grapes, cherries, plums) and in some cases, preferential quotas for raisins, apples, pears, peaches, wine, tomato paste, motor vehicles, etc., while Chile has provided preferential quotas on beef, rice, tofu, trucks, buses and chassis. This all means that a significant number of products have had preferential access to Mercosur and to Chile since the agreement came into effect.

Once the agreement with Mercosur came into effect, at least in Argentina's case, a new cycle of reductions began, free of the distortions caused by some product elasticities in the past. However, many benefits took more than a decade to materialize, because reductions were slow to come into effect.

iii) Mexico

The ECA between Chile and Mexico agreed on consolidating a total shared tariff of 10 per cent ad valorem applicable to the imports of products from their respective countries, as of the date the agreement came into effect (1 January 1992). At the same time, the maximum shared tariff *overall* was gradually reduced.

As in previous cases, a special, slower pace for reductions was applied, and preferential tariffs established in the partial and regional agreements signed by Chile and Mexico within ALADI continued. A list of exceptions included 92 items from Mexico and 100 from Chile.

Overall, almost all Mexican items subject to tariff reduction, first in ECA Nº 17 (1992) and later extended through the reduction of the exception list, in the 1996 free trade agreement, stood at zero by 2001.

As per ECA N° 17 (1991), the Chile-Mexico free trade zone came into full effect on 1 January 1998. This agreement eliminated all customs tariffs on goods originating with either party as of that date, except for those goods included in exception lists, i.e. 99 items in Chile's case and 89 items in Mexico's. Forestry and agricultural products excepted by Chile were highly sensitive ones associated with price bands; in Mexico's case, they were dairy products, grapes, apples and corn.

iv) Canada

First of all, the Chile-Canada Free Trade Agreement eliminated tariffs on goods originating from the other party, except those included in the respective exception lists. Most goods in the tariff universe were immediately freed and a gradual schedule applied to different product lists.

It also reduced import tariffs on reciprocal trade from the moment it came into effect (5 July 1997), and established a special schedule for gradual reductions over three, five, six and seven years, along with the elimination of reintegration afforded exporters, no later than 1 January 2003 and a list of goods excluded from the process totalling 96 items.

Thus, by the end of 2001, tariffs on virtually all relevant Canadian items had been eliminated with others falling to zero by the end of 2002. The general schedule ended in January 2003 and the special schedules for a small number of items will end in 2014.

v) Central America

The treaty established that each party was to steadily reduce customs tariffs on all merchandise originating in other signatory countries, and reduction schedules between each Central American country and Chile function bilaterally. The Chile-Costa Rica reduction schedule was approved at the same time as the treaty; later a reduction schedule was approved for Chile-El Salvador; and the rest are still being negotiated.

vi) China

Agreement was reached on an immediate 92 per cent reduction on Chile's exports to China, in effect from the first day of the agreement. For China, this percentage stands at 50 per cent of current trade, and includes reductions in one, two, five and ten years on China's exports to Chile. To protect some sensitive sectors, product exclusions were approved covering 1 per cent of Chilean exports and 3 per cent of China's shipments to Chile.

Chilean exports to China subject to reductions immediately or within five years under the FTA include copper and other minerals, fresh vegetables, fish oils, fowl, fresh cherries, fresh peaches and nectarines, wood panels, smoked salmon,

cheese, peach preserves, chocolate and tomato paste. Moreover, tariffs on several products considered highly sensitive by China, among them fresh and frozen salmon, grapes and apples, were scheduled for reduction within ten rather than 15 years.

Chilean negotiators also ensured that sensitive products from Chile's perspective, such as cement, some chemicals, surgical gloves, and certain textile and apparel sector items remained within the ten-year category. Exceptions included agricultural products subject to price bands (wheat, flour and sugar), tires, some textile and apparel items, metallurgical goods and appliances. The number of products excluded by Chile stands at 152, all considered sensitive by domestic productive sectors.

vii) Republic of Korea

The FTA negotiated between Chile and Republic of Korea, provided key products within Chile's export basket with some substantial competitive advantages. This is Republic of Korea's only trade treaty and offers Chilean exporters tariff cuts available only to them, particularly favourable to fishing, mining, forestry, agricultural, manufacturing and agro-manufactured products.

The treaty covers a wide range of trade and investment issues, using an approach similar to that used in agreements with Canada, Mexico, Central America, the United States and the European Union. It specifies WTO obligations, setting up specific trade disciplines aiming to guarantee compliance with obligations, a system for settling major disputes and a capacity for commercial coercion.

Innovations included an effort to establish compatibility for later trade agreements, especially with the European Union; and in some cases the postponement of application of some specific discipline, until the results of other negotiations are known (with the United States, some aspects of the WTO, and, eventually, APEC).

In terms of the treaty's tariff regime, Chilean exports to the Korean market were divided into six lists, depending on the period scheduled for reduction. These lists cover: immediate reduction or reductions scheduled to take place within five, seven, nine, ten and 16 years (this last includes a six-year grace period). A category subject to review once the WTO's Doha round is completed was also included, along with products subject to tariff-free quotas. In the case of Korean imports, a calendar for reductions was negotiated that included five lists: immediate reduction, reduction within five, seven, ten and 13 years (this last period includes a five-year grace period).

Both parties also agreed to a small list of sensitive products that have been excluded from the tariff reduction process. These include Chilean pears, apples and rice, and Korean washers and refrigerators.

Analysed in light of these schedules, 87 per cent of Chilean exports subject to tariffs will see an immediate reduction, once the treaty comes into effect.

The five-year reduction period will benefit 6.3 per cent of items, 2.9 per cent of Chilean exports by value. Korea scheduled 53.5 per cent of Chile's total sales to that market within the seven-year period. Thus, after seven years, 97 per cent of Chile's exports to the Korean market will enjoy tariff-free access.

In terms of investment, the treaty consolidated the current judicial certainty regarding conditions for access and establishment of foreign investment in Chile. The treaty safeguards the rights of both parties' investments in goods and services, applying the same logic as that signed with the European Union, which grants *most favoured nation* status during the post-signing period, and safeguards the Central Bank's authority over monetary and foreign exchange issues, and the Foreign Investment Committee's faculties for setting contract terms and conditions.

Finally, one of the main difficulties was overcome, thus permitting the completion of negotiations, was the issue of financial sector investment. This was excluded from the treaty, but both parties agreed to evaluate their inclusion four years after the treaty comes into effect.

viii) European Free Trade Association (EFTA)

Through this agreement, more than 90 per cent of Chilean exports will enter the EFTA at a zero tariff from the first day of the agreement coming into effect, rising to almost 96 per cent in the case of Norway and Iceland.

This favourable perspective will benefit products of enormous importance within Chile's exports, among them copper, methanol, wood, wood pulp, fish meal, fresh fruit and vegetables, frozen goods, grape juice, fish, and potassium nitrate, among others. With a zero tariff, fish meal received preferential treatment, but EFTA members may change this. The treaty also includes products enjoying the preferred treatment that the EFTA accords to its main partner, the European Union, so their status will improve along with that of the EU. This provision will benefit yogurt, food pastes and cookies, among other items.

On reductions benefiting agricultural products, three categories were agreed upon: immediate reduction (defined separately with each country), partial reduction (set at a fixed percentage that does not change over time), and exclusions. Some products will also be subject to quotas, based on current WTO quotas.

With regard to manufactured goods, most are subject to immediate reductions, with a few exceptions (single list for the four countries). Moreover, in manufacturing Chile will reduce tariffs on certain products in four and six years, and for fisheries, most products are subject to immediate reductions.

This agreement differs from those signed previously in three ways. First, despite the fact that the other party is an economic bloc, each country involved is different geographically and therefore in terms of agricultural sensitivity. Given the diversity of their sectoral policies, they have different agricultural agreements with the EU and required the same from Chile. Secondly, given that agriculture is difficult in these countries and therefore subject to special protection, commitments to tariff reduction are relatively modest, many products are excluded, and measures are limited to immediate liberalization and ongoing preferential tariffs. Thirdly, commitments offer special protection to the highest value-added agri-manufactured goods, requiring cuts to tariffs on the manufactured components only.

In terms of imports, Chile will benefit from tariff-free imports on virtually all manufactured products, including capital goods, medicines, and agricultural inputs. Aside from manufacturing, EFTA countries requested access to the agricultural sector for a reduced list of products including live horses, seal meat, smoked mutton, among others. Finally, an important aspect of this FTA is that it involves updating on an ongoing basis.

ix) United States

Under this agreement, almost 87 per cent of Chile's exports to the United States will be subject to immediate reduction, rising to 95 per cent in eight years and 100 per cent of products subject to zero tariffs in 12 years. Agro-manufactured goods and sugar are included in this last period. Dairy products are subjected to a quota that is one-ninth (3,500 tons) of the amount originally requested, which triggered some outcries from this sector.

On services, disciplines based on the WTO's General Agreement on Trade in Services (GATS), particularly with regard to (non-discriminatory restrictions on) market access, domestic regulations and transparency.

In short, the results of tariff negotiations and other provisions for market access reflect some achievements. However, there was little progress made toward eliminating non-tariff barriers, which are as important or more important than tariffs themselves, when it comes to access to US markets. Neither government support, subsidies to producers, nor the repeated use of anti-dumping measures (which has become a main protective mechanism) formed part of negotiations. Because the US has many more non-tariff barriers, Chile's products will continue to face more difficult access despite this agreement.

x) The European Union

The agreement negotiated with the European Union established six categories of tariff reduction, which only exclude a few agricultural (those affected by price bands and dairy products, among others) and fishery (mackerel preserves) products. Thus, 85.1 per cent of total exports to the EU will be tariff free, from the moment the agreement comes into effect. Starting in the fourth year, total goods enjoying zero tariffs will amount to 96.2 per cent of Chile's exports to this market, by value.

Only 0.3 per cent of trade with the EU was exempted from the tariff reduction process. The agreement includes a "review clause" for these products, which means that every three years the feasibility of expanding tariff concessions on other agricultural products (for example, those covered by quotas) will be examined.

In terms of opening up the Chilean market, around 91 per cent of European exports will come in at a zero tariff once the agreement comes into effect. The rest of European trade will see tariffs gradually decline over five to ten years, with sensitive products from both agriculture and manufacturing being safeguarded.

In short, a cut of at least one percentage point per year in the tariff represents a reasonable situation for the more sensitive national producers competing with imports, bearing in mind that any economic sector must deal with the challenge of boosting its productivity by similar rates, with or without trade agreements. Likewise, tariff cuts to manufactured imports benefit domestic production overall, since they make inputs and capital goods imported from the EU for agriculture, agro-manufacturing, wine, mining, manufacturing, fishing, construction, land transport and services cheaper.

In terms of the direct tariff benefits, Chile will enjoy an actual paid tariff cut that currently stands at 1.9 per cent. This tariff is a consequence of the current structure of Chile's exports to the EU, which are primarily natural resources, particularly copper. If we compare the actual tariff paid on Chilean exports, taking

into consideration the Generalized System of Preferences (GSP) and the Most Favoured Nation (MFN) tariff that the rest of the world pays in the EU, it is clear that natural resources on average pay a tariff of 0.61 per cent versus 0.64 per cent MFN; processed natural resources face the same 3.5 per cent as the MFN tariff; while manufactured products pay 3.6 per cent versus 6.4 per cent MFN. Given that most manufactured exports to Central and South America are tariff-free, these amount to market opportunities in which two or three points in tariffs can make a significant difference.

Finally, a more obvious indicator of the benefits of this agreement will be the tariff cuts for those products currently paying tariffs of more than 0 per cent in the European market. In the case of fishing, the average tariff is 13 per cent; in manufacturing, 6.9 per cent; and in agriculture, 10.4 per cent. Moreover, the EU applies specific tariffs to products, which amounts to high levels of protection. In the case of agriculture, for example, these may be as much as 60 per cent ad valorem.

Overall, Chile's strategy of increasing its openness to world trade has been to increase the significance, as a destination for exports, of those countries with which it has trade agreements. As the next section will show, this has stimulated growth of trade and diversification of the export basket.

III. Chile's foreign trade: 1990-2005

1. Openness to international trade

As Table 3-1 shows, global trade in goods and services rose significantly, from US$4,256.4 trillion in 1990 to US$12,684.3 trillion in 2005, posting nominal growth of 7.6 per cent annually, considerably more than the 4.6 per cent rise in world GDP during the same period.[15] This in turn reflects the growing openness of economies at the global level, which can be expressed as the rise in the Exports/GDP coefficient from 18.7 per cent in 1990 to 28.5 per cent in 2005.

Table 3-1: GDP, exports and openness of large blocs within the world economy

Blocs/Countries	1990			2005		
	GDP	Exports	Export/GDP	GDP	Exports	Export/GDP
	(US$ trillion)	(US$ trillion)	(per cent)	(US$ trillion)	(US$ trillion)	(per cent)
World	22,721.7	456.4	18.7	44,454.8	12,884.3	28.5
Advanced economies	17,582.4	3,422.3	19.5	34,034.6	8,768.2	25.8
Emerging economies	5,139.3	834.1	16.2	10,420.2	3,916.1	37.6

Source: International Monetary Fund, World Economic Outlook Database, October 2006.

This rise in trade between countries partly reflects the growth of domestic economies, associated with greater demand for goods and services from other economies, along with a rise in the prices of goods and services that are traded.

Changes in the degree of openness of the world economy are apparent in the behaviour of its two largest blocs: the advanced and emerging economies. The advanced group includes, among others, the United States, Japan, Germany, France, United Kingdom, Italy, Canada, Spain, Australia, New Zealand, Republic of Korea, Taiwan, Hong Kong, Israel, Singapore and another 14 countries within the European Union. The remaining 152 IMF member countries form the bloc of emerging economies.

In 1990, the advanced economies generated 77.4 per cent of world GDP and accounted for 80.4 per cent of world trade, while in 2005 these coefficients had dropped to 76.6 per cent and 69.1 per cent, respectively. As for GDP, the advanced economies grew at an average annual rate of 3.6 per cent over the past 15 years, while the emerging economies averaged 4.8 per cent annual growth, improving their share of world GDP. Trade performed similarly, since while the advanced economies posted a 6.5 per cent annual rise, emerging economies enjoyed significantly higher growth, at 10.9 per cent annually. This drove their share of global trade up from 19.6 per cent in 1990 to 30.9 per cent in 2005.

At the same time, significant changes took place within the two large economic blocs. Whereas in 1990, the advanced economies were slightly more open than emerging economies (19.5 per cent for advanced economies versus 16.2 per cent for emerging economies), by 2005 this had reversed, with emerging economies more open, at 37.6 per cent, versus 25.8 per cent for the advanced economies. The evidence suggests that, because their home markets are relatively

[15] World GDP rose from US$22,721.7 trillion in 1990 to US$ 44,454.8 trillion in 2005. International Monetary Fund, World Economic Outlook Database, September 2006.

small, emerging economies have opted for an outward-looking development strategy. These economies have therefore attempted to capture investment headed for the world market, primarily using their lower labour costs as an incentive.

Table 3-2 shows exports and imports to GDP ratio for selected countries in 1990 and 2004, using information from the United Nations' Yearbook of National Accounts Statistics.[16] Note that in general whether exports or imports are used as the numerator in the quotient measuring the degree of openness, it makes little difference.

The countries selected, from both the advanced and the emerging blocs, are ranked from highest to lowest GDP in dollars, in 2005. Because countries' classification in either bloc is based on per capita income, some emerging countries have higher overall GDP than advanced countries, for example China, which outdoes Canada and every country that follows it, while India's GDP is slightly lower than Korea's, but higher than those of Finland, Hong Kong and Israel.

Table 3-2: Indices of external openness for advanced and emerging economies (percentage)

Economies	1990		2005	
	Export/GDP	Import/GDP	Export/GDP	Import/GDP
		Advanced economies		
United States	9.6	10.9	10.5	16.2
Japan	10.4	9.5	14.3	12.9
Germany	24.6	24.8	40.1	35.1
United Kingdom	24.0	26.6	26.1	30.0
Canada	26.0	26.0	37.9	34.1
Republic of Korea	28.0	29.0	42.5	40.0
Finland	22.7	24.0	38.7	35.2
Hong Kong	130.9	123.2	197.5	186.3
Israel	31.0	34.9	43.8	44.1
		Emerging economies		
China	17.7	12.2	33.0	305
India	7.2	8.6	14.9	16.1
Brazil	7.9	6.1	16.5	12.0
Argentina	10.3	4.6	24.6	19.1
Venezuela	39.5	20.2	33.5	18.4
Chile	33.1	29.4	43.2	35.5
Egypt	28.1	36.2	20.7	26.9
Burkina Faso	11.2	28.8	9.6	23.9

Source: United Nations, Yearbook of National Accounts Statistics.

In 1990, the United States exported US$552 billion and imported US$630 billion in goods and services, ranking first in the world for its volume of trade, followed by Germany, Japan, United Kingdom and Canada in that order. In 2005, the United States continued to rank first in exports and imports world wide, followed by Germany and Japan, although China rose to fourth place, relegating the United Kingdom to fifth, and pushing Canada out of the top five. Nevertheless, China is still classified as an emerging country, given that its per capita income in 2005 stood at US$1,533, barely 9.3 per cent of per capita income in Republic of Korea, which was the country posting the lowest per capita income that year among the advanced economies.

[16] Available at: http://unstats.un.org/unsd/snaama/SelectionCountry.asp

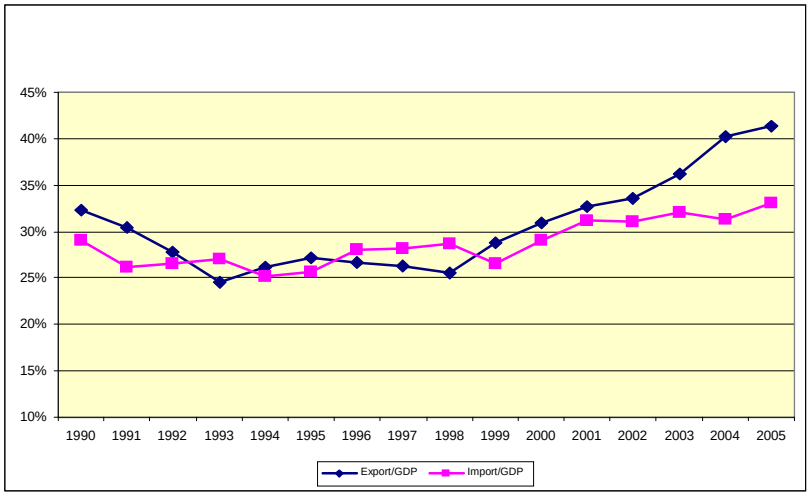
The openness of the two main world economic powers, the United States and Japan, is significantly lower than the world average, since both tend to be much more self-sufficient than less economically developed countries. But this does not mean that the degree of openness falls as the size of the market (which we can associate with a larger overall GDP) increases. In fact, the degree of openness of advanced economies in 1990 was greater than that of emerging economies (see Table 3-1). In 2005, GDP for the European Union stood at US$13,442 trillion, versus the US GDP, which stood at US$12,456 trillion, and their degree of openness stood at 37.2 per cent and 10.5 per cent, respectively.

Hong Kong, one of China's two special administrative regions, is the only "country" included in Table 3-2 in which the degree of economic openness is above 100 per cent, no matter how it is measured. Hong Kong is an economy where the service sector prevails, accounting for 80 per cent of the island's economic activity. While its market is smaller than those of China, India, Brazil and Argentina, it is larger than those of Venezuela, Chile, Egypt and Burkina Faso, countries with far more open economies. Germany's market size was 15 times that of Argentina in 2005, while openness, measured by the Exports/GDP ratio, stood at 40.1 per cent for Germany and 24.6 per cent for Argentina.

Chile's economy, meanwhile, has been more open than the world averages for both 1990 and 2005. If the degree of openness is measured by the ***export-based ratio*** (Export/GDP), this rose by almost 10.1 percentage points during this period, an indicator that falls to 6.1 percentage points if the ***import-based ratio*** (Import/GDP) is used, reflecting the steady rise of the copper price from late 2002 on.

Figure 3-1 shows how the Chilean economy's degree of openness rose between 1990 and 2005, a period during which the country signed more than 20 free trade agreements involving 52 partner countries. This indicator remained between 25 per cent and 30 per cent in the last decade of the past century, with few exceptions. Since 1990, with the rebuilding of democratic governance in Chile, the policy of international integration shifted away from a focus on unilateral openness, which characterized the approach during the dictatorship.

Figure 3-1: Chile, economic openness from 1990 to 2005 (% of GDP)



Source: author's own calculations using data from The Central Bank.

Since then, efforts have focused on reaching trade agreements with different countries and blocs, and making the most of multilateral negotiations, to deepen progress achieved since the mid-1970s. The impact of this new policy on the degree of economic openness became apparent from the mid-1990s on, intensifying further after 2000, with the Export/GDP ratio rising somewhere between 30-35 per cent between 2000-2002, and then soaring to over 40 per cent in 2005. Although the substantial rise in the copper price in 2004 and 2005 played a decisive role in this increase in the degree of openness, the curve based on the Import/GDP ratio confirms these trends.

2. Exports and imports

Since the late 1970s, Chile's foreign trade policy has become increasingly liberal, going from an import-substitution model of industrialization to one in which exports drive economic growth. While this process has remained involving liberalization, it has undergone significant restructuring in its 30 years of implementation.[17]

In its first stage, which began in late 1973, a more open approach to trade began with a drastic tariff cut, elimination of all tariff restrictions, and unification of existing foreign exchange rates. The decline in the anti-export bias, combined with capacities accumulating prior to the State-led reform, and the domestic recession of this period gave way to noteworthy export growth during the late 1970s. This ended in 1979, however, with tariffs at 10 per cent, a fixed exchange rate for stabilization purposes, and conditions unfavourable to exports.

Growth lasted until 1981 and output declined significantly over the next two years, the result of an overvalued exchange rate, a growing trade deficit, massive private sector debt, and a crisis in financial and external sectors. After the 1982 crisis, trade policy grew more flexible, making use of anti-dumping measures, and boosting tariffs as high as 35 per cent (the level Chile achieved in the General

[17] The information that follows is from Studies by Díaz and Ramos (1998), French-Davis (2002) and Silva (2001).

Agreement on Tariff and Trade, GATT) in 1984, on imports involving proven cases of dumping and price bands for agricultural products.

This stage also saw Chile recover and enjoy some post-crisis growth, starting with significant currency depreciation, based on a crowding peg, which remained in effect, with some variations, until 1999. This was complemented by a strategy of actively promoting exports and other structural economic reforms, including the second stage of privatization of non-tradable sectors, and investment incentives.

The latter included measures favouring foreign investment, incentives for foreign debt swaps, in effect from 1985 to 1991, and a substantial 46 per cent implicit subsidy to foreign investors holding Chilean foreign debt papers, which particularly benefited mining, forestry and service sectors, and brought with them significant restructuring and productivity increases.[18] Lessons from the crisis during the early 1980s also brought a new era of financial system regulation, which along with interest and the foreign exchange rate, fostered productive investment and export diversification. As for exports, reintegration systems were improved, along with promotion efforts, including:[19]

- Exemption from value added tax (VAT) on exports and recovery of taxes paid on inputs incorporated into export goods. This instrument was designed to avoid double taxation on end products or tax exports.

- Simplified tax reimbursement for minor exports (untraditional products) through reimbursement of 5-10 per cent of the FOB export value.

- Suspension of payment of duties and VAT on imported inputs to be used in export goods, in a suitably identified facility.

- Deferred payment of customs duties on capital goods imports. This instrument was applied across the board and did not solely benefit exporters.

- Recovery of customs duties paid on imported inputs used for export goods.

Support for exports from Fundación Chile, a semi-public institution that developed technology transfer projects, such as salmon cultivation, which in the 1990s became one of Chile's main exports and the leading one among untraditional goods.

Since the 1990s, unilateral openness has been followed by bilaterally negotiated liberalization, which reduced average actual tariffs to around 2 per cent, thus leaving little room for new unilateral liberalization policies. Trade policies, meanwhile, have faced a very different context from the previous decade, since the next round of GATT negotiations and standards defined by the World Trade Organization (WTO) restricted the use of export subsidies by developing countries. Thus, efforts, especially those of ProChile, focused on encouraging exports, by offering information, support and promotion for Chilean goods in new markets.

[18] This investment reached more than 20 per cent of gross fixed capital formation from 1987-1989 (Calderón and Griffith-Jones, 1995). Foreign investment as a percentage of GDP went from 4.5 per cent in 1990 to 15 per cent in 1999, although it bounced back and forth between 3 per cent and 9 per cent during the 1990s (CIE, 2000), quoted in Silva (2001) op. cit.

[19] French-Davis, Leiva and Madrid (1991), and Macario (2000), quoted in French-Davis (2002), op. cit.

These policies successfully expanded market access for participating companies, although they fell far short of results from the 1980s, in a context of a real 130 per cent devaluation.

The pattern of trade growth during the 1990s exercised considerable influence on foreign direct investment (FDI). These flows contributed substantial portfolio flows during those years and were partly responsible for the overvalued peso. Despite all this, the export sector continued to perform well, reflecting burgeoning world trade, preferential access to new markets thanks to different trade agreements, and the fact that the unprecedented coefficient for productive investment boosted labour productivity and external competitiveness considerably.

Chile's appreciating currency, however, has reined in further development of manufactured exports or other more elaborate goods based on the natural resources for which Chile enjoys a competitive advantage. Thus, in recent years the country has sought to expand its export base; support companies losing their competitive edge; and develop new business or incentives for more advanced internationalization of companies. New directions were apparent in the 2000-2006 programme, which sought to bring new drive to export development, advance in the field of business technological innovation; stimulate fishery production with more added value, and encourage aquaculture; and increase the export capacity for mining-related capital goods, inputs and services.

Through ProChile, the government launched nine export promoting instruments, to respond to "the demands and needs created by the adoption of new technological and communications models,"[20] over a long-term horizon. This new effort, which has treated public-private cooperation as essential, aims to redirect promotion policies *away from simply selling the country's products and more toward producing things that can sell*, placing the need to restructure export supply and production at the centre of attention. The main challenges include keeping exports present in international markets and expanding the export base.

General evaluations of trade's performance have revealed noteworthy import growth, a persistent current account deficit, and a decline in export strength since the mid-1990s. This apparently reflects macroeconomic conditions, peso appreciation, and high interest rates, but also structural shortcomings,[21] such as the deficit in investment in skill-related factors, technologies and training, and barriers to accessing capital markets facing significant production sectors.

[20] These instruments include: i) Virtual information on Electronic marketing and trade, to promote and sell products over the Internet; ii) New versions of institutional portals on Interent, providing information and other services offered by the promoting body; iii) a Miami.com branch, or virtual sales office for small and medium-sized businesses in the agricultural and agribusiness sector, to help them break into the US market; iv) Trade Map Chile, a web site offering market intelligence; v) Face to face with Japan, a platform offering videoconferences to solve different problems implicit in early business contacts; vi) Sectoral information services (*Servicios de Información Sectorial*, SICOS), a model Electronic Communications strategy providing selective information via e-mail on Central America; and several vertical portals grouping companies from the same sector in a single international display case, among them: vii) Chile Trip.cl (special interest tourism); viii) Chile Universitario.cl (information on Chilean universities' functioning and main activities, including exports of this kind of service); ix) Chile Cine.cl: to help raise the country's profile. Prochile (2000).

[21] Díaz and Ramos (1998), op. cit.

2.1 Export growth

Export growth (8.9 per cent) in the past 30 years far outperformed output growth (5.1 per cent annually) by volume, pushing the goods and service/GDP coefficient significantly higher, from 20.6 per cent in 1976 to 35.0 per cent in 2005.

Table 3-3 shows the changes in some of the relevant indicators for Chilean exports between 1976-2005, compared to real GDP and gross fixed capital formation. Thanks to this openness, goods and service exports, by volume, increased an average 8.9 per cent annually from 1976 to 2005, which means that the volume of Chilean exports rose 12-fold during this period, while in current dollars it rose 19.2-fold.

Table 3-3: Chile, export indicators, 1976-2005

Indicator	1976	1993	2005	Average annual change, per cent		
				2005/1976	1993/1976	2005/1993
Real GDP (1996 = 100)	33.1	79.6	141.4	5.1	5.3	4.9
Goods exports by volume (1996 = 100)	15.3	72.2	182.8	8.9	9.6	8.1
Exports, current US$ (1996 = 100)	12.7	55.3	244.0	10.7	9.0	13.2
Goods exports/GDP (1996 prices)	20.6	24.7	35.0			
Gross Fixed Capital Formation (1996 = 100)	25.8	70.0	156.4	6.4	6.1	6.9

Source: Central Bank of Chile.

During the years when Chile focused primarily on changing its own procedures, rather than fostering international agreements (1976-1993), exports by volume grew 9.6 per cent annually, compared to 8.1 per cent during the period in which trade agreements were the focus. This difference reflects the low starting point for exports in the first sub-period. Despite this, by value, Chilean exports grew 9.0 per cent per year from 1976-1993 and 13.2 per cent per year from 1993 to 2005, given the substantial rise in prices for the main export products in recent years.

From 1976 to 2005, exports by volume only declined once, in 1981, reflecting a plunge in export prices and a significant lag in foreign exchange policy of the period, dominated by a fixed exchange rate and double digit inflation. In 1982-83, however, when the Chilean economy experienced a severe shock, which caused accumulated GDP to plunge downward by 16.0 per cent in two years, exports by volume continued to rise. Further along, during the Asian crisis, despite a sharp slowdown in economic activity in 1998, which became negative in 1999 (-0.8 per cent), exports by volume grew vigorously (7.3 per cent in 1998 and 8.1 per cent in 1999). This reveals that Chile's export flows have achieved a relatively interesting degree of autonomy from domestic economic swings.

Finally, the more exports move in parallel to gross fixed capital formation, the more their importance to the rest of the economy is reinforced, as was the case from 1984 on. In fact, from 1984 to 2005 exports by volume rose 7.5 per cent annually and investment by 9.7 per cent annually, bringing average output growth to 5.8 per cent annually.

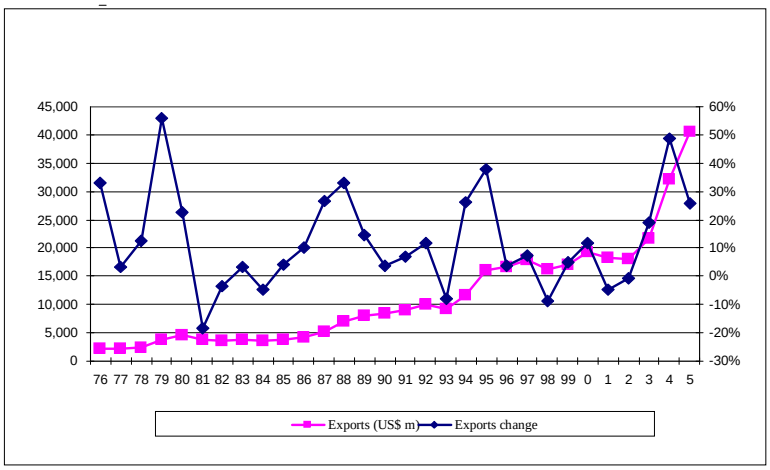
Figure 3-2, meanwhile, shows changes in Chilean exports by value over the past 30 years. From 1976 to 1993, the period during which the unilateral policy

applied, exports rose in absolute terms by US$7,083 billion, with annual growth averaging 9.0 per cent.

As analysed in the previous section, in 1993 the first agreements were signed, with Venezuela, Bolivia and Colombia, as part of the new trade policy, and from 1993 to 2005 Chilean exports rose by US$31,375 billion, averaging 13.2 per cent annual growth. At the same time, the world economy rose by 3.9 per cent annually, while from 1976 to 1993 it averaged 3.2 per cent annually.

Thus, all things being equal, a more expansionary cycle for the world economy has favoured the development of international trade, while trends in international prices for Chile's main export products during these two periods has also positively influenced export growth by value. The real exchange rate, however, at least from 1993-1998 and 2004-2005, has served more to moderate this growth.

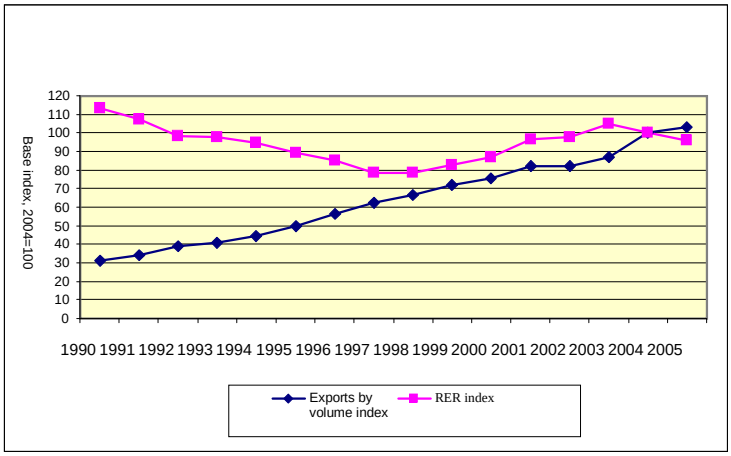
Figure 3-2: Chile, goods exports from 1976-2005 (US$ million)



Source: author's own calculations using Central Bank data.

In fact, Figure 3-3 shows the change in Chilean exports abroad by volume from 1990-2005, compared to the real observed exchange rate (RER), using a common base year (2004) for both variables. Thus, by including exports by volume instead of value as the variable, the impact of changes in the prices of products in Chile's export basket has been eliminated.

Figure 3-3: Chile, indices for exports by volume and the real exchange rate



Source: author's own calculations using Central Bank data.

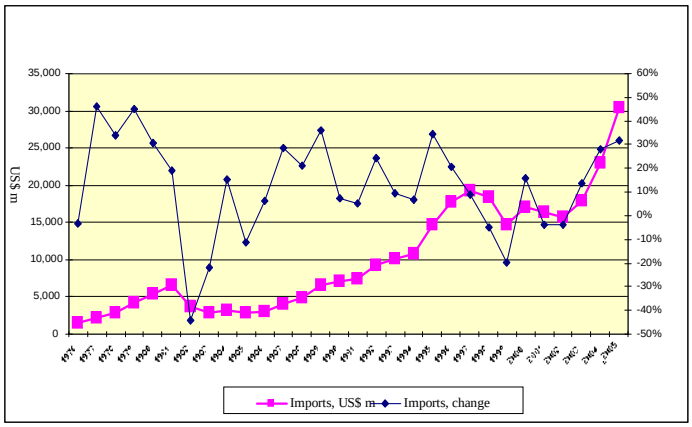
From 1990-1998, the RER negatively affected exports, since it fell steadily, dampening export growth. Exports grew nonetheless. Meanwhile, from 1993-1998, world GDP grew on average 3.5 per cent annually, up from the 3.2 per cent annually posted from 1976-1993, thus favouring growth in Chilean export volumes, although not enough to explain the full magnitude of this growth, which reached 9.4 per cent annually.

From 1999-2003, curves for exports by volume and the real exchange rate posted complementary and rising trends, suggesting that the RER did contribute to export growth during this period, in combination with other factors, such as the strong performance from the world economy, which averaged 3.7 per cent annual growth. Finally, in 2004 and 2005, exports by volume and the RER behaved very differently from each other, since exports continued to grow while the RER fell by 9 per cent. In those years, growth in world GDP was especially high (over 5 per cent). This factor, and the combined strength of major trade agreements signed by Chile (with the European Union, Republic of Korea, and the United States) and under the impulse of the Chinese economy, drove a significant rise in exports.

Meanwhile, trends in ***imports*** in the past 30 years are presented in Figure 3-4. From 1976-1993, imports grew in absolute terms by US$8,716 billion, averaging 12 per cent and higher than the 9.0 per cent posted by exports in the same period.

This figure reveals that the curve generated using the absolute value for imports follows economic cycles very closely. Thus, the profound recession in 1982-1983 brought a severe contraction in economic activity, with a major devaluation of the Chilean peso, which sharply reduced demand for imports. Thus, only towards the end of the 1980s, once recovery had consolidated, did growth rates for imports regain levels experienced prior to the crisis.

Figure 3-4: Chile, goods imports, 1976-2005



Source: author's own calculations using Central Bank data.

In contrast, from 1993 to 2005, when the country was pursuing an ambitious policy based on negotiating trade agreements, Chilean imports rose to US$20,206 billion, averaging 9.5 per cent annual growth, still down, in this case, from the 13.2 per cent average rise in exports for the same period.

Thus, imports did not rise as much as exports, despite the new trade agreements. This reflected the cyclical relationship between imports and economic growth in general. When growth plunged during the Asian crisis (1997-1998), imports sank and their growth remained slow until 2002.

2.2 Exchange and trade agreements

As trade agreements came into effect, they favoured both import and export development, and the purpose of this study is to examine the magnitude of these effects, along with their impact on employment and its characteristics.

To facilitate this presentation, we have used ten classifications for the main trade agreements signed from 1993 to 2005. These include, in chronological order, the following countries or groups of countries:

- Venezuela, Bolivia, Colombia and Ecuador, under free trade agreements signed in 1993-1994.
- Mercosur (Brazil, Argentina, Paraguay and Uruguay) and Canada, under agreements signed in 1996.
- Mexico and Peru, under agreements signed in 1998.
- Central America (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua), under agreements signed in 1999.
- The European Union (Germany, Austria, Belgium, Cyprus, Denmark, Spain, Slovenia, Estonia, Finland, France, Greece, The Netherlands, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, United Kingdom, Czech Republic, Slovak Republic and Sweden), under FTAs signed in 2002.
- Republic of Korea, under agreement signed in 2003.
- United States, under agreement signed in 2003.
- European Free Trade Agreement (EFTA, which includes Iceland, Liechtenstein, Norway and Switzerland), under agreement signed in 2003.
- China and P4 (Pacific Four, including New Zealand, Singapore, Brunei and Chile), under agreement signed in 2005.
- India, under agreement signed in 2006.

A review of the information available reveals the influence of trade agreements on Chilean exports once these come into effect. Moreover, these changes begin during negotiations, suggesting that completion of an agreement and its eventual implementation are the final stage in processes begun in previous years that both reinforce and expand political and trade relations.

Table 3-4 uses a shaded area to represent the "*coming into effect"* stage, which in each case is the year prior to the final signing of the agreement. The final columns present changes in exports to countries with trade agreements compared to total exports. This measure considers the effects of individual agreements coming into effect, along with the combined effects of all agreements in 2005.

As expected, the information contained in the column per cent ExpFTA/ExpTotal (1) shows steady growth over time, due to incorporation of total exports to additional countries covered by new trade agreements in the indicator. While in 1992, barely 3.6 per cent of exports went to countries with agreements, in 2005, 74 per cent of total exports did, thus reflecting the rapid rise in exports going to destinations covered by trade agreements, which averaged around 40.4 per cent annually during this period.

Table 3-4: Chile: Exports to groups/countries with trade agreements and total exports (US$ m and per cent of total exports)

Years	VBCE	Mercosur and Canada	Mexico and Peru	CAM	European Union	Republic of Korea	USA	EFTA	China and P4	India	Export to FTA (1)	Export to FTA (2)	Total Exports	% export FTA Total export	% export FTA Total export
	(US$ mn)	(US$ mn)	(US$ mn)	(US$ mn)	(US$ mn)	(US$ mn)	(US$ mn)	(US$ mn)	(US$ mn)	(US$ mn)	(US$ mn)	(US$ mn)	(US$ mn)	(1)	(2)
1990	231	700	132	35	3,357	262	1,490	16	112	57	0	6,391	8,373	0.0%	76.3%
1991	279	838	189	39	3,008	263	1,595	61	181	8	0	6,463	8,942	0.0%	72.3%
1992	364	1,045	265	45	3,123	244	1,655	39	506	2	364	7,288	10,007	3.6%	72.8%
1993	363	1,148	335	44	2,572	414	1,656	46	314	17	363	6,909	9,199	3.9%	75.1%
1994	444	1,437	550	63	2,946	597	2,059	51	284	62	444	8,494	11,604	3,8%	73,2%
1995	646	1,856	558	49	4,337	873	2,330	140	460	83	2,502	11,331	16,024	15.6%	70.7%
1996	689	1,886	475	67	3,800	870	2,592	112	579	98	2,575	11,167	16,627	15.5%	67.2%
1997	767	2,018	715	79	4,095	991	2,439	105	722	74	3,500	12,005	17,870	19.6%	67.2%
1998	829	1,829	870	80	4,204	422	2,360	91	661	54	3,608	11,400	16,323	22.1%	69.8%
1999	701	1,708	978	97	4,099	694	2,811	156	616	101	3,483	11,960	17,162	20.3%	69.7%
2000	788	1,961	1,255	120	4,525	809	3,008	166	1,008	125	4,124	13,765	19,210	21.5%	71.7%
2001	903	1,795	1,312	114	4,634	578	3,216	215	1,110	118	8,758	13,995	18,272	47.9%	76.6%
2002	871	1,254	1,375	147	4,259	714	3,483	134	1,316	180	12,238	13,733	18,180	67.3%	75.5%
2003	865	1,639	1,346	235	4,885	1,014	3,467	115	1,990	222	13,567	15,780	21,664	62.6%	72.8%
2004	1,043	2,729	1,833	387	7,715	1,804	4,569	190	3,426	426	23,697	24,123	32,215	73.6%	74.9%
2005	1,252	3,536	2,300	372	9,060	2,207	6,238	101	4,485	492	30,044	30,044	40,574	74.0%	74.0%
TCX prior to FTA	**21.0%**	**19.8%**	**23.7%**	**12.1%**	**3.0%**	**7.5%**	**7.3%**	**26.8%**	**24.8%**	**15.5%**	-	**1.1%**	**6.8%**	-	-
TCX under FTA	**11.3%**	**8.5%**	**19.2%**	**21.4%**	**14.9%**	**39.8%**	**18.0%**	**-17.2%**	**50.1%**	**15.6%**	**40.4%**	**11.6%**	**11.4%**	-	-

Source: Chile's national customs service.

(1): The numerator is the value of exports to countries covered by agreements

(2): The numerator is the value of exports to countries covered by agreements in 2005

FTA = Free Trade Agreement

VBCE = Venezuela, Bolivia, Colombia and Ecuador

CAM = Central America (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua)

EFTA = European Free Trade Association (Iceland, Liechtenstein, Norway and Switzerland)

P4 = Strategic Transpacific Economic Association agreement (New Zealand, Singapore and Brunei, plus Chile)

TCX = Average annual growth rate of exports.

Meanwhile, if we examine trends in exports, in 1990, 76.3 per cent of all exports were covered by trade agreements, falling to 67.2 per cent in 1996-1997, before bouncing back to 74 per cent (going to 52 countries) in 2005. This behaviour reflects the fact that in the 1990s Chile signed trade agreements with countries or groups of countries in the region, which were not very important within total Chilean exports, and thus offered little room to significantly expand trade. In contrast, this indicator rose significantly during the last years of the series, as agreements with major economies such as the European Union, Republic of Korea, the United States, China and India came into effect. Exports then rose around 10 per cent to 20 per cent annually, more than the 7.8 per cent increase in total exports since 2000.

We can identify three different responses, depending on how strongly exports reacted to new agreements. In the first case (agreements with the Andean countries, Mercosur, Canada, Mexico, Peru and the EFTA, 17.7 per cent of total), exports grew less than prior to the agreement. This reflected higher than usual export growth just prior to agreements coming into effect, after very low absolute levels of exports. In the second case, average annual growth rates rose from the moment that agreements came into effect (Central America, the European Union, Republic of Korea, the United States, China and the P4). In fact, growth doubled or even increased five-fold over previous export growth rates. The third case involved India, which saw no significant increase in exports, probably because this is a partial agreement and is still awaiting parliamentary approval and full implementation.

The information on imports covered by trade agreements is presented in Table 3-5, distributed among five blocs of countries that have signed free trade agreements with Chile: Mercosur (Argentina, Brazil, Paraguay and Uruguay), NAFTA (Canada, the United States and Mexico), the European Union (24 countries), Asia (Republic of Korea, China, India, New Zealand, Singapore and Brunei) and ALADI (minus Mexico and Mercosur).

In 1995, when the only agreements in effect were those with Venezuela, Bolivia, Colombia and Ecuador, these five blocs accounted for 76.3 per cent of total imports, falling to 71.7 per cent the next year, when Chile signed an agreement with Mercosur. In 2005, these five blocs accounted for 77.9 per cent of total imports, up six percentage points over 1996.

For a better idea of the strength of imports by origin, however, changes in year-on-year growth rates should be noted. In fact, as Table 3-5 reveals, the average annual rise in total imports for the whole period was 7.5 per cent, down significantly from the 16.4 per cent posted for 2001-2005. The recession of the late the 1990s clearly affected the annual average for the whole period, and in contrast, when economic recovery consolidated, total imports picked up again.

Table 3-5: Chile: Imports (CIF) under trade agreements and total imports

Years	Mercosur (US$ m)	NAFTA (US$ m)	European Union (US$ m)	Asia with FTA (US$ m)	ALADI minus Mexico and Mercosur (US$ m)	Total imports 5 blocs with FTA (US$ m)	Total imports (US$ m)	Import 5B with FTAs/ Total imports (%)
1995	2,677	4,709	3,199	1,171	384	12,140	15,900	76.3
1996	2,814	5,445	3,589	1,356	483	13,688	19,097	71.7
1997	3,194	5,841	3,989	1,480	915	15,420	20,800	74.1
1998	3,094	5,347	3,898	1,455	719	14,513	19,852	73.1
1999	3,090	3,975	2,873	1,226	795	11,959	15,962	74.9
2000	4,327	4,402	2,883	1,667	982	14,261	18,466	77.2
2001	4,692	3,799	3,089	1,719	807	14,107	17,799	79.3
2002	4,811	3,314	3,031	1,733	731	13,619	17,146	79.4
2003	5,912	3,319	3,285	2,015	866	15,398	19,389	79.4
2004	7,096	4,345	3,580	2,770	1,353	19,143	24,918	76.8
2005	8,802	5,879	5,014	3,824	1,897	25,416	32,637	77.9
Avg annual change, % 2005/1995	12.6%	2.2%	4.6%	12.6%	17.3%	7.7%	7.5%	--
Avg annual change, % 2005/2001	17.0%	11.5%	12.9%	22.1%	23.8%	15.9%	16.4%	--

Source: National customs service.

FTA = free trade agreement

Mercosur = Argentina, Brazil, Paraguay and Uruguay

NAFTA = Canada, the United States and Mexico

The European Union = 25 countries specified in section 3.2

Asia with FTA =Includes China, India, New Zealand, Singapore and Brunei.

In any case, it is important to note that between 2001 and 2005 the rise in volumes from countries covered by trade agreements was slightly lower than the rise in total imports: 15.9 per cent. However, the main changes in the pace of growth (measured in percentage points) tended to concentrate on those blocs of countries with which trade agreements came into effect in the final years of the series: the Asian countries, North America and the European Union.

2.3 Main points of origin and destinations

Table 3-6 provides data on exports by main sectors of origin, for 1992-2005. These rose from US$9,773 billion in 1992 to US$38,414 billion in 2005, averaging 6.7 per cent annual growth.

The strongest components of this growth were, first, the sector referred to as "*other mining activities*", which includes exports of molybdenum oxide, unroasted molybdenum concentrate, metallic gold, metallic silver, gold ore, zinc ore, pelletized iron ore and bulk iron, which rose on average 16.8 per cent annually during this period. Between 1996 and 2003, this sector's annual exports fell as low as US$250 million in 1992 and soared as high as US$642 million in 2003, taking its average share of total exports to 3 per cent. These exports soared to US$1,622 in 2004 and US$3,376 billion 2005, mainly reflecting higher molybdenum exports, taking its share from 3.4 per cent of total exports in 1992 to 8.8 per cent in 2005.

Table 3-6: Goods exports by sector of origin (current US$ 000)

Years	Copper	Agro-Forestry	Other Mining	Food, beverage, tobacco	Wood, furniture	Manufact'd	Chemical, oil, rubber, plastic	Other	Total
1992	4,035	1,070	328	1,749	412	690	477	1,013	9,773
1993	3,421	1,268	250	1,629	470	617	513	1,090	9,259
1994	4,315	1,380	355	1,950	574	922	678	1,288	11,460
1995	6,822	1,651	599	2,621	723	1,629	771	1,426	16,242
1996	6,024	1,811	396	2,808	724	953	738	1,669	15,122
1997	7,104	1,778	483	2,882	833	966	1,001	1,677	16,723
1998	5,063	1,848	473	2,833	731	962	1,001	1,575	14,486
1999	5,895	1,855	446	2,966	919	1,045	995	1,512	15,633
2000	7,448	1,745	505	3,002	932	1,441	1,397	1,546	18,016
2001	6,750	1,662	469	3,138	1,013	1,184	1,557	1,462	17,235
2002	6,411	1,836	520	3,268	1,154	1,117	1,465	1,394	17,164
2003	7,646	2,097	642	3,786	1,265	1,236	1,950	1,433	20,055
2004	14,691	2,390	1,622	4,591	1,726	1,631	2,362	1,814	30,827
2005	18,026	2,563	3,376	5,380	1,805	1,660	3,175	2,430	38,414
Avg annual change, per cent	12.2%	6.4%	16.8%	7.3%	9.1%	5.0%	10.5%	4.5%	6.7%
				(percentage of each year's total)					
1992	41.3	10.9	3.4	17.9	4.2	7.1	4.9	10.4	100
1993	37.0	13.7	2.7	17.6	5.1	6.7	5.5	11.8	100
1994	37.6	12.0	3.1	17.0	5.0	8.0	5.9	11.2	100
1995	42.0	10.2	3.7	16.1	4.5	10.0	4.7	8.8	100
1996	39.8	12.0	2.6	18.6	4.8	6.3	4.9	11.0	100
1997	42.5	10.6	2.9	17.2	5.0	5.8	6.0	10.0	100
1998	34.9	12.8	3.3	19.6	5.0	6.6	6.9	10.9	100
1999	37.7	11.9	2.9	19.0	5.9	6.7	6.4	9.7	100
2000	41.3	9.7	2.8	16.7	5.2	8.0	7.8	8.6	100
2001	39.2	9.6	2.7	18.2	5.9	6.9	9.0	8.5	100
2002	37.3	10.7	3.0	19.0	6.7	6.5	8.5	8.1	100
2003	38.1	10.5	3.2	18.9	6.3	6.2	9.7	7.1	100
2004	47.7	7.8	5.3	14.9	5.6	5.3	7.7	5.9	100
2005	46.9	6.7	8.8	14.0	4.7	4.3	8.3	6.3	100

Source: author's own calculations using Central Bank data.

The "*copper mining*" sector, which includes copper concentrates, refinery copper, refined copper cathodes and other refined coppers also posted noteworthy growth, averaging 12.2 per cent annually, boosting its share of total exports from 41.3 per cent in 1992 to 46.9 per cent in 2005. As with molybdenum, copper exports by value soared, driven by price increases in international markets.

Some manufactured goods also rose more than total exports. In fact, the group referred to as "*chemicals, oil, rubber and plastics*," which includes exports of gasoline for ground vehicles, diesel oil, molybdenum oxide and hydroxide, potassium nitrate, methyl alcohol and car tires posted 10.5 per cent average annual growth.

Other sectors also saw exports rise, although less than total exports, so their share of the total was smaller. "Agriculture-forestry" in particular saw its share fall from 10.9 per cent in 1992 to 6.7 per cent in 2005.

Another noteworthy sub-group was "*wood and furniture"*, which grew by an average 9.1 per cent annually during this period, although its share of total exports was less than the previously mentioned sectors. Finally, the *"food, beverages and tobacco"* sector, which averaged 7.3 per cent growth, ranked second in importance over total exports, with a 14 per cent share in 2005.

If export destination is considered, other changes are also apparent, as presented in Table 3-7. In fact, along with rising export volumes, analysed above, have come changes in their composition by destination, particularly in shares going to the European Union and Japan. Although they continue to lead demand for exports from 1992 and 2005, their share fell significantly, by 7.1 percentage points (European Union) and 5.6 percentage points (Japan).

This was offset by a strong rise in China's share of Chilean exports, which rose 9.4 percentage points to reach Japan's level by 2005. Republic of Korea and Mexico also posted considerable increases in the share of Chilean exports they received, although they lagged behind the others by almost one-third.

Countries without free trade agreements with Chile, which in 1992 accounted for 11.6 per cent of Chilean total exports, remained at this level until 1997. In 2005, however, they received 8.8 per cent of Chile's total exports, 2.8 percentage points less than in 1992, thereby confirming the previous observation that trade with countries (regions) covered by trade agreements with Chile tended to rise in both absolute terms and compared to other countries.

In terms of the main export groups, by importance to total exports, for the "*copper mining sector"*, the main destinations were the European Union, China and Japan, with 56.7 per cent of shipments in 2005. In line with the trend apparent at the total export level, the share of Chile's exports received by the European Union and Japan (the latter has not yet implemented a trade agreement with Chile) declined from 1992 to 2005, while those of China and Republic of Korea rose significantly, from around 3.5 per cent to 19.1 per cent and 8.1 per cent, respectively.

For *"food, beverages and tobacco"* exports, second in importance within total exports, the main destinations in 2005 were the European Union, Japan and the United States, which together accounted for 61.5 per cent of the total. As above, there have been some shifts in the relative importance of these destinations, with the European Union and Japan declining by 7.3 percentage points, whereas Mexico, the United States, Republic of Korea and China enjoyed the main increases.

Table 3-7: Main export groups by main destination (percentage of each year's total)

Copper mining											
	Canada	**China**	**Republic of Korea**	**USA**	**India**	**Japan**	**Mercosur**	**Mexico**	**Countries without FTA**	**EU 15**	**Other**
1992	0.0%	3.5%	3.7%	11.1%	0.0%	18.6%	9.8%	0.0%	13.0%	36.7%	3.6%
2005	3.6%	19.1%	8.1%	9.8%	2.5%	11.5%	5.5%	2.1%	10.8%	25.6%	1.3%
Food, beverages and tobacco											
	Canada	**China**	**Andean countries**	**Republic of Korea**	**USA**	**Japan**	**Mercosur**	**Mexico**	**Countries without FTA**	**EU 15**	**Other**
1992	1.9%	1.8%	5.9%	0.3%	12.8%	24.9%	6.4%	2.2%	17.0%	24.7%	2.0%
2005	2.0%	4.6%	6.7%	2.5%	19.2%	20.8%	2.7%	6.6%	9.0%	21.5%	4.5%
Other mining activities											
	Canada	**China**	**Andean countries**	**Republic of Korea**	**USA**	**Japan**	**Mercosur**	**Mexico**	**Countries without FTA**	**EU 15**	**Other**
1992	0.2%	0.3%	4.2%	5.9%	3.2%	53.3%	3.9%	0.5%	2.0%	26.5%	0.0%
2005	0.4%	8.6%	0.3%	6.8%	11.5%	26.8%	5.9%	5.3%	4.4%	29.8%	0.2%
Chemicals, oil, rubber and plastics											
	C. America	**China**	**Andean countries**	**Republic of Korea**	**USA**	**Japan**	**Mercosur**	**Mexico**	**Countries without FTA**	**EU 15**	**Other**
1992	1.6%	1.8%	20.4%	0.9%	23.1%	3.2%	16.8%	1.8%	3.7%	24.4%	2.2%
2005	6.2%	1.7%	17.2%	7.6%	22.9%	2.1%	12.9%	3.7%	4.2%	20.1%	1.4%
Agriculture – forestry											
	Andean countries	**Republic of Korea**	**USA**	**Japan**	**Mercosur**	**Mexico**	**Countries s/ FTAs**	**EU 15**	**Others with FTA**	--	--
1992	5.1%	2.9%	33.5%	3.8%	5.8%	2.7%	11.5%	33.4%	1.4%	--	--
2005	5.8%	0.9%	43.9%	3.1%	2.6%	3.7%	10.1%	26.5%	3.4%	--	--
Total											
	Canada	**China**	**Andean countries**	**Republic of Korea**	**USA**	**Japan**	**Mercosur**	**Mexico**	**Countries without FTA**	**EU 15**	**Other**
1992	0.6%	2.2%	5.4%	2.5%	16.2%	17.5%	10.1%	0.9%	11.6%	30.9%	2.1%
2005	2.8%	11.6%	5.0%	5.8%	16.9%	11.9%	6.3%	4.1%	8.8%	23.8%	3.1%

Source: author's own calculations using Central Bank data.

As in the previous case, the main destinations for products from the *"Other mining activities"* sector were the European Union, Japan and the United States, which altogether accounted for 71.1 per cent of the total. Nonetheless, in this period Japan's share plunged by 26.5 percentage points, offset by a rise of 8.3 percentage points in the shares received by the United States and China, and smaller increases in the case of Mexico and the European Union.

Destinations for "*chemicals, oil, rubber and plastic*" exports, showed fewer changes than for the products mentioned above. In 2005, these exports went mainly (73.1 per cent of total exports) to the United States, the European Union, the Andean countries and Mercosur. Nonetheless, in the case of both the European Union and Mercosur, their share fell (by 8.2 percentage points), while shares received by Central America and Republic of Korea rose (by 11.3 percentage points).

Finally, in the case of agricultural and forestry products, which include agriculture, fruit, livestock and wood exports, the main products are grapes, apples, avocados, kiwis, blueberries and plums (fruit); corn and fresh vegetable seed (agriculture); and wood in the rough (forestry). These went mainly (70 per cent of demand) to the United States and Europe in 2005. The United States has consolidated in this case, with its share rising from 33.5 per cent in 1992 to 43.9 per cent in 2005, while the importance of exports to the European Union and Mercosur Republic of Korea declined.

Thus, there have been major changes in export destinations, depending on the product group, with a wide range of situations apparent. In some cases, destinations have remained stable while in others they fluctuate. Others are developing steadily, pushing down exports to traditional export markets.

Only two sectors retained the same main destination in both 1992 and 2005: *copper mining* (going to the European Union), and *fishing and forestry* (going to the United States). There were changes in the three remaining sectors: *food, beverages and tobacco* and *other mining activities* saw the European Union displaced Japan as the main destination, while the *chemicals, oil, rubber and plastic* sector saw the United States pushing the European Union into second place.

Moreover, in four of the five sectors, the percentage going to the main destination was down in 2005 from 1992, illustrating the fact that export destinations have diversified (see section IV). Finally, for the 25 positions determined for the five main sectors and five countries (regions) receiving the largest share of each sector's exports in 2005, there was only one case where a group of countries without trade agreements with Chile appeared: this was the fifth most important sector (agriculture-forestry), and the group of countries without an agreement ranked third.

3. Investment in production

Table 3-8 provides the distribution worldwide of net foreign direct investment (FDI) inflows in the past 15 years. It reveals that some two-thirds of net FDI inflows in this period went to developed countries, mainly Europe. Of the remaining third, which went to developing countries, almost 60 per cent went to Asia and Oceania and almost 35 per cent to Latin America and the Caribbean.

Table 3-8. World distribution of net inflows of foreign direct investment in 1991-2005*(US$ billion)

	1991-1995[1]	1996-2000[1]	2001-2005[1]	2004	2005
World total	231.7	814.0	754.2	694.4	896.7
Developed countries	148.8	601.2	514.6	414.1	573.2
- United States	39.3	191.9	97.9	95.9	106.0
- Europe	93.2	364.5	377.6	258.2	449.2
15 original EU members	83.3	332.8	345.4	231.4	407.7
United Kingdom	14.9	67.7	80.2	77.6	219.1
10 additional EU members	7.2	16.6	24.2	27.8	37.7
Developing countries	82.9	212.8	239.6	280.3	323.5
- Africa	4.9	9.4	19.6	18.7	28.9
- Latin America and the Caribbean (2)	22.4	83.0	65.7	68.9	72.0
- Asia and Oceania	53.1	110.7	127.2	155.5	172.7
China	22.8	42.7	54.8	60.6	60.3
- Southeast Europe and CEI	2.5	9.7	27.1	37.2	49.9
Russia	1.0	3.2	9.1	12.5	26.1

* Excludes financial centres. FDI figures are for inflows of foreign direct investment, minus capital withdrawn by foreign investors.

(1) Annual averages

(2) Includes financial centres

Source: UNCTAD, database on foreign investment (www.unctad.org/fdistatistics).

Investment primarily took the form of mergers and acquisitions, which accounted for almost two-thirds of world FDI from 1995-2004. In developing countries, however, greenfield investment was most common. Almost 60 per cent of world FDI went to service sectors, one-third to manufacturing, and the rest to natural resources in both developed and developing countries, although in the latter, manufacturing's share was slightly larger.

3.1 FDI in Latin America and the Caribbean

Table 3-9 presents net FDI inflows by subregion in Latin America and the Caribbean,[22] revealing two main trends: (i) a strong rise in FDI in the 1990s, which then partly turned around in the next five-year period, and (ii) South America outperformed Mexico and the Caribbean basin as an FDI destination, although it has been subject to more volatile flows, given that capital flows often reflect privatizations that take place through a single operation.

In terms of the countries of origin for FDI flowing into Latin America and the Caribbean, the United States consolidated its leadership, going from 35 per cent in 1996-2000 to 40 per cent in 2001-2005. Spain came second, although it dropped from 23 per cent in 1996-2000 to 12 per cent in 2001-2005. The Netherlands came third, with its share rising from 7 per cent to almost 12 per cent.

[22] These figures differ from those in Table 3-5 because they exclude financial centres.

Table 3-9: Latin America and the Caribbean: Net FDI inflows by subregion, 1991-2005*(US$ m)

	1991-1995[1]	1996-2000[1]	2001-2005[1]	2004	2005
Mexico	6,805	12,609	18,806	18,244	17,805
Central America	659	2,340	2,251	2,729	2,745
Caribbean	945	2,519	2,858	2,861	2,971
Sub-total Mexico and Caribbean	**8,409**	**17,468**	**23,914**	**23,834**	**23,521**
Mercosur	6,445	36,757	19,883	22,822	20,399
Andean Community	3,686	10,747	9,701	7,674	16,919
Chile	1,666	5,667	5,088	7,173	7,209
Sub-total South America	**11,797**	**53,171**	**34,672**	**37,669**	**44,526**
Total Latin America and the Caribbean	20,206	70,639	58,586	61,503	68,046

* Excluding financial centres. FDI figures are for foreign direct investment inflows, minus capital withdrawals by foreign investors.

(1) Annual averages

Source: ECLAC, Foreign investment in Latin America and the Caribbean (2005).

As for the sectors receiving investment, services continued to lead, although its share dropped somewhat, going from 58 per cent in 1996-2000 to 54 per cent in 2001-2005. Manufacturing's share, however, rose from 28 per cent in 1996-2000 to 36 per cent in 2001-2005. Natural resources' share, meanwhile, fell from 14 per cent in 1996-2000 to 10 per cent in 2001-2005.

Table 3-10 presents net FDI inflows into South American countries, using averages for the past five-year periods as its base, and revealing that Brazil receives the most, followed by Chile, which replaced Argentina in 2001-2005. The European Union and the United States are the main investors in the main South American market. By sector, FDI flows into Brazil go mainly to the service sector.

Table 3-10: South America: Net FDI inflows in 1991-2005*(US$ m)

	1991-1995[1]	1996-2000[1]	2001-2005[1]	2004	2005
Mercosur	6,445.2	36,757.1	19,883.1	22,822.1	20,398.5
Argentina	3,781.5	11,561.1	2,980.6	4,273.9	4,662.0
Brazil	2,477.4	24,823.6	16,480.7	18,145.9	15,066.3
Paraguay	103.8	185.1	53.9	69.9	69.9
Uruguay	82.5	187.2	367.9	332.4	600.3
Andean Community	3.685.5	10,746.7	9,701.1	7,674.0	16,918.5
Bolivia	158.4	780.2	271.1	62.6	-279.6
Colombia	911.9	3,081.1	3,946.2	3,117.0	10,192.1
Ecuador	368.1	692.4	1,370.1	1,160.3	1,530.2
Peru	1,304.2	2,000.8	1,794.0	1,816.0	2,518.8
Venezuela	943.0	4,192.2	2,319.8	1,518.0	2,957.0
Chile	1,666.2	5,667.0	5,087.7	7,172.7	7,208.5
Total Latin America and the Caribbean	20,205.8	70,638.9	58,586.2	61,503.2	68,046.3

* Excluding financial centres. FDI figures reflect foreign direct investment inflows, minus capital withdrawals made by foreign investors.

(1) Annual averages

Source: ECLAC, Foreign investment in Latin America and the Caribbean (2005).

In 2001-2005, Chile stood second in absolute terms, after Brazil, as the country receiving the most foreign direct investment, although in relative term, whether measured against GDP or per capita, Chile held the first place. For the two years, 2004-2005, specifically, net FDI flowing into Chile averaged 7 per cent of GDP annually, compared to 6 per cent in Colombia, 4 per cent in Ecuador, 3 per cent in Uruguay, with other countries receiving less than 3 per cent of GDP. In per

capita terms, net FDI flows into Chile in 2005 reached US$445 per capita, US$221 in Colombia, US$188 in Uruguay, US$123 in Argentina, US$116 in Ecuador, US$112 in Venezuela, with other countries receiving less than US$100 per capita.

In 2005, US$7,208 billion of FDI flowed into Chile, up 0.5 per cent over 2004. A significant portion involved reinvestment in mining, land transport and communications, and electric power. In the past ten years, 60 per cent of the FDI coming into Chile went to the service sector, 21 per cent to natural resources, and 19 per cent to manufacturing. Countries of origin were led by Spain with 30 per cent, followed by the United States with 22.5 per cent, and Canada with 12.7 per cent.

3.2 Policies to attract foreign investment to Latin America and Chile

ECLAC's most recent report on foreign investment[23] mentioned three types of policy to attract foreign direct investment: (i) passive policies, based on comparative advantages or favourable macroeconomic conditions in the country (if that is the case); (ii) active policies, which seek the efficient production of goods and services for export and the creation of domestic production chains, beneficial to GDP and employment; and (iii) integrated policies, in which foreign investment policy is coordinated with and integrated into general development policies. In exceptional cases, such as Ireland and Singapore, FDI was the main pillar of development and other policies lined up around it. In other cases, foreign direct investment has driven the development of strategically important sectors.

Notwithstanding the different institutional models specific to each country, one common and irreplaceable element for promoting foreign investment involves the creation of a special body responsible for this task. According to research by the OECD,[24] in 2004 there were at least 160 institutions of this nature at the national level and more than 250 at the subnational level. Two-thirds of these were created in the last decade of the 20th century, indicating these are a recent phenomenon.

The countries of Latin America and the Caribbean have also become involved in this process. However, their efforts have been weaker than those of developed countries, and some transitional economies (particularly the Czech Republic and Hungary) and developing countries in Asia (Singapore, Republic of Korea, China, Malaysia and Thailand), which have focused specifically on issues such as defining explicit FDI policies and integrating these into development policies, promotion, and mechanisms for facilitating and focusing activities. To date, 30 of the region's 33 countries have bodies for promoting investment or equivalent activities that centralize promotion functions. Of the 15 bodies studied by ECLAC, 12 were created in 2001-2005, changed significantly, or were being reorganized.

This type of promotion body fulfils a range of functions, of both primary and complementary natures. They analyse opportunities, develop country images, focus marketing, offer investor services (the most used) and provide follow-up and post-

[23] ECLAC, Foreign Investment in Latin America and the Caribbean (2005).

[24] OECD, "A policy framework for investment: draft preamble, checklists and preliminary annotations".

investment services. As complementary measures they also work to improve the business environment, advise authorities, manage incentives (the least common component), and increase the competitiveness of local businesses. Promotion abroad, meanwhile, which includes participation in fairs, seminars and business visits, are the least frequent, and enjoy a smaller portion of the budget. Chile, Costa Rica and Mexico are the exception to this practice, and are frequently involved in these activities, which enjoy large budgets.

Based on its macroeconomic stability, Chile's approach to capturing FDI was passive until 1999. In 2000, it shifted its focus, giving the Foreign Investment Committee a more active role in promoting investment. It also added the functions of promoting investment, organized around programmes and focusing on both geographic and sectoral aspects, to the duties of the national development corporation (*Corporación de Fomento de la Producción*, CORFO). The Foreign Investment Committee has made a major effort to collect, generate and distribute information about Chile that can awaken foreign investors' interest. It began by documenting the country's supply, publishing its availability through different means (pamphlets, papers, web sites), and organizing events abroad, with the participation of Chilean business people.

Opening offices or agencies abroad has been vital to promoting FDI. Chile, Costa Rica and St. Lucía have implemented their own particular models for promotion abroad. The Chilean model, through CORFO, works through representatives (contracts with firms that do promotion), in effect in Spain (Barcelona), Sweden (Stockholm) and the United States (Boston), with new initiatives in Italy and Germany under evaluation. CINDE (Costa Rica) promotes investment through an office in New York while St. Lucía established a model of "virtual offices" operated from New York and Miami.

Another important characteristic of Chile's FDI-promotion model is the signing of agreements with regional governments within Chile. CORFO set up a programme to attract regional investment through a shared financing agreement with 12 of the region's governments, which made it possible to set up regional working teams. CORFO runs these offices, but financing is shared with other governments in the region.

In terms of the incentives used in Latin America and the Caribbean to attract FDI, these are mainly duty-free zones (including income tax exemptions), tax relief, *maquila* laws and focused subsidies. The first permit the free movement of goods, free of import and export taxes, combined with additional benefits (a reduction of up to 100 per cent of taxes on companies and their profit remittances). Colombia, Costa Rica, Ecuador, El Salvador and Guatemala have used this as their main mechanism for attracting investment.

In contrast, the main incentive applied by Jamaica, Panama, Saint Vincent and the Grenadines, Saint Lucia and Venezuela is tax-related, with the amount of and exemption or reduction in taxes on company profits depending on the sector targeted for support. In Mexico a decree to foster the *maquila* industry permits the temporary entry of goods with no surcharge on taxes associated with these movements. The main incentives also include cuts to local taxes, access to infrastructure, free use or a reduced price on land and essential services, provided by states and municipalities, which can independently negotiate special conditions for investors.

Chile designed a mixed incentive scheme that combines tax cuts and financial incentives to promote investment in specific locations or economic sectors. These include a programme to encourage investment high in technological content, based on providing non-reimbursable resources to finance fixed assets, long-term rents and training of human resources for this sort of project.

Incentives may be automatic or evaluated on a case-by-case basis. In the first situation, requirements are developed for projects interested in receiving these benefits. Companies present their projects and they are evaluated individually. This system is applied mainly in countries where incentives are based on duty-free zones, *maquila* laws, or sectoral tax exemptions. Incentives are provided on a case-by-case basis, depending on the merit of the investment project. The advantage of this type of incentive is that it focuses support on the results expected from projects.

These incentives, moreover, can be generally applied or focus on a specific sector or objective. Those going to new investment in duty-free zones, for example, are of a general nature, while those going to a specific end may take the form of a subsidy for human resource training within Chile's programme for investment in significant technological content.

Chile therefore has applied a mixed strategy: on one hand the Foreign Investment Committee promotes it as a business platform, highlighting market opportunities opened up by existing and up-and-coming trade agreements. On the other hand, CORFO focuses on food manufacturing, technological (services for information and communications technology, software development and biotechnology) and the carbon bond market.

3.3 Attracting FDI to research and development (R&D)

Attracting more advanced investment, such as R&D, requires the design of more focused incentives. Ireland, for example, which offers the most attractive tax rate in the European Union and the OECD to attract FDI, offers a set of extra financial incentives, among them direct financing (grants) for hiring, training, research and development, and fixed asset acquisitions. The Czech Republic, meanwhile, set up an incentives programme in 2004 to attract investment in technological centres associated with production: up to 50 per cent of investment costs during the first five years or two years of wages for new employees can receive subsidies, along with 35 per cent of specific training costs and 65 per cent of general training.

A recent UNCTAD report[25] on investment in the world indicates that R&D is the least internationalized segment within the value chain, but the one that has grown the most vigorously in recent years. From 1995-2003, Swedish companies' spending on R&D abroad rose from 22 per cent to 45 per cent, reaching US$2.47 billion. From 1995-2002, Japanese firms boosted spending on R&D abroad from US$1.9 billion to US$3.3 billion, 4 per cent of their total spending on R&D. From 1995-2001, German companies boosted their spending on R&D abroad by 130 per cent, taking it to US$12 billion.

[25] UNCTAD: World Investment Report 2005: Transnational Corporations and the Internationalization of R&D, Geneva.

Developed countries have traditionally been the main receivers of investment in R&D, and this remains the case today. Now, however, transnational companies – by far the main investors in R&D – are starting to consider developing countries as destinations for this kind of investment, particularly China and India in Asia, and Brazil, in Latin America.

Despite the enormous potential of R&D investment, a recent survey by UNCTAD[26] found that bodies encouraging FDI in FTAs have not actively fostered this investment. Results showed that only 11 per cent of FDI promotion bodies in Latin America and the Caribbean actively seek to attract investment in R&D, compared to 79 per cent in developed countries and 94 per cent in developing countries in Asia and Oceania.

In any case, it is important to take into consideration the fact that facilitating investment in R&D requires meeting certain conditions, such as having a stable economy, the right infrastructure (especially information and telecommunications), intellectual property protection, a business environment friendly to this type of investment and available researchers. This latter, in terms of quantity as well as the equality of specific know-how, is a fundamental requirement for making a country attract this sort of investment.

Finally, UNCTAD developed an index to measure countries' ability to innovate based on two indicators: one that measures technological activity (using variables such as the number of researchers, patents and technical publications, all expressed per capita) and the other measuring human capital (per literacy rates and registration in secondary and post-secondary education). The innovation capability index is assumed to denote countries' ability to attract FDI in R&D. Using this base and a universe of 117 countries studied, Chile ranked 42nd, higher than Brazil (49), Uruguay (52), Costa Rica (58), Mexico (59), Venezuela (62), Peru (63), Colombia (68) and Ecuador (78), but lower than Argentina (37).

3.4 Trade agreements and attracting FDI to Chile

Table 3-11, which shows the accumulated stock of FDI as a percentage of GDP for selected countries, reveals that Chile's FDI stock rose from US$10,067 billion in 1990 to US$54,464 billion in 2004. Measured over GDP, FDI in Chile rose from 33.2 per cent in 1990 to 58.2 per cent in 2004, well above the world average and the average for developing economies.

[26] UNCTAD: World Investment Report 2005: Transnational Corporations and the Internationalization of R&D, Geneva

Table 3-11: Stock of foreign direct investment received in selected countries (per cent of GDP)

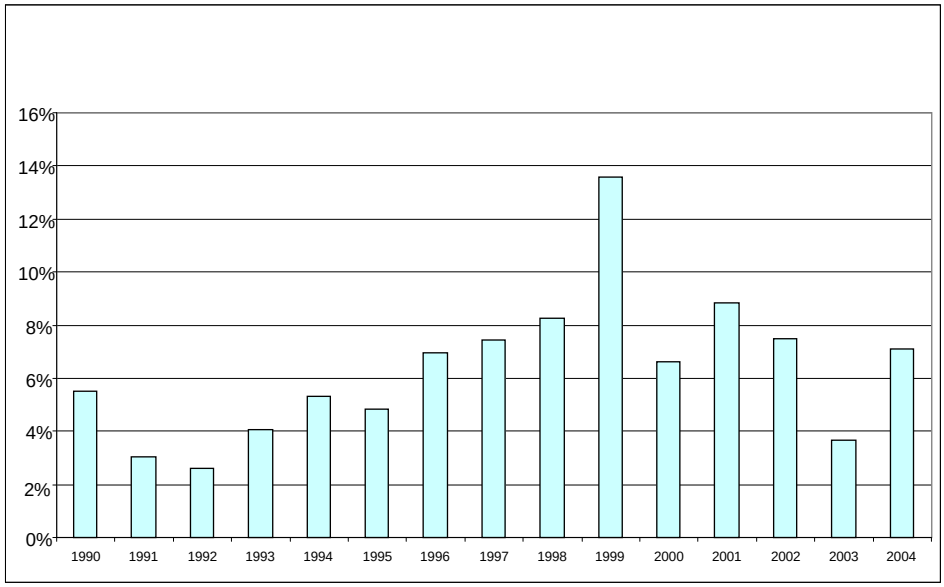
Countries	1990	2000	2003	2004
Brazil	8.0	17.2	25.8	25.2
Chile	33.2	60.7	65.0	58.2
China	5.8	32.2	35.6	14.9
Spain	12.8	25.7	27.4	34.9
United States	6.9	12.4	14.1	12.6
France	7.1	19.8	24.7	26.5
Hungary	1.7	49.3	51.8	60.7
India	0.5	3.8	5.4	5.9
Indonesia	34.0	40.4	27.5	4.4
Ireland	71.5	144.1	129.7	126.3
Malaysia	23.4	58.5	57.2	39.3
Mexico	8.5	16.7	26.5	27.0
New Zealand	18.2	45.0	49.1	51.5
United Kingdom	20.6	30.4	37.4	36.3
South Africa	8.2	33.9	18.5	21.7
Rep. of Korea	2.1	7.3	7.8	8.1
Developed countries	14.7	29.3	31.4	29.1
World	9.3	19.3	22.9	21.7

Source: UNCTAD, World Investment Report, 2005.

Figure 3-5, meanwhile, shows flows of Foreign Direct Investment into Chile from 1990 to 2005, expressed as a percentage of GDP.[27] In the five-year period, 1990-1994, which we can treat as a period without agreements (only agreements with Venezuela, Bolivia and Colombia were in effect at the time and were of limited importance from the perspective of trade and investment flows), US$5,777 billion (in constant US dollars, 1994) in FDI entered Chile, some 2.6 per cent of the accumulated GDP for the period. This came mostly (84 per cent) from countries with which Chile has currently free trade agreements.

[27] The information on annual FDI flows into Chile is taken from UNCTAD's World Investment Report (1996-2006), while Chilean GDP in dollars comes from the Central Bank of Chile (nominal GDP in pesos for each year, divided by the average exchange rate (ChP/USD) observed in each year).

Figure 3-5: Direct foreign investment flows into Chile (as a percentage of GDP)



Source: UNCTAD and Central Bank of Chile.

By 1995-2002, Chile had agreements in effect with Venezuela, Bolivia, Colombia, Ecuador, Mercosur, Canada, Mexico and Peru, affecting less than 20 per cent of Chilean exports and exercising little influence over FDI flows into the country. Nonetheless, during that period FDI reached US$41,580 billion (in constant 2002 dollars), 8.5 per cent of accumulated GDP. This came mostly (90 per cent) from countries that currently have free trade agreements in effect with Chile, especially Spain, the United States, Canada and the United Kingdom.

In terms of FDI and Chilean export and import volumes, the most important trade agreements came into effect between 2003 and 2005. FDI flows into Chile hit a record high in 1999, but dropped off in the years that followed, the result of a serious decline in the world economy, caused by the Asian crisis, which affected FDI flows into most countries, except China. From 2001-2003, the mergers and acquisitions market, which had become the driving force behind FDI worldwide and in Chile, also collapsed in the face of the uncertainty that had engulfed the world economy, reflected in dropping share prices, weak corporate results, and significant cuts to multinational firm's budgets for expansion.

The recovery in FDI inflows into Chile in 2004 and 2005 cannot be attributed to the latest trade agreements, since their origin has not shifted significantly in recent years. While these agreements open prospects for greater inflows in the coming years, the main issue will centre on the quality of this new investment, especially that going to R&D, even if this takes longer.

3.5 FDI's influence on employment[28]

To estimate FDI's impact on employment, the information available on actual FDI was separated into that with macroeconomic effects and that representing

[28] These estimates were developed to complement those of foreign trade flows presented in the next section, and contained in Velásquez, Frigolett and Riffo (2008).

changes in ownership or the constitution of investment funds providing productive risk capital.

In fact, to estimate the impact of actual FDI flows on employment, there are some conceptual considerations that should be taken into account, associated with correcting the indicator. The Foreign Investment Committee treats all actual flows as investment, regardless of their impact on production. This means that a foreign company's purchase of a Chilean firm is treated as investment, even though in many cases it involves no increase in productive capacity, which is the usual definition that economic theory assigns to investment.

In Chile's case, significant foreign investment went into purchasing major firms in the telecommunications, financial service (banks), public utilities (electric power, water and sewage treatment) sectors, among others. For the purpose of this study's estimates, we excluded flows that were primarily financial in nature, and investment involved in the purchase of large firms (where these operations could be identified). The remaining investment (corrected FDI) was considered a more accurate way of evaluating impacts on employment.

The main sectors involving productive FDI flows, that are those increasing productive capacity, were: mining, manufacturing and engineering works. We estimated how much FDI was going into construction and machinery and equipment for these sectors.

To do so, we estimated the percent of both components within each economic sector according to the MIP 2003 investment matrix. Because investment in manufacturing and engineering works was more disaggregated, a weighted average was used to estimate the respective coefficients. These percentages were then applied to the three sectors to obtain a dollar amount. The average foreign exchange was applied to take figures to thousands of 1996 and 2003 pesos. These final values were applied to the MIP model developed for the study to obtain impacts on gross production, aggregate value, direct and indirect employment generated by foreign direct investment flows for the 1990-1999 and 2000-2006 periods.

The results for each of the main sectors receiving FDI for the construction component are presented below. The basic assumption in this case is that FDI's impact on employment is apparent in this kind of activity, whereas in the case of machinery and equipment, essentially imports, there is no impact on employment. It wasn't possible to estimate employment generated at the different stages of operation and production associated with each project, so this estimate should be considered the bottom limit with regard to salaried employment generated.

For 2000-2006

Total employment generated on average in 2000-2006 was estimated at 418,093, specifically 260,974 direct and 157,119 indirect jobs. In mining, the average for the period for the construction component of FDI (CLP 2.4 trillion) created jobs for 202,000 people, 118,700 direct and 83,800 indirect jobs. We estimated total average employment created reached 59,728 jobs, down 7.4 per cent from the annual average for 1990-1999.

Table 3-12: FDI-generated employment 2000-2006 and 1990-1999

In the three main sectors, for the construction component:

Period	2000 – 2006				1990 – 1999			
Sector	Total	Mining	Engineering works	Manufacturing	Total	Mining	Engineering works	Manufacturing
Total employment	418,093	202,494	159,404	56,195	645,125	398,284	135,491	111,350
- Direct	260,974	118,691	109,269	33,014	396,956	239,609	92,021	65,326
- Indirect	157,119	83,803	50,135	23,181	248,169	158,676	43,470	46,023
Average employment	59,728	28,928	22,772	8,028	64,513	39,828	13,549	11,135
- Direct	37,282	16,956	15,610	4,716	39,696	23,961	9,202	6,533
- Indirect	22,446	11,972	7,162	3,312	24,817	15,868	4,347	4,602

Source: Velásquez, Frigolett and Riffo (2008).

The second most influential sector was engineering works (investment going to the electric power sector, hydraulic works and construction). In this case, for an overall amount of CLP1.8 trillion, the construction component within FDI generated 159,000 jobs, 109,000 direct and 50,100 indirect jobs. For manufacturing, CLP723 billion, the construction component within FDI (2000-2006) generated 56,200 jobs, 33,000 direct and 23,200 indirect.

According to this study, for direct and indirect employment broken down for products required as inputs for the construction component of FDI 2000-2006, business and real estate services stood out, accounting for over 20 per cent of indirect employment in the three sectors, outperforming the 30 per cent in the case of engineering works, followed by metallic products (almost 40 per cent in the case of manufacturing); commercial services, almost 9 per cent; non-ferrous base metal products; and finally, hotel and restaurant services, mainly in the case of mining. This last can be explained by the enormous amount of labour immigration from southern to northern Chile, due to mining projects.

For 1990-1999

We carried out a similar exercise for the 1990-1999 period, finding that total average jobs created reached 645,125, specifically 396,956 direct and 248,169 indirect jobs. For mining, the FDI construction component for 1990-1999 (CLP2.9 trillion) provided employment for a total of 398,300 people, 239,600 direct and 158,700 indirect jobs. Average annual salaried employment generated was estimated at 64,513.

The next most important sector was engineering works (investment going into electric power, hydraulic works and construction). In this case, an overall investment of CLP952 billion in the FDI construction component generated 135,500 jobs, 92,000 direct and 43,500 indirect. Finally, for manufacturing, CLP882 billion in the FDI construction component (1990-1999) generated a total of 111,400 jobs, 65,300 direct and 46,000 indirect.

According to the study quoted here, within the disaggregate direct and indirect employment generated according to products required as inputs for the accumulated FDI construction component (1990-1999), real estate and business services stood out, accounting for 25 per cent in mining, 31 per cent in engineering works and 20 per cent in manufacturing. Metallic products follow, at 37.5 per cent in the case of manufacturing; 17.1 per cent in mining; and 13.6 per cent in engineering works. Hotel and restaurants accounted for a significant share within

mining (13.8 per cent). In the case of engineering works and manufacturing, other products posting a significant share included: glass; non-metallic mineral and glass products; non-ferrous base metal products, iron and steel; and commercial services, all with shares of around 6 per cent.

IV. The effects of trade agreements on employment

This section focuses on quantifying the effects of expanding exports to countries with which Chile has trade agreements on employment levels, and projects trends for 2007-2010. It also analyses the characteristics of the jobs generated, based on information available on wages.

As Díaz and Ramos (1998) note, with respect to the effects of more openness to trade, and in particular trade agreements, there is widespread belief that because Chilean exports are mainly based on natural resources, they reflect enclaves with little impact on the rest of the economy, and therefore generate few jobs, or where they do generate many jobs, these are of poor quality and low productivity, offering low wages. This section presents evidence which calls this view into question.

1. Openness and export diversification

Table 4-1 provides information revealing the significant changes to the Chilean economy in terms of greater trade abroad in the past 35 years, as part of a unilateral process in the second half of the 1970s, and then through multiple trade agreements in the 1990s, combined with active participation in multilateral instances.

Table 4-1: Export diversification

Indicator	1970	1990	2005
1. Exports (US$ m)	1,111.8	8,372.7	40,573.7
a) Copper	75.5%	45.5%	45.1%
b) Non-copper	24.5%	54.5%	54.9%
2. Nº of products SITC v.1 to 4 digits	200	2,796	5,307
3. Markets	31	122	190
4. Exports by destination market (per cent of total)			
a) Asia	12%	26%	34%
b) European Union	61%	37%	22%
c) Latin America (minus Mexico)	12%	13%	12%
d) NAFTA	15%	18%	22%

Source: ProChile.

Thus, from 1970 to 2005, Chile went from a virtually mono-export structure, based on copper and focused on very few markets, to a new one involving innumerable new products and several dozen new destination markets. While mining products, particularly copper, currently account for half of export revenues, in the period studied other exports involving processed and unprocessed natural resources from the forestry, agriculture and fishing sectors, along with manufactured products and non-financial services, have grown enormously. As a result, non-copper exports rose from 24.5 per cent in 1970 to 54.9 per cent in 2005.

The number of export products in 1970 had multiplied more than 26-fold by 2005, almost doubling between 1990 and 2005 alone. Destination markets,

meanwhile, increased more than six-fold, diversifying significantly. Asian countries and North America rose in importance, displacing the European Union.

To identify the importance of trade with countries or blocs associated with trade agreements by originating groups of sectors, a new classification system was designed for productive sectors,[29] which regroups those used in the Input-Output Matrix (2003) and establishes equivalence with those from the national customs service, processed by Direcon according to the Chilean system (*Sistema Armonizado Chileno*, SACH) for foreign trade, the Population Census (2002) and the national employment survey (*Encuesta Nacional de Empleo*, ENE-INE).

Table 4-2 shows groups of goods according to the classification used, along with information on the degree of openness from 1996 to 2003,[30] and the percentage of total exports accounted for by countries and blocs covered by trade agreements. The groups are ranked from most to least important, by their percentage of gross production going to exports in the years indicated.

Note that in seven groups the degree of openness rose by more than ten percentage points, led by goods from the agricultural and agro-manufacturing sectors in the top three spots. In fact, exports of processed and preserved fruit and vegetables, as a percentage of gross production, from processing and preserving of fruit and vegetables, reached 76.5 per cent of gross production in 2003, and almost 70 per cent in the case of wine making. In the case of slaughter of livestock, and preparation and preservation of meat, the rise was particularly significant, with exports rising from 2.2 per cent in 1996 to 16 per cent in 2003. Among the first seven groups, it should be noted that the importance of extractive fishing, aquaculture and processing also rose, to almost 70 per cent in 2003. Aside from these, the extraction of metallic minerals (copper and iron production), and coal and other mining activities, should also be noted, with 81.6 per cent and 66.2 per cent respectively of their production going to external markets.

If the percentage of exports going to countries or blocs covered by trade agreements is examined, changes in the distribution discussed above become apparent. In fact, the seven groups experiencing the largest increase in exports to these destinations, posted rises of 20 percentage points or more in this period. This was the case with the manufacture of dairy products, wearing apparel, rubber and plastics, publishing and printing, the manufacture of furniture, machinery and equipment, and forestry, wood and paper products.

[29] See Appendix, Tables 4-1 and 4-2.

[30] These years were used because Input-Output Matrices are available.

Table 4-2: Degree of openness by group of goods and participation in trade agreements

Group of Goods	Export/GDP (per cent)		Change (percentage points)	Export FTA (per cent)		Change (percentage points)
	1996	2003		1996	2003	
(CR10) Processing and preserving of fruit and vegetables	56.4	76.5	20.1	48.0	60.3	12.3
(CR19) Wine making	50.9	69.6	18.7	74.0	77.5	3.5
(CR9) Slaughter of livestock, preparation and preservation of meat	2.2	16.0	13.8	43.7	52.0	8.3
(CR7) Extraction of crude oil and natural gas, and fuels	3.7	17.0	13.3	-	-	-
(CR29) Manufacture of common metals	22.3	34.8	12.5	48.1	60.7	12.6
(CR5) Extractive fishery, aquaculture, and service activities incidental to fishing	56.6	68.8	12.2	31.8	50.6	18.8
(CR26) Manufacture of chemicals and chemical products	14.0	24.2	10.2	40.3	60.2	19.9
(CR1) Agriculture, livestock, hunting and related services	16.6	24.9	8.3	64.0	77.0	13.0
(CR4) Forestry, wood and paper products	38.0	45.3	7.3	40.7	60.7	20.0
(CR31) Manufacture of machinery and equipment	21.3	27.8	6.5	15.3	38.4	23.1
(CR27) Manufacture of products of rubber and plastics	9.3	15.1	5.8	12.1	46.1	34.0
(CR22) Manufacture of textiles	16.2	20.8	4.6	29.5	33.2	3.7
(CR32) Manufacture of furniture, Manufacturing not elsewhere classified (n.e.c.).	10.9	15.3	4.4	46.4	71.5	25.1
(CR12) Manufacture of dairy products	3.1	6.3	3.2	0.0	73.2	73.2
(CR13) Milled products	2.5	5.2	2.7	-	-	-
(CR16) Manufacture and refining of sugar	4.2	6.5	2.3	-	-	-
(CR28) Manufacture of other non-metallic mineral products	2.6	4.9	2.3	32.6	32.9	0.3
(CR6) Extraction of coal and other mining activities	64.2	66.2	2.0	79.3	76.9	-2.4
CR24) Leather and footwear	5.4	7.3	1.9	29.9	46.2	16.3
(CR18) Distillation, rectification and mixing of spirits	1.1	2.8	1.7	-	-	-
(CR23) Manufacture of wearing apparel, dressing and dyeing of fur	4.9	5.6	0.7	33.4	68.1	34.7
(CR30) Manufacture of metal products	6.7	6.5	-0.2	21.5	33.4	11.9
(CR20) Beers and non-alcoholic beverages	2.5	2.2	-0.3	-	-	-
(CR8) Mining of metal ores	82.0	81.6	-0.4	56.1	68.5	12.4
(CR14) Preparation of animal feed	1.3	0.4	-0.9	-	-	-
(CR15) Manufacture of bakery products	3.9	1.5	-2.4	-	-	-
(CR11) Manufacture of vegetable and animal oils and fats	11.6	9.1	-2.5	40.2	26.5	-13.7
(CR21) Manufacture of tobacco products	10.1	6.5	-3.6	-	-	-
(CR17) Manufacture of other food products	24.4	20.2	-4.2	7.4	25.1	17.7
(CR25) Publishing and printing	10.1	5.2	-4.9	2.7	35.1	32.4

Source: author's own calculations using Direcon and Central Bank figures.

Moreover, it should be noted that the groups of sectors posting the highest percentages of shipments of their production to countries covered by trade agreements does not coincide completely with those experiencing increases from 1996 to 2003. This was the case with wine making, agriculture, livestock, hunting and related services, the manufacture of furniture, and the mining of metal ores, which clearly point to more diversification of shipments to destinations covered by trade agreements.

2. The impact on employment levels

Given the growing relevance of the Chilean economy's openness and integration into the world economy, along with the number of countries and blocs with which it has trade agreements, we are now interested in identifying the impact on employment levels.

The estimation method uses Chile's Input-Output Matrix (IOM) to estimate the employment intensity, degree of openness and average wages.[31] In November 2006, the Central Bank of Chile published the country's IOM, using 2003 as the base year, disaggregated to 78 branches of economic activity. Based on this IOM and the one for 1996, we calculated inverse matrices for both years to determine the direct and indirect effects.

The indirect effect on employment was generated by identifying how a given economic sector uses the production from other sectors as inputs, which in turn are generated through the use of capital and labour. Thus, indirect employment is that which takes place somewhere down the chain of intersectoral relationships, which originate from a direct impact generated by the production of one specific economic sector.

2.1 Estimation of salaried employment levels: 1996-2003

To estimate direct and indirect employment effects, employment multipliers were used, which reflect the sum of direct and indirect effects associated with a rise in the gross value of production. These are obtained using technical coefficients from the IOM.

First, average employment was estimated for 1996 and 2003, particularly in the salaried sector, given that the most recent information published on the IOM does not estimate mixed income, which would have made it possible to estimate self-employment.

To estimate absolute levels of salaried employment in 1996 and 2003 (required to estimate direct and indirect employment coefficients) three main sources of information were used: the 2002 Population Census, disaggregated into 58 sectors; the national employment survey (ENE) for 1996 and 2003, disaggregated to 72 sectors; and the annual national manufacturing survey (ENIA) for 1996 and 2003. The different employment classifications used by the first two were then brought into line with the branches of economic activity used in the IOM 2003.

[31] This last factor is also important to keep in mind when analysing the characteristics of the jobs created.

We chose to use information from the Population Census, because the Population Census reports more salaried employees than ENE for the same period, and a new sampling framework used by the ENE has revealed that the previous survey tended to underestimate this category.

Once they were aligned with the IOM categories, the absolute values for each branch in the 2002 Population Census were projected for 2003 and then for 1996, to assimilate these values to those for the 1996 and 2003 base years used by the IOM. And the quarterly rates of change for each branch of economic activity from the ENE's July-August 2002 to October-December 2003 and the four quarters of 1996 were applied to the census data.

At the level of the food and beverage manufacturing sector, more disaggregated estimates were done, since the 2002 Population Census does not provide more details. To do so, we used the annual national manufacturing survey (ENIA) for 1996 and 2003, which includes a breakdown compatible with the 1996 and 2003 IOMs. The ENIA provided total employment to four digits using the Standard International Trade Classification (SITC, rev. 2). Owners (employers) were subtracted from the total, leaving total formal sector employees. Then each sector's share was obtained, and applied to aggregate data from the Population Census for food and beverages manufacturing sectors. These estimates of salaried employment for 1996 and 2003 are posted in Table 4-3 and grouped under ten sectors in the next one.

Table 4-3: Average salaried employment by sector, 1996 and 2003 (number of people and change, per cent)

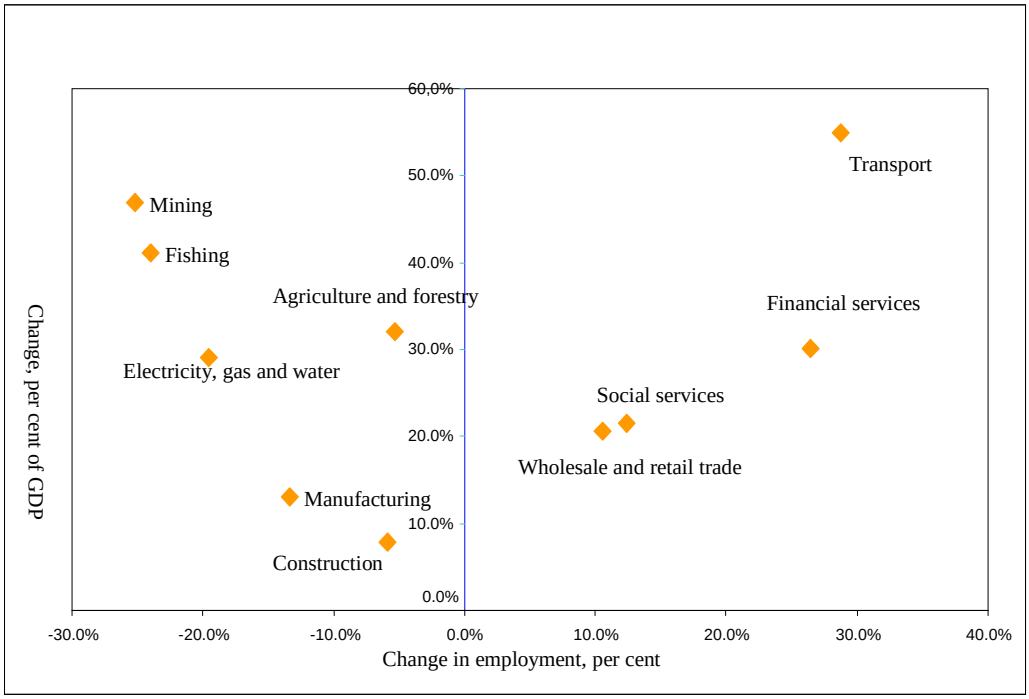
IOM Code	Sector	1996	2003	Var %
CR19	Wine making	3,898	13,188	238.3
CR40	Activities associated with land transport	38,067	67,796	78.1
CR39	Air transport	7,561	12,448	64.6
CR15	Manufacture of bakery products	20,897	32,734	56.6
CR29	Manufacture of common metals	19,322	29,376	52.0
CR41	Post and telecommunications	39,991	59,793	49.5
CR9	Slaughter of livestock, preparation and preservation of meat	18,887	26,829	42.1
CR43	Business services and real estate	315,944	440,941	39.6
CR36	Hotels and restaurants	103,042	122,364	18.8
CR46	Education	275,369	323,489	17.5
CR45	Public administration, defence and social security	213,246	245,630	15.2
CR11	Manufacture of vegetable and animal oils and fats	1,857	2,129	14.7
CR27	Manufacture of products of rubber and plastics	16,286	18,627	14.4
CR37	Land transport, transport by pipelines	150,341	167,700	11.5
CR49	Other service activities	146,050	159,964	9.5
CR47	Health and social work	182,944	200,213	9.4
CR35	Wholesale and retail trade	678,527	741,585	9.3
CR26	Manufacture of chemicals and chemical products	31,323	33,317	6.4
CR30	Manufacture of metal products	53,864	54,684	1.5
CR25	Publishing and printing	29,087	29,087	0.0
CR4	Forestry, wood and paper products	128,543	121,744	-5.3
CR1	Agriculture, livestock, hunting and related services	398,889	377,339	-5.4
CR34	Construction	429,562	404,258	-5.9
CR48	Recreational, cultural and sporting activities	46,503	42,056	-9.6
CR42	Financial intermediation, insurance and pensions	114,603	103,204	-9.9
CR31	Manufacture of machinery and equipment	34,590	30,500	-11.8
CR13	Milled products	6,238	5,443	-12.7
CR38	Water transport	9,373	8,172	-12.8
CR10	Processing and preserving of fruit and vegetables	22,217	19,357	-12.9
CR8	Mining of metal ores	53,476	44,153	-17.4
CR12	Manufacture of dairy products	15,240	12,456	-18,3
CR33	Electricity, gas and water	40,912	32,895	-19,6
CR17	Manufacture of other food products	16,904	12,935	-23,5
CR5	Extractive fishing, aquaculture, and service activities incidental to fishing	145,060	110,192	-24,0
CR22	Manufacture of textiles	31,452	23,105	-26,5
CR32	Manufacture of furniture, manufacturing n.e.c.	66,249	47,355	-28,5
CR28	Manufacture of other non-metallic mineral products	22,906	15,293	-33,2

IOM Code	Sector	1996	2003	Var %
CR7	Extraction of crude oil and natural gas, and fuels	4,176	2,788	-33.2
CR6	Extraction of coal and other mining activities	25,929	15,567	-40.0
CR20	Beers and non-alcoholic beverages	18,572	10,771	-42.0
CR24	Leather and footwear	22,243	11,877	-46.6
CR23	Manufacture of wearing apparel, dressing and dyeing of fur	57,084	27,305	-52.2
CR21	Manufacture of tobacco products	1,152	360	-68.7
CR14	Preparation of animal feed	11,701	3,332	-71.5
CR18	Distillation, rectification and mixing of spirits	8,824	2,470	-72.0
CR16	Manufacture and refining of sugar	4,369	1,038	-76.2
	Total	**4,083,72**	**4,267,862**	**4.5**

Source: author's own calculations using INE and Central Bank figures.

Figure 4-1 presents percentage changes between 1996 and 2003 in employment for each branch and product.

Figure 4-1: Salaried employment and GDP, 2003-1996 (change per cent)



Source: author's own calculations using INE and Central Bank figures.

In this period, salaried employment rose just 4.5 per cent, reflecting the significant drop in job creation apparent in the late 1990s, and a slow recovery in the early years of this decade, despite the fact that all productive sectors posted growth in economic activity.

This information also reveals that employment rose in the land transport, wholesale and retail trade, and services sectors, whereas in those sectors most oriented to foreign trade, such as agriculture, forestry, fishing, mining and manufacturing, employment fell. This tendency was also apparent when sectors were grouped according to their IOM codes and presented in Table 4-3. Employment rose in just seven of these.

2.2 Estimation of coefficients for direct and indirect employment, by sector, 1996-2003

To estimate trade agreements' impacts, information on exports from the national customs service, processed by the Direcon, provided values fob, countries and product groups classified according to Chile's harmonized system (SACH) for foreign trade. The data available covers from 1990 to 2005, and had to be matched with IOM information and employment data, to obtain an homogeneous classification system for products.

To evaluate agreements' impact on employment, an ex-post analysis was carried out for the years between the base years used in the two latest IOMs, 1996 and 2003. Based on this, it was possible to identify changes at the level of direct and indirect technical coefficients and their impact on employment.

To associate employment with the degree of economic openness, it was useful to summarize the state of openness by product group and rank them using measures based on exports over total gross production. The results are presented in Table 4-4, for nine exporting sectors, six semi-exporting sectors, and 31 sectors focusing on the domestic market.

In terms of the intensity of employment, this was analysed in terms of both *direct employment* generated and the associated indirect employment. This indicator was defined as direct or indirect employment generated per one billion peso rise in final demand for gross production.

This increase in final demand translates into a rise in gross production of the sector itself, plus the gross production of other sectors in the chain via cost functions. At the same time, the rise in gross production then translates into rises in aggregate value (direct and indirect) which, based on the structure of the components, determines direct and indirect wages generated. As the average wage level is known from the start, the extent of direct and indirect employment can be determined.

Table 4-4: Sectors by degree of openness and employment coefficients, 2003 (per cent and number of people)

Code	Sector	Export structure	Direct employment coefficient (jobs/billion pesos)	Indirect employment coefficient (jobs/billion pesos)
CR38	Water transport	5.8	7	11
CR8	Mining of metal ores	31.4	7	22
CR10	Processing and preserving of fruit and vegetables	2.0	35	60
CR19	Wine making	2.7	21	50
CR5	Extractive fishing, aquaculture, and service activities incidental to fishing	8.4	61	27
CR6	Extraction of coal and other mining activities	4.2	15	22
CR39	Air transport	3.6	11	19
CR4	Forestry, wood and paper products	9.6	45	22
CR29	Manufacture of common metals	2.1	37	23
	Exports	***69.7***	***25***	***24***
CR31	Manufacture of machinery and equipment	1.6	25	22
CR1	Agriculture, livestock, hunting and related services	4.5	130	24
CR26	Manufacture of chemicals and chemical products	3.7	14	24
CR40	Activities associated with land transport	1.8	48	24
CR22	Manufacture of textiles	0.4	63	28
CR17	Manufacture of other food products	0.8	26	38
	Semi exports	***12.8***	***62***	***25***
CR7	Extraction of crude oil and natural gas, and fuels	2.3	1	5
CR9	Slaughter of livestock, preparation and preservation of meat	1.1	24	104
CR32	Manufacture of furniture, manufacturing n.e.c.	0.3	143	33
CR27	Manufacture of products of rubber and plastics	0.8	20	19
CR35	Wholesale and retail trade	6.6	76	27
CR11	Manufacture of vegetable and animal oils and fats	0.1	17	37
CR24	Leather and footwear	0.1	49	29
CR21	Manufacture of tobacco products	0.0	4	47
CR16	Manufacture and refining of sugar	0.0	8	91
CR30	Manufacture of metal products	0.3	53	24
CR12	Manufacture of dairy products	0.2	19	70
CR23	Manufacture of wearing apparel, dressing and dyeing of fur	0.1	63	33
CR13	Milled products	0.1	19	77
CR25	Publishing and printing	0.2	46	32
CR28	Manufacture of other non-metallic mineral products	0.3	18	19
CR41	Post and telecommunications	0.6	31	25
CR43	Business services and real estate	2.0	61	13
CR37	Land transport, transport by pipelines	0.9	39	19
CR42	Financial intermediation, insurance and pensions	0.6	29	15
CR18	Distillation, rectification and mixing of spirits	0.0	35	64
CR20	Beers and non-alcoholic beverages	0.1	13	31
CR15	Manufacture of bakery products	0.1	48	45
CR36	Hotels and restaurants	0.0	86	49
CR46	Education	0.0	102	20
CR14	Preparation of animal feed	0.0	5	57
CR33	Electricity, gas and water	0.0	15	13
CR34	Construction	0.0	55	27
CR45	Public administration, defence, social security	0.1	71	12
CR47	Health and social work	0.0	77	16
CR48	Recreational, cultural and sporting activities	0.3	62	23
CR49	Other service activities	0.0	103	19
	Domestic market	**17.5**	**52**	**24**
	Total	**100.0**	**50**	**24**

Source: author's own calculations.

By classifying different economic sectors according to their degree of openness, three groups appear:

- *Export sectors*

In 2003, these accounted for 69.7 per cent of total exports, although just 20 per cent of Chile's total gross production. In terms of job creation, they show a relatively balanced average between direct (25) and indirect (24) jobs generated for every billion pesos of gross production. This means they generate just half the jobs created by the rest of the economy, although indirect jobs created by export sectors equal those created by the rest of the economy.

The sectors most intensive in direct employment are extractive fishing, aquaculture and processing (61 jobs); forestry, wood and paper products (45 jobs), Manufacture of common metals (37 jobs) and processing and preserving of fruit and vegetables (35 jobs). In the case of indirect employment, their average is far higher than the average for export sectors: processing and preserving of fruit and vegetables (60 jobs), followed by the wine industry (50 jobs).

- *Semi-export sectors*

In 2003, these sectors accounted for 12.8 per cent of exports and 10 per cent of total gross production, and proved to be more employment intensive, at 62 jobs, although they were similar to the rest of the economy in the case of indirect jobs, 25 versus 24 jobs.

In this group, the sectors most intensive in direct employment were agriculture, livestock and hunting (130 jobs), the second highest, nationally; followed by textiles (63 jobs), and activities associated with land transport (48 jobs). On indirect employment generated by these sectors, there were no major surprises, with manufacturing of other food products leading, at 38 jobs per billion pesos of gross production.

- *Domestic market sectors*

Sectors focusing primarily on domestic markets, i.e. those exporting less than 20 per cent of their gross production, accounted for 17.5 per cent of exports and 71 per cent of total gross production.

These sectors approached national averages in the case of both direct (52 jobs) and indirect (24 jobs) employment. There were larger differences among the sectors; however, since those most employment-intensive belonged to the manufacture of furniture and other industries groups (143 jobs). Aside from these goods-oriented sectors, services was most intensive in employment. In fact, for direct jobs, other service activities led (103 jobs), followed by education (102 jobs), hotels and restaurants (86 jobs), health services (77 jobs), wholesale and retail trade (76 jobs), and public administration (71 jobs).

There was also significant variance in the case of indirect jobs. In this case, the sectors most intensive in employment were slaughter of livestock, preparation and preservation of meat (104 jobs); manufacture and refining of sugar (91 jobs); milled products (77 jobs); and manufacture of dairy products (70 jobs).

2.3 Employment required for the total export vector

As Table 4-5 shows, upon examining the total export vector in the estimation model, the level of total salaried employment for 1996 is 557,400 people, composed of 342,300 direct and 215,000 indirect jobs. For 2003, total salaried employment reached 716,600 people, 388,000 direct and 328,600 indirect jobs.

The information on total employment has been ranked from most to least. This shows that 72.5 per cent of jobs are concentrated in copper and iron production (mining of metal ores), followed by extractive fishing and aquaculture, agriculture and livestock, and forestry and wood and paper products.

Table 4-5: Salaried employment associated with total exports, 1996-2003 (number of people)

Groups of goods		Employment 1996			Employment 2003		
		Total	Direct	Indirect	Total	Direct	Indirect
CR8	Mining of metal ores	123,528	45,841	77,687	156,663	37,504	119,160
CR5	Extractive fishing, aquaculture, and service activities incidental to fishing	131,715	104,948	26,767	129,414	90,162	39,252
CR1	Agriculture, livestock, hunting and related services	85,058	72,118	12,940	120,558	101,762	18,796
CR4	Forestry, wood and paper products	85,078	58,581	26,497	113,156	75,678	37,478
CR19	Wine making	12,407	2,224	10,183	33,226	9,730	23,496
CR10	Processing and preserving of fruit and vegetables	36,064	11,433	24,631	32,727	12,188	20,539
CR9	Slaughter of livestock, preparation and preservation of meat	2,885	419	2,466	24,357	4,584	19,773
CR26	Manufacture of chemicals and chemical products	9,503	4,385	5,119	24,292	8,865	15,427
CR29	Manufacture of common metals	7,989	5,080	2,910	21,625	13,261	8,365
CR31	Manufacture of machinery and equipment	13,475	7,699	5,775	13,618	7,162	6,457
CR32	Manufacture of furniture, manufacturing n.e.c.	8,718	7,098	1,620	9,110	7,411	1,699
CR17	Manufacture of other food products	11,168	4,474	6,695	9,021	3,698	5,323
CR22	Manufacture of textiles	4,871	3,640	1,230	5,801	3,987	1,815
CR27	Manufacture of products of rubber and plastics	3,137	1,541	1,596	5,618	2,856	2,763
CR30	Manufacture of metal products	4,730	3,324	1,406	4,655	3,199	1,455
CR12	Manufacture of dairy products	1,950	491	1,460	3,637	775	2,863
CR25	Publishing and printing	5,551	2,956	2,595	2,685	1,594	1,090
CR23	Manufacture of wearing apparel, dressing and dyeing of fur	4,867	3,641	1,226	2,444	1,605	839
CR28	Manufacture of other non-metallic mineral products	1,211	613	599	1,659	805	854
CR24	Leather and footwear	1,860	1,290	570	1,473	925	548
CR11	Manufacture of vegetable and animal oils and fats	1,625	526	1,099	881	275	606
Total		**557,393**	**342,323**	**215,070**	**716,621**	**388,025**	**328,596**

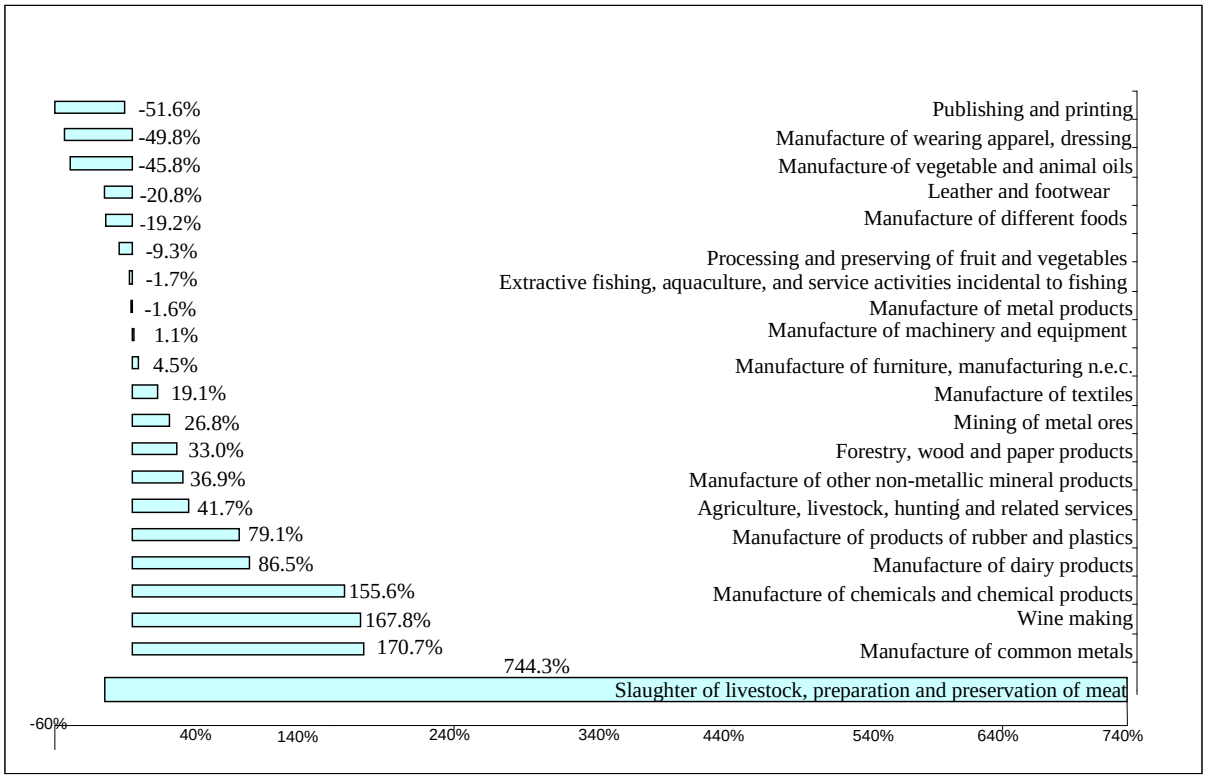
Source: author's own calculations.

The breakdown of the changes in total employment, which reached 28.6 per cent, is presented in Figure 4-2. During this period, eight sector groups saw their total employment decline, particularly publishing and printing, manufacture of wearing apparel, manufacture of vegetable oils and fats, and leather and footwear, although their contribution to total employment is relatively low.

Despite the larger increases in manufacturing, particularly slaughter of livestock, preparation and preservation of meat, manufacture of common metals, Wine making,

manufacture of chemicals and chemical products, dairy products and rubber and plastic, their effect on total employment is relatively minor.

Figure 4-2: Percentage change in total employment associated with exports, 1996-2003



Source: author's own calculations.

Moreover, the information presented reveals a total net increase in employment associated with exports between the two matrices of 28.6 per cent, or 159,000 people, which reflects a general increase in direct employment of 13.4 per cent and a larger rise in indirect employment, of 52.8 per cent.

The rise in the percentage of indirect jobs over total employment associated with exports for the years examined can be analysed in Table 4-6, which shows indirect to direct employment for each group of goods examined in 1996 and 2003, and their changes.

On possible values for this coefficient, when greater than (less than) one, it denotes the generation of more (fewer) indirect jobs than those created in the sector itself. Thus, for example, at the aggregate level, total direct jobs was more than indirect jobs in both 1996 and 2003, although at the same time it is clear that the percentage of indirect jobs rose from one year to the next.

Table 4-6: Indirect employment – direct salaried employment associated with total exports, 1996-2003

Groups of goods		1996	2003	Variation
CR9	Slaughter of livestock, preparation and preservation of meat	5.88	4.31	-
CR12	Manufacture of dairy products	2.98	3.69	+
CR8	Mining of metal ores	1.69	3.18	+
CR19	Wine making	4.58	2.41	-
CR11	Manufacture of vegetable and animal oils and fats	2.09	2.20	+
CR26	Manufacture of chemicals and chemical products	1.17	1.74	+
CR10	Processing and preserving of fruit and vegetables	2.15	1.69	-
CR17	Manufacture of other food products	1.50	1.44	-
CR28	Manufacture of other non-metallic mineral products	0.98	1.06	+
CR27	Manufacture of products of rubber and plastics	1.04	0.97	-
CR31	Manufacture of machinery and equipment	0.75	0.90	+
	Total	0.63	0.85	+
CR25	Publishing and printing	0.88	0.68	-
CR29	Manufacture of common metals	0.57	0.63	+
CR24	Leather and footwear	0.44	0.59	+
CR23	Manufacture of wearing apparel, dressing and dyeing of fur	0.34	0.52	+
CR4	Forestry, wood and paper products	0.45	0.50	+
CR22	Manufacture of textiles	0.34	0.46	+
CR30	Manufacture of metal products	0.42	0.45	+
CR5	Extractive fishing, aquaculture, and service activities incidental to fishing	0.26	0.44	+
CR32	Manufacture of furniture, manufacturing n.e.c.	0.23	0.23	0
CR1	Agriculture, livestock, hunting and related services	0.18	0.18	0

Source: author's own calculations.

Of the indirect jobs associated with the sector groups examined, those rising in importance in 2003 included slaughter of livestock, preparation and preservation of meat in the first place, followed by the manufacture of dairy products and the extraction of copper and iron (mining of metal ores), which as mentioned above, accounts for the highest level of total employment, and posted an increase in the percentage of jobs produced by production chains associated with the main activity. Because they also outperformed the value for all sectors overall, the wine industry and a set of manufacturing activities associated with food, chemicals, rubber and plastic, and machinery and equipment also stood out.

Sectors showing a less significant relationship of indirect to direct jobs included forestry; wood and paper products; extractive fishing, aquaculture, and service activities incidental to fishing; and agriculture and livestock (in last place), all accounting for a large share of total employment.

Moreover, the mining of metal ores sector clearly posted the largest increase in the coefficient for the years in question, indicating a high level of outsourcing of functions. In contrast, wine making posted a significant decline in indirect to direct jobs, suggesting technological and organizational changes that may have led to a greater relative concentration of employment in this sector, and a more limited association between production and employment in the other sectors to which it is related.

2.4 Employment required for the exports to countries with trade agreements vector

If we only consider exports going to countries and blocs covered by the main trade agreements, as presented in Table 4-7, total salaried employment reached

241,600 people, broken down into 153,300 direct and 88,000 indirect jobs. As of 2003, total salaried employment stood at 447,100 people, breaking down into 242,000 direct and 205,100 indirect jobs. The difference in total jobs from one period to the next was 205,000 people, an 85 per cent increase, outperforming that for total exports.

Table 4-7: Salaried employment levels associated with exports under trade agreements

Groups of goods		Employment 1996			Employment 2003		
		Total	Direct	Indirect	Total	Direct	Indirect
CR8	Mining of metal ores	39,332	14,596	24,736	107,382	25,706	81,676
CR1	Agriculture, livestock, hunting and related services	40,794	34,588	6,206	92,878	78,398	14,481
CR4	Forestry, wood and paper products	62,936	43,335	19,601	68,643	45,908	22,735
CR5	Extractive fishing, aquaculture, and service activities incidental to fishing	57,546	45,851	11,694	65,490	45,627	19,864
CR19	Wine making	4,050	726	3,324	25,748	7,540	18,208
CR10	Processing and preserving of fruit and vegetables	23,085	7,319	15,767	19,736	7,350	12,386
CR26	Manufacture of chemicals and chemical products	5,334	2,461	2,873	14,629	5,339	9,290
CR29	Manufacture of common metals	3,210	2,041	1,169	13,129	8,051	5,078
CR9	Slaughter of livestock, preparation and preservation of meat	1,163	169	994	12,657	2,382	10,275
CR32	Manufacture of furniture, manufacturing n.e.c.	235	191	44	6,510	5,296	1,214
CR31	Manufacture of machinery and equipment	1,003	573	430	5,228	2,749	2,479
CR12	Manufacture of dairy products	298	75	223	2,663	567	2,096
CR27	Manufacture of products of rubber and plastics	0	0	0	2,589	1,316	1,273
CR17	Manufacture of other food products	0	0	0	2,264	928	1,336
CR22	Manufacture of textiles	0	0	0	1,929	1,325	603
CR23	Manufacture of wearing apparel, dressing and dyeing of fur	1,625	1,215	409	1,664	1,093	571
CR30	Manufacture of metal products	0	0	0	1,555	1,069	486
CR25	Publishing and printing	0	0	0	943	560	383
CR24	Leather and footwear	401	278	123	680	427	253
CR28	Manufacture of other non-metallic mineral products	0	0	0	546	265	281
CR11	Manufacture of vegetable and animal oils and fats	662	214	447	234	73	161
	Total	**241,672**	**153,632**	**88,040**	**447,097**	**241,969**	**205,128**

Source: author's own calculations.

These employment levels are presented as a function of total absolute employment in 2003, and are ranked in descending order.[32] This reveals that in 2003 six sector groups that had not exported to countries covered by trade agreements in 1996 joined the export set, a direct consequence of the growing diversification of destinations and expanding external demand for domestic manufacturing production.

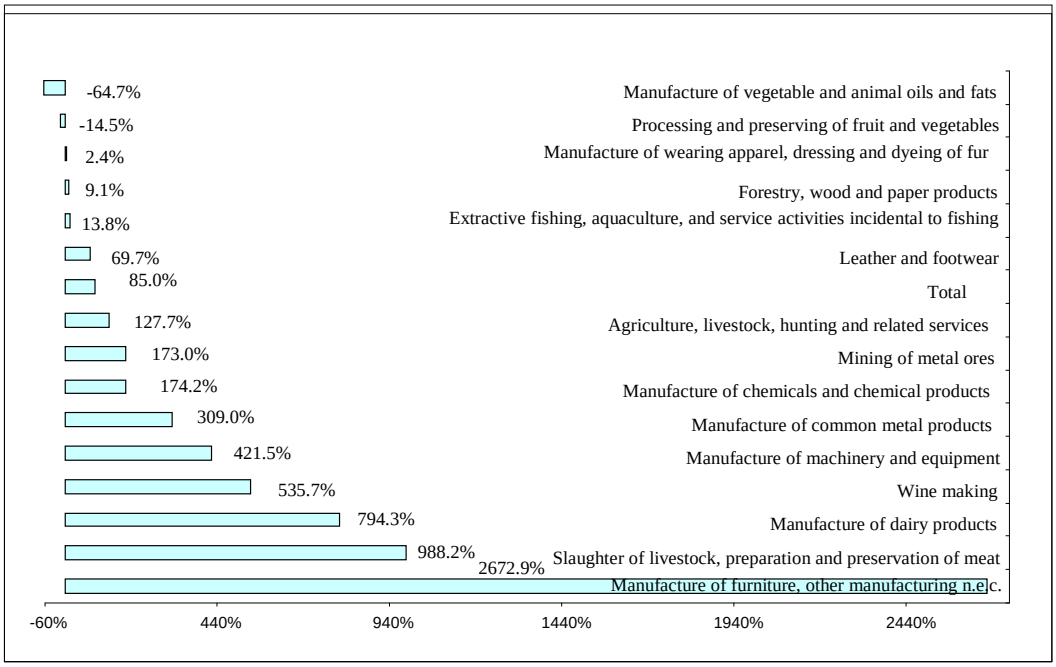
Moreover, the majority sectors that account for 74.8 per cent of total employment are the same as those generating a similar percentage of jobs associated with total exports: the production of copper and iron (mining of metal ores), followed by agriculture and livestock, then forestry, wood and paper products, and extractive fishing, aquaculture and related services. This is one of the consequences expected

[32] Given the very small number of exports in 1996 to the main trading countries and blocs for products classified in the CR27, CR17, CR22, CR30, CR25 and CR28 sectors, employment results could be subject to some significant distortion.

from signing a series of trade agreements in this period, since these focused on countries and groups of countries that were very important to Chile's foreign trade.

The composition of the associated changes in total employment in this case is presented in Figure 4-3. Only two groups of sectors posted declines in employment at this time: processing and preserving of fruit and vegetables and the manufacture of vegetable and animal oils and fats.

Figure 4-3: Total employment associated with exports to destinations covered by trade agreements, 1996- 2003 (change, per cent)



In contrast, the largest increases were posted by manufacture of furniture, slaughter of livestock and preservation of meat, dairy products and wine making, with all but the latter posting lower levels of employment to total employment in 1996.

In terms of the components of total employment, direct salaried employment associated with exports to destinations covered by trade agreements accounted for 3.8 per cent of total formal sector direct employment in 1996, rising slightly to 5.7 per cent in 2003. For total employment, direct jobs fell from 63.6 per cent of total employment in 1996 to 54.1 per cent in 2003, which means that jobs resulting from production chains associated with the main activity rose in importance. The same thing happened in the case of employment associated with total exports.

The rise in the proportion of indirect jobs over the total generated by exports going to destinations covered by trade agreements, distributed by sector groups, is presented in Table 4-8. For this sector group, there is a great similarity in the coefficients obtained for employment associated with total exports, which was expected given the significant rise in exports to destinations covered by trade agreements over total exports. In future, assuming that Chile will continue to forge new agreements, especially with those countries with which trade is and will be significant, these relationships should be even more similar.

Table 4-8: Indirect employment to formal sector direct employment in sectors exporting to destinations covered by trade agreements, 1996-2003

Groups of goods		1996	2003	Change
CR9	Slaughter of livestock, preparation and preservation of meat	5.88	4.31	-
CR12	Manufacture of dairy products	2.98	3.69	+
CR8	Mining of metal ores	1.69	3.18	+
CR19	Wine making	4.58	2.41	-
CR11	Manufacture of vegetable and animal oils and fats	2.09	2.20	+
CR26	Manufacture of chemicals and chemical products	1.17	1.74	+
CR10	Processing and preserving of fruit and vegetables	2.15	1.69	-
CR17	Manufacture of other food products	-	1.44	
CR28	Manufacture of other non-metallic mineral products	-	1.06	
CR27	Manufacture of products of rubber and plastics	-	0.97	
CR31	Manufacture of machinery and equipment	0.75	0.90	+
	Total	0.57	0.85	+
CR25	Publishing and printing	-	0.68	
CR29	Manufacture of common metals	0.57	0.63	+
CR24	Leather and footwear	0.44	0.59	+
CR23	Manufacture of wearing apparel, dressing and dyeing of fur	0.34	0.52	+
CR4	Forestry, wood and paper products	0.45	0.50	+
CR22	Manufacture of textiles	-	0.46	
CR30	Manufacture of metal products	-	0.45	
CR5	Extractive fishing, aquaculture, and service activities incidental to fishing	0.26	0.44	+
CR32	Manufacture of furniture, manufacturing n.e.c.	0.23	0.23	
CR1	Agriculture, livestock, hunting and related services	0.18	0.18	0

Source: author's own calculations.

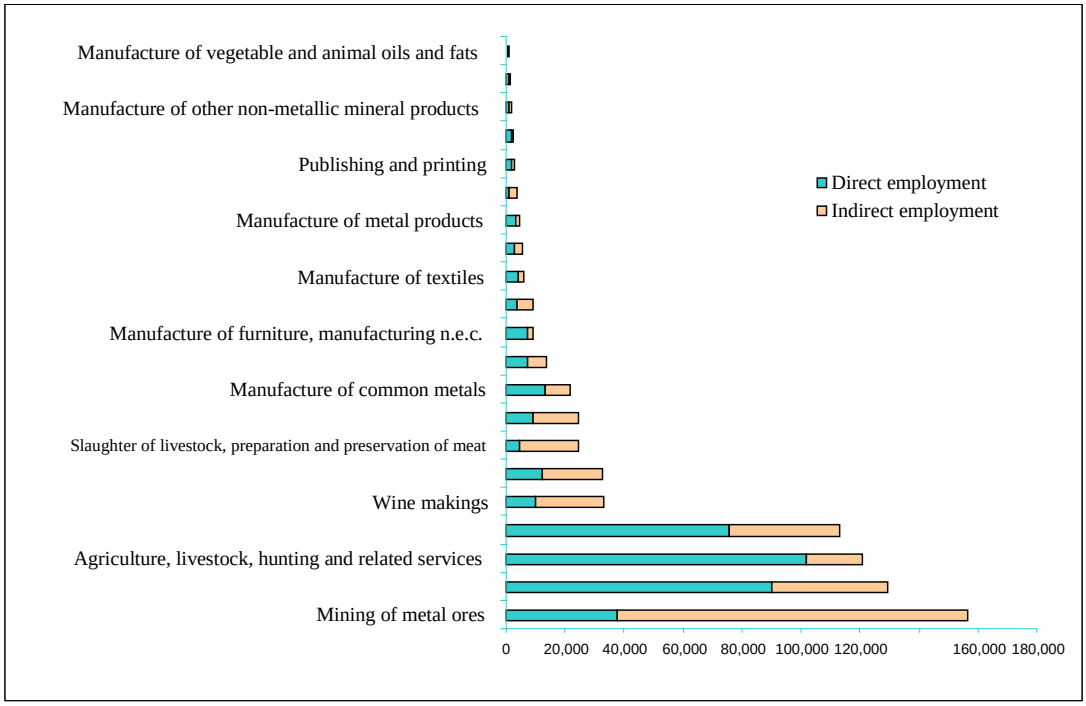
The coefficient for all sectors considered, 0.85, is identical to that obtained for the ratio between indirect and direct jobs. It is important to note that in 1996 this was lower than for the estimation for total exports: 0.57 versus 0.63, respectively, thus suggesting that the strategy to expand the number of countries involved in trade agreements has not only benefited employment, but has also encouraged the production of goods that today generate relatively more jobs along the production chain associated with the main activity.

2.5 Export sector value chains, 1996-2003

Based on information from the IOMs (1996 and 2003), along with employment estimates for the same years, we have estimated the magnitude of direct and indirect jobs associated with the export vector for each year.

Given that the above information includes direct and indirect employment, it is useful to our analysis to identify both components by groups of sectors. These are presented in Figure 4-4, and it is possible to see how the effect on the composition varies for each export sector group. In fact, in the case of sectors leading employment, such as mining of metal ores, the indirect component is larger, suggesting that production chains are very labour intensive. The indirect component is also larger in the case of fishing and forestry, in absolute terms, and some agri-business sectors, such as the packaging of fruit and vegetables, and the Wine making, in relative terms.

Figure 4-4: Direct and indirect employment by export sector, 2003



Source: author's own calculations.

To identify the characteristics of chaining within salaried employment, Tables 4-10 and 4-11 present a breakdown of the effects in terms of indirect employment associated with the main group of export sectors for 2003 and 1996, which have been ranked according to the coefficient "Indirect employment/Direct employment (I/D), and which highlight those chains that represent more than 3 per cent of total indirect employment by sector group.

The distribution and weight of economic sectors involved in chains are different when figures for 2003 and 1996 are compared. However, because the latest information is from 2003, and because that year the coefficients between indirect and direct employment and total exports converge with those going to countries with trade agreements, it is more useful to focus on describing chains for that year.

The main chains found are presented in Table 4-9, ranked by their importance to total indirect jobs in 2003. This reveals that, for example, in the case of copper production chains, indirect employment is primarily associated with specialized business services, the wholesale and retail trade, land transport, energy, and the production of metal inputs.

Thus, these production chains associated with exports, which have become increasingly important to total job creation in export-related activities in recent years, have made the task of establishing precisely the characteristics of jobs associated with foreign trade even more complex.

This limits analysis at the sector or company levels somewhat, since production chains may extend into more than one sector and involve a wide range of labour relationships. Thus, along the production chain high productivity, high-wage jobs may co-exist with lower labour productivity and poorer working conditions.

Table 4-9: Main sources of indirect salaried employment generation, 2003

Main activities	Employment in value chains by groups of goods						
CR8. Mining of metal ores (Mining of copper and iron)	CR43. Business services and real estate (45.9%)	CR35.Wholesale and retail trade (16.0%)	CR37. Land transport via railways, freight transport by truck, and other (7.5%)	CR33. Electricity, gas and water (4.6%)	CR30. Manufacture of metal products (4.2%)		
CR4. Forestry, wood and paper products	CR43. Business services and real estate (26.7%)	CR35.Wholesale and retail trade (23.6%)	CR37. Land transport via railways, freight transport by truck, and other (20.2%)	CR40. Post and telecommunications (6.1%)	CR42. Financial intermediation, insurance and pensions (3.1%)		
CR5. Extractive fishing, aquaculture, and service activities incidental to fishing	CR43. Business services and real estate (26.1%)	CR35.Wholesale and retail trade (23.6 %)	CR1. Agriculture, livestock, hunting and related services (18.1%)	CR37. Land transport via railways, freight transport by truck, and other (4.8%)	CR40. Post and telecommunications (4.2%)	CR14. Preparation of animal feed (3.4%)	CR42. Financial intermediation, insurance and pensions (3.1%)
CR19. Wine making	CR1. Agriculture, livestock, hunting and related services (51.1%)	CR43. Business services and real estate (18.1%)	CR35.Wholesale and retail trade (9.6%)	CR37. Land transport via railways, freight transport by truck, and other (4.8%)			
CR1. Agriculture, livestock, hunting and related services	CR35.Wholesale and retail trade (36.6%)	CR43. Business services and real estate (27.0%)	CR37. Land transport via railways, freight transport by truck, and other (20.2%)	CR5. Fishing, aquaculture and service activities incidental to fishing(4.3%)			
CR10. Processing and preserving of fruit and vegetables	CR1. Agriculture, livestock, hunting and related services (59.4 %)	CR43. Business services and real estate (12.9%)	CR35.Wholesale and retail trade (11.4%)	CR37. Land transport via railways, freight transport by truck, and other (3.9%)			
CR9. Slaughter of livestock, preparation and preservation of meat	CR1. Agriculture, livestock, hunting and related services (79.0%)	CR35.Wholesale and retail trade (6.6 %)	CR43. Business services and real estate (6.2%)				

Main activities	Employment in value chains by groups of goods				
CR26. Manufacture of chemicals and chemical products	CR43. Business services and real estate (26.1%)	CR35.Wholesale and retail trade (27.9%)	CR37. Land transport via railways, freight transport by truck, and other (6.9%)	CR4. Forestry, wood and paper products (3.7%)	
CR29. Manufacture of common metals	CR43. Business services and real estate (36.3 %)	CR35.Wholesale and retail trade (36.6 %)	CR37. Land transport via railways, freight transport by truck, and other (6.9%)	CR8. Mining of metal ores (Mining of copper and iron)	CR6. Extraction of coal and other mining activities (3.3%)
CR31. Manufacture of machinery and equipment	CR35.Wholesale and retail trade (32.0%)	CR43. Business services and real estate (29.4%)	CR29. Manufacture of common metals (10.1%)	CR37. Land transport via railways, freight transport by truck, and other (6.9%)	
CR12. Manufacture of dairy products	CR1. Agriculture, livestock, hunting and related services (60.4%)	CR43. Business services and real estate (13.5%)	CR35.Wholesale and retail trade (10.1%)	CR37. Land transport via railways, freight transport by truck, and other (3.2%)	CR4. Forestry, wood and paper products (3.1%)

Source: author's own calculations using Table 4-10.

Table 4-10: Generation of indirect salaried employment, 2003 (per cent of total indirect employment for each export-related group)

	CR9	CR12	CR8	CR19	CR11	CR26	CR10	CR17	CR28	CR27	CR31	CR25	CR29	CR24	CR23	CR4	CR22	CR30	CR5	CR32	CR1
I/D	**4.31**	**3.69**	**3.18**	**2.41**	**2.20**	**1.74**	**1.69**	**1.44**	**1.06**	**0.97**	**0.90**	**0.68**	**0.63**	**0.59**	**0.52**	**0.50**	**0.46**	**0.45**	**0.44**	**0.23**	**0.18**
CR1	79.0	60.4	0.8	51.1	22.9	2.3	59.4	28.6	0.9	1.1	0.8	0.9	0.8	11.6	2.9	2.4	16.0	1.1	18.1	2.7	0.0
CR4	0.5	3.1	0.8	3.9	1.8	3.7	2.6	3.2	3.8	2.6	1.6	27.5	0.9	2.0	1.0	0.0	2.3	1.4	1.6	16.0	1.9
CR5	0.6	0.5	0.1	0.4	7.6	1.7	0.5	0.3	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.3	0.2	0.1	0.0	0.2	4.3
CR6	0.1	0.1	0.5	0.2	0.4	0.3	0.1	0.4	6.9	0.1	0.5	0.0	3.3	0.1	0.1	0.1	0.5	0.5	0.1	0.4	0.3
CR8	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.6	0.0	4.3	0.0	0.0	0.0	0.1	0.6	0.0	0.2	0.0
CR9	0.0	0.0	0.1	0.0	0.4	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	3.1	0.1	0.1	0.1	0.0	0.6	0.0	0.2
CR14	0.3	0.2	0.0	0.2	0.7	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	3.4	0.0	2.0
CR22	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.5	0.1	0.2	0.1	4.3	2.4	0.1	0.0	0.1	0.0	5.6	0.1
CR23	0.0	0.0	0.3	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.0	0.1	0.1	0.1	0.2	0.1	0.1
CR24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	1.6	0.1	0.1	0.0	0.0	0.6	0.1
CR25	0.2	0.4	1.1	0.8	0.7	1.3	0.7	0.8	1.1	1.2	1.4	0.0	1.0	1.1	1.2	1.1	0.8	0.9	0.9	0.8	0.8
CR26	0.4	0.8	1.6	0.6	0.7	0.0	0.4	0.8	1.7	4.3	1.4	1.3	2.1	2.4	0.5	2.6	0.9	1.4	1.7	1.9	2.3
CR29	0.1	0.3	1.0	0.2	0.3	1.0	0.1	0.4	1.2	1.9	10.1	0.5	0.0	0.4	0.3	0.3	1.0	17.2	0.4	4.6	0.5
CR30	0.2	0.2	4.2	0.2	0.7	1.1	0.1	0.4	1.3	0.4	2.4	0.3	2.1	1.5	0.7	0.4	0.8	0.0	1.0	0.8	0.6
CR33	0.3	0.4	4.6	0.4	0.6	0.9	0.4	0.6	2.2	1.6	1.0	0.9	2.9	0.8	0.6	2.7	1.2	1.3	0.9	1.1	1.1
CR34	0.3	0.5	1.1	0.5	1.0	1.2	0.4	0.9	1.5	1.3	1.2	1.3	1.3	1.1	1.0	1.1	0.9	1.0	0.8	0.7	1.2
CR35	6.6	10.1	16.0	9.6	19.4	27.9	11.4	17.2	20.7	35.7	32.0	20.9	25.0	22.1	45.7	23.6	36.8	28.8	19.9	23.1	36.6
CR37	1.8	3.2	7.5	3.6	4.9	6.9	3.9	5.8	13.4	6.5	4.3	5.9	6.9	3.6	3.6	20.2	4.2	5.4	4.8	7.3	7.2
CR40	0.4	0.8	2.5	1.9	2.2	2.8	1.6	1.7	2.8	2.2	1.8	1.9	3.0	1.7	2.9	6.1	2.1	2.0	4.2	2.3	1.7
CR42	0.3	0.5	1.4	0.9	1.2	1.9	0.8	1.0	1.9	2.7	1.8	1.8	1.7	1.9	1.6	3.1	1.8	1.6	3.1	2.0	1.4
CR43	6.2	13.5	45.9	18.1	25.3	35.8	12.9	26.7	30.4	29.7	29.4	25.2	36.3	32.4	27.4	26.7	23.2	27.3	26.1	21.8	27.0
CR49	0.2	0.5	0.6	0.6	0.8	1.3	0.2	0.7	1.7	1.0	1.4	4.4	0.8	1.2	0.9	1.2	0.5	1.1	1.0	0.6	0.6
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: author's own calculations.

Table 4-11: Generation of indirect salaried employment, 1996 (per cent of total indirect employment for each export-related group)

	CR9	CR19	CR12	CR10	CR11	CR8	CR17	CR26	CR27	CR28	CR25	CR31	CR29	CR4	CR24	CR30	CR22	CR23	CR5	CR32	CR1
I/D	**5.88**	**4.58**	**2.98**	**2.15**	**2.09**	**1.69**	**1.50**	**1.17**	**1.04**	**0.98**	**0.88**	**0.75**	**0.57**	**0.45**	**0.44**	**0.42**	**0.34**	**0.34**	**0.26**	**0.23**	**0.18**
CR1	76.5	50.2	59.9	59.6%	22.6	1.0	29.3	2.0	1.3	1.1	1.1	1.2	1.1	2.4	13.8	1.1	3.7	1.9	11.5	1.1	0.0
CR4	0.9	5.7	3.4	3.1%	3.3	1.1	6.4	4.4	3.1	4.3	23.5	2.1	1.5	0.0	2.8	2.4	4.3	2.1	3.3	21,0	3.2
CR5	1.1	0.7	1.0	0.8%	18.6	0.1	0.7	2.9	0.3	0.5	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.0	0.2	7.5
CR6	0.2	0.3	0.3	0.2%	0.2	2.8	0.6	0.8	0.4	10.3	0.1	0.6	1.1	0.3	0.2	0.4	0.5	0.2	0.2	0.5	1.4
CR8	0.0	0.0	0.0	0.1%	0.0	0.0	0.0	0.3	0.1	0.2	0.0	0.9	8.0	0.0	0.0	1.4	0.0	0.0	0.1	0.1	0.0
CR14	1.4	0.9	1.3	1.1	2.2	0.0	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.1	0.0	10.3	0.0	10.4
CR22	0.0	0.1	0.1	0.1	0.3	0.1	0.1	0.2	1.5	0.3	0.3	0.3	0.2	0.5	2.6	0.4	0.0	26.4	1.3	2.2	0.2
CR26	0.5	0.9	0.7	0.5	0.5	0.6	1.5	0.0	2.7	1.3	1.7	0.7	0.8	1.5	1.3	1.2	2.8	1.0	1.1	1.8	3.4
CR29	0.1	0.1	0.6	1.3	0.3	1.9	0.4	0.4	1.3	0.5	0.3	9.6	0.0	0.4	0.2	17.2	0.4	0.1	0.8	2.2	0.3
CR30	0.3	0.4	0.9	2.6	1.5	2.5	1.0	1.0	6.3	0.7	0.7	4.7	1.2	2.2	0.9	0.0	1.0	0.4	3.8	2.8	0.9
CR33	0.4	0.6	0.7	0.7	1.0	7.2	1.0	1.7	2.7	3.3	1.3	2.1	5.4	2.5	1.6	2.7	3.4	1.7	1.5	1.6	1.8
CR34	0.3	0.7	0.4	0.5	0.8	2.2	0.9	1.5	2.0	1.2	1.7	1.4	1.7	1.3	1.4	1.5	1.5	1.0	0.9	0.9	0.7
CR35	5.3	8.9	8.3	8.1	13.7	19.3	13.1	19.6	23.2	19.5	19.3	20.1	17.1	21.6	22.5	18.3	22.7	16.6	18.1	17,7	23.9
CR36	0.6	1.1	0.8	1.2	1.1	2.8	1.4	2.5	2.9	2.6	2.4	3.3	2.8	2.4	3.1	2.9	4.2	2.9	1.8	2.2	1.8
CR37	2.2	4.8	4.1	3.3	5.8	7.7	6.3	7.0	6.6	13.6	6.7	4.9	7.5	21.7	5.4	6.1	4.9	4.2	6.8	7.9	8.6
CR42	0.3	1.0	0.5	0.7	1.2	1.4	1.1	1.8	3.1	2.6	1.2	2.7	1.2	3.1	1.5	1.7	1.8	1.5	3.0	1.4	1.4
CR43	5.7	12.7	11.2	8.8	16.9	35.0	22.1	33.5	28.5	23.8	23.9	29.6	33.9	23.9	24.9	26.7	31.6	25.4	17.6	23,0	22.7
CR45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CR46	0.0	0.1	0.0	0.0	0.1	0.8	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CR49	0.6	3.0	1.0	1.6	1.9	1.2	2.7	8.0	4.0	5.4	8.5	5.4	4.2	5.2	4.4	5.6	4.1	3.8	5.4	4.3	1.4
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: author's own calculations.

2.6 Employment effects associated with imports and the net effect

This section estimates the impact on employment of imports associated with trade agreements. We have assumed that more open trade, and specifically a greater influx of imports, implicitly involves the loss of jobs that would previously have gone to producing those goods within the country. To estimate this effect, we used the 2003 Input-Output Matrix to simulate the production and employment required to generate domestically the goods imported from countries and blocs covered by the main agreements.

The import vector required a prior treatment, which involved excluding non-competing goods within domestic production. In particular this involved the sectors CR7 (extraction of oil, natural gas and fuels), CR26 (manufacture of chemicals and chemical products), and CR31 (manufacture of machinery and equipments). We also excluded those goods for which imports from countries and blocs covered by trade agreements are of marginal significance.

As Table 4-11 reveals, the estimation for salaried employment associated with goods imported from countries with trade agreements in 2003 reached 162,000 people breaks down into 117,000 direct and 46,000 indirect jobs.

Table 4-12: Employment associated with imports covered by trade agreements, 2003 (number of people)

Groups of goods		Total	Direct	Indirect
CR1	Agriculture, livestock, hunting and related services	13,433	11,281	2,152
CR4	Forestry, wood and paper products	13,420	11,633	1,787
CR5	Extractive fishing, aquaculture, and service activities incidental to fishing	907	637	270
CR6	Extraction of coal and other mining activities	2,767	2,276	491
CR9	Slaughter of livestock, preparation and preservation of meat	603	505	99
CR10	Processing and preserving of fruit and vegetables	652	466	186
CR11	Manufacture of vegetable and animal oils and fats	737	576	161
CR12	Manufacture of dairy products	992	802	190
CR13	Milled products	683	570	113
CR16	Manufacture and refining of sugar	485	405	81
CR17	Manufacture of other food products	2,859	2,185	674
CR19	Wine making	61	49	12
CR20	Beers and non-alcoholic beverages	287	217	70
CR21	Manufacture of tobacco products	284	215	69
CR22	Manufacture of textiles	13,318	8,434	4,883
CR23	Manufacture of wearing apparel, dressing and dyeing of fur	31,256	12,185	19,070
CR24	Leather and footwear	10,933	7,503	3,430
CR25	Publishing and printing	4,456	3,321	1,135
CR27	Manufacture of products of rubber and plastics	9,864	7,580	2,284
CR28	Manufacture of other non-metallic mineral products	3,899	3,193	705
CR29	Manufacture of common metals	8,140	6,907	1,234
CR30	Manufacture of metal products	19,276	16,838	2,439
CR32	Manufacture of furniture, manufacturing n.e.c.	23,005	19,007	3,998
	Total	**162,317**	**116,785**	**45,532**

Source: author's own calculations.

Products accounting for the highest levels of estimated employment were in textiles, apparel and footwear, followed by agriculture, livestock and hunting and, in third place, forestry, wood and paper.

Compared to employment associated with exports going to countries and blocs with trade agreements, we estimate that net employment generated in this part of our study amounted to 273,000 people, as presented in Table 4-12. The goods for which the net result was negative were to be found in the following sectors: textiles, apparel and footwear; products made of metal; the manufacture of furniture; and other manufacturing. The main gains were to be found in mining of metals; agriculture, livestock and hunting; fishing, aquaculture and processing; forestry, wood and paper; and, lastly, wine making.

In terms of the results regarding the displacement of domestic production and employment due to imports, we must keep in mind that at least two effects were not considered that would ultimately tend to compensate: the transformation of producing companies that can no longer stay in the market and that become units for selling imported goods, and the effect of increased imports on wholesale and retail trade activity and associated services. Moreover, along with these effects it should be noted that since openness to trade began in the 1970s, it is reasonable to assume that most of the corrections to the structure of production have already taken place in the ensuing years, and with them the losses in terms of companies and jobs. This suggests that to determine the actual impact of imports today on production and employment, a highly desegregated analysis is necessary, as this would identify effects on specific sectors which must deal with new imports activated by trade agreements.

For these reasons, the estimates in this case should be treated as the upper limit, in terms of job loss associated with increased imports.

Table 4-13: Salaried employment associated with exports and imports covered by trade agreements (number of people)

Groups of goods		Employment exports, FTA			Employment imports, FTA			Net employment, FTA		
		Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect
CR1	Agriculture, livestock, hunting and related services	94,354	79,603	14,751	13,433	11,281	2,152	80,921	68,322	12,599
CR4	Forestry, wood and paper products	62,507	41,799	20,708	13,420	11,633	1,787	49,087	30,166	18,921
CR5	Extractive fishing, aquaculture, and service activities incidental to fishing	67,186	47,258	19,928	907	637	270	66,279	46,621	19,658
CR6	Extraction of coal and other mining activities	20,428	8,156	12,272	2,767	2,276	491	17,661	5,880	11,781
CR8	Mining of metal ores	81,493	19,509	61,984				81,493	19,509	61,984
CR9	Slaughter of livestock, preparation and preservation of meat	11,786	1,564	10,222	603	505	99	11,183	1,059	10,124
CR10	Processing and preserving of fruit and vegetables	20,193	7,534	12,659	652	466	186	19,541	7,068	12,473
CR11	Manufacture of vegetable and animal oils and fats	123	40	83	737	576	161	-615	-537	-78
CR12	Manufacture of dairy products	1,786	360	1,426	992	802	190	794	-442	1,236
CR13	Milled products				683	570	113	-683	-570	-113
CR16	Manufacture and refining of sugar				485	405	81	-485	-405	-81
CR17	Manufacture of other food products	2,334	1,087	1,247	2,859	2,185	674	-524	-1,098	573
CR19	Wine making	26,243	7,684	18,559	61	49	12	26,183	7,635	18,547
CR20	Beers and non-alcoholic beverages				287	217	70	-287	-217	-70
CR21	Manufacture of tobacco products				284	215	69	-284	-215	-69
CR22	Manufacture of textiles	2,111	1,450	660	13,318	8,434	4,883	-11,207	-6,984	-4,223
CR23	Manufacture of wearing apparel, dressing and dyeing of fur	1,600	1,050	549	31,256	12,185	19,070	-29,656	-11,135	-18,521
CR24	Leather and footwear	743	469	275	10,933	7,503	3,430	-10,190	-7,034	-3,156
CR25	Publishing and printing	1,097	651	446	4,456	3,321	1,135	-3,359	-2,670	-689
CR26	Manufacture of chemicals and chemical products	12,684	4,626	8,058				12,684	4,626	8,058
CR27	Manufacture of products of rubber and plastics	2,000	1,017	984	9,864	7,580	2,284	-7,864	-6,564	-1,300
CR28	Manufacture of other non-metallic mineral products	623	302	321	3,899	3,193	705	-3,275	-2,891	-384
CR29	Manufacture of common metals	12,006	7,362	4,644	8,140	6,907	1,234	3,866	455	3,410
CR30	Manufacture of metal products	2,122	1,458	663	19,276	16,838	2,439	-17,155	-15,379	-1,775
CR31	Manufacture of machinery and equipment	5,821	3,061	2,760				5,821	3,061	2,760
CR32	Manufacture of furniture, manufacturing n.e.c.	6,517	5,302	1,215	23,005	19,007	3,998	-16,488	-13,705	-2,782
	Total	**435,757**	**241,343**	**194,414**	**162,317**	**116,785**	**45,532**	**273,440**	**124,558**	**148,882**

Source: author's own calculations.

2.7 Employment projections: 2006-2010

To project salaried employment associated with changes in export activity associated with trade agreements, two scenarios were constructed (see Table 4-13).

Scenario 1: Real corrected export trends, 1996-2005.

In this case, the trend posted by real export growth from 1996-2005 was extracted for each group of export sectors. Assuming the coefficients for direct and indirect employment obtained using the Input-Output Matrix (2003) were constant, and extrapolating the real observed growth rates (for mining exports, just 4 per cent growth was assumed), annual employment was obtained and then used as the basis for projecting total employment throughout the period.

Using this procedure, we estimated that total salaried employment associated with trade agreements rose by 245,453 jobs.

Scenario 2: Real corrected export trends, 1996-2005.

This scenario took as its starting point the coefficients for employment for each sector group associated with a 1 per cent rise in exports going to countries with trade agreements in 2003.

On this basis, three trends for real export growth were assumed, considering total averages posted from 1996 to 2003, from 2003 to 2005, and using a hypothesis involving growth higher than these averages.

- 10 per cent annually: similar to the average for 1996-2005,
- 15 per cent annually: similar to the average for 2003-2005, and
- 20 per cent annually: assuming a significant increase scenario.

In each case, we obtained the respective magnitudes for each sector group, which in aggregate terms provides an estimated range for job creation that goes from 223,432 to 446,863 jobs, for the period under consideration.

These calculations, however, must be analysed in more detail, since they assume that investment will rise proportionately to the productive capacity required to meet additional demand for exports, and that factors such as the real exchange rate will evolve in a consistent manner. Variables representing more macroeconomic characteristics should be included to perfect this model.

Table 4-14: Projection for employment associated with exports under FTAs, 2006-2010

Groups of goods	Scenario 1				Scenario 2		
	Real corrected export trends, 1996-2005	Projected annual employment	Projected employment 2006-2010	Employment 1% exports FTA 2003	Annual growth hypothesis 2006-2010		
					10%	15%	20%
Agriculture, livestock, hunting and related services	10%	9,288	46,439	929	46,439	69,659	92,878
Forestry, wood and paper products	15%	10,296	51,482	686	34,322	51,482	68,643
Extractive fishing, aquaculture, and service activities incidental to fishing	15%	9,824	49,118	655	32,745	49,118	65,490
Mining of metal ores	4%	4,295	21,476	1,074	53,691	80,536	107,382
Slaughter of livestock, preparation and preservation of meat	20%	2,531	12,657	127	6,329	9,493	12,657
Processing and preserving of fruit and vegetables	5%	987	4,934	197	9,868	14,802	19,736
Manufacture of dairy products	20%	533	2,663	27	1,331	1,997	2,663
Manufacture of other food products	15%	340	1,698	23	1,132	1,698	2,264
Wine making	15%	3,862	19,311	257	12,874	19,311	25,748
Manufacture of textiles	5%	96	482	19	964	1,446	1,929
Manufacture of wearing apparel, dressing and dyeing of fur	5%	83	416	17	832	1,248	1,664
Leather and footwear	5%	34	170	7	340	510	680
Publishing and printing	20%	189	943	9	471	707	943
Manufacture of chemicals and chemical products	20%	2,926	14,629	146	7,314	10,971	14,629
Manufacture of products of rubber and plastics	20%	518	2,589	26	1,295	1,942	2,589
Manufacture of other non-metallic mineral products	10%	55	273	5	273	410	546
Manufacture of common metals	15%	1,969	9,847	131	6,564	9,847	13,129
Manufacture of metal products	10%	156	778	16	778	1,166	1,555
Manufacture of machinery and equipment	15%	784	3,921	52	2,614	3,921	5,228
Manufacture of furniture, manufacturing n.e.c.	5%	325	1,627	65	3,255	4,882	6,510
Total		**49,091**	**245,453**	**4,469**	**223,432**	**335,147**	**446,863**

Source: author's own calculations.

3. Characteristics of the jobs generated

This section analyses the characteristics of the jobs associated with sectors most involved in foreign trade. This analysis applies the International Labour Organization's perspective and particularly its view of "*decent work*", considered essential to its mission. The ILO believes that economic and social development are two fundamental aspects of progress, which can be expressed in its four basic objectives: *the effective application of International Labour Standards; improvement of work and income conditions; the expansion of social protection; and strengthening of social dialogue and tripartism.*

It is useful to keep in mind that while at the national level it is possible to build a set of indicators that can partially capture this concept in terms of job characteristics, gender gaps and the associated gaps in social protection, major difficulties arise when it comes to reproducing this exercise at more disaggregated levels (or for specific sectors of economic activity), whether for lack of specific surveys or a sample size that can guarantee significant results at greater levels of disaggregation.

The following analysis must deal with additional restrictions, because, as mentioned in the previous section, employment associated with exported production is to be found in value chains that involve different segments of multiple economic sectors. Thus, analysing employment by sector of economic activity becomes insufficient to characterize this set of jobs, since on one hand there are no sectors or groups of sectors like those used in this study that can be identified with net exports. Likewise, it is not possible to observe the specific characteristics of jobs in a productive sector belonging to a specific chain. It is also important to note that the increase in employment associated with export activity has been complementary to a rise in indirect employment, both in absolute terms and in terms of its share of total salaried employment.

This problem cannot be solved using the available information or the method used here, basically because we have worked with sector or sector group averages that do not provide the level of detail that an analysis of this nature would require. In fact, a greater disaggregation of the CASEN 2003 data, to the level of jobs developed, is not possible to determine to a degree that is statistically significant.

This reveals the need to explore this aspect more deeply through special studies of the different production chains, to characterize production relations and then, based on the results, identify specific labour-related demands. Thus, the results presented here only provide partial progress toward characterizing the jobs associated with production going to foreign trade.

The information used here comes from Chile's most important socioeconomic survey (CASEN, 2003) and the IOM for the same year. We chose to anchor this analysis in a specific year, to avoid including more variables regarding the economic cycle, which fluctuated significantly in the period covered by this kind of survey. Specifically, 2003 marked the end of some stagnation in employment growth and relatively high unemployment rates.

Finally, and given the restrictions discussed above, we have focused our analysis on employment characteristics in the different chains, using the distinction between direct and indirect employment, and seeking to explore the factors that influence wage levels in sector groups derived from the 2003 Input-Output Matrix. In addition, information from CASEN 2003 is presented, and the classification of sectors constructed for this study has been adjusted accordingly.

Wages by sector groups

An initial approach to analysing the characteristics of the employment generated can be done based on the level and gaps in average wages derived from combining IOM and employment data. Table 4-14 provides information on both and adds the coefficient for average wages associated with direct and indirect jobs, weighted by the percentage of total employment falling into each category, thus making it possible to rank sectors from high to low.

On average for the groups under study,[33] the ratio between average wages by type of job (direct to indirect) is slightly lower than 1: 0.90. This means that average wages for indirect jobs were higher than for direct jobs, because indirect employment accounted for the largest portion of total jobs. Moreover, the sector with the largest wage gap is mining of metal ores (copper and iron). The other above-average sectors are the manufacture of chemicals, agribusiness, wine manufacture and other manufacturing. This is the case for the forestry and wood and paper sectors, extractive fishing, aquaculture and related services; agriculture, livestock, hunting and related services, all of which post an inverse relationship. That is, on average, wages along the production chain are higher than those paid in the main sector.

In contrast, the remaining cases post opposite results, particularly metal mining (copper and iron), the sector which posts the largest gap between direct and indirect wages, followed by chemical manufacturing, machinery, agribusiness, the wine making industry and other branches of manufacturing.

Table 4-15: Average wages from direct and indirect employment, 2003 (in 2003 pesos)

Groups of Sectors		Direct employment	Indirect employment	Direct/ Indirect employment (%)
CR8	Mining of metal ores	1,279,934	423,948	3.02
CR26	Manufacture of chemicals and chemical products	853,422	395,386	2.16
CR31	Manufacture of machinery and equipment	731,321	391,608	1.87
CR12	Manufacture of dairy products	377,218	234,159	1.61
CR27	Manufacture of products of rubber and plastics	600,595	410,800	1.46
CR28	Manufacture of other non-metallic mineral products	592,194	424,348	1.40
CR9	Slaughter of livestock, preparation and preservation of meat	252,672	181,946	1.39
CR11	Manufacture of vegetable and animal oils and fats	457,135	330,928	1.38
CR19	Wine making	351,468	267,939	1.31
CR25	Publishing and printing	453,761	371,494	1.22
CR17	Manufacture of other food products	368,535	325,592	1.13
CR10	Processing and preserving of fruit and vegetables	253,072	237,827	1.06
CR24	Leather and footwear	378,079	371,129	1.02
	Sector average	*289,838*	*320,855*	*0.90*
CR22	Manufacture of textiles	272,293	346.712	0.79
CR23	Manufacture of wearing apparel, dressing and dyeing of fur	278,561	373,152	0.75
CR30	Manufacture of metal products	256,107	386,164	0.66
CR4	Forestry, wood and paper products	260,456	422,884	0.62
CR5	Extractive fishing, aquaculture, and service activities incidental to fishing	232,843	387,779	0.60
CR29	Manufacture of common metals	271,194	457,786	0.59
CR1	Agriculture, livestock, hunting and related services	121,700	405,339	0.30
CR32	Manufacture of furniture, manufacturing n.e.c.	109,821	377,786	0.29

Source: author's own calculations.

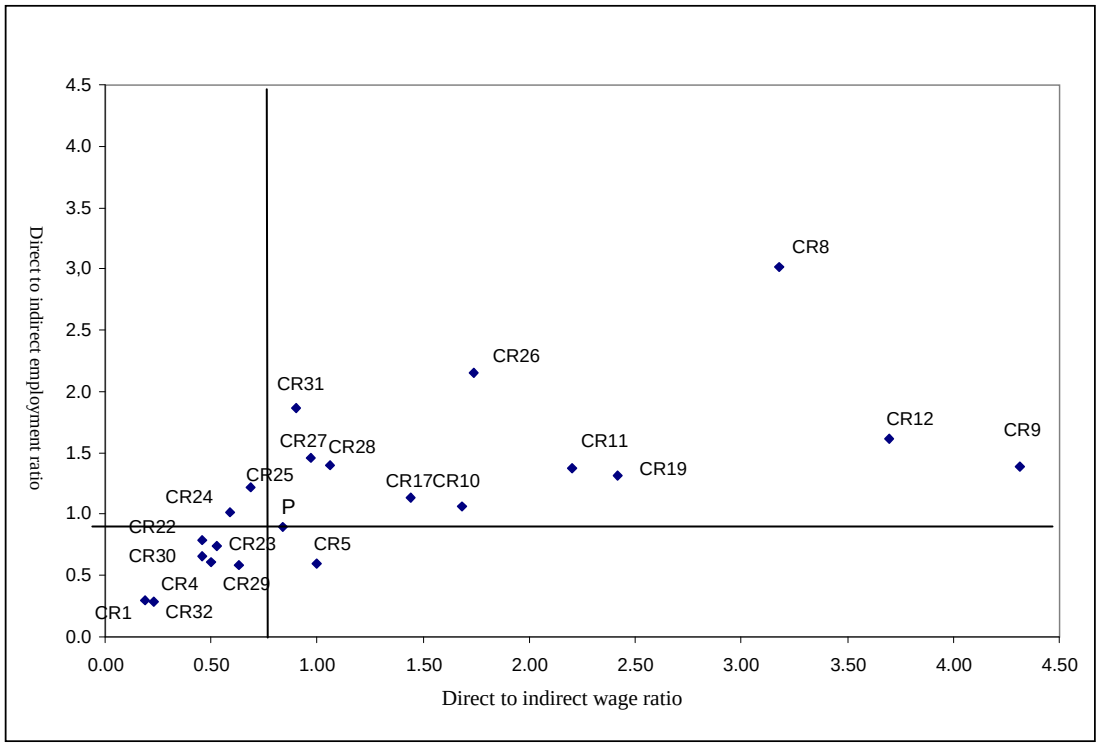
Figure 4-5, below, illustrates the respective indices for indirect to direct employment for the different sector groups, along with average wages for direct and indirect jobs.

[33] Only those sectors posting a larger percentage of their production going to countries covered by trade agreements are considered.

Results suggest that there is a positive relationship between both coefficients, since the more significant indirect jobs are, the higher the wages of direct jobs to indirect jobs, in the sector groups examined.

In fact, if we examine the case of groups representing the largest percentages of indirect to direct employment in 2003 (see Table 4-10), such as: slaughter of livestock, preparation and preservation of meat (CR9), manufacture of dairy products (CR12), mining of metal ores (CR8), wine making (CR11), manufacture of chemicals and chemical products (CR26), processing and preserving of fruit and vegetables (CR10), processing of other food products (CR17), manufacture of other non-metallic mineral products (CR28) and manufacture of machinery and equipment (CR31), they all post a higher than average ratio of direct employment wages to indirect employment wages.

Figure 4-5: Direct and indirect employment and wage ratios



Source: author's own calculations using Table 4-14.

3.2 Average direct and indirect wages by quintiles

Additional information on the characteristics of the estimated jobs can be obtained by examining average wages for direct and indirect jobs in the first and last quintiles, by sector. This data is presented in the next table and illustrated in Figure 4-6.

The coefficient that compares average wages in the quintiles at either end serves as an indicator of the wage differences in each case. Thus, assuming the wage level represents productivity levels, if this coefficient reaches relatively high values, it would denote large differences in productivity.

The information in Table 4-15 shows these coefficients applied to average wages for direct and indirect jobs, and the last column shows the coefficient constructed using the previous two, which serves to rank the information from high to low. The "total" row in every case provides the weighted average for the sector group under consideration.

As becomes apparent, the largest wage differences occur among indirect jobs. This is associated with different types of productive activities along the chain, despite which the coefficients reach the highest values in the case of the manufacture of chemicals and chemical products (4.25) and publishing and printing (4.06), in terms of direct jobs. This is because the highest value in the case of indirect jobs is obtained for mining of metal ores (3.13), and this sector concentrates 50.4 per cent of indirect jobs, so its importance to the total is decisive when it comes to obtaining the average coefficient.

Table 4-16: Coefficients for the average wage of the first quintile over the last quintile, direct and indirect employment

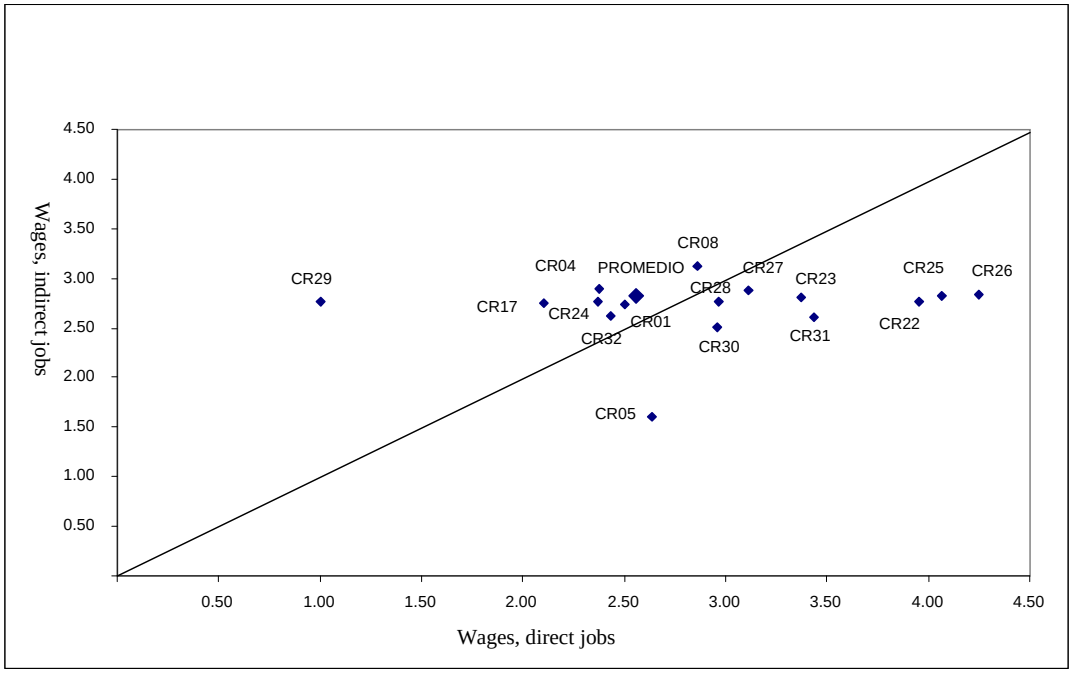
Group of sectors	Direct employment (1)	Indirect employment (2)	(1) / (2)
Fishing, aquaculture and service activities incidental to fishing[CR05]	2.64	1.60	1.65
Manufacture of chemicals and chemical products [CR26]	4.25	2.84	1.50
Publishing and printing [CR25]	4.06	2.83	1.44
Manufacture of textiles [CR22]	3.95	2.76	1.43
Manufacture of machinery and equipment [CR31]	3.44	2.60	1.32
Manufacture of wearing apparel, dressing and dyeing of fur [CR23]	3.37	2.82	1.20
Manufacture of metal products [CR30]	2.96	2.51	1.18
Manufacture of products of rubber and plastics [CR27]	3.12	2.89	1.08
Manufacture of other non-metallic mineral products [CR28]	2.96	2.77	1.07
Manufacture of furniture, manufacturing n.e.c. [CR32]	2.43	2.62	0.93
Mining of metal ores [CR08]	2.86	3.13	0.91
Agriculture, livestock, hunting and related services [CR01]	2.50	2.74	0.91
Averages for sector groups	2.56	2.82	0.91
Leather and footwear [CR24]	2.37	2.77	0.86
Forestry, wood and paper products [CR04]	2.38	2.90	0.82
Manufacture of other food products [CR17]	2.11	2.76	0.76
Manufacture of common metals [CR29]	1.00	2.77	0.36

Source: author's own calculations.

Figure 4-6 provides the positions held by the different sectors when wage differences between the top and bottom quintiles are examined for both direct and indirect jobs. For nine of the sector groups, wage differentials are greater for direct jobs, but these sectors only account for 26.3 per cent of direct and 21.7 per cent of indirect jobs.

In contrast, in seven sector groups the coefficient is less than one. This means that wage differences between the top and bottom quintiles of indirect jobs are larger than those for direct jobs, and they involve the majority of jobs generated by trade agreements (73.7 per cent of direct and 78.3 per cent indirect jobs). These groups vary widely in terms of the nature of production, since they involve sectors such as mining of metal ores, forestry and wood and paper products and agriculture, among the most important.

Figure 4-6: Ratio between the average wage of the fifth quintile versus the first quintile by sector groups



Source: author's own calculations based on Table 4-15.

3.3 Other characteristics of direct and indirect jobs

Table 4-15 provides data from the CASEN 2003 survey on the structure of direct and indirect salaried employment for different sector groups, using variables for company size, gender, range of hours per week worked, and type of contract.

The information is presented for each sector group for which a significant percentage of production goes to exports, revealing differences between the different values for direct jobs and the main production sectors making up the chains associated with the main activity.

The variables used in this case typically reflect wage levels and even define them. In fact, the main regularities appear at the level of company size, since it is to be expected that wage levels will be positively associated with size, and size with productivity, and a higher proportion of men than women, whereas relatively long working hours and short-term contracts are associated with less protection. Nonetheless, to reach definitive conclusions, we also need to control for other variables such as the type of specific job or the level of education or training, among others. This would involve a level of disaggregation of results that, given the sample size, is impossible without loss of statistical significance.

Using the information in Table 4-15, we can make out diverse situations present at the level of the different sector groups studied.

a) *Mining of metal ores* (mining of copper and iron). Direct employment is concentrated in large firms (77.8 per cent), while chains involve business

services, the wholesale and retail trade, land transport and manufacturing of metal products, where the importance of employment in micro and small businesses constitutes a majority. One exception is the electricity, gas and water sector, where many large companies also predominate.

Mining employment involves mainly men, who fill almost 90 per cent of jobs involving 40-48 hours of work, and a significant percentage work more than 49 hours per week, although to a lesser extent in percentage terms than those found in the wholesale and retail trade and land transport sectors. As far as the most common contract type is concerned, there are no significant differences between direct and indirect employment, with indefinite contracts being the majority in all cases.

b) *Extractive fishing, aquaculture and agriculture, livestock and related services*. These sectors have similar features. They both form part of their respective chains and are markedly different from copper mining. In fact, the most common company size is microbusiness, which accounts for 55.5 per cent (fishing) and 52.8 per cent (agriculture). Agriculture is the most fragmented, since small companies account for 21.5 per cent of employment, while in the case of extractive fishing and aquaculture 24.7 per cent of direct employment is provided by large companies.

Among the activities associated with extractive fishing and aquaculture are business services, the wholesale and retail trade, agriculture itself, land transport and associated activities, as well as financial intermediation services, although the latter involves a company size that is quite different from the other sectors, since employment is provided mainly by large companies (71.3 per cent of total).

Both in fishing and agriculture men dominate and tend to work long hours. Finally, in agriculture the commonest contract is a task-based contract in the case of direct employment, while in sectors within the chain indefinite contracts are most common. In fishing, meanwhile, while indefinite contracts are most common (56.1 per cent of total direct employment), specific term contracts and task-based contracts are also important, particularly among indirect jobs.

c) *Forestry, wood and paper products*. In this sector group, the distribution of employment is more homogeneous across company size, with the largest being most common (36.6 per cent).

By gender, men predominate by far, a substantial difference from other sectors except land transport. Finally, the contract type in forestry and wood products is for a fixed period, thus differing significantly from business services, the wholesale and retail trade, land transport and financial intermediation, which are more important to indirect employment.

d) *Other manufacturing*. These sectors vary widely in terms of the variables under study. On one hand, the manufacture of chemicals and chemical products sector is dominated primarily by mid-sized and large companies, as is the manufacture of other food products. The opposite is true of the manufacture of other non-metallic mineral products, wearing apparel and the manufacture of metal products and the manufacture of furniture.

In terms of gender, the only sector where women predominate in direct employment is wearing apparel, and in terms of hours worked and the contract type, no single type predominates.

Ultimately, if we examine the main characteristics at the sector group level in terms of direct jobs and the characteristics of the jobs associated with their production chains, we can see that the sectors with the highest percentage of indirect jobs and the widest wage gap tend to be those with a higher percentage of direct jobs in large companies, where men's participation is more prevalent than elsewhere in the production chain.

Table 4-17: Other selected characteristics of direct and indirect salaried employment associated with exports (percentage of respective totals)

Mining of metal ores (CR8)	Direct employment	Indirect employment				
		Business services and real estate (CR43)	Wholesale and retail trade (CR35)	Land transport (CR37)	Electricity, gas and water (CR33)	Manufacture of metal products (CR30)
Company size						
- Up to 9 employees	0.0	48.4	61.1	57.6	16.8	40.3
- 10-49	9.4	22.5	10.4	17.7	15.3	24.2
- 50-199	12.8	14.5	7.7	11.8	17.8	18.0
- 200 or more	77.8	14.7	20.8	12.9	50.0	17.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Gender						
Men	71.0	65.1	58.2	92.2	79.5	92.9
Women	29.0	34.9	41.8	7.8	20.5	7.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Hours per week						
Up to 39						
- Men	8.6	15.0	18.0	15.5	8.5	12.3
- Women	5.1	25.5	29.1	30.5	9.7	22.7
40 - 48						
- Men	61.7	54.8	39.8	32.7	56.5	52.8
- Women	61.6	56.4	33.4	49.0	77.1	55.6
49						
- Men	29.7	30.2	42.3	51.8	35.1	34.9
- Women	33.3	18.1	37.5	20.5	13.2	21.7
Type of contract						
- Indefinite	75.7	76.1	79.6	73.3	83.0	72.2
- Fixed period	13.0	11.2	10.5	9.0	7.5	11.9
- Task-based contract	11.3	12.7	9.9	17.8	9.5	16.0

Table 4-17, continued....

Forestry, wood and paper products (CR04)	Direct employment	Indirect employment				
		Business services and real estate (CR43)	Wholesale and retail trade (CR35)	Land transport (CR37)	Activities associated with land transport (CR40)	Financial intermediation and insurance (CR42)
Company size						
- Up to 9 employees	21.5	48.4	61.1	57.6	20.4	5.1
- 10-49	23.4	22.5	10.4	17.7	21.2	11.5
- 50-199	18.5	14.5	7.7	11.8	31.5	12.1
- 200 or more	36.6	14.7	20.8	12.9	26.9	71.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Gender						
- Men	91.6	65.1	58.2	92.2	58.2	50.4
- Women	8.4	34.9	41.8	7.8	41.8	49.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Hours per week						
Up to 39						
- Men	15.1	15.0	18.0	15.5	8.8	5.6
- Women	30.4	25.5	29.1	30.5	14.9	11.2
40 - 48						
- Men	49.4	54.8	39.8	32.7	55.2	76.6
- Women	46.7	56.4	33.4	49.0	55.7	73.1
49						
- Men	35.5	30.2	42.3	51.8	36.0	17.7
- Women	22.9	18.1	37.5	20.5	29.4	15.7
Type of contract						
- Indefinite	27.9	76.1	79.6	73.3	64.1	90.4
- Fixed period	72.1	11.2	10.5	9.0	17.2	5.7
- Task-based contract	0.0	12.7	9.9	17.8	18.7	4.0

Table 4-17, continued....

Extractive fishing, aquaculture, and service activities incidental to fishing (CR05)	Direct employment	Indirect employment					
		Business services and real estate (CR43)	Wholesale and retail trade (CR35)	Agriculture, Livestock, Hunting and Related services (CR01)	Land transport and pipelines (CR37)	Activities associated with land transport (CR40)	Financial intermediation, insurance and pensions (CR42)
Company size							
- Up to 9 employees	55.5	48.4	61.1	52.8	57.6	20.4	5.1
- 10-49	11.1	22.5	10.4	21.5	17.7	21.2	11.5
- 50-199	8.7	14.5	7.7	14.6	11.8	31.5	12.1
- 200 or more	24.7	14.7	20.8	11.1	12.9	26.9	71.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gender							
- Men	75.4	65.1	58.2	79.1	92.2	58.2	50.4
- Women	24.6	34.9	41.8	20.9	7.8	41.8	49.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hours per week							
Up to 39							
- Men	37.5	15.0	18.0	17.3	15.5	8.8	5.6
- Women	27.1	25.5	29.1	26.7	30.5	14.9	11.2
40 – 48							
- Men	28.2	54.8	39.8	49.0	32.7	55.2	76.6
- Women	38.7	56.4	33.4	49.1	49.0	55.7	73.1
49							
- Men	34.4	30.2	42.3	33.6	51.8	36.0	17.7
- Women	34.2	18.1	37.5	24.1	20.5	29.4	15.7
Type of contract							
- Indefinite	56.1	76.1	79.6	37.8	73.3	64.1	90.4
- Fixed period	20.0	11.2	10.5	15.7	9.0	17.2	5.7
- Task-based contract	24.0	12.7	9.9	46.5	17.8	18.7	4.0

Table 4-17, continued….

Agriculture, livestock, hunting and related services (CR01)	Direct employment	Indirect employment			
		Wholesale and retail trade (CR35)	Business services and real estate (CR43)	Land transport and pipelines (CR37)	Fishing, aquaculture and service activities incidental to fishing(CR05)
Company size					
- Up to 9 employees	52.8	61.1	48.4	57.6	55.5
- 10-49	21.5	10.4	22.5	17.7	11.1
- 50-199	14.6	7.7	14.5	11.8	8.7
- 200 or more	11.1	20.8	14.7	12.9	24.7
Total	100.0	100.0	100.0	100.0	100.0
Gender					
- Men	79.1	58.2	65.1	92.2	75.4
- Women	20.9	41.8	34.9	7.8	24.6
Total	100.0	100.0	100.0	100.0	100.0
Hours per week					
Up to 39					
- Men	17.3	18.0	15.0	15.5	37.5
- Women	26.7	29.1	25.5	30.5	27.1
40 - 48					
- Men	49.0	39.8	54.8	32.7	28.2
- Women	49.1	33.4	56.4	49.0	38.7
49					
- Men	33.6	42.3	30.2	51.8	34.4
- Women	24.1	37.5	18.1	20.5	34.2
Type of contract					
- Indefinite	37.8	79.6	76.1	73.3	56.1
- Fixed period	15.7	10.5	11.2	9.0	20.0
- Task-based contract	46.5	9.9	12.7	17.8	24.0

Table 4-17, continued….

Manufacture of chemicals and chemical products (CR26)	Direct employment	Indirect employment			
		Business services and real estate (CR43)	Wholesale and retail trade (CR05)	Land transport and pipelines (CR37)	Forestry, wood products and paper (CR04)
Company size					
- Up to 9 employees	0.0	48.4	61.1	57.6	21.5
- 10-49	18.6	22.5	10.4	17.7	23.4
- 50-199	32.7	14.5	7.7	11.8	18.5
- 200 or more	48.7	14.7	20.8	12.9	36.6
Total	100.0	100.0	100.0	100.0	100.0
Gender					
- Men	66.0	65.1	58.2	92.2	91.6
- Women	34.0	34.9	41.8	7.8	8.4
Total	100.0	100.0	100.0	100.0	100.0
Hours per week					
Up to 39					
- Men	4.5	15.0	18.0	15.5	15.1
- Women	20.2	25.5	29.1	30.5	30.4
40 - 48					
- Men	64.1	54.8	39.8	32.7	49.4
- Women	66.1	56.4	33.4	49.0	46.7
49					
- Men	31.4	30.2	42.3	51.8	35.5
- Women	13.8	18.1	37.5	20.5	22.9
Type of contract					
- Indefinite	82.9	76.1	79.6	73.3	27.9
- Fixed period	9.3	11.2	10.5	9.0	72.1
- Task-based contract	7.7	12.7	9.9	17.8	0.0

Table 4-17, continued….

Manufacture of different food products (CR17)	Direct employment	Indirect employment				
		Agriculture, livestock, hunting and related services (CR01)	Business services and real estate (CR43)	Wholesale and retail trade (CR35)	Land transport and pipelines (CR37)	Forestry, wood and paper products (CR04)
Company size						
- Up to 9 employees	7.1	52.8	48.4	61.1	57.6	21.5
- 10-49	24.1	21.5	22.5	10.4	17.7	23.4
- 50-199	19.4	14.6	14.5	7.7	11.8	18.5
- 200 or more	49.4	11.1	14.7	20.8	12.9	36.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Gender						
- Men	70.4	79.1	65.1	58.2	92.2	91.6
- Women	29.6	20.9	34.9	41.8	7.8	8.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Hours per week						
Up to 39						
- Men	9.0	17.3	15.0	18.0	15.5	15.1
- Women	33.4	26.7	25.5	29.1	30.5	30.4
40 – 48						
- Men	47.9	49.0	54.8	39.8	32.7	49.4
- Women	39.8	49.1	56.4	33.4	49.0	46.7
49						
- Men	43.2	33.6	30.2	42.3	51.8	35.5
- Women	26.8	24.1	18.1	37.5	20.5	22.9
Type of contract						
- Indefinite	71.2	37.8	76.1	79.6	73.3	27.9
- Fixed period	15.7	15.7	11.2	10.5	9.0	72.1
- Task-based contract	13.0	46.5	12.7	9.9	17.8	0.0

Table 4-17, continued….

Manufacture of other non-metallic mineral products (CR28)	Direct employment	Indirect employment				
		Business services and real estate (CR43)	Wholesale and retail trade (CR35)	Land transport and pipelines (CR37)	Extraction of coal and other mining activities (CR06)	Forestry, wood and paper products (CR04)
Company size						
- Up to 9 employees	18.9	48.4	61,1	57,6	34,8	21,5
- 10-49	30.2	22.5	10,4	17,7	10,1	23,4
- 50-199	19.9	14.5	7,7	11,8	5,4	18,5
- 200 or more	30.9	14.7	20,8	12,9	49,8	36,6
Total	100.0	100.0	100,0	100,0	100,0	100,0
Gender						
- Men	91.6	65.1	58,2	92,2	27,9	91,6
- Women	8.4	34.9	41,8	7,8	72,1	8,4
Total	100.0	100.0	100,0	100,0	0,0	100,0
Hours per week						
Up to 39						
- Men	11.7	15.0	18,0	15,5	n.d.	15,1
- Women	19.5	25.5	29,1	30,5	n.d.	30,4
40 – 48						
- Men	57.2	54.8	39,8	32,7	n.d.	49,4
- Women	52.3	56.4	33,4	49,0	n.d.	46,7
49						
- Men	31.1	30.2	42,3	51,8	n.d.	35,5
- Women	28.2	18.1	37,5	20,5	n.d.	22,9
Type of contract						
- Indefinite	72.0	76.1	79,6	73,3	n.d.	27,9
- Fixed period	14.9	11.2	10,5	9,0	n.d.	72,1
- Task-based contract	13.0	12.7	9,9	17,8	n.d.	0,0

n.d: no data.

Table 4-17, continued….

Manufacture of products of rubber and plastics (CR27)	Direct employment	Indirect employment			
		Wholesale and retail trade (CR35)	Business services and real estate (CR43)	Land transport and pipelines (CR37)	Manufacture of chemicals and chemical products (CR26)
Company size					
- Up to 9 employees	11.9	61.1	48.4	57.6	0.0
- 10-49	24.6	10.4	22.5	17.7	18.6
- 50-199	40.6	7.7	14.5	11.8	32.7
- 200 or more	22.9	20.8	14.7	12.9	48.7
Total	100.0	100.0	100.0	100.0	100.0
Gender					
- Men	85.8	58.2	65.1	92.2	66.0
- Women	14.2	41.8	34.9	7.8	34.0
Total	100.0	100.0	100.0	100.0	100.0
Hours per week					
Up to 39					
- Men	3.3	18.0	15.0	15.5	4.5
- Women	15.8	29.1	25.5	30.5	20.2
40 - 48					
- Men	56.8	39.8	54.8	32.7	64.1
- Women	60.6	33.4	56.4	49.0	66.1
49					
- Men	39.9	42.3	30.2	51.8	31.4
- Women	23.6	37.5	18.1	20.5	13.8
Type of contract					
- Indefinite	83.2	79.6	76.1	73.3	82.9
- Fixed period	9.6	10.5	11.2	9.0	9.3
- Task-based contract	7.2	9.9	12.7	17.8	7.7

Table 4-17, continued….

Manufacture of machinery and equipment (CR31)	Direct employment	Indirect employment			
		Wholesale and retail trade (CR35)	Business services and real estate (CR43)	Manufacture of common metals (CR29)	Land transport and pipelines (CR37)
Company size					
- Up to 9 employees	29.5	61.1	48.4	0	57,6
- 10-49	25.5	10.4	22.5	10%	17,7
- 50-199	15.8	7.7	14.5	0	11,8
- 200 or more	29.2	20.8	14.7	0	12,9
Total	100.0	100.0	100.0	100	100,0
Gender					
- Men	84.3	58.2	65.1	100	92,2
- Women	15.7	41.8	34.9	0	7,8
Total	100.0	100.0	100.0	100	100,0
Hours per week					
Up to 39					
- Men	11.7	18.0	15.0	0	15,5
- Women	24.9	29.1	25.5	0	30,5
40 - 48					
- Men	55.1	39.8	54.8	100	32,7
- Women	43.7	33.4	56.4	0	49,0
49					
- Men	33.2	42.3	30.2	0	51,8
- Women	31.3	37.5	18.1	0	20,5
Type of contract					
- Indefinite	71.5	79.6	76.1	100	73,3
- Fixed period	14.2	10.5	11.2	0	9,0
- Task-based contract	14.3	9.9	12.7	0	17,8

Table 4-17, continued….

Publishing and printing (CR25)	Direct employment	Indirect employment				
		Forestry, wood products and paper (CR04)	Business services and real estate (CR43)	Wholesale and retail trade (CR35)	Land transport and pipelines (CR37)	Other service activities (CR49)
Company size						
- Up to 9 employees	25.0	21,5	48,4	61,1	57,6	94,5
- 10-49	34.6	23,4	22,5	10,4	17,7	3,2
- 50-199	14.4	18,5	14,5	7,7	11,8	1,2
- 200 or more	25.9	36,6	14,7	20,8	12,9	1,1
Total	100.0	100,0	100,0	100,0	100,0	100,0
Gender						
- Men	72.7	91,6	65,1	58,2	92,2	72,4
- Women	27.3	8,4	34,9	41,8	7,8	27,6
Total	100.0	100,0	100,0	100,0	100,0	100,0
Hours per week						
Up to 39						
- Men	14.1	15,1	15,0	18,0	15,5	24,5
- Women	21.1	30,4	25,5	29,1	30,5	38,1
40 - 48						
- Men	49.6	49,4	54,8	39,8	32,7	41,8
- Women	51.3	46,7	56,4	33,4	49,0	28,2
49						
- Men	36.3	35,5	30,2	42,3	51,8	33,7
- Women	27.6	22,9	18,1	37,5	20,5	33,7
Type of contract						
- Indefinite	82.3	27,9	76,1	79,6	73,3	72,1
- Fixed period	6.5	72,1	11,2	10,5	9,0	8,5
- Task-based contract	11.1	0,0	12,7	9,9	17,8	19,3

Table 4-17, continued….

Leather and footwear (CR24)	Direct employment	Indirect employment				
		Business services and real estate (CR43)	Wholesale and retail trade (CR35)	Agriculture, livestock, hunting and related services (CR01)	Manufacture of products textiles (CR22)	Land transport and pipelines (CR37)
Company size						
- Up to 9 employees	27,1	48,4	61,1	52,8	31,8	57,6
- 10-49	18,4	22,5	10,4	21,5	21,9	17,7
- 50-199	15,8	14,5	7,7	14,6	16,4	11,8
- 200 or more	38,7	14,7	20,8	11,1	29,9	12,9
Total	100,0	100,0	100,0	100,0	100,0	100,0
Gender						
- Men	69,9	65,1	58,2	79,1	58,9	92,2
- Women	30,1	34,9	41,8	20,9	41,1%	7,8
Total	100,0	100,0	100,0	100,0	100,0	100,0
Hours per week						
Up to 39						
- Men	10,4	15,0	18,0	17,3	6,5	15,5
- Women	24,1	25,5	29,1	26,7	29,7	30,5
40 - 48						
- Men	65,8	54,8	39,8	49,0	57,7	32,7
- Women	44,9	56,4	33,4	49,1	48,7	49,0
49						
- Men	23,7	30,2	42,3	33,6	35,8	51,8
- Women	31,0	18,1	37,5	24,1	21,6	20,5
Type of contract						
- Indefinite	72,3	76,1	79,6	37,8	83,7	73,3
- Fixed period	18,3	11,2	10,5	15,7	12,1	9,0
- Task-based contract	9,5	12,7	9,9	46,5	4,2	17,8

Table 4-17, continued….

Fabrication wearing apparel, dressing and dyeing of fur (CR23)	Direct employment	Indirect employment		
		Wholesale and retail trade (CR35)	Business services and real estate (CR43)	Land transport and pipelines (CR37)
Company size				
- Up to 9 employees	63,4	61,1	48,4	57,6
- 10-49	16,0	10,4	22,5	17,7
- 50-199	7,9	7,7	14,5	11,8
- 200 or more	12,6	20,8	14,7	12,9
Total	100,0	100,0	100,0	100,0
Gender				
- Men	42,5	58,2	65,1	92,2
- Women	57,5	41,8	34,9	7,8
Total	100,0	100,0	100,0	100,0
Hours per week				
Up to 39				
- Men	11,2	18,0	15,0	15,5
- Women	45,3	29,1	25,5	30,5
40 - 48				
- Men	55,4	39,8	54,8	32,7
- Women	33,5	33,4	56,4	49,0
49				
- Men	33,4	42,3	30,2	51,8
- Women	21,2	37,5	18,1	20,5
Type of contract				
- Indefinite	74,5	79,6	76,1	73,3
- Fixed period	10,0	10,5	11,2	9,0
- Task-based contract	15,5	9,9	12,7	17,8

Table 4-17, continued….

Manufacture of textiles (CR22)	Direct employment	Indirect employment		
		Wholesale and retail trade (CR35)	Business services and real estate (CR43)	Agriculture, livestock, hunting and related services (CR01)
Company size				
- Up to 9 employees	31,8	61,1	48,4	52,8
- 10-49	21,9	10,4	22,5	21,5
- 50-199	16,4	7,7	14,5	14,6
- 200 or more	29,9	20,8	14,7	11,1
Total	100,0	100,0	100,0	100,0
Gender				
- Men	58,9	58,2	65,1	79,1
- Women	41,1	41,8	34,9	20,9
Total	100,0	100,0	100,0	100,0
Hours per week				
Up to 39				
- Men	6,5	18,0	15,0	17,3
- Women	29,7	29,1	25,5	26,7
40 - 48				
- Men	57,7	39,8	54,8	49,0
- Women	48,7	33,4	56,4	49,1
49				
- Men	35,8	42,3	30,2	33,6
- Women	21,6	37,5	18,1	24,1
Type of contract				
- Indefinite	83,7	79,6	76,1	37,8
- Fixed period	12,1	10,5	11,2	15,7
- Task-based contract	4,2	9,9	12,7	46,5

Table 4-17, continued….

Manufacture of metal products (CR30)	Direct employment	Indirect employment			
		Wholesale and retail trade (CR35)	Business services and real estate (CR43)	Manufacture of common metals (CR29)	Land transport and pipelines (CR37)
Company size					
- Up to 9 employees	40,3	61,1	48,4	0	57,6
- 10-49	24,2	10,4	22,5	100	17,7
- 50-199	18,0	7,7	14,5	0	11,8
- 200 or more	17,5	20,8	14,7	0	12,9
Total	100,0	100,0	100,0	100	100,0
Gender					
- Men	92,9	58,2	65,1	100	92,2
- Women	7,1	41,8	34,9	0	7,8
Total	100,0	100,0	100,0	100	100,0
Hours per week					
Up to 39					
- Men	12,3	18,0	15,0	0	15,5
- Women	22,7	29,1	25,5	0	30,5
40 - 48					
- Men	52,8	39,8	54,8	100	32,7
- Women	55,6	33,4	56,4	0	49,0
49					
- Men	34,9	42,3	30,2	0	51,8
- Women	21,7	37,5	18,1	0	20,5
Type of contract					
- Indefinite	72,2	79,6	76,1	100	73,3
- Fixed period	11,9	10,5	11,2	0	9,0
- Task-based contract	16,0	9,9	12,7	0	17,8

Table 4-17, continued….

Manufacture of furniture, manufacturing n.e.c. [CR32]	Direct employment	Indirect employment				
		Wholesale and retail trade (CR35)	Business services and real estate (CR43)	Forestry, products of wood and paper (CR04)	Land transport and pipelines (CR37)	Manufacture of textiles (CR22)
Company size						
- Up to 9 employees	50.7	61.1	48.4	21.5	57.6	31.8
- 10-49	16.0	10.4	22.5	23.4	17.7	21.9
- 50-199	14.3	7.7	14.5	18.5	11.8	16.4
- 200 or more	19.1	20.8	14.7	36.6	12.9	29.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Gender						
- Men	91.2	58.2	65.1	91.6	92.2	58.9
- Women	8.8	41.8	34.9	8.4	7.8	41.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Hours per week						
Up to 39						
- Men	18.4	18.0	15.0	15.1	15.5	6.5
- Women	27.7	29.1	25.5	30.4	30.5	29.7
40 – 48						
- Men	51.0	39.8	54.8	49.4	32.7	57.7
- Women	44.9	33.4	56.4	46.7	49.0	48.7
49						
- Men	30.6	42.3	30.2	35.5	51.8	35.8
- Women	27.5	37.5	18.1	22.9	20.5	21.6
Type of contract						
- Indefinite	72.9	79.6	76.1	27.9	73.3	83.7
- Fixed period	12.7	10.5	11.2	72.1	9.0	12.1
- Task-based contract	14.4	9.9	12.7	0.0	17.8	4.2

Source: author's own calculations using CASIN 2003.

V. Final comments

This study has identified a series of transformations and effects associated with the ongoing and steadily increasing participation of the Chilean economy in international markets. As shown, the enormous openness apparent today began in the mid-1970s, with an opening to trade and financial participation, which has consolidated over time, and whose expansion has been the explicit goal of different governments, since the return to democratic rule in the early 1990s.

Along with the evident, major growth associated with trade and investment abroad, the Chilean economy has changed significantly in terms of its ability to generate new export capacities. Indeed, what in 1970 was practically a single export economy, based on copper going to a very small number of markets had become, by 2005, one characterized by a plethora of products going to several dozen new destination markets. The number of export products multiplied 26-fold during this period, and almost doubled between 1990 and 2005, while destination markets diversified six-fold, with the Asian countries and North America rising to importance, displacing the European Union.

While mining products, especially copper, still account for half of export revenues, during the period of this study, processed and unprocessed natural resource exports have grown steadily, particularly those from the forestry, agriculture and fishing sectors, as have manufactured products and non-financial services. As a result, non-copper exports have risen from 24.5 per cent in 1970 to 54.9 per cent in 2005.

A second aspect that should be noted is the strategy for achieving economic integration into external markets. This has played a central role in Chile's development strategy and is based on the small size of its economy and the potential benefits from greater integration internationally: specialization in producing those goods for which the country is most efficient, due either to natural or acquired advantages, as well as supplying itself with other goods from those better equipped to produce them and at lower costs.

While trade openness began in the mid-1970s, at first it was a unilateral process. Thus, it did not meet with an equivalent response on the part of trading partners' markets, thus restricting Chile's ability to fully reap the benefits, since these depend not only on the policies applied domestically by one country, but rather, and fundamentally, on those applied by trading partners. This premise formed the basis for a new phase of integration that began in the 1990s, which aimed to advance through active participation in multilateral instances and especially trade agreements. These made it possible to get the most out of trade between parties, since they opened the way to ongoing cooperation and reduced transaction costs by establishing clear rules and obligations that enhanced stability of all commitments.

Chile's experience reveals that starting in the 1990s, bilateral agreements were pursued at the regional level, known as Economic Complementation Agreements, which currently cover Chile and five countries of Central America, the US and Canada. As the criteria have broadened, new agreements have been reached with the European Union, Republic of Korea, the European Free Trade Association (EFTA), and more recently with China and Japan. Evaluations to date suggest that Chile's strategy has been fruitful, since the more products included and the greater the number of partners, the more the benefits for wellbeing. Moreover, the increased openness seems to have helped the economy to avoid the higher costs of recessive episodes and to recover more promptly.

A third aspect, central to this study, has been quantifying the impact of expanding imports to countries covered by trade agreements on employment, projecting trends for 2007-10, and analysing some of its main characteristics.

Prior to examining results, we must keep in mind that they are based on a series of assumptions closely associated with the method used. For example, they are based on comparing two specific years, with different characteristics in terms of the economic cycle, which could influence the value of coefficients key to the estimations. Moreover, even as trade agreements are signed, a whole set of economic variables between countries shift (growth, relative prices, foreign exchange parities, domestic policy impacts, among others), so it is difficult to completely isolate the effect of trade policies from the effects of other variables. Although these are limitations associated with the impossibility of including all relevant effects in the analysis, and occur simultaneously in reality, it is essential to keep them in mind when analysing these results and conclusions.

The main results from this exercise are presented below.

Table 5-1: Estimated total employment generated by exports and FDI, 1996 and 2003 (number of people and % of total)

Year		Total employment	Direct employment	Indirect employment
		Over total exports		
1996	No. of people	557,393	342,322	215,070
	% of total	100	61.4	38.6
2003	No. of people	716,624	388,026	328,598
	% of total	100	54.1	45.9
		Over foreign direct investment		
1996	No. of people	64,513	39,696	24,817
	% of total	100	61.5	38.5
2003	No. of people	59,728	37,282	22,446
	% of total	100	64.2	37.6
		Over exports and foreign direct investment		
1996	No. of people	621,906	382,018	239,887
	% of total	100	61.4	38.6
2003	No. of people	776,352	425,308	351,044
	% of total	100	54.8	45.2
		Over FTA-related exports		
1996	No. of people	241,600	153,300	88,000
	% of total	100	63.5	36.4
2003	No. of people	447,100	242,000	205,100
	% of total	100	54.1	45.9
Number of jobs per US$1 bn (2003) exported		20.0 (1996)		33.1 (2003)
Number of jobs per US$ bn (2003) in foreign direct investment		92.8 (1996)		58.5 (2003)
		1996		2003
% salaried employment		17.6%		22.0%
- exports		15.8%		20.3%
- FDI		1.8%		1.7%

Source: author's own preparation.

1. *FDI significantly influenced employment.* Table 5-1 shows the impact of total corrected FDI, considering the impact of investment in construction, which created a total of 59,728 jobs annually on average for 2000-2006, down 7.4 per cent less than generated by similar investment in 1990-1999.

2. *Corrected FDI generated fewer jobs.* In fact, if we compare these results, we find that every US$1 billion of investment created 92.8 jobs, on average, annually, in 1990-1999, while external investment in production generated just 58.5 jobs on average in 2000-2006. This means that FDI's impact on employment is significantly greater than exports, despite the decline, and notwithstanding, its total impact on salaried employment is marginal (no more than 2 per cent of the total in every case), since total corrected FDI amounts to about 5 per cent of total exports.

3. *Exports significantly influenced employment.* Table 5-1 reveals that the impact of total exports on salaried employment in 2003 amounted to 716,624 jobs, up 28.6 per cent from 1996.

4. *More jobs generated by exports.* By comparing these results with previous studies, we can see that for every US$ million in exports (2003), salaried employment generated rose from 8.6 jobs in 1979, to 20 in 1996, and 33.1 jobs in 2003. This means that total employment generated by exports accounted for 15.8 per cent of salaried employment in 1996, and that in 2003 this coefficient had risen to 20.3 per cent of all salaried employment in the private sector.

5. *Trade agreements generated new jobs.* The salaried employment generated by trade agreements rose from 241,000 jobs in 1996 to 447,000 in 2003, while its importance to total salaried employment generated by exports rising from 43.3 per cent in 1996 to 62.4 per cent in 2003.

6. *The net effect of trade agreements on employment is positive.* If the effect of imports generated by trade agreements is subtracted from the above results, on the assumption that the production and employment required to domestically generate imported goods is equivalent to a loss associated with imports, this would amount to 162,000 jobs, less than the total generated by exports. In any case, this estimate should be considered an upper limit for jobs lost, since it does not incorporate the effects of transformation of producers into sellers, or the effects that increased imports may have on the wholesale and retail trade and associated services, or the fact that the largest losses in companies and jobs resulting from more openness to trade were already absorbed throughout the years.

For these reasons, the estimates obtained in this case should be treated as a ceiling, in terms of job loss associated with an increase in imports.

7. *Indirect jobs begin to account for a larger share of total jobs generated*. The composition of direct and indirect employment has changed since 1996. Indirect employment has risen in importance, going from 38.6 per cent of total jobs in 1996 to 45.9 per cent in 2003. When only exports to countries and blocs covered by trade agreements are examined, the percentage of indirect employment over the total went from 36.4 per cent in 1996 to 45.9 per cent in 2003. This convergence (45.9 per cent) between the two in 2003 shows that the disproportionate increase of indirect jobs within the total generated by exports is associated with a rise in exports to countries with which Chile has concluded trade agreements.

8. *A rise in employment is estimated for 2007-10*. Using different scenarios to project trends in export growth in recent years, towards countries with trade agreements, and excluding the effects of high growth of some products such as copper, the associated employment is expected to rise somewhere between 223,000 and 446,000 new jobs, which means that in the most optimistic scenario (which includes participation from China and Japan, for example), employment could rise

to twice the level observed in 2003. These forecasts, however, depend on a consistent performance from key variables such as the real exchange rate or actual growth in investment in production required to sustain this rise in production, among other variables.

The distinction between direct and indirect employment identified above highlights the importance of production chains associated with export sectors: industrial *commodities* that come from natural resources (copper, wood pulp, fish meal, agri-business products), traditional manufactured products (metal-mechanical, plastic, wearing apparel, footwear) and manufactured products based on natural resources (paper, furniture and wood, salmon, and fruit juice).[34]

Within the organization of current production and sales chains, although institutional factors have had an influence,[35] the most important effect has come from the growing openness to trade itself, and its characteristics. In fact, this generated a series of profound changes in the structure of production, because it produced: a) a breakdown among traditional manufacturing industries affected by this openness and recessions that caused many to go bankrupt, along with the end of domestic production of many items; b) a decline in the vertical integration due to the import of many intermediate products; and c) a rise in production chains based on natural resources, which grew quickly with an eye to emerging export markets (industrial *commodities*: for example, wood pulp or fish meal, and other manufactured products, such as paper, furniture and wood).

The study of the characteristics of export-related jobs must deal with an important analytical challenge. These jobs are not concentrated in a single economic sector; instead they are spread out among diverse segments within value chains. Employment characteristics largely depend on how capital intensive these segments are and whether production is continuous or discontinuous.

To facilitate an overview of the main characteristics, we have distinguished between direct and indirect employment, applying this to wage levels and gaps according to the classification of sectors used in this study, and provided information on the defining characteristics. The main findings show that:

1. *The wage gap (or the ratio between the average wage for indirect to direct wages, weighted for their importance to employment in the groups examined) was 0.9*, and the sector posting the highest ratio for direct to indirect wages was mining of metal ores. The others posting above average belonged to the groups manufacture of chemicals and machinery, agri-business, wine making, and other manufacturing.
2. *Minor gaps in the averages posted by forestry* and wood and paper products, extractive fishing, aquaculture and related services and agriculture, livestock, hunting and related services, post an inverse ratio, that is, average wages in sectors involved in chains are higher than those paid in the main activity.
3. *There is a positive relationship between the wage gap and the coefficient for indirect / direct employment*. In general, the larger the proportion of indirect jobs within the total employment, the higher the wage gap.

[34] The characteristics of the chains identified were from Abramo et al. (1998).

[35] For example, in 1974 the elimination of the sales tax and the introduction of a value added tax eliminated a barrier to outsourcing services and production stages. Moreover, in 1979 a 1968 law was repealed that forbade recourse to “jobs inherent to the main, permanent production process of an industry” by contractors or through a concession. See Abramo et al., op. cit.

4. *A high wage gap is apparent in the mining of metal ores (mining of copper and iron) sector*. Direct employment is concentrated (77.8 per cent) in large companies, while along the chain, which includes business services and real estate, the wholesale and retail trade, land transport and manufacturing of metal products, micro and small businesses account for most employment. The only exception occurs in the electricity, gas and water sector, which also involves a high percentage of large companies.

Employment in mining is filled mainly by men, who account for almost 90 per cent of those working from 40 to 48 hours per week, while a significant portion also works more than 49 hours per week, although less than is the case in the wholesale and retail trade and transport sectors. As for the type of contract that predominates, there are no significant differences between direct and indirect employment, since most are indefinite in nature.

Compared to other sectors, outsourcing in mining is marked by the high technological level of contractors and, in some situations, these assume broad responsibilities for the purchase of inputs and coordination of tasks. In between are engineering services and shops that provide metallic structures and heavy boilers to copper mining. Outsourcing also affects less specialized activities, however, involving companies where labour conditions tend to be more precarious.

In contrast with the previous case, extractive fishing, aquaculture and agriculture, livestock and related services, for example, share similar features. In fact, the company size predominant in these sectors is microbusiness, which accounts for 55.5 per cent (fishing) and 52.8 per cent (agriculture) of employment, respectively, although in agriculture it is more fragmented, as another 21.5 per cent of employment is in small businesses, while in extractive fishing and aquaculture 24.7 per cent of direct employment is located in large firms.

Associated with extractive fishing and aquaculture are business services and real estate, the wholesale and retail trade, agriculture itself, land transport and associated activities, as well as financial intermediation, although the latter's structure is dominated by a company size substantially different from the others, since employment is mostly in large firms (71.3 per cent of total).

Both in fishing and agriculture, men hold most jobs and tend to work relatively long hours of work. Finally, the most common contract in agriculture is a task-based contract in the case of direct employment, while in the sectors involved in the chain the indefinite contract predominates. In fishing, meanwhile, although indefinite contracts account for the majority (56.1 per cent of total direct employment), task-based or time-based contracts, are also significant, particularly in the case of indirect jobs.

Ultimately, if the main characteristics are examined at the level of each sector group in terms of direct jobs and the nature of jobs along the production chain, it is clear that those sectors with the highest percentage of indirect jobs and the largest wage gap tend to be those posting a larger proportion of direct jobs in relatively large firms, in which men's participation is significant, compared to those working elsewhere in the production chain.

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