PART 2

INFRASTRUCTURE

5 CORFO'S PROGRAMS FOR SMEs IN CHILE

Introduction

The small- and medium-sized enterprises (SMEs) in Chile amount for 16.9% of the total number of companies, with 50% of the work force and 23.7% of the total sales. This sector presents new opportunities for the country's economic and social development. Its productive characteristics make it especially adaptable in a changing environment, and it is capable of satisfying specific requirements for a determined scale of the production. Furthermore, it has been transformed into an excellent vehicle for sharing the risk of innovative activities. The complete realization of its potential, however, requires that the limitations derived from its size, cultural factors, market imperfections and others, should be overcome.

For that reason, since the beginning of the present decade, the public policies that have been applied to the sector have been oriented mainly towards the improvement of its participation in the national and international markets of goods and services, facilitating the access to training resources, technical assistance, technological development and innovation, and to financing.

This chapter summarizes the public policies that have been applied in Chile during this decade, its results, and the challenges that are to be confronted. To begin with, a characterization and dimensioning of the sector is presented, together with a description of the spirit of the governmental action and the current institutionality. Hereinafter, the policies and challenges associated to the action spheres, considered in the APEC SME Action, will be detailed as follows:

- Human resources
- Access to the information
- Technology and the diffusion of the technology
- Financing
- Access to markets

5.1 The SME in Chile

5.1.1 Current Situation

(1) Definitions

In Chile a sole SME classification criteria does not exist. Based on the yearly sales,[1] the definition considered in the support programs for the sector are shown in Table 5.1.1.

Table 5.1.1 Classification of Companies by Annual Sales

Size	Annual Sales
Micro	Less than US$ 76,800
Small	Between US$ 76,801 and US$ 800,000
Medium	Between US$ 800,001 and US$ 3.2 million
Large	More than US$ 3.2 million

According to the number of workers, the most used classification is shown in Table

1 The expressed values in US$ are approximate. The section is defined in Unidades de Fomento (Development Units), an accounting measure index, according to the Chilean inflation rate. The value to the date is approximately 1 UF to US$32.

5.1.2.

Table 5.1.2 Classification of Size by Number of Workers

Size	Number of Workers
Micro	Less than 4 workers
Small	Between 5 and 49 workers
Medium	Between 50 and 199 workers
Large	More than 200 workers

(2) Relative participation in the economy

Number of enterprises

According to the information supplied by the Internal Revenue Service, in 1997, 526,920 enterprises existed in Chile. According to its sales volumes as defined in Table 5.1.1, they are distributed in the manner as shown in Table 5.1.3.

Table 5.1.3 Number of Enterprises in Chile in 1997 by Size

Size	Number	Percentage (%)
Micro	432,431	82.1
Small	78,805	14.9
Medium	10,870	2.0
Large	4,814	1.0
	526,920	100.0

Source: CORFO, based on information supplied by the Internal Revenue Service (SII: Servicio Impuestos Internos).

Sales share

In 1997 the SMEs in Chile generated sales exceeding 34,720 million dollars, equivalent to 23.7 % of the nation's total (Table 5.1.4). During the first years of the 1990s, the share of the different sections in the total sales did not show any significant variation.

Table 5.1.4 Sales in Chile in 1997 by Company Size

Size	Sales (US$ million)	Percentage (%)
Micro	6,432	4.4
Small	18,240	12.4
Medium	16,480	11.3
Large	105,184	71.9
	146,336	100.0

Source: CORFO, based on information supplied by the Internal Revenue Service (SII: Servicio Impuestos Internos).

Between 1990 and 1997 actual sales of the SMEs grew 120.6%. 1991 was the year in which the highest yearly rates were registered in absolute terms (13.5% for the small and 15.4% for the medium) (Table 5.1.5).

Table 5.1.5 Actual Growth Rate in Sales by Company Size

Size	Actual growth rate of the accumulated sales 1997/90
Micro	34.0 %
Small	66.0 %
Medium	247.2 %
Large	81.8 %
	88.0 %

Source: CORFO, based on information supplied by the Internal Revenue Service (SII: Servicio Impuestos Internos).

(3) Share of employment for each enterprise segment

Using the size classification based on the number of employees (Table 5.1.2), the importance of the SMEs in the employment generation in Chile is appreciable. As following Table 5.1.6 shows, in 1996, 5.0 million workers existed in Chile, of which 50.0% were occupied in small- and medium-size enterprises.

Table 5.1.6 Employment by Size in Chilean Enterprises in 2000

(Million workers)

Size	Number of Employees	Percentage
Micro	2.0	40.0
Small	2.5	50.0
Medium	0.5	10.0
Large	5.0	100.0

Source: CORFO, based on information supplied by the Internal Revenue Service (SII: Servicio Impuestos Internos).

(4) Sector specialization

It is possible to calculate the quotient of sector specialization, based on the data of employment by sector. The results indicate that the quotient is superior to 1 (one) in these sectors: Municipal Services 1.4, Construction 1.2, Industry 1.1 and Financial Services.

In terms of relative importance, the municipal services occupy first place with 24.0% of the total SME workers. The manufacturing industry follows with 16.8%. Further down, trade 15.8% and agriculture and fishing 15.2% are found (Table 5.1.7).

Table 5.1.7 Total Employment in Chile by Economic Sector and Enterprise Size in 1992

(Thousand workers)

Sector	Total	Micro	SME	Large
Agriculture and Fisheries	785	375	377	33
Mining	91	15	50	26
Industry	749	202	418	129
Energy, Gas and Water	34	6	20	8
Construction	434	137	258	39
Commerce	956	515	393	48
Financial Services	317	67	214	36
Municipal Services	1,263	526	597	140
Transport	358	174	141	43
Non-specific	25	7	15	3
Total	5,012	2,024	2,483	505

Source: CORFO, based on information supplied by the Internal Revenue Service (SII: Servicio Impuestos Internos).

5.1.2 SME Support Programs

(1) Objectives of the policy and main alignments

The recent attention of the governmental support for the small- and medium-size enterprises in Chile has marked a tendency change regarding the prevailing public policies up to the end of the 1980s. The latter were traditionally focused on sector maintenance objectives for its incidence on employment, covered by measures of assistance character.

In the new orientation, the SMEs are considered a source of competitiveness, particularly when relating to external markets or to large dynamic enterprises, acknowledging, however, the presence of discriminating factors that restrain the sector's access to certain product markets and factors, as:

- uneven access to financial resources
- uneven access to the relevant commercial information
- uneven access to technological know-how and the necessary management for its modernization
- uneven access to training

Consequently, the SME aid programs, established in this decade, pursue the attainment of both productive efficiency and equity objectives, related to the social benefits of the diffusion of business opportunities in wide strata of the population. Among the proposed objectives, the following are found:

- to propel the productive modernization of these enterprises
- to improve their competitiveness levels
- to allow an autonomous performance in competitive and globalize markets

In order to attain these objectives a number of instruments have been implemented, majority of which are oriented towards the correction of inconvenient that the SME confronts in order to participate efficiently in the markets. The instrument cover six main work areas:

- Financing
- Technical assistance
- Technological transfer and innovation
- Training
- Export promotion
- Associativity

The type of instruments and incentives applied are described further on, in the review of the specific aspects related to the different work areas contemplated in this chapter.

(2) Institutionality

The SME support programs in course are, in a majority of the cases, inserted in the Production Promotion Program, administrated and coordinated by the Chilean Development Agency, CORFO (Corporación de Fomento de la Producción).

The institutional design established by CORFO, for the management of these programs is based on a network of entities that are organized according to three action levels:

- first floor organisms: those who execute the actions
- second floor organisms: those who administer them
- third floor organisms: those who finance them

The orientation goes towards fortifying the bonds between the central and regional governmental institutions and the business associations, financial institutes, non-governmental organizations, universities and research institutes, with a massive incorporation of private consultants in the execution of the credit and technical assistance actions.

In general terms the institutional design is summarized as in Figure 5.1.1.

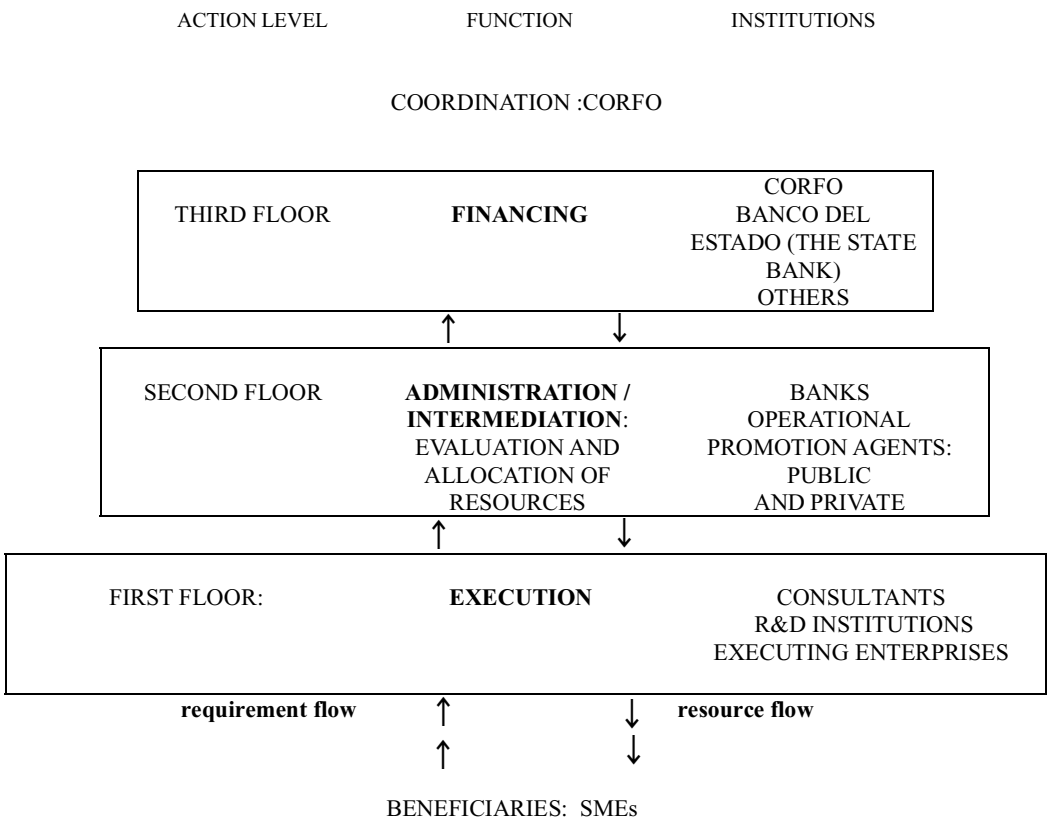

Figure 5.1.1 Institutional Scheme of the SME Support Program in Chile

In this design the evaluation and resource allocation functions are delegated to the second-floor organisms, that are closer to the necessity of the industrial sectors. This permits an increase in the efficiency of such allocation, and, at the same time, a decrease in the financial risk and red tape of the central government organisms.

This program has become a complement to the previous existing support initiatives for the sector, conforming to a national SME support system. This constitutes different instruments of executing institutions. Those regarding the work areas considered in the APEC SME Action Program are described in the points that follow.

5.2 Human Resources

5.2.1 Human Resources of the SMEs in Chile

The small-, medium-size and micro enterprises in Chile generate close to 90% of the employment (see Table 5.1.6 above). The greatest employment absorbing sectors are the municipal services, trade, agriculture and industry.

Different studies have showed the existence of significant productivity differentials between the SMEs and the large enterprises, favoring the latter. These differentials become even greater in the matter of remuneration (superior to 30%). Even though both the productivity levels and salaries have increased during the last few years, said

differentials persist.

The tendency of increasing productivity and salary is probably a factor that explains the gradual improvement in labor relations in the SMEs. Contrary to the confrontational scenery of the sixties, increasing worker identification with the development objectives of the enterprises that they belong to is adverted for the nineties. Consistently, a low union affiliation can be observed and it is common to find individually based salary negotiation modalities, without the participation of the unions.

In this context of low confrontation, an important effort in the area of training would be expected. This, however, is not the case. In Chile, as will be described further on, a tax discount scheme exists, which finances part of the expenses incurred in training activities by the enterprises. However, statistics show a low use of this benefit by the enterprises, particularly in the case of SME (see Table 5.2.1 below).

This reality can mainly be explained by the nature of the Chilean SME entrepreneurs and their environment. Most SME entrepreneurs belong to the tradition of family-owned enterprises, where the managerial structure has been based on family links rather than on technical qualification of the personnel.

Besides, the small size of these enterprises does not require a large group of professionals and technicians or a large group of highly skilled workers, generally speaking. Likewise, SME entrepreneurs do not have the habit of hiring consultant services, to improve general management or to support their technical decisions. The managerial tasks are performed in a rather simple way and the owner himself carries out many of them. Accordingly, decision-making tends to be based on personal beliefs and desires more than being based on knowledge and technical grounds.

5.2.2 Training Policies for Workers

In Chile the National Training System is based on a Tax-Refund System. Enterprises can deduct from their taxes the amount of money they have spent in training during the year, whenever this amount does not exceed 1% of the total wages paid during the period. The smallest enterprises, for which this 1% is meaningless, can discount a fixed amount of approximately US$ 420 per year. Nevertheless, companies have to pay the total amount of taxes by the end of the year and they get the corresponding drawback in April of the following year.

This system has been more beneficial for large enterprises than for SMEs. In the case of large firms, 1% of their wages is significant and their financial constraints are not as dramatic as they usually are for SMEs. In addition, SMEs face various kinds of barriers that limit their ability and willingness to make use of the available incentives.

First, most of SME entrepreneurs are reluctant to train their workers because they believe that workers will then shift to larger enterprises in search for better wages. Alternatively, they would be forced to increase their salaries.

Secondly, SMEs have relative disadvantages in buying courses that match their specific needs. These customized training services are normally available for larger groups of

trainees. Besides, SMEs do not have training departments or specialized personnel that may technically determine what the real training needs are and how these better can be satisfied.

As a result, the Tax-Refund System has been used mainly by large and medium-size enterprises. A rather small fraction of small companies have made use of it (Tables 5.2.1, 5.2.2 and 5.2.3).

Table 5.2.1 Use of Tax Discount for Training in Chile in 1997

Size	Total Number of Enterprises (A)	Number of Enterprises that Use the Tax-Refund 1997 (B)	B/A
Micro	432,431	2,172	0.5%
Small	78,805	3,426	4.4%
Medium	10,870	2,553	23.5%
Large	4,814	3.093	64.3%
Total	526,920	11,244	2.1%

Source: CORFO, based on information from the Internal Revenue Service (SII: Servicio de Impuestos Internos), and the National Training and Employment Service (SENCE: Servicio Nacional de Capacitación y Empleo).

Table 5.2.2 Use of Tax Discount for Training in Chile in 1991-1997

(In number of enterprises)

Size	1991	1992	1993	1994	1995	1996	1997
Micro	462	651	719	952	847	1.495	2.172
Small	1.265	1.896	2.233	2.504	2.645	3.308	3.426
Medium	642	856	961	2.176	2.360	2.482	2.553
Large	2.406	2.914	3.270	2.549	2.850	3.026	3.093
Unclassified	1.141	960	269	389	665	2.307	3.461
Total	5.916	7.277	7.425	8.570	9.367	12.618	14.705

Source: CORFO, based on information from SENCE.

Table 5.2.3 Use of Tax Refund Training Investment 1994-1997

(US$1,000)

Size	1994	1995	1996	1997	% 1997 / 1994
Micro	2,382.4	1,990.7	2,901.8	5,856.1	103.8
Small	2,669.9	3,330.3	3,899.9	4,904.5	53.4
Medium	4,690.5	5,259.3	6,105.5	6,917.7	47.5
Large	48,799.1	54,680.1	61,053.2	62,.850.2	28.8
Unclassified	852.1	1,737.2	3,309.9	5,026.1	489.9
Total	59,397.0	66,997.6	77,270.3	83,744.6	41.0

In order to overcome some of the above-mentioned problems, in 1991 the Corporation for Training for Small- and Medium-Size Enterprises, the Technical Co-operation Service, SERCOTEC (Servicio de Cooperación Técnica), and the National Confederation of SME Associations, CONUPIA, created CORCAPYME.

CORCAPYME functions as a training department for its associates. The SMEs affiliated to it pay on a voluntarily basis the equivalent of their 1% tax devolution and in turn they get technical assistance for their training activities. CORCAPYME may also get better conditions from those who provide training services, since it negotiates on behalf of its complete group of affiliates.

5.2.3 New Policy Initiatives

For effects of overcoming the flaws of the current training policy, particularly

concerning the SMEs, in 1994 the Chilean government submitted a bill to Parliament, which modifies the current text of the Training and Employment Statute. The proposed reform seeks the following objectives:

- To maintain and perfect the decentralized functioning of the system.
- To achieve a greater coverage of the training programs, with the goal of reaching at least 20% of the labor force in a medium term. This, hopefully, will improve particularly the participation rate of the smaller enterprises.
- To improve the quality of the training activities, raising the information available for private agents concerning the functioning of the market, and particularly, concerning the quality of the training institutions, and fortifying the supervisory faculty of SENCE.
- To make the available legal instruments more flexible for the design and financing of the public programs destined to social sectors with limited resources, with low or inadequate labor qualification, and with few opportunities of labor insertion in employment with high productivity, wages and quality.
- To favor the co-ordination of public and private agents in the promotion of the permanent and intense qualification of human resources, as well as the co-operation between the management and the workers inside the enterprise.

This law reform proposes to increase the minimum Tax-Refund for training from 3 minimum yearly wages to 13 Yearly Tax Units, UTA (Unidad Tributaria Anual) (approximately US$ 600).

In addition to this, a direct subsidy is created to finance the training actions of the small and micro enterprises with a maximum yearly limit of 26 UTA (approximately US$ 15,600). This subsidy on demand recognizes the enterprises' capacity to define autonomously and with greater relevance, the labor training needs and the choice of training organisms that could offer the best service according to the requirements. This subsidy is exclusive for smaller enterprises, with yearly sales inferior to 1.300 UTA (approximately US$ 800,000) and will be instrumentalized under the criteria of co-financing.

Furthermore, in 1996, the Ministries of Education and of Labor implemented a basic leveling program of 480 hours for workers in SMEs. This program includes general competence and knowledge in new technologies and in other areas of the labor activities.

Along with these measures a number of complementary measures were also introduced favoring a more participatory environment in the enterprises with regard to decisions about training, and other measures that seek to eliminate certain distortions of the current scheme.

Hopefully, these governmental initiatives will significantly improve the training levels of the small and micro enterprises, eliminating current barriers that hamper their access to the training markets.

5.3 Access to Information

5.3.1 Access to Information for the SMEs in Chile

Chile is blessed with a modern technology park of software and hardware, and a great advance in telecommunication matters exists.[2] However, the access to the information is, perhaps, one of the most deficient areas of the SME. This is due to the different access buffers that the sector confronts. They include financial resources that are required to subscribe to an information supplier, the expenses in equipment needed to accede to databases in Chile and/or abroad, the lack of experience in the efficient use of the information and the insufficient dominion of the English language and, consequently, the time involved in acceding to these networks. These causes, together with the own market imperfections in the case of public goods, have a bearing on a very insufficient constitution of private information services offered for the SMEs.

However, the dynamism of the telecommunication market in Chile and in particular the tendency of the telephone and data transmission companies, towards the constitution of database services and information provision, give hopes of a rapid increase in the information services for the SMEs.

5.3.2 Policies and Initiatives

It is convenient to recognize that in Chile the access to the information is not included in the priority agenda of SME policies, which results in the absence of a systematic approach towards this area by the government. However, some initiatives that are worth mentioning exist in the context of the network of productive development entities.

The Technical Co-operation Service, SERCOTEC (Servicio de Cooperación Técnica), has been operating for several years the Business Information System, SIE (Sistema de Información Empresarial). SERCOTEC is a main operational agent of public development, which concentrates its action in the sectors of manufacturing, transport, tourism and small-scale fishing. The SIE is available in all the country's SERCOTEC networks and has 10 databases in the following subjects: company roll; technology and input providers; business opportunities, specialists; ideas, profiles and projects; support institutions; documentation centers; legal formalities; national fairs and expositions.

This system is interconnected to a Latin American SME development network, within the frame of the Latin American SME Organism, OLAMP (Organización Latinoamericana de la Pequeña y Mediana Empresa), to which 56 public and private institutions in 18 countries are affiliated, related to the SME support roll. Furthermore, SERCOTEC is developing a new network that allows the interconnection with other public and private organisms, both national and foreign.

The most advanced system of public information in the country is found in the field of non-traditional export promotion, an area in which the main clients are SMEs. Only a few months ago, the Export Promotion Administration, ProChile (Dirección de

[2] Chile has implemented important regulation reforms in recent years that have increased the capacity of the telecommunication sector. They have resulted in improvements in the service quality (completely digital networks, hanging of fibre optics with consequent improvements in transmission quality and traffic volumes, efficient data transmission systems, etc.).

Promoción de Exportaciones), launched an information system in Internet that allows the national and international users to have an easy access to information about Chilean export products, their specifications and the markets in which they are sold.

A third initiative is being developed by a private agent related to the network of CORFO agents (see Figure 5.1.1 above), the Manufacturing Exporter Association, ASEXMA (Asociación de Exportadores Manufactureros). ASEXMA operates a supply-on-demand system providing information over markets, potential buyers, fairs, customs and other regulations, among other information.

5.3.3 The Challenges of Future Policies

In Chile exists an important potential of efficiency gain in the small- and medium-size enterprise segment, through the efficient provision of information for decision taking. Both market conditions and unused resources in the area of SME management have delayed the creation of information services oriented to this segment. However, the new wave of innovations in the telemetric field (especially in the globalization of the use of Internet) and the change in the regulatory framework of the telecommunication sector has activated the enterprises that would be potential suppliers of these services.

The public SME promotion institutions should take advantage of these conditions, and in this way fortify the establishment of a solid network of information service providers. In order to achieve this, the enterprise information requirements and the capacity of the enterprises to absorb the new data transmission tools should be diagnosed more precisely. Based on this, a new policy should be designed to efficiently balance actions in the area of information service supply (creation of databases, subscription to international agreements for access to networks, making existing networks compatible, etc.), and the demand for the services (company training, technology transfer, establishing adequate interfaces for the company, etc.).

5.4 Technology and Technological Diffusion

5.4.1 Technological Capacities of SMEs in Chile

There are no systematic statistics available, which demonstrate the SME conditions in regards to access to, and models of, operation in technology and technological-based subject matter. However, global and sector diagnostic information exists which permits sketching the panorama described as follows.

According to a study sponsored by CORFO in 1993,[3] a majority of SMEs in Chile possess a low technological base and their main concern is to find a solution to financial problems, with a low perception of the importance of themes like quality management and technological development (Table 5.4.1).

[3] Espinoza, D., *Technological Transfer for Most Competitive SMEs: Diagnose and Prospects for Future Actions*, Work Document, Investment Promotion Division, CORFO, September 1993.

Table 5.4.1 Technological Attitude of SMEs

Analysis Category	Typical Behavior	Approximate % of SMEs in the category
Innovative and quality enterprise	• central motivation is to improve quality • central requirement is the transfer of know-how • technology is considered a business element • high technological base; innovating capacity; explosive growth	1 %
Renewable towards quality enterprise	• manifests interest in quality issues • medium technological base • central technological requirement is the hard technology transfer (equipment, processes) and soft (training, management, etc.)	9 %
Mature and conservative enterprise	• central preoccupation is financing • entrepreneurs do not see opportunities in technology • low technological base • quality issue is seen as something far away	90 %

Source: Elaborated based on *SME, a Productive Modernization Challenge*, 1994.

Also, a sample analysis of Chilean enterprises sponsored by CORFO concluded that the principle problems faced by these enterprises in the technological sphere are:[4]

- Lack of business management and suitable organization of current factors of production
- Lack of adequately skilled labor
- Obsolete processes and machinery
- Lack of standards in production, methods and processes
- Lack of promotion of adaptation and design
- Low development of technological and information assistance services
- Lack of infrastructure and promotion of quality application

As determinant factors to the type of behavior observed, the following can be identified:

- *Low management capacity*: Chilean SMEs are mainly family-oriented, which generates a tendency to make subjective technical decisions and a low tendency to hire consultants to make these decisions.
- *Low endowment of professionals and qualified technicians*: Both the facts that the family-oriented management style of many businesses and the size of their operations and financial limitations determine that they have small technical teams, both internal and external consultants.
- *Lack of strategic vision in making decisions associated with the technological sphere*: Associated with the low level of professionalism, as described earlier, lies the insufficient analysis job, which refers to the technology selection and search processes as well as to the low incorporation of investigation activities and development, being the latter a flaw that spans throughout the business spectrum.

If indeed the previous situation corresponds to a number of important businesses, it is not representative of the global reality of the sector, particularly those sectors with the most dynamic development. In effect, the enterprises classified as "innovators and quality," (Table 5.4.1 above) together with the "renewable towards quality," represent a proportion of close to 10 % of the SME sector. In these cases, the technological variable plays a relevant role and the enterprises participate more actively in the

[4] CORFO, 1994.

technology innovation process. This corroborates with the high level of participation of SMEs in innovation projects financed by the National Technological and Productive Development Fund (FONTEC). This fund has operated in CORFO since September 1991. It has supported the financing of more than 400 projects, whose total costs were above US$50 million with an SME participation of 80%.

5.4.2 National SME Technological Development Support System

Taking into account the diagnose elements previously mentioned, as well as the will to give a major impulse to emerging sectors of high dynamism, different institutions of the national sphere have fortified their SME support programs in the last decade. Seen as a whole, these initiatives are creating a National SME Technological Development Support System, whose main elements are presented below (see Table 5.4.2).

(1) Technology transfer and innovation

In the area of innovation promotion, a central element of the program is the National Technological Development Fund (FONTEC). This fund's objective is to support the development of innovation projects and the technological infrastructure that arose as an initiative from national productive enterprises. This allows the level of competitiveness to rise, increasing productivity and improving the quality of their products. The Development Fund operates through the financing of projects presented by enterprises granting a subsidy between 20% and 50% in accordance to the financing line and to the specific characteristics of the project.

FONTEC operates based on five financial lines:

1) *Technological innovation*: Support investigation development projects and the development of products, processes, services or other issues that constitute technological innovation.

2) *Technological infrastructure*: Support the creation or reinforcement of the investigation capability and development of enterprises. It understands, among other things, the implementation of laboratories, certification and quality control units, and technical information centers.

3) *Technological Transfer Projects presented by associations*: Support toward the execution of an activities program of a group of enterprises that have an objective to prospect, diffuse, transfer or adequate management, process or production technologies for the associated enterprises. It understands the financing of missions abroad as well as the hiring of experts in highly specialized processes and technologies.

4) *Management entities and Technological Transfer Centers*: Support towards the execution of associative projects with the creation of entities destined toward prospecting, development, diffusion, transfer, and the allocation of technologies for an enterprise sector.

5) *Pre-investment studies for productive scaling on innovation projects*: Support the development of pre-investment studies that related to the stimulation of productive investment with innovative contents.

6) *Guarantee funds for projects with innovative contents*: That facilitate bank financing of productive scaling projects based on innovations developed with financing from

FONTEC.

As complements, there exist different promotion initiatives for development of R&D projects of pre-competitive character and for the creation of basic technological services. The most important initiatives that have a multi-sector element are FONDEF, which is operated by the National Commission of Scientific and Technological Investigation (CONICYT) and FDI, which is operated by CORFO. Both incorporate the relation dimension between enterprises and entities of investigation and development. Although these funds are not specifically focused on the SMEs, their impact will incorporate them, particularly in those industrial sectors where the participation of the sector is most important. In addition to these initiatives, some sector funds exist, as in the case of the Agricultural Investigation Fund (FIA) that supports technological transfer and investigation projects.

(2) Enterprise modernization

In the enterprise modernization ambience of local industries, three main promotion instruments exist in the current support programs for SMEs. They are Development Projects (PROFOS), the Technical Assistance Fund (FAT), and Suppliers Development Program (PDP), all of which are in CORFO's charge.

The PROFO's objective is to promote cooperative work within the enterprises of similar or complementary areas and of similar location. This is necessary in order to find solutions for common problems that by their nature could not be solved individually. With this in mind, CORFO subsidizes the realization of an activity program and the hiring of a manager to administer the program.

The object of the FAT is to facilitate the access to technical assistance for SMEs, both to improve the global management of the enterprise as well as to solve problems that require specific solutions. This is exactly how it is intended to develop a consultant market specialized in SMEs.

The object of the PDP is to increase competitiveness in production chains and facilitate the establishment of long-term subcontracting relationships between a large company and its smaller sized suppliers, thus allowing mutually beneficial specialization and complementation.

In these cases, the administration of the resources and the articulation of the enterprises are delegated to public and private intermediary agents. In particular, business management associations are experiencing an increase in participation in the administration of these resources.

Finally, a system of support services exists with an assistance character, a few of which usually incorporate a technological dimension.

Table 5.4.2 National SME Technological Development Support System

Incentives				Institutions		
Scope	**Instrument**	**Description**	**Objective Group**	**3rd Floor: Finance**	**2nd Floor: Administration**	**1st Floor Execution**
Technological Innovation and Transfer	**FONTEC**	Financing of technological innovation and transference programs	Multisector enterprises	CORFO	CORFO - FONTEC	Enterprises
	FONDEF	Financing of public technological investigation and infrastructure projects	Alliances R&D-Enterprise Institutions	CONICYT	CONICYT	Universities & non-profit Technological Institutions
	FDI	Financing of R&D and service projects of public interest	Alliances R&D-Enterprise Institutions	CORFO	CORFO	Non-profit R&D Institutions
	FIP	Financing de R&D projects of Fishing and Fish-breeding	R&D Institutions in the fishing sector	Fishing Sub-Secretary	FIP	R&D Institutions
	FIA	Subsidy for investigation or transfer projects	R&D Institutions and Investigators	Ministry of Agriculture	Ministry of Agriculture	R&D Institutions
Technical Assistance	**FAT**	Subsidy for the hiring of technical assistance	Multisector SMEs	CORFO	Intermediary operating agents	Consultants
	PAG	Financing of diagnose and D of productive process	Multisector enterprises	CORFO	Intermediary operating agents	Consultants and R&D Institutions
	Rural Productive Development Program	Technological transfer for small farmers	Small farmers	FOSIS	FOSIS	NGOs
	Technological Transfer Program	Technical assistance for small farmers	Small farmers	INDAP	INDAP	Private Sector
	Rural Irrigation Program	Technical assistance in irrigation	Small farmers	INDAP	INDAP	National Irrigation Board
	PAMMA Technological Assistance	Technical assistance for small miners	Small-scale mining	PAMMA	PAMMA	PAMMA
	ENAMI – pre-investment studies	Subsidy for diagnose and pre-investment studies	Mining	ENAMI	ENAMI	Consultants
	ENAMI - Productive Projects Assistance	Direct technical assistance	SME-mining	ENAMI	ENAMI	Consultants
	ENAMI - Consultant Technical Assistance	Direct technical assistance	SME-mining	ENAMI	ENAMI	ENAMI - Consultants
Associativity	**PROFO**	Integrated support for the productive modernization of enterprise groups.	Multisector SMEs	CORFO	Intermediating operating agents	PROFO
	PDP	Integrated support for enterprise group of product and service subcontractors	Multisector enterprises	CORFO	Intermediating operating agents	Consultants and/or Enterprises

Source: CORFO.

5.5 Financing

5.5.1 Financing the SMEs in Chile

A diagnosis made in the beginning of these decade uncovered three main motives that made access to credits difficult for SMEs. These are:

1) Lack of resources in the market on the term conditions and grace periods required for the investments.
2) Lack of availability of guarantees for the companies.
3) High transaction costs for the financial institutions on operating with SMEs.

Consequently, instruments were designed to correct the flaws detected in the market. Some descriptions of them will follow.

(1) Resources

The State, through CORFO, abandoned the direct credit for productive investment promotion, replacing it with a second floor scheme. In the new scheme, the long-range resources are transferred to the private financial system for them to place them among the final users, emphasizing the SME stratum. Furthermore, a financing line was implemented for long and medium credit exports, with the objective of improving the competitiveness in the exporting sector, permitting the companies to offer better terms for its clients.

Since the beginning of the operation of these programs in 1990 and until December 31 of 1999, resources amounting to US$1,819.1 million have been mediated (Table 5.5.1).

Table 5.5.1 Placing of Financial Mediation of CORFO in 1990-1999

(US$ million)

Year	Banks	Leasing	Others	Total
1990	21.2	47.2	-	68.4
1991	33.7	86.8	-	120.5
1992	101.4	121.0	-	222.4
1993	63.6	84.1	-	147.7
1994	61.0	120.5	-	181.5
1995	46.6	134.7	9.0	189.3
1996	41.2	147.6	25.0	213.8
1997	113.4	105.1	-	218.5
1998	148.3	59.8	12.0	220.1
1999	203.5	19.5	12.9	235.9
Total	**833.9**	**926.3**	**58.9**	**1,819.1**

Source: CORFO.

(2) Guarantees

There exist several financial tools for technological oriented investment, or geographical location (zones of productive re-conversion) or/and to highly export oriented investment, to facilitate its access to the commercial banking system. In general terms, CORFO covers between 30% and 60% of the risk of non-payment, under approval of the commercial bank.

5.5.2 New Initiatives

Contrary to the prevailing situation in the beginning of the CORFO financial mediation program, today, long-term resources in sufficient amounts are available in the financial market. These resources mainly come from pension funds. A problem that subsists is the inadequate capacity development of evaluation and monitoring of the risks associated with the SME segment, added to the problems of asymmetric information problems and to the high costs of their transaction operations.

(1) Banks and Leasing

To develop long-term financing capacities for SMEs in the bank sector, CORFO seeks to generate adequate incentives so that the banks decide to invest in said capacities. One formula is the contribution of "quasi-capital" to financial institutions that are

prepared to create capacities, letting them lever this quasi-capital with medium-term placing in the SMEs. Furthermore, re-discount lines have been established with convenient rates in order to facilitate SME investment projects, as well as the need for work capital.

(2) Risk Capital

CORFO is financing the risk capital development, which finances new projects with strong innovating components but without access to the financial market due to the high risk for a traditional banking operation.

Currently, Investment Funds exists, which, according to the norm, can invest in projects of this kind. In practice, however, this has proved inoperative. One reason is that the main contributors of these funds (institutional investors) have a great influence in the establishing of these investment politics and, because of valuation problems of their portfolios, they are not interested in this type of investments.

As a way of modifying the incentives of the Funds, CORFO would offer them resources through a conditioned loan mode. The eligible funds should have investment policies that give priority to investments in enterprises that introduce, in a commercial or industrial scale, innovations of products or processes or organizational innovations.

(3) The Exporting Sector

As a complement to the export financing lines, CORFO has implemented a re-discount line for financing credits granted by banks for the acquisition of production inputs (raw material, parts, pieces and services) that are required in the production of non-traditional exportable goods and services.

Another re-discount line finances credits granted for investments or office expenses, commercial premises, warehouses, storage premises needed by non-traditional exporters for the marketing of its products abroad. Work capital, sales costs and general and administrative costs necessary for the installation, up to six months, are also financed.

Finally, CORFO has implemented mechanisms in order to increase the coverage of the export credit insurance, offering by private insurance companies. Currently, the Chilean market only offers coverage for short-term commercial risks, which affects the competitiveness of the national exporters, who are obliged to export with credit notes. CORFO is developing a mechanism for reassuring extraordinary, political and long-term commercial risks, with the purpose of giving the possibility of offering these coverage in the market.

5.6 Access to Markets

In Chile, a subsidy policy for enterprise associations for product lines has been impelled. It can secure sufficient offer sizes, increase the positioning of the market studies and reduce the non-compliance probabilities that affect the reputation of the offer of national goods and services. In the same way, the expansion opportunities of the SMEs are conditioned by the country's investment promotion policies.

Further on, the policies associated with the market expansion for SMEs are described in

three areas: the internationalization promotion of Chilean SMEs; the existing incentives and regulations for foreign investment in Chile; and the promotion program for investments localized geographically and that benefit a particular zone of the country.

5.6.1 Internationalization Promotion

(1) Policy Orientation

In this action sphere three policy orientations are distinguished. Each one of these is related to the export experience of the enterprises:

- To expand the export base, in order to incorporate a great number of enterprises to the exporting activity; directed towards those enterprises that have not yet exported.
- Consolidation and development of the national export base in order to meet the new requirements of those enterprises that are already represented in a continual manner in external markets and that desire to increase their competitiveness in the target markets.
- The deepening of the export base, collaborating with the enterprises with greater experience in their target markets in the development of new global businesses, accompanying their investments in the target markets and in the construction of global networks with importers, with distribution channels and, generally, with all market initiatives that allows a greater approximation towards the end consumer.

(2) Institutionality

The institution responsible for the internationalization promotion of the Chilean enterprises is the Export Promotion Administration, ProChile (Dirección de Promoción de Exportaciones), which is affiliated to the Ministry of Foreign Affairs.

The mission of ProChile is to support the internationalization process of the Chilean economy through the promotion of non-traditional exports, both goods and services of the country. These supports are oriented towards the diversification of products markets and exporters, towards the increase of the export volumes, and towards the access to positions that are more and more competitive in the marketing chain.

The most usual functioning modality is through the Export Committees, which are groups of entrepreneurs with common objectives in the international business sphere, that furthermore constitute the counterpart for private co-financing.

(3) Support Instruments

a. Promotion and marketing programs

They have as objective to support the internationalization process of the enterprises in a particular market and with a determined product/service line, through the penetration and diversification of markets. Besides, the desire is to advance in the marketing chain, optimizing the returns and the competitive position of the enterprises.

They operate as a fund with bidding, financing up to 50% of the cost of the action programs presented by the Export Committee, with a decreasing support with time. Enterprise groups are financed in export promotion activities, such as commercial missions brought to the country by potential buyers and opinion leaders, participation in fairs and expositions, market studies, submission of promotional samples and material,

publicity and others.

b. Adjustment to the exportable offer

The objective is to co-finance enterprise group projects oriented to adequate products and services according to external market demand, emphasizing design, quality and marketing issues. It supports the development of and adjustment to the exportable offer. It operates as a fund with bidding through projects, financed with a maximum of 50% of the costs of the selected projects.

c. Country image program:

This instrument boosts the image of the country in markets relevant to Chile, improving the engagement in population segments and opinion leaders in the object markets, differentiating the trademark "CHILE." It operates through the design and implementation of international promotion campaigns of country image, carried out and financed together with the private sector.

5.6.2 Foreign Investment

(1) Legislation

Foreign investment in the country is regulated by Decree Law Nº 600, whose norms are valid for private persons and enterprises, as well as for Chileans resident and domiciled abroad, that transfer foreign capital to Chile and subscribes a foreign investment contract.

The ways in which admission and valorization of capital can be done are in foreign currency, physical goods, technology, credit associated to foreign investment, capitalization of external credits and debts and capitalization of debts.

The authorization of foreign investments is realized through contracts subscribed between the Foreign Investment Committee and the investors. The capital should be admitted in a period not superior to eight years for mining investments and three years for other investments.

The foreign investors can freely transfer its liquid capital and utilities after a year from the date of their respective admission, and they are subject to a 42 % total income tax charge. In the same way, the indirect tributary system and the customs system that applies to national investment. A non-discriminative treatment is established regarding national enterprises.

(2) Institutionality

The entity in charge of authorizing the admission of capital according to Decree Law Nº 600 is the Foreign Investment Committee, a public organism dependent to Finance Ministry.

(3) Foreign Investment Evolution

Table 5.6.1 presents the evolution for each economic sector of foreign investment carried out in Chile in the period between 1974 and 1995. As can be appreciated in the Table, 58.8% of the total investment carried out in the country during the period 1974 and 1995 corresponds to sectors related to natural resources (mining, agriculture and fishing, forestry, fish breeding and aquaculture). Of these, mining contributes with

56.2% of the total.

Table 5.6.1 Foreign Investment Carried Out in Chile in 1974-1995

(US$ million)

Sector	1974-1989	1990-1995*	Total
Services	1,311	2,030	3,341
Industry	864	1,432	2,296
Mining	2,559	5,730	8,289
Agriculture and Livestock	80	79	159
Construction	123	173	296
Transport	21	82	103
Forestry	11	118	129
Fish Breeding and Aquaculture	18	95	113
Electricity, Gas and Water	0	35	35
Total	**4,986**	**9,974**	**14,760**

Source: Foreign Investment Committee.

* Provisional amounts. The data for 1995 correspond to the period January-September.

5.6.3 Geographically Localized Investment Promotion

(1) Policy Orientation

The Chilean economic opening and its subsequent participation in highly competitive and globalize markets gives evidence of the existence of the backwardness of productive sectors or geographic zones that generate stagnation situations or underdevelopment that need to be overcome through the reconversion of these sectors or areas. This reconversion action is oriented by the following two concepts:

- Stimulate private investment and productive development
- Facilitate training and labor reinsertion

(2) Institutionality

The institution in charge of carrying out reconversion programs is the Chilean Development Agency (CORFO). Currently, reconversion incentives exist in four zones of the country: the Arauco Zone of Region VIII; the Provinces of Arica and Parinacota in Region I; Regions XI and XII and the Province of Palena of Region X; and the Province of Valparaiso in Region V.

(3) Instruments

a. Co-financing of investment project studies

CORFO finances up to 50% of the costs of feasibility studies needed by enterprises interested in investing in the specific zones.

b. Payment to private investment promotion agents

This is a subsidy granted to institutional agents (consulting companies, investment societies, bank branches and others) as well as to the same enterprises that are installed in the specific zone. The subsidy will be granted to the first 20 investment projects carried out and the amount depends on the number of generated employment by the new productive activity.

c. Project financing guarantees

CORFO grants financing guarantees to the private sector regarding the fulfillment of obligations made by private persons and enterprises, in Chilean or foreign currency, to Chilean or foreign lenders.

d. Credit insurance

Through an agreement subscribed with private credit insurance company, CORFO offers a special line of credit insurance for the enterprises in the zone, subsidizing 80% of the insurance premium.

e. Stimulation to the installation of labor intensive enterprises

A subsidy is granted for in-service training for the enterprises that are installed in the zone and that use resident labor.

f. Subsidy for the acquisition of sites in the industrial zones

CORFO subsidies the cost of the land in which a new enterprise is to be located. Once the investment is made effective, the subsidy is paid, to the first best projects localized in industrial zones.

6 BUSINESS ENVIRONMENT

6.1 Definition

The concept "investment environment" is a literal translation of a Japanese term and might not be widely recognized in the English language. On the other hand, the term "business environment" is perhaps a more familiar term to English readers. Though the two concepts are not exactly interchangeable, we will use "business environment" throughout this report for the sake of convenience. The definition here refers to various conditions that could affect business activities, especially investment decision-making. It usually pertains to political-economic conditions, legal systems, financial systems and regulations, infrastructure, educational systems, labor conditions as well as environmental regulations.

This chapter will first describe the Chilean business environment in general and later will explain its main components in some detail.

6.2 General

Interviews with some Japanese companies (both in Japan and in Chile) and with Chilean firms with foreign capital have confirmed that they confide strongly in Chile's political-economic stability and well-managed macroeconomic policy, particularly after the 1990 political transition from the military regime to democracy. In fact, Chile has consistently attained high and stable economic growth even during the so-called "lost 80s" in Latin America. This is a very exceptional case. Although Chile experienced a severe economic recession in the past two years, due mainly to the Asian financial crisis between 1997 and 1999, this condition was maintained or even improved in some instances.

Recently President Lagos invited representatives of major foreign companies operating in Chile to a discussion. The invitees, representing various sectors such as mining, energy, banking, etc., expressed their firm confidence in Chile's political-economic stability as well as in the macroeconomic management by the Lagos administration.

Another recent episode explains this mentality. According to the latest quarterly report by J.P. Morgan published in mid-July, 2000, Chile qualified as the lowest-risk country among 24 developing or emerging countries in Latin America, Asia and Africa. In general, the world business community perceives Chile's business environment very favorably.

6.3 Policy for Foreign Investment

Foreign companies positively evaluate the Chilean policy on foreign investment. Reflecting its basic policy of an open economy, the Foreign Investment Law (DL 600), on which most major investments have been made, is quite liberal compared with those of other Latin American countries. As far as laws and rules pertaining to foreign investment are concerned, there are very few obstacles for foreign companies wishing to make direct investments in Chile.

It is true, however, that there still remain aspects that demand improvement in order to

attract more foreign investment. In this regard, a promising sign is that the new government has recently decided, among other measures, to no longer obligate foreign capital to remain for a minimum of one year (Central Bank Foreign Exchange Rule Chapter XⅣ). The government is also making efforts to increasingly liberalize the capital market, such as the complete elimination of *Encaje*. Liberalization of the capital market is not directly related to making foreign direct investment but, nonetheless, is an important element of the investment environment.

6.4 Market Size of Chile

Chile is often said to be a rather small market for foreign companies. In fact, Chile's total GDP in 1996 was US$70,060 million, which was roughly equivalent to 10% of the GDP of Brazil, 20% of the GDP of Mexico and 24% of the GDP of Argentina.

Accordingly, if foreign companies see Chile's domestic market as only the export destination of their products, no one will deny the limited market size. However, if they consider Chile as one of the regionally integrated countries or the partner of many bilateral Free Trade Agreements (FTAs) in addition to the export base or "gateway" linked to these other countries, the picture will change completely. Nevertheless, it might not be so easy for Chile to become such a base or "gateway" in the near future. There exists a great need to raise its level of technology and improve its facilities. This is especially true for the manufacturing sector.

Besides being a WTO member, Chile is an official member of APEC and an associate member of MERCOSUR. At the same time, Chile has concluded bilateral FTA with Canada, Mexico, Peru, Colombia and even with MERCOSUR among others. Chile is now negotiating with the EU, South Korea and further with Japan for the same type of FTA. In the case of Japan, a joint study team was officially launched at the end of May, 2000, nominating JETRO of Japan and DIRECON (Ministry of Foreign Affairs) of Chile as the counterparts. Subsequently, a Chilean delegation visited Japan in late June to discuss matters with JETRO. Taking this opportunity, an open seminar was held in Tokyo which was attended by approximately 100 Japanese participants. This indicates the equally strong interest on the Japanese side regarding this subject.

Meanwhile, a MERCOSUR Summit was held in Buenos Aires, Argentina, at the end of June 2000. The two associate member countries were also present. The participating governments agreed to establish a timetable for the gradual reduction of the Common External Tariff. This represents a great step for Chile in its effort to gain full membership into MERCOSUR. A current expectation is that Chile will be rendered official membership as early as the next Summit to be held in Brazil in December of this year. Once this happens, Chile will at least have more opportunities to export goods to the member countries of MERCOSUR, granted that Chile takes necessary measures to materialize these opportunities, such as improvements on infrastructure.

6.5 Social Stability

Social stability is one of the key factors that the foreign investor should consider in deciding whether or not to carry out his or her plan of investment. As mentioned earlier, foreign investors generally have a positive impression regarding the political-

economic stability of Chile. However, there seem to be some aspects that might negatively affect interested investors under the current social situation in Chile.

In this light, the most significant event in recent months was the historical announcement made in June 2000 by the Committee of the Table of Dialogue on Human Rights, consisting of representatives from four military sectors, the church, lawyers defending human rights and others. This announcement confirmed that the military and lawyers finally reached an agreement recognizing the fact that acts of political violence were conducted by military forces during the military regime. They also agreed to cooperate in order to investigate the cases of missing persons (*desaparecidos*). This statement is extremely important because for the first time the facts were acknowledged by all sectors in Chile including the government, military, lawyer, church and politicians of the ruling and opposition parties.

It has been acknowledged that the private sectors felt uneasy at the beginning of the administration of the new government headed by President Lagos. However, relations between the private sectors and the government have improved rapidly through the very open-minded dialogue and well-managed administration of the President.

There are, however, some pending social issues which the government is working hard to settle as early as possible by obtaining a consensus from all the parties concerned. Following are some awaiting cases of this sort:

a. Conflicts with Indigenous People (*Mapuche*)

This problem is a delicate issue, which has existed ever since the conquest of Chile by the Spaniards. Considering the settlement of this problem as one of the first priorities of his government, President Lagos established the Working Group on Indigenous People just following his inauguration. The Working Group consists of concerned Ministers, the President of the National Corporation of Indigenous Development (Conadi), and representatives of native peoples of Chile, the church and, for the first time, various forestry companies. The Working Group is expected to present an action plan as early as possible.

b. Unemployment Insurance

A draft law on this subject was presented to Congress by the last administration of President Frei. However, its passage is still pending due to opposition both from employers, especially owners of small- and medium-sized companies, and from unions who are primarily against the cost share scheme proposed in the law. President Lagos, complying with his election platform, has been making every effort to materialize this system. He finally presented an amended proposal to Congress in April, lowering the shares both for the labor and the employer respectively. This issue is still under discussion at Congress but the government is urging them to approve it before the end of 2000, as one of the eight measures to accelerate economic recovery announced at the end of June.

c. Modification (Reform) of Labor Law

This subject is another long pending issue. An attempt to modify the Labor Law was

once rejected by Congress just before the end of the Frei administration. Taking it as a lesson, the current government is studying the issue very carefully through the Board of Social Dialogue so as to reach a consensus among the government, the employers and workers. Although the government expects to have the amendment approved by Congress before September 2000, it may actually take more time to reach an agreement by all the parties concerned.

6.6 Promotion of Investment

As for export promotion, ProChile is performing a very important role quite well particularly through its overseas representatives outside Chile. ProChile is also the organization responsible for investment promotion abroad, functioning in most foreign countries on behalf of the Foreign Investment Committee.

Even if the same word "promotion" is employed, however, promotion of exports and of investment actually have quite different meanings. As a consequence, the necessary activities for each type of promotion are quite distinct. It is then natural to notice possible limitations in ProChile's duties regarding investment promotion; they simply do not specialize in this field.

Considering the above and if Chile really wishes to invite increased foreign investment, it is essential that the Foreign Investment Committee have its proper representatives outside Chile, at least in major countries, rather than leaving its duties to ProChile. If the Committee's budget constraint does not allow this due to high living costs overseas, such as the case in Japan, a viable alternative would be to employ local staff, granted that capable professionals are available.

Take Japan as an example. A number of countries or even local governments have established their Japanese representative offices and many of them are staffed with Japanese people. From the United States, for instance, about 40 States keep their own offices for investment promotion in Japan and about 30 of them have Japanese representatives. All European countries keep more than 60 offices in Japan for the same purpose and almost half of them are represented by Japanese staff. By contrast, in the case of Asian and Oceanic countries, most of their representatives come from their own countries. Among Latin American countries, only Costa Rica and Jamaica have so far set up a representative office for investment promotion, which are both managed by Japanese staff.

Meanwhile, in recent months, quite a number of investment promotion seminars about various Latin American countries have been organized and offered in Japan by various organizations. Japan External Trade Organization (JETRO), as one representative organization for such activity, held a total of eight seminars on Latin America during January 1999 and June 2000. Out of the eight seminars, only one dealt exclusively with Chile. The IDB Tokyo Office is also actively organizing similar seminars. However, Chile has been poorly presented as far as investment promotion is concerned. Even more disappointing, when a Chilean seminar for investment promotion is indeed held, it is rarely attended by Chilean high-ranking officials.

One Latin American country which is very active in this field is Mexico. It will send

not only high-ranking officials of the central government to such seminars, but representatives of major States as well. Furthermore, the delegation will usually organize and attend two seminars in Japan, both in Tokyo and Osaka. Chile could learn some important lessons from this valuable example. For instance, Chile should organize more effective and attractive seminars for investment promotion in the future. Other active and exemplary countries in this respect are Colombia, Peru and Panama among others.

In view of Chile's high international reputation with respect to its business environment, its more positive and aggressive attitude towards investment promotion would easily bear some fruit. It is expected that the few ideas suggested in this chapter, combined with a long-term strategy formulated by EPIE, will be highly instrumental in achieving this goal.

7 FINANCE FOR SMALL AND MEDIUM SIZED ENTERPRISES (SMEs)

7.1 The Importance of SMEs in the Chilean Economy

Small and medium sized enterprises (SMEs) in Chile have been among those most adversely affected by the unprecedented economic recession in 1999, which was triggered by the Asian financial crisis of 1997-1998. At the same time, however, such a situation has demonstrated the importance of SMEs in that this sector, together with micro enterprises, contributes almost 90% to the country's total employment (Table 7.1.1). And their importance is more significant in the regions outside the metropolis.

Table 7.1.1 SMEs' Shares in Enterprises and Workers and in Chile in 1997

(1) Number of Enterprises

Region	Micro (%)	SMEs (%)	Large (%)	Total (%)	Total Enterprises
I - XII	85.5	14.1	0.4	100.0	313,937
Metropolitan	75.5	22.7	1.8	100.0	198,699
No information	97.9	2.1	0.0	100.0	14,284
Nation	82.1	17.0	0.9	100.0	526,920
National Total	432,431	89,675	4,814	526,920	

(2) Workers

Region	Micro (1 - 4)	Small (5 - 49)	Medium (50 - 199)	Large (200 -)	No Info.	Total	Total Workers
I - XII	43.3	35.7	10.3	6.6	4.1	100.0	2,946.9
Metropolitan	33.1	34.6	15.4	13.7	3.3	100.0	2,263.3
Nation	38.9	35.2	12.5	9.7	3.7	100.0	5,210.2
Total Workers	2,024.3	1,833.9	652.8	505.3	193.9	5,210.2	

Note: Definitions of SMEs in terms of annual sales: "Small" = UF2,401-25,000 and "Medium" = UF25,001-100,000. (UF1 is approximately 15,500 pesos as of July 2000.)

Source: CORFO based on information of the Internal Revenue Service (S.I.I.), ProChile, and MIDEPLAN, as quoted in CORFO, Basic Statistics of Enterprises in Chile, November 1998.

Nevertheless, SMEs have been traditionally placed in a disadvantageous position in terms of access to finance as compared with large sized enterprises. In October 1999, when he was still a presidential candidate, President Lagos agreed upon 12 items with the National Confederation of SMEs (CONAPYME) to improve SMEs' position in the Chilean economy. The agreement was to recognize SMEs as one of the most important economic actors in the country and to give them a status so as to be positively integrated into the process of the government's decision-making. Among the 12 items, considered the most urgent and essential are: 1) To duplicate funds for programs assisting SMEs in all economic sectors, including commerce and services; and 2) To generate a new mechanism for financing SMEs.

7.2 Finance for SMEs in Chile

The most critical problems that faces SMEs in Chile are limited access to finance and the unavailability of sufficient funds favorable for expanding and/or improving their productive activities. CORFO, as a leading government agency for economic development, once served as the principal provider of long-term credits to SMEs in the

country. CORFO's financial scheme until 1989 was to provide credits to SMEs directly ("first-floor finance" or FPP), but it resulted in a huge burden of debt on CORFO due to the default of payments that had amounted to more than US$550 millions by then.[1] Having learned from the bitter experience, CORFO decided to change its policy drastically and started indirect finance through commercial banks and other financial institutions ("second-floor finance" or FSP) in 1990.

CORFO now provides various types of finance to SMEs, including long-term credits for production investment, export, and other economic activities, co-finances export credit, and supports risk capital through conditional long-term loans. But the most important are the following two schemes, which are both operated through commercial banks.[2]

Finance for Investment of SMEs (Credit Line B.11)
This applies to all types of investment including investments for environment control such as the purchase of equipment and the improvement of infrastructure and management. This scheme has such characteristics as: 1) Multisectoral finance for all productive sectors, e.g., industry, agriculture, livestock production, forestry, fisheries, mining, tourism, education, health, etc.; 2) Flexibility in the payment period form 2 to 10 years with a grace period up to 24 months; 3) Availability of options for the loan currency between $US or UF and between a fixed or floating interest rate; and 4) Targeting enterprises with annual sales up to US$30 millions; and 5) Maximum size of US$5 millions of which 30% can be used as working capital.

Finance for Investment of Small Enterprises: CORFO-German Credit (B.12)
The main features of this scheme are basically the same as the Finance for Investment of SMEs, but this credit is provided to smaller sized enterprises (with annual sales no more than UF100,000 (approximately US$3 millions) at a lower interest rate and for a longer payment period as it is partially financed by the German government through Kreditanstalt fur Wiederaufbau (KfW).

In the intermediary financing system, however, the problem of unavailability of enough productive funds for SMEs has remained essentially unchanged, or rather, has become even more serious since commercial banks are not willing to finance, at their own risk, a SME's project even when it has been approved by CORFO for extending its funds. Commercial banks are said to be satisfied with lending loans to larger sized enterprises and consumers (e.g., automobiles, houses, etc.) at high interest rates. Between 1998 and April 2000, CORFO channeled credits of US$290 millions in total, in which industry and agriculture accounted for 38% and 25%, respectively.[3]

Besides CORFO, some other government agencies, e.g., the Institute of Agriculture and Livestock Development (INDAP), the Fund for Solidarity and Social Investment (FOSIS), and the Technical Cooperation Service (SERCOTEC), provide credits to SMEs. But these agencies tend to focus on micro and small sized enterprises and individual producers and, consequently, their credits are generally small-sized and

1 Juan Foxley R., "Reformas a la Institucionalidad del Credito y el Financiamiento a Empresas de Menor Tamano: La Experiencia Chilena con Sistemas de 'Segundo Piso' 1990-1998," CEPAL, 1998.
2 CORFO, Lineas de Intermediacion Financiera de CORFO: Normas para su Utilizacion, May 1999.
3 La Hora, July 5, 2000.

insufficient for the purchase of sophisticated processing plants, machinery, and equipment, especially for production for external markets.

The Chilean government is currently studying possible measures to improve finance for SMEs in order to meet the demand of those enterprises. Such measures include the transformation of Banco de Estado into a bank exclusively for SME finance and the extended application of the Guarantee Fund for Small Sized Enterprises (FOGAPE). However, SMEs do not seem to be thoroughly satisfied with these measures, though the study team has yet to find out reasons for their dissatisfaction, if any.

7.3 Finance for SMEs in Japan

The situation of SMEs in Japan is quite similar to that in Chile in the sense that Japanese SMEs also have difficulty in obtaining loans in the financial market even though they are playing a vital role in the economy.[4] Therefore, Japan's experiences in finance for SMEs can be a good, and also partly bad, example to Chile in improving its situation. Certainly, Japan's system cannot be applied directly to Chile and it is necessary to give due consideration to differences between Japan and Chile in such factors as the size and structure of economy, historical background, the degree of deregulation of the financial market, and so forth. It must be noted, however, that major financiers for SMEs in Japan are not government but private financial institutions, like in Chile. In fact, loans extended by private financial institutions (including banks, credit cooperatives, etc.) occupied more than 90% of Japan's total SME loans in 1999.[5] But government financial institutions have played a significant role in extending loans to SMEs, especially at the time of severe economic recession or under tight monetary policy.

[4] For further discussion on Japan's finance system for SMEs, see "Discussion Paper 1: Finance for Small and Medium Sized Enterprises (SMEs) in Japan," which was prepared as a part of this study and presented separately to CORFO on July 26, 2000.

[5] The Ministry of International Trade and Industry, *White Paper on SMEs*, 1999.

8 LABOR AND HUMAN RESOURCES

8.1 Labor Market

During the 1990s, new kind of economic growth started to emerge in Chile as its market and economy became more open to foreign investment. Technological innovation and privatization processes came along and they have been pressuring the labor market as well as the education and training sector for a change. However, not many enterprises, especially smaller-sized enterprises, seem to be responding quickly enough to a change in the labor market situation.

Two issues may be raised. One issue is the lowering employability of unskilled and low educated workers. For the time being, the low unemployment rate seems to be favorable for both the employer and employee, but experts point out some negative factors behind this. They say that the unemployment figure seems to be relatively low because many workers have been absorbed by the "informal sector," which means that they are self-employed, undocumented workers, or work for unregistered micro enterprises.[1] Another issue is the risk of growing polarization of productivity levels and living conditions between those working in modern and large companies and those in small- and medium-sized enterprises (SMEs). Both issues may be treated critically since somehow they are rooted in the educational and training structure of the country that holds a position as one of the basic elements for sustained economic growth.

8.1.1 Characteristics of the Labor Market

(1) Unemployment by Region, Season, and Age Group

During the period of 1986 to 1996, the unemployment rate was reduced from 13.5% to 5.4%.[2] In 1999-2000, it rose back to the range from 8.1% to 11.5%, but the overall situation seems to be better than before (Table 8.1.1).

Table 8.1.1 Unemployment Rates by Region (%)

Period	Nation	Regions												
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	R.M.
Year 1999														
Feb. - Apr.	8.7	7.7	5.9	7.7	7.8	11.6	4.4	6.3	8.9	9.5	5.6	3.5	6.5	9.7
Mar. - May	9.8	10.0	5.7	10.3	10.5	13.4	6.8	8.5	9.7	9.8	5.9	3.8	6.3	10.5
Apr. - June	10.8	10.8	5.6	11.4	12.4	13.9	9.9	10.5	10.2	10.5	6.2	5.1	7.8	11.5
May - July	11.1	10.6	7.0	8.7	13.3	15.1	12.0	11.3	10.6	10.5	6.2	5.8	8.2	11.5
June - Aug.	11.5	10.7	8.2	7.3	12.5	15.0	12.0	11.7	10.9	10.5	7.2	6.5	8.5	12.0
July - Sep.	11.4	10.3	9.9	6.6	11.3	14.3	11.7	11.6	11.3	10.1	7.9	5.4	8.5	11.9
Aug. - Oct.	11.0	11.0	10.2	7.4	9.6	13.0	9.9	11.2	11.2	8.2	7.5	4.1	8.1	12.0
Sep. - Nov.	10.0	9.9	9.9	9.0	7.5	11.4	7.6	8.8	10.1	7.5	6.0	3.8	7.1	11.4
Oct. - Dec.	8.9	8.5	8.3	7.9	6.8	10.5	4.8	7.1	8.9	6.2	4.8	3.5	6.2	10.7
Year 2000														
Nov. - Jan.	8.4	7.2	8.0	8.0	7.8	9.6	4.1	6.4	8.1	6.9	5.0	3.6	5.9	10.0
Dec. - Feb.	8.1	7.0	8.8	8.0	8.2	9.2	3.2	5.8	8.3	7.5	4.7	3.2	5.5	9.3
Jan. - Mar.	8.2	8.2	9.4	8.2	7.6	10.1	4.1	6.1	8.7	7.7	5.0	3.1	5.1	9.0
Feb. - Apr.	8.5	8.4	10.1	9.2	6.8	10.4	4.6	6.7	9.0	7.3	4.4	3.6	4.8	9.5

Source: Instituto Nacional de Estadisticas (INE), *Encuesta Nacional del Empleo.*

[1] A micro enterprise is an establishment with less than 5 workers.

[2] Instituto Nacional de Estadisticas (http://www.ine.cl/ind_mens/f_indmes.htm).

These unemployment figures implicate at least three issues. One is a different unemployment situation among regions. Table 8.1.1 shows, for example, the difference of unemployment rates between Regions V and X in February-April 1999 is a 6 percentage point (i.e., 11.6% vs. 5.6%), which is not small. Seasonality is another issue. In Region VI, for example, the difference of unemployment rates between June-August and December-February is almost a 9 percentage point. The seasonal difference is due mainly to the agricultural sector, which demands a larger quantity of labor during planting and harvesting seasons. The third issue is different unemployment rates by age group. As Table 8.1.2 shows, while the unemployment rate of the 15-24 age group is almost 20%, the rate of the age group above 45 years old is less than 7%.

Table 8.1.2 Unemployment Rates by Age Group (%)

	Age Group								
Period	15 years and above	15 - 24	15 -19	20 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 years and above
Year 1999									
Feb. - Apr.	8.7	18.9	20.2	18.6	9.8	6.2	5.6	5.6	2.0
Mar. - May	9.8	21.0	25.2	19.9	10.9	7.2	6.2	6.6	2.3
Apr. - June	10.8	22.7	30.4	20.5	11.8	8.4	6.8	6.9	1.7
May - July	11.1	24.0	33.1	21.4	12.2	8.7	6.7	6.6	2.1
June - Aug.	11.5	25.4	34.4	22.9	12.1	9.2	6.9	6.4	2.1
July - Sep.	11.4	26.2	33.8	24.1	12.0	8.6	6.6	7.1	2.6
Aug. - Oct.	11.0	25.4	34.5	22.8	11.9	8.2	6.5	6.4	2.1
Sep. - Nov.	10.0	22.9	30.8	20.7	11.1	7.1	6.2	6.0	2.1
Oct. - Dec.	8.9	20.6	26.8	18.8	10.0	6.5	5.3	4.9	1.3
Year 2000									
Nov. - Jan.	8.4	20.0	23.8	18.9	9.3	5.9	4.8	4.4	2.0
Dec. - Feb.	8.1	19.1	22.1	18.2	9.3	5.4	4.4	4.2	2.0
Jan. - Mar.	8.2	19.4	23.5	18.2	9.5	5.5	4.4	4.2	2.7
Feb. - Apr.	8.5	19.5	24.2	18.1	9.9	5.8	4.6	5.2	2.8

Source: INE, *Encuesta Nacional del Empleo*.

(2) Low Utilization of Female Labor Force

Although women's participation in the labor market has been increasing at a fast pace, it is still far from the full utilization of female labor force. As Table 8.1.3 shows, the number of employed men is more than two times of that of employed women. Some experts describe the under-utilization of female labor force as a cushion to a danger of labor force scarcity or sudden growth of real wages. In other words, economic growth will never face a shortage in labor supply or an increase in real wages because "reserved" female labor force is abundant enough to prevent them from happening.[3]

The growth of the agricultural sector, especially its export sector, seems to be taking advantage of the situation. Agricultural export has strong seasonal patterns and it is said that the competitiveness of some of those exporters is based on the existence of abundant cheap female workers who can be employed only during crop seasons.

[3] Rural women associated with harvest activities of the agriculture sector are mostly affected, but it also seriously affects urban female workers with low-level education and heads of families living in poor quarters of cities as well.

Table 8.1.3 Total Population and Situation of Work Force by Age and Sex

By Sex and Period	Total Population	Population of 15 years old and above						
		Total	Labor Force					Population not in labor force
			Total	Employed	Unemployed			
					Total	Retired	Those looking for a job for the first time	
Both Sexes								
Year 1999								
Feb. - Apr.	14,963,750	10,670,830	5,805,200	5,300,020	505,180	443,130	62,050	4,865,630
Mar. - May	14,980,400	10,685,110	5,794,470	5,226,730	567,740	504,040	63,700	4,890,640
Apr. - June	14,997,050	10,699,420	5,761,330	5,139,700	621,630	555,240	66,390	4,938,090
May - July	15,013,700	10,713,700	5,767,100	5,124,370	642,730	573,100	69,630	4,946,600
June - Aug.	15,029,770	10,727,460	5,794,660	5,129,910	664,750	589,870	74,880	4,932,800
July - Sep.	15,045,800	10,741,240	5,822,310	5,158,570	663,740	580,240	83,500	4,918,930
Aug. - Oct.	15,062,240	10,755,290	5,853,930	5,208,420	645,510	564,270	81,240	4,901,360
Sep. - Nov.	15,078,360	10,769,160	5,907,290	5,315,430	591,860	514,430	77,430	4,861,870
Oct. - Dec.	15,094,290	10,782,810	5,933,560	5,404,480	529,080	450,030	79,050	4,849,250
Year 2000								
Nov. - Jan.	15,110,610	10,796,750	5,921,980	5,424,580	497,400	413,320	84,080	4,874,770
Dec. - Feb.	15,126,760	10,810,550	5,883,420	5,409,900	473,520	390,740	82,780	4,927,130
Jan. - Mar.	15,142,750	10,824,350	5,858,470	5,378,540	479,930	401,950	77,980	4,965,880
Feb. - Apr.	15,158,950	10,838,220	5,835,870	5,341,210	494,660	418,140	76,520	5,002,350
Male								
Year 1999								
Feb. - Apr.	7,408,740	5,223,970	3,892,060	3,566,340	325,720	292,420	33,300	1,331,910
Mar. - May	7,417,260	5,231,250	3,894,070	3,527,540	366,530	331,750	34,780	1,337,180
Apr. - June	7,425,760	5,238,530	3,883,020	3,477,980	405,040	367,690	37,350	1,355,510
May - July	7,434,270	5,245,810	3,890,890	3,469,740	421,150	383,590	37,560	1,354,920
June - Aug.	7,442,330	5,252,670	3,887,250	3,448,390	438,860	398,490	40,370	1,365,420
July - Sep.	7,450,330	5,259,510	3,893,870	3,462,840	431,030	385,720	45,310	1,365,640
Aug. - Oct.	7,458,560	5,266,530	3,898,030	3,487,820	410,210	366,550	43,660	1,368,500
Sep. - Nov.	7,466,630	5,273,460	3,928,470	3,562,810	365,660	324,670	40,990	1,344,990
Oct. - Dec.	7,474,590	5,280,270	3,926,540	3,603,630	322,910	282,490	40,420	1,353,730
Year 2000								
Nov. - Jan.	7,482,740	5,287,210	3,927,140	3,623,210	303,930	260,860	43,070	1,360,070
Dec. - Feb.	7,490,830	5,294,110	3,900,310	3,614,330	285,980	244,610	41,370	1,393,800
Jan. - Mar.	7,498,850	5,300,990	3,904,570	3,619,240	285,330	250,140	35,190	1,396,420
Feb. - Apr.	7,506,990	5,307,920	3,903,000	3,600,490	302,510	266,830	35,680	1,404,920
Female								
Year 1999								
Feb. - Apr.	7,555,010	5,446,870	1,913,140	1,733,680	179,460	150,710	28,750	3,533,730
Mar. - May	7,563,130	5,453,850	1,900,380	1,699,180	201,200	172,280	28,920	3,553,470
Apr. - June	7,571,300	5,460,890	1,878,310	1,661,720	216,590	187,550	29,040	3,582,580
May - July	7,579,430	5,467,900	1,876,220	1,654,630	221,590	189,520	32,070	3,591,680
June - Aug.	7,587,440	5,474,790	1,907,410	1,681,520	225,890	191,380	34,510	3,567,380
July - Sep.	7,595,480	5,481,720	1,928,430	1,695,730	232,700	194,520	38,180	3,553,290
Aug. - Oct.	7,603,680	5,488,760	1,955,900	1,720,600	235,300	197,720	37,580	3,532,860
Sep. - Nov.	7,611,730	5,495,720	1,978,830	1,752,620	226,210	189,760	36,450	3,516,890
Oct. - Dec.	7,619,710	5,502,560	2,007,030	1,800,850	206,180	167,550	38,630	3,495,530
Year 2000								
Nov. - Jan.	7,627,870	5,509,540	1,994,840	1,801,370	193,470	152,460	41,010	3,514,700
Dec. - Feb.	7,635,930	5,516,450	1,983,130	1,795,580	187,550	146,130	41,420	3,533,320
Jan. - Mar.	7,643,900	5,523,370	1,953,900	1,759,300	194,600	151,810	42,790	3,569,470
Feb. - Apr.	7,651,950	5,530,300	1,932,870	1,740,720	192,150	151,310	40,840	3,597,430

Source: INE, *Encuesta Nacional del Empleo*.

(3) Difference in Educational Background and Wages

As Table 8.1.4 shows, the earning gap according to educational background is wide in Chile as compared with MERCOSUR countries except Brazil. This implies that Chilean labor cost, especially for those who have education only up to secondary level, is relatively inexpensive from the point of view of employers. From the point of view

of investors, this is a positive factor for investment decision making.

Table 8.1.4 Earning Gap by Education in MERCOSUR

(Upper-Secondary=100)

Level of educational attainment	**Chile (1996)**	Brazil (1993)	Argentina (1994)	Paraguay (1994)	Uruguay (1994)
1. Below upper secondary	**65**	53	74	72	71
2. Upper secondary	**100**	100	100	100	100
3. Non-university tertiary	**125**	-	88	92	83
4. University	**190**	195	177	176	143
Difference between 1 and 4	**125**	142	103	104	72

Source: CEPAL, *Measuring Labor Market Outcomes of Educational Attainment*, 1999.

(4) Relaxed Employer-Employee Relation

Chile was a pioneer country during the early years of the 20th century in terms of labor institutionalization. The first labor code was introduced in 1924 and it was protective and in favor of workers for those years. The origin of the labor movement was closely related with mining activities in the North Zone.

By 1956, Chile had more than 330,000 unionized workers who represented 27.5% of total employment. During the socialist administration of President Allende (1970-73) the number of unionized workers grew to nearly 940,000, which represented almost one third of total employment. During the 1990s, the number of unionized workers decreased to 700,000 and the percentage has averaged less than 15% of total employment.

There are strong unions in particular sectors such as mining and in some of the leading companies. In those sectors and companies, management is not afraid of unions and, on the contrary, they favor labor organizations under unions as they can negotiate with only a few leaders.[4]

Recently, there has been an increase of unionization, but this does not mean an increase in labor conflicts. As a matter of fact, during the democratic government of 1990-95, the incidence of conflicts in Chile due to strikes are less than a half of that experienced by OECD countries and lower than those in countries like the United States, Italy, Untied Kingdom, Canada, Spain, and Sweden.[5]

8.1.2 Some Aspects of Supply and Demand of Labor

(1) Change of Employment Structure

Demand for labor has been steadily shifting from primary activities towards secondary and, mainly, tertiary activities. In 2000, tertiary industries accounted for more than two thirds of total employment (Figure 8.1.1).

[4] However, it is said that this kind of thinking will not suit the reality of SMEs since unionization usually pushes up the operating costs of those companies.

[5] Rodolfo Bonifáz y David Bravo, "Mercado del trabajo e institucionalidad laboral en Chile durante los gobiernos de la Concertación" in René Cortázar y Joaquín Vial, eds., *Construyendo opciones: propuestas económicas y sociales para el cambio de siglo*, Santiago: CIEPLAN-DOLMEN, 1998.

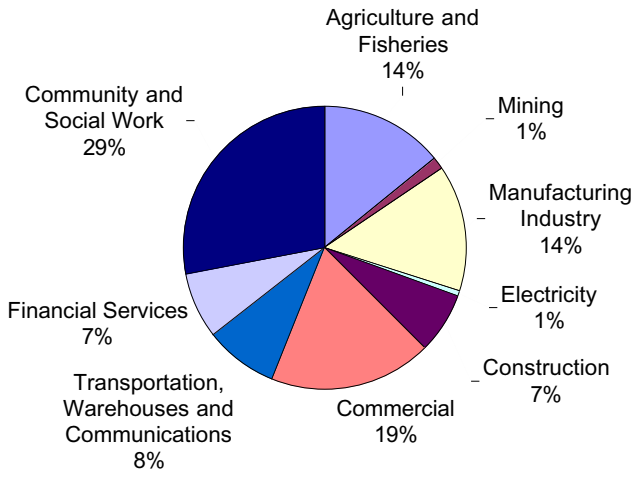

Figure 8.1.1 Employment by Type of Industry (February-April, 2000)

Source: INE, *Encuesta Nacional del Empleo.*

The change in the employment structure is not only a result of economic and social development but it is also a desirable phenomenon. The proportional and absolute diminishment of employment in the agriculture sector, together with the dynamic growth of agriculture exports, has based on improvement of labor productivity in the sector. It has also enabled the sector to maintain its competitiveness in the international markets in spite of the relative appreciation of the Chilean peso with respect to foreign currencies.

It is said that the employment in the agricultural sector will continue declining in terms of the share in total employment. Industry and their complimentary secondary activities will stabilize around 15% of total employment, leaving over two thirds of total employment to tertiary activities like commerce and services (both private and public).

Table 8.1.5 Employment by Type of Industry and Region (February-April, 2000)

Region	Total	Agriculture and Fisheries	Mining	Manufac-turing Industry	Electricity	Construc-tion	Commer-cial	Transport, Warehouses and Communi-cations	Financial Services	Community and Social Work
Total	100.0%	14.2%	1.3%	14.4%	0.6%	7.1%	18.6%	8.2%	7.4%	28.1%
I	100.0%	9.0%	1.5%	13.5%	1.2%	6.8%	24.6%	11.3%	6.1%	26.0%
II	100.0%	3.1%	10.9%	10.6%	0.6%	11.1%	17.0%	11.7%	10.5%	24.6%
III	100.0%	14.7%	10.7%	10.7%	1.0%	10.4%	17.6%	6.6%	5.0%	23.4%
IV	100.0%	26.5%	5.1%	7.2%	0.6%	9.9%	18.1%	7.4%	4.4%	20.8%
V	100.0%	11.9%	1.4%	8.9%	0.8%	6.3%	19.8%	11.7%	5.7%	33.4%
VI	100.0%	34.5%	3.6%	9.2%	0.7%	5.1%	15.3%	7.3%	3.7%	20.5%
VII	100.0%	33.9%	0.1%	11.8%	0.6%	7.7%	16.0%	5.5%	3.3%	21.0%
VIII	100.0%	17.2%	0.5%	17.7%	0.4%	8.2%	16.3%	8.5%	4.7%	26.6%
IX	100.0%	33.8%	0.1%	8.3%	0.4%	4.9%	14.7%	5.4%	3.3%	29.1%
X	100.0%	29.9%	0.1%	13.1%	0.3%	5.5%	13.8%	6.7%	3.8%	26.8%
XI	100.0%	22.0%	0.8%	10.5%	0.5%	9.0%	13.0%	6.4%	3.5%	34.2%
XII	100.0%	10.1%	5.1%	12.3%	0.5%	10.5%	15.0%	8.9%	6.3%	31.2%
R.M.	100.0%	4.0%	0.3%	17.8%	0.6%	7.0%	20.9%	8.2%	11.0%	30.3%

Source: INE, *Encuesta Nacional del Empleo.*

(2) Rising Productivity and Lack of Skilled Workers

Labor productivity has increased fast during the 1990s, as a result of privatization, industrial re-engineering (but basically for large-sized companies), the introduction of

modern management (especially in the mining industry), and the introduction of new technologies embodied in imported modern equipment and machinery.

On the other hand, a new profile of labor demand emerged during the 1990s. It was a result of massive aggregate investment and progressive opening of the economy towards foreign products and investments that favored "skilled" workers. Working experience, educational background and managerial sense are the major qualifications of a "skilled" worker. As a matter of fact, over 50% of new jobs require 12 or more years of education.[6] Consequently, both employment and salaries of skilled workers are growing above the national average. Demand has been strong for skilled labor, mostly professional, technical, and administrative workers, and this phenomenon can be confirmed especially within the service sector.

(3) Santiago as the "Supply Hub" for Workers

One thing that cannot be read from statistics is the mobilization of highly skilled or educated workers flowing from Santiago to other regions. For example, it is said that for many new hotels that are constructed in the regions outside Santiago, people from Santiago manage the work. In fact, the majority of engineers, architects, and supervisors are from Santiago. When a new hotel is constructed and opened, managers or accountants or both are supplied from Santiago while general workers are mostly hired locally.[7]

Many regions are trying to supply the necessary workers locally. However, some specialists contend that the situation will not change in the near future because such workers are traditionally supplied by universities and professional schools that are mostly located in the Metropolitan Region and Region V.

8.1.3 Situation of the Social Safety Net

(1) Turning Point of the Pension Scheme

In 1980, the Chilean government decided to replace the state-run pension system with the Individual Capitalization Account (ICA), a privately administered national system. Under the ICA scheme, every formal employee under the age of 65 for male and 60 for female will have about 14% of his/her salary deducted and deposited in his/her individual pension account as pension fees.[8]

At present, there are only 3.2 million people who pay their pension fees to their ICAs through salary deduction. Since the number of labor force is more than 5.4 million in the country, this means that only 60% are covered by the pension system. As

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[6] This means at least graduating a secondary school.

[7] For example, in Region I, a supply-demand gap of human resources exists, though considered not that serious since the gap has been filled by labor from Santiago and sometimes by foreign labor. Regarding executive, administrative, and managerial positions, they are filled mainly by people from Santiago. Peruvian and Bolivian workers with low educational levels fill jobs which Chileans do not prefer, such as domestic work and construction work.

[8] ICAs are managed by private pension fund administrators (AFPs) and there are eight of them at present. An expert has observed that eight is too many and, therefore, some of them will merge and the number will be half in the next few years.

mentioned earlier, unemployment rate is about 10% at the moment. Therefore, theoretically speaking, the coverage of the pension should be about 90%. The 30% gap can be explained by the existence of casual workers or informal (undocumented) workers who cannot or do not continually pay to their ICAs.

(2) Change in the Health Insurance System

In the late 1970s, the Chilean health insurance system was the state's responsibility. Employees paid 7% of their income to the National Fund for Health (FONASA), but in 1981, the system was modified. Employees were allowed to pay this 7% to "private" health insurance institutions (ISAPRES), instead of FONASA.

At the moment, two thirds of the Chilean population is covered by FONASA and roughly they are in the lower income bracket. The rest, which are more or less in the middle to upper income brackets, are covered by ISAPRES.

There are 26 ISAPRES in operation and 10 of them deal with some particular groups of enterprises. For these 10 ISAPRES, employers usually provide some subsidies in addition to the 7% contribution, so that the employees will be able to receive higher-level medical treatment. However, this is normally the case for some particular large enterprises but not so much for SMEs.

(3) Introduction of Unemployment Insurance

A new labor institution that is being discussed under the administration of President Ricardo Lagos is the unemployment insurance called PROTRAC. Workers covered by the system will be protected from the risk of unemployment for a period of time established for dismissed workers to get a new job. The cost of the insurance will be financed in a tripartite way, that is, by employers, workers, and the government. The proportions and precise rates are still under discussion. It is a new labor market instrument that is expected to contribute to increase the flexibility of the labor market and provide more security or protection for workers.

8.2 Human Resource Development

Due to the openness in international trade, productivity gaps among sectors or industries appear to be narrowing down, as it is the case in developed economies. However, higher productivity levels across the sectors may entail fewer unskilled workers required in various productive processes. At the same time, this tendency may lead the companies to increase not only physical investment but also investment in human capital through education and training.

As described briefly in the previous section, employers do seem to be aware of the urgent need for higher education and training of their employees and, in some cases, they are even confident in the potential of their employees. Generally, they say, "Chile has good educational and training infrastructure (though under-utilized at present) and consequently is ready to face future challenges." The training and education industry has grown as well in terms of the number of courses and institutions, but they appear to be faced with the problems of quality and direction for the future.

8.2.1 Structure of Training

(1) Secondary and Higher Education

The educational level of the Chilean labor force has steadily improved and reached an average of 9 years of schooling, i.e., completion of primary and junior secondary education. As is seen in Figure 8.2.1, Chile has a higher percentage of secondary school graduates as compared with Argentina, a positive factor for investors. However, the large difference from developed countries must be considered seriously.

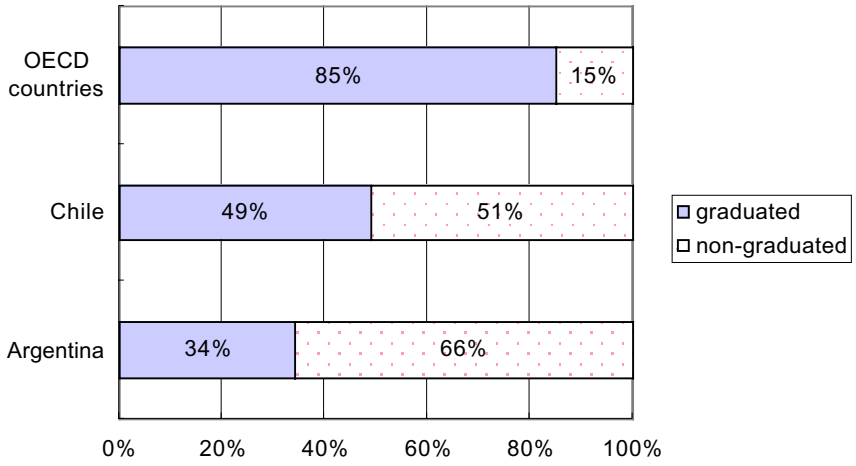

Figure 8.2.1 Percentage of Secondary School Graduates at a Typical Age Group

Source: CEPAL, *Measuring Labor Market Outcomes of Educational Attainment*, 1999.

In higher education, such as universities and professional institutes, the participation of the private sector has grown steadily in terms of the number of institutions over the past 15 years. In 1980, Chile had only eight universities, which were all publicly financed. Currently, however, there are almost 70 and most of them are private and self-financed.[9]

Given this situation, according to the National Service for Training and Employment (SENCE),[10] the number of students going to higher education increased during the last nine years. University students more than doubled whereas students at professional institutes increased over 50% (Tables 8.2.1 and 8.2.2).

Table 8.2.1 Number of Students Registered: Universities

Region	1990	1991	1992	1993	1994	1995	1996	1997	1998	1998/1990
I	4,884	5,984	6,276	5,942	6,314	6,858	7,354	8,539	7,292	149%
V	17,532	19,786	22,751	23,753	25,227	27,571	31,053	35,107	38,723	221%
VIII	20,575	22,690	24,216	24,776	26,464	27,917	29,191	30,886	31,586	154%
X	6,661	7,493	7,757	10,201	10,942	11,106	11,612	10,680	12,524	188%
Others	77,976	87,573	102,426	123,581	136,791	150,437	165,284	174,578	184,155	236%
Total	127,628	143,526	163,426	188,253	205,738	223,889	244,494	259,790	274,280	215%

Source: SENCE, *Boletin Estadístico 1998*, 1999.

[9] A major decentralization of public education at the primary and secondary levels took place in the early 1980s. The change in the higher education system was along with this movement.

[10] SENCE, which is part of the Ministry of Labor and Social Security, monitors overall programs and provides public support to a network of almost 130 decentralized public employment services.

Table 8.2.2 Number of Students Registered: Professional Institutes

Region	1990	1991	1992	1993	1994	1995	1996	1997	1998	1998/1990
I	160	280	390	462	504	426	748	996	1,563	977%
V	3,520	3,659	3,552	3,607	3,977	4,631	5,128	4,429	4,032	115%
VIII	3,274	3,589	4,753	5,336	5,698	6,122	7,767	8,018	7,948	243%
X	2,853	3,109	3,566	971	1,043	1,045	1,231	1,860	1,987	70%
Others	30,199	26,739	30,942	27,700	27,030	28,756	37,296	41,669	46,086	153%
Total	40,006	37,376	43,203	38,076	38,252	40,980	52,170	56,972	61,616	154%

Source: SENCE, *Boletin Estadístico 1998*, 1999.

(2) Vocational Training

A change also occurred in the vocational education system, in which technical training centers that provides three to five years of post-secondary education are representative. Throughout the country, there are 70 vocational training centers that undertake training programs under the SENCE scheme (Table 8.2.3). However, enrollments have been gradually declining for the last nine years (Table 8.2.4). The decline may indicate that vocational training does not meet the specific demand by private enterprises for particular technical and managerial skills and knowledge. This may be caused by limited communication between the training institutions and the business sector.

Table 8.2.3 Number of Higher Level Educational Institutions Undertaking Training under SENCE Scheme

Region	Professional Institutes	Universities	Vocational Training Centers
I	-	1	5
V	5	10	12
VIII	4	4	5
X	3	1	2
National Total	46	67	70

Source: SENCE, *Boletin Estadístico 1998*, 1999.

Table 8.2.4 Number of Students Registered: Vocational Training Institutes

Region	1990	1991	1992	1993	1994	1995	1996	1997	1998	1998/1990
I	2,411	2,639	2,466	2,949	2,702	2,391	2,051	1,563	1,101	46%
V	9,112	7,247	6,970	9,137	8,072	8,066	5,728	6,309	5,203	57%
VIII	8,415	8,220	9,110	9,378	8,940	7,394	6,707	6,375	6,296	75%
X	2,770	2,640	2,861	3,402	3,280	3,470	2,752	2,509	2,527	91%
Others	55,066	45,241	52,497	58,379	54,264	51,414	44,180	37,280	39,146	71%
Total	77,774	65,987	73,904	83,245	77,258	72,735	61,418	54,036	54,273	70%

Source: SENCE, *Boletin Estadístico 1998*, 1999.

The management of formerly centralized public vocational schools was transferred to local authorities and private non-profit making institutions, particularly those related to employers' organizations. Many of them have technical education courses because they were created under private initiative.[11]

[11] Currently, the 70 vocational schools are managed by private corporations and enterprise associations such as the National Society of Agriculture (SNA), the Chilean Chamber of Construction, the Society for Manufacturing Development (SOFAFA), the Chamber of Commerce of Santiago, the Chamber of Commerce and Industry of Concepción, the Development Corporation of Temuco, the Metal Industry Association (ASIMET), and the Private Development Corporation of Region VI (CORPRIDE).

8.2.2 Characteristics of Training

(1) Abundant Training Institutions

According to SENCE, in 1999 more than 4,000 training institutions provided over 25,000 courses, in which more than 540,000 trainees participated. Regarding the type of courses provided, administration, computing, commerce, services, and English represented two thirds of these courses (Table 8.2.5).

Table 8.2.5 Type of Training Courses in 1999

Area of Training	Courses		Participants		Hours		Number of Participants per Course	Number of Course Hours per Course	Number of Course Hours per Participant
	Number	%	Number	%	Number	%			
English	1,849	7.2	15,401	2.8	105,565	10.4	8.3	57.1	**6.9**
Computer	5,008	19.4	69,420	12.8	172,926	17.0	13.9	34.5	**2.5**
Agriculture, Fisheries and others	895	3.5	19,464	3.6	45,349	4.4	21.7	50.7	**2.3**
Construction	533	2.1	12,235	2.3	27,576	2.7	23.0	51.7	**2.3**
Science and Technology	5,177	20.1	106,532	19.7	236,684	23.2	20.6	45.7	**2.2**
Arts and Crafts	31	0.1	683	0.1	1,459	0.1	22.0	47.1	**2.1**
Mining	319	1.2	6,366	1.2	13,431	1.3	20.0	42.1	**2.1**
Industrial Technology	991	3.8	21,050	3.9	34,823	3.4	21.2	35.1	**1.7**
Administration	7,763	30.1	195,364	36.1	265,921	26.1	25.2	34.3	**1.4**
Commercial and Services	2,498	9.7	65,074	12.0	84,954	8.3	26.1	34.0	**1.3**
Others	716	2.8	29,211	5.4	30,711	3.0	40.8	42.9	**1.1**
Total	25,780	100.0	540,800	100.0	1,019,399	100.0	21.0	39.5	**1.9**

Source: SENCE, *Boletin Estadístico 1998*, 1999.

The 4,000 training institutions include professional institutions and universities. This means that higher educational institutions are also involved in providing training to employees in private companies. SENCE has been providing subsidies through a tax rebate scheme to companies which send their employees for training. In 1998, almost 90% of the 540,000 participants received training through this scheme.

Aside from subsidized enterprise-based training programs, the government finances public training programs for workers who do not have access to enterprise-based programs, such as unemployed adults, young labor force entrants, and workers displaced by business restructuring.

(2) Little Usage of the Tax Rebate Scheme

SENCE's training incentive or tax rebate scheme has been utilized mostly in such sectors as manufacturing, financial services, mining, transport, and communications. However, despite the remarkable growth of enterprise-based training, only a small percentage of enterprises participate in the tax rebate system and the potential of the fiscal incentive is not yet fully utilized.[12] In 1998, less than 5% of tax paying

[12] According to some experts, a company makes decision whether to provide training to its employees based mainly on self-interest and short-term considerations. Regarding workers' participation in vocational training, labor unions claim that the participation rate is still low and it reflects only the interest of the employers. Enterprises consider training as part of risk as employees may quit after receiving training. Therefore, to reduce the risk, many enterprises, especially the smaller ones, tend to avoid investments in training that promotes chances for external mobility of workers. They also dislike providing a long pay-off period. Training therefore tends to be enterprise-specific and mostly for a short term.

enterprises benefited from the scheme and two thirds of the potential incentive amount was unused.

Generally, larger enterprises undertake more training programs and their employees receive more training. Larger companies are therefore the major beneficiaries of training incentives. SENCE estimates that larger companies account for one third of total employment but receive 81% of training incentives.[13]

Fear of tax audits and bureaucratic controls and the financial cost of the deferred reimbursement of training expenditure are said to be the main reasons for the low usage of the scheme.[14] Moreover, smaller enterprises incur higher risk of losing trained workers as compared with larger enterprises and this is said to be the major reason that smaller companies are less interested in training.[15]

(3) More Opportunities for Higher Level Personnel and Skilled Workers

It is said that a significant proportion of the tax incentive was used to train high level personnel. According to SENCE, from 1994 to 1998, over 17% of their subsidies were used to train employees in the highest income bracket that composed only 10% of the labor force.

Skilled workers are in a better position as well, since a growing number of companies regard them as valuable assets and would not like to lose them to the competition after having invested in them through training. Therefore, companies tend to continue providing training to skilled workers as an incentive to retain them.

(4) High Demand for Administrative and Computer Training

In terms of hours spent per training participant, English courses are the most popular one. In terms of the number of trainees, administration, science and technology, commercial and computer operation seem to be more in demand. These are skills that may broaden workers' general potential and give them chances to increase their value. For the training providers or schools, these subjects require less investment and seem to be relatively easy and reasonable for them to implement.

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[13] This tax rebate scheme has contributed to the growth of enterprise-based training programs but mainly for large-sized enterprises in the large-scale industry such as mining. Due to diversification and flexibility of training supply, productivity has been gained mostly at those large enterprises and high-level personnel. There is a serious concern about the results of this scheme in terms of the quality and costs of training services and the possibility of windfall gains for larger companies and high-level personnel at the public expense. Therefore, more administrative control by the government appears to be necessary in order to prevent distortions in the private use of public funds for training purposes.

[14] Companies can only receive the tax relief at the end of a fiscal year and, therefore, smaller companies may face a cash flow problem in this regard.

[15] A recent survey of SENCE indicates that less than 3% of small enterprises train their workers regularly and one third of other enterprises feel no need for training programs. Aside from the fear to lose their employees after training, there seem to be two other factors that can explain these phenomena. First, there is a lack of adequate training supply since training agencies rarely meet the need of small enterprises. Second, training in most of the schools may be too theoretical or designed to suit only the need of larger enterprises.

Specific technical courses are not widely provided through SENCE-subsidized training courses. It is said that most of specific technical trainings are provided internally within the enterprises through on-the-job training.[16]

8.3 Views of Private Enterprises on the Labor Market and Human Resource Development in Chile

As mentioned above, companies do not seem to recognize serious troubles in the labor market and human resource development in Chile. However, it is difficult to judge whether they are satisfied with the present situation. The following are views of some private companies towards the quality of labor that may give us some insight into the future direction of the education and training sector of Chile.

8.3.1 Views of Chilean Private Enterprises on Their Workers[17]

(1) Current Trends

There is a broad consensus among professionals and people related to human resource development in Chile that the country is relatively in a good position in terms of the supply of quality human resources compared with other Latin American and developing countries.

However, due probably to the openness of the Chilean market and the recent tendency of a higher degree of competition in international markets, many companies wish to hire better skilled and educated workers. In concrete words, those who have completed secondary education plus diploma courses, especially in the field of business administration, seem to be most eagerly sought by private companies, particularly in the service sector. According to the National Institute for Training (INCAP),[18] companies wish to hire a person with completed secondary education, 2.5 years of technical studies and a half-year of working experience.[19]

(2) Specific Need of Chilean Companies

Among Chilean companies, there is growing recognition of the need for quality vocational training, professional institutes, and universities, while they also expect workers attitude to be more creative and involved in the organization after training.

Despite the need for training courses to improve employees' creative capacity, however,

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[16] It is difficult to know how much of the supply and demand structure of training really reflects companies' training strategy. It may simply be the consequence of a shortage of external supply in technical training since training institutions are less inclined to invest in more expensive equipment and technology required for technical courses.

[17] This section is based on interviews and observations conducted by Chilean consultants hired by the JICA Study Team.

[18] INACAP was established by CORFO as a vocational training institute in 1960 but has been managed without government support since 1980 (http://www.inacap.cl/inacap/?MIval=/inacap/corporativa/ trayectoria.html).

[19] Recently some people perceive that the level of educational requirements to obtain a job is getting higher. For example, it is becoming customary to require that a lift operator has completed secondary education.

few training institutes seem to be ready to implement such kinds of courses since most of them consider those courses infeasible under the present conditions. Some companies emphasized the importance of the role of the Chilean government. That is, the government should have a long-term vision regarding training and give guidance to training providers to focus also on unconventional areas needed by private companies.[20] For example, a stronger incentive should be provided for the creative capacity building of managers and supervisors.[21]

Regional integration will also highlight the need for internationally competitive workers. In Region V, for example, human resource development has been refocused as a key to successful horizontal integration between Chile and the Argentine provinces such as Mendoza, San Luis, and San Juan, as well as vertical integration with the Metropolitan Region and Region VI. In order to accelerate such regional integration, human resource development is essential for Region V and for neighboring regions as well. Therefore, it is important to set a concrete goal, such as doubling the present training rate.

8.3.2 Views of Foreign Investors on Chilean Workers

(1) Favorable Labor Situation for Employers

A number of foreign private companies consider the labor situation in Chile as being "favorable for employers and investors" because: 1) Chilean workers are hard working; 2) labor costs are low (especially for workers who have educational background up to secondary level); and 3) union participation is still low.[22]

(2) Need for Multi-Functional Workers

However, some foreign companies have a different view. That is, Chilean workers are good at following manuals and working within labor contracts but not active enough to do something beyond the instructions given to them. Some companies indicated that a similar tendency could be found in highly educated people such as university graduates. Unlike in the past, companies are now looking for people with the will and ability to carry out various types of jobs, or "multi-functional" workers. Foreign companies should have the same need for "skilled" workers as domestic companies do, but the definition of "skilled" seems to be more specific. This aspect is particularly relevant to companies that are willing to train Chilean workers to become future general managers. Foreign companies facing severe competition feel it necessity to hand over more of managerial functions to the hands of Chilean employees. They are willing to train promising Chilean workers in administration, sales or operation, though some realize that it is difficult to find potential workers among their existing personnel.

(3) Little Interaction between Schools and Businesses

Foreign companies do not seem satisfied with the role of the educational sector of Chile. For example, companies generally do not expect schools to produce and deliver "multi-

[20] In the interviews, many companies mentioned that universities and training schools provide courses based on what they can supply but not on the need of the companies.

[21] This may also benefit SMEs since usually they are not training their employees.

[22] According to the Ministry of Labor, only 12% of the total employees are unionized at present.

functional" workers, though they are much in demand. They will rather pick up a person with basic education (proper Spanish and mathematics knowledge) and a "pure" mindset (as a blank sheet of high-quality paper) and try to train him or her for themselves. Likewise, few companies seem to care much about which school their recruits have graduated from (except for a few prestigious engineering schools). On the other hand, universities and professional institutes establish their courses based on what they think students should learn but not on what companies want them to learn. This is probably a result of traditionally poor interaction between the educational sector and the private business sector.[23]

In Region I, however, the Mining Technological Center (CTM) is highly regarded by industrial associations such as the Chamber of Commerce and Industry of Iquique. It is regarded as an ideal mix of university education and technical training. It also represents a desirable model for matching supply and demand for human resources. It should be reproduced for other sectors.

8.4 Human Resource Development for SMEs

The current situation of the Chilean labor market and human resource development is very favorable for large enterprises but not so for SMEs. However, this situation should be changed considering that the future of the Chilean economy highly depends on the development of SMEs because it is SMEs that can create more jobs. In terms of employment, little can be expected of both the public sector and the large, leading private companies. Therefore, efforts to improve productivity levels among SMEs will be the key element for enhancing the competitiveness of Chilean industries.

(1) Sharper Focus on Training for SMEs

Generally, SMEs can hardly take the initiative to improve human resource development, as is evident in their low utilization of the tax rebate scheme for training employees. Training institutions, on the other hand, are not so interested in fulfilling the training need of SMEs. For the development of human resources for SMEs, therefore, the government should play a leading role with a sharper focus on that need. Strategic planning is necessary in terms of industrial areas, subjects, workers support provision, and so forth.

(2) Specific Need for Marketing and Quality Control of SMEs

SMEs maintain that their employees need to be trained to gain knowledge and skills in marketing and quality control. Practical knowledge about logistics and distribution may also become indispensable especially for international trade. One way to acquire such training is through their foreign partners. Many SMEs have received some kind of technical support from their foreign partners typically in the form of technology import and transfer.[24] This is particularly the case for natural resource-based products

[23] Their interactions have become even less frequent since the early 1980s when the number of universities and professional institutes started to increase rapidly, and the management of secondary education was handed over from the central government to the municipalities.

[24] Some people maintain that SMEs should be more actively engaged in international trade either as direct exporters or as subcontract suppliers of parts and accessories to larger exporting corporations. This is the model how SMEs in some Asian countries develped through the

such as wine, wood, and salmon. Another way to train the SME's employees about marketing and quality control is to turn to Chilean universities. In the fields of scallop cultivation and wood processing, for instance, universities are providing technical consultation (with cost) to enhance and stabilize their production capacity.

When SMEs want to export a new, non-traditional product, however, they will usually realize that they do not know what to do. Such a situation occurred in Caleta Portales Fishermen's Association in Region V. They want to export live fish to Japan but so far they cannot. According to a JICA expert working for the association, it is ready on the production side but not on the marketing side. The association does not have its own marketing function yet. As a result, they cannot find any contact with foreign partners who may be interested in their products. The association also needs to establish a quality assurance system to guarantee and appeal that the fish are contamination-free but no progress on that either. Fresh fruit exporters have already set up such a system in dealing with the United States Department of Agriculture (USDA). In the past it was ProChile that directly supported companies with those problems, but recently ProChile can be less involved in this kind of support activity due to the severe budget curtailment.

(3) Systematic Upgrading of Human Resources

One promising way to upgrade the general quality of the labor force, for SMEs in particular, is to issue certificates for particular qualifications or skills. Certified workers can usually earn higher wages or salaries, thus giving the workforce a valuable incentive for excellence. It is highly advisable to establish a labor accreditation system nationwide or, more practically, support the "labor accreditation project (*Proyecto Certificación de Competencies Laborales y Calidad de Capacitación*)" being implemented by *Fundación Chile*. CORFO is partly associated with this project. Tourism is one of its subject sectors. Once this system has taken hold in Chile, the next step will be to disseminate the system to other Latin American countries while "standardizing" the Chilean certificates as the regional ones. This would certainly have important implications in expanding Chilean exports in the region outside Santiago as well as attracting investment from Latin American countries.

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partnership with Japanese companies.

9 INDUSTRIAL STANDARDS

9.1 Chilean System

Industrial standards and their related subjects are categorized into three basic fields: 1) measurement (e.g., how to measure weight accurately); 2) conformance (e.g., how to guarantee that a product meets the standards); and 3) documentation standards (e.g., how to standardize documentation regarding production processes, as typified by ISO). Usually, various institutions (both government and private) work in the fields in any given country but their number and level of development vary according to the country's policy, needs and practice. Since the whole matter requires international harmonization particularly in the era of globalization, those national institutions have been closely organized into regional and international networks along the lines of the three fields (Table 9.1.1).

In Chile, the central organization in the fields is Instituto Nacional de Normalización (INN). It is the apex organization in the field of conformance and coordinates a national network of reference laboratories, which is in its formative stage and currently composed of CESMEC, DICTUC and IDIC. INN also deals with documentation standards in Chile. Table 9.1 shows the Chilean system and how it is integrated into the worldwide organizational networks.

Table 9.1.1 International and Regional Organizations on Standards and Conformance

	Measurement Standards	Conformance		Documentation Standards
		Laboratory Accreditation	ISO9000/14000 Accreditation	
International Body	CGPM BIPM	ILAC	IAF	ISO/IEC
Regional Body (Americas)	SIM	IAAC	-	COPANT
Regional Body (Asia and the Pacific)	APMP	APLAC	PASC	-
National Body (Chile)	CESMEC, DICTUC, IDIC (Network coordinator: INN)	INN	INN	INN

9.2 Measurement Standards

Chile's approach in this field is unique in the world. The common practice is to establish one single national laboratory that maintains and supplies a whole range of measurement standards (like weight, length, temperature, force, electric field, etc.). Chile instead tries to organize several institutes or laboratories, each specializing in respective measurement standard(s), under the umbrella of INN. Currently, three institutes (CESMEC, DICTUC and IDIC) are participating in this network as the custody laboratories of national reference standards for mass (weight) [CESMEC], temperature [CESMEC], force [IDIC] and dimension (length) [DICTUC]. The

accuracy of the Chilean standards maintained by those laboratories is not as high as that of OECD countries but fairly acceptable for internationally traded goods. One limitation, however, is the fewness of the kinds of standards. In addition to the present four, other standards for, e.g., electric field, pressure and torque, are essential to promote manufacturing and logistic services.

9.3 Conformance

Various organizations work in this field: 1) **calibration laboratories** provide working standards for in-house testing laboratories of manufacturers; 2) **testing laboratories** test products and certify their conformity to the specified standards; 3) **inspection laboratories** are the legally authorized testing laboratories for certain products (liquid and gas energy facilities and equipment) requiring official inspection; 4) **product certification laboratories** certify some specific products' conformity to their standards (e.g., fire extinguisher); 5) **quality system certification laboratories** issue ISO9000 certificates and **environmental protection certification laboratories** issue ISO14000 certificates.

INN has accredited a number of Chilean laboratories in those categories. They concentrate, however, in a few areas that relate to Chile's traditional mainstays like fishery and wood products (mostly to their chemical composition). If non-traditional, non-natural resources-based manufacturing is to be further developed and promoted in Chile, many other measurement standards and capable laboratories are necessary as the indispensable part of the infrastructure for such industrial development.

9.4 Documentation Standards

INN developed 171 standards (as of 1998) for various fields of documentation (Table 9.4.1). The remarkable growth in number is a reflection of the recent developments in regional integration in South America and in WTO discussions.

Table 9.4.1 Documentation Standards Developed by INN

	1994	1995	1996	1997	1998
Basic Standards	14	22	20	22	37
Printing	12	0	4	0	7
Health/Consumer Protection	9	26	27	37	13
Packaging/Transportation	0	4	2	0	0
Energy	17	20	13	22	22
Construction	7	4	7	7	59
Food	6	2	9	12	21
Chemical Products	6	11	12	17	7
Electric Appliances	0	0	0	0	2
Textile/Leather	1	1	0	0	0
Wood/Lumber	5	4	4	14	3
Total	**77**	**94**	**98**	**131**	**171**

Source: INN

9.5 Chile's International Position

As world trade becomes dynamic and diversified, it is of increasing concern and necessity that the Chilean standards system should be harmonized with other countries' systems. In this light, Chile is a little lagging behind other countries.

One such aspect is inter-comparison of national laboratories in custody of national reference standards. This activity is necessary to periodically test the national laboratories' technical credibility and give basis to the so-called traceability system. BIPM in France coordinates this activity at the international level and NIST of the U.S. takes initiatives under SIM (*Sistema Interamericana de Metrologia*) for countries on the American continents. Mexico, Brazil and Argentina are particularly active with this respect to indicate their laboratories' high standards and credibility and, ultimately, their products' high quality. By contrast, Chile (though being a SIM member) has yet to participate in this activity because its national network of laboratories is still in the making.

Another important point is Chile's weak relationship with Asian counterparts in all the three fields of standards and conformance. Besides the inter-comparison issue described above, Chile has a problem of a very low profile in Asia. While it keeps membership in SIM, it does not consider participating in the APMP (Asia Pacific Metrology Program) activities, SIM's counterpart program in Asia and the Pacific. Similarly, while Chile joins the IAAC (Inter-American Accreditation Cooperation) initiatives, its presence in the APLAC (Asia Pacific Laboratories Accreditation Cooperation) is limited. The same applies to the documentation standards: while being very active in COPANT (Pan-American Commission on Technical Standards), Chile is underrepresented in its Asian counterpart, PASC. The reason for this is primarily a financial one: for any Chilean organization, keeping contact with Asian counterparts is costly.

Weak relationships with Asian counterparts working in these standards fields could be highly damaging to Chile since they represent increasingly important business and trade partners with Chile. Lack of harmonization with their standards systems could lead to a tremendous loss of economic opportunities.

These are two long-term issues that should be properly addressed as an essential part of Chile's infrastructure for export and investment promotion.