



The Functioning of Economic Institutions in Two Chilean Territories

Eduardo Ramírez^a

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IPPG Programme Office, IDPM, School of Environment & Development
University of Manchester, Arthur Lewis Building, 2.023, Oxford Road
Manchester M13 9PL; Telephone 0161 306 6438; ippg@manchester.ac.uk
www.ippg.org.uk



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INTRODUCTION

This paper explores a set of hypotheses concerning the performance of economic institutions in two of Chile's rural areas in relation to the different types of markets to which the areas' products are directed. One of the areas is an economically dynamic one, producing fresh agricultural products for export; the other, less dynamic, features traditional agriculture and forestry.

The paper begins with a brief description of the national economic context, emphasising changes in rural employment and economic development as it affects the reduction and distribution of poverty. The second section briefly presents the information available on the two areas, describes the analytical procedures used, and concludes with the results of quantitative and qualitative analyses based on secondary information as well as on interviews in both areas.

THE ECONOMIC CONTEXT IN CHILE

Chile's gross domestic product grew at an average annual rate of 5.6% from 1990 to 2005. Two phases of growth may be distinguished within this period. The first is the rapid expansion that came to an end in 1997 with the onset of the Asian crisis, which heavily impacted the Chilean economy; the second is the recovery that began in 2000, which has featured only moderate growth rates (see Chart 1).

Though agricultural growth was cyclical during the period, the trend of the value of the sector's exports was upward (see Chart 2), making the sector of special importance for Chile as a source of foreign currency independent of copper sales. The trend also reflects the negative correlation between agricultural growth and the performance of the mining sector, for when mineral prices (especially copper) increase, the terms of trade improve for the Chilean peso, which in turn is detrimental to the competitiveness of the country's agricultural export sector.

Chart 1: GDP growth rates: agriculture, mining, trade (1990–2005)

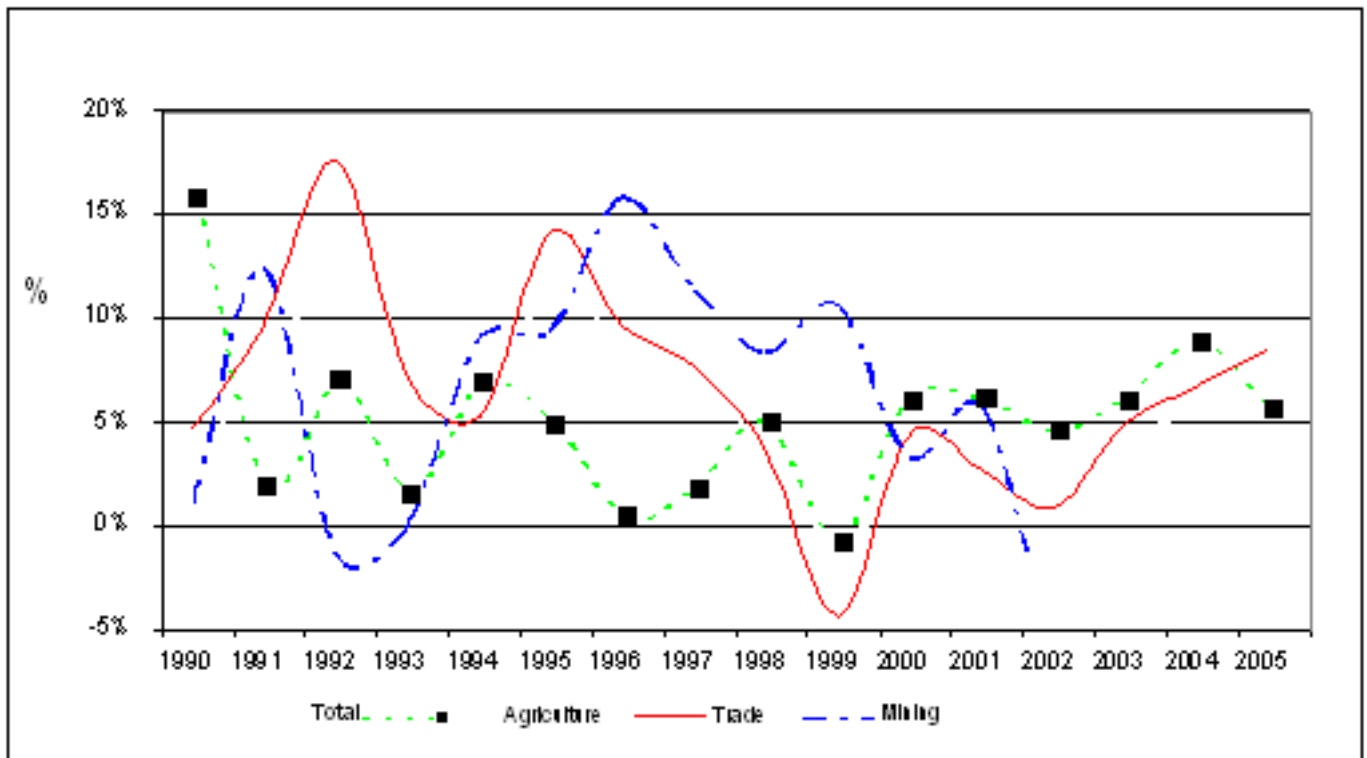
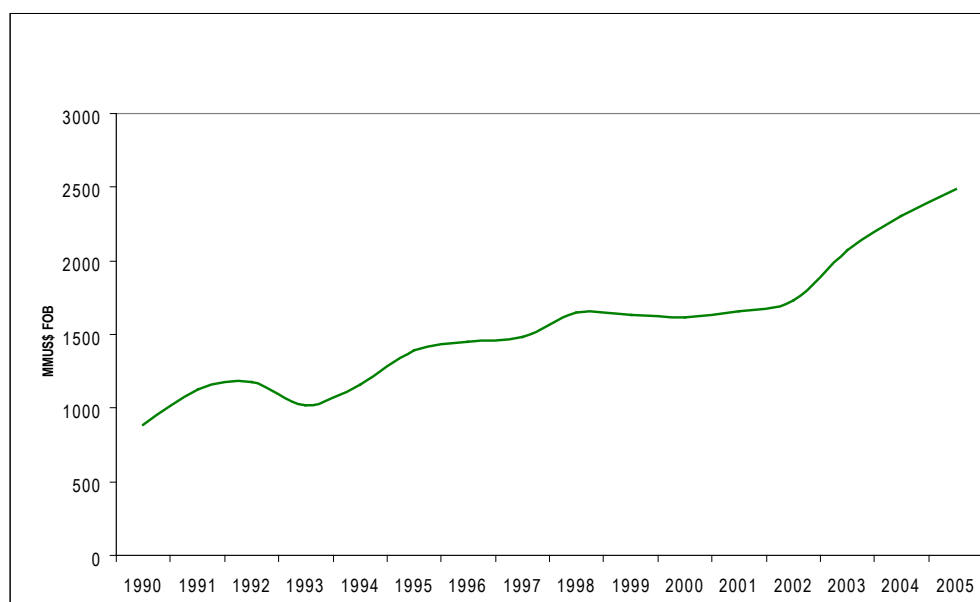


Chart 2: Agricultural exports over time (millions of dollars FOB)



The impact of the prolonged period of economic growth on poverty is evident. As Table 1 shows, the incidence, in the population, of rural poverty declined from approximately 30% in 1994 to 20% in 2003. Meanwhile, urban poverty declined from 27% to 19%. Moreover, the proportion of rural indigence declined from 10% in 1994 to 6% in 2003, while urban indigence dropped from 7% to 4.5%.

Table 1: Poverty and indigence by type of area, 1994–2003 (percentage of population)

	Indigence					Poverty				
	1994	1996	1998	2000	2003	1994	1996	1998	2000	2003
Urban	7.1	5.0	5.1	5.2	4.5	26.9	21.8	20.7	20.4	18.6
Rural	9.8	9.6	8.7	8.3	6.2	30.9	30.6	27.6	23.8	20.1
Nationwide	7.6	5.8	5.6	5.7	4.7	27.5	23.2	21.7	20.6	18.8

Source: Ministry of Planning and Cooperation (MIDEPLAN) CASEN (national socioeconomic) surveys of 1990, 1992, 1994, 1996, 1998, 2000 and 2003.

Note: Poverty percentages include indigence, and exclude live-in domestic workers and their immediate families.

The effects of this national economic picture on the rural sector are clear. Non-agricultural rural employment (NARE), and hence non-agricultural rural income (NARI), have become increasingly important in Chile. MIDEPLAN's CASEN surveys show that 70% of rural income derived from agriculture in 1990 (versus 30% from other sources), while the balance by 2000 was 55% agriculture versus 45% non-agricultural. This change is due not only to greater average productivity in non-agricultural jobs, but also to a greater amount of non-agricultural employment in rural areas. (By 2000, according to that year's CASEN survey, 65% of rural employment was in agriculture, 35% in other sectors).

As Reardon and Berdegú (1999) point out, however, there is no evidence of a direct link between NARE and NARI growth on the one hand, and the income of the poor population on the other. The authors argue that this is to be expected, given the scarcity of human, physical and social capital assets among the poor rural population, which impedes its access to non-agricultural rural jobs that demand such resources. Secondly, they argue, the physical and economic environment in poor rural areas is different to that that characterises areas where non-agricultural rural activities thrive. NARE requires a dynamic, expanding physical and economic environment, precisely the opposite of what is found in areas of rural poverty.

Comparing two agricultural areas in Chile – a dynamic area in which fruit is produced for export, and an area of less economic growth that produces traditional, low-priced agricultural products – Berdegú et al. (2001) found NARI and NARE of different types and qualities in the two areas. In dynamic areas, NARI grows in a context of increasing agricultural income, which leads to high returns in terms of NARE. Meanwhile, NARI in the more traditional areas also increases, but on the basis of very precarious agricultural income, producing low-paying jobs that the authors call 'refuge' NARE. Though this situation helps to boost the incomes of poor households, it is not a solution to rural poverty.

Looking at another dimension, one finds that NARE figures for men and women behave very differently.

Thus, a study based on CASEN 1998 data (MIDEPLAN, 2000) shows that male and female employment vary in major ways. While NARE represents over 60% of women's jobs, it represents less than 30% of men's, which suggests that women may be an important factor in job and income growth for poor households in rural areas.

To summarise, Chile's economic context is one of general, if not unvarying, growth, driven by a number of different factors. The results include a reduction of both urban and rural poverty, but an intractable situation as regards income distribution. The most visible effects in rural areas are certain fundamental changes in rural employment, including a major increase in non-agricultural rural employment. Despite the positive changes, there are disparities between geographical areas, the better jobs being created in those areas with more valuable natural resources, and where public investment in infrastructure such as roads has been greater.

HYPOTHESIS

Our first hypothesis is that dynamic areas benefit from institutional arrangements different to those present in less dynamic areas. Specifically, there have been changes in the institutions that govern the labour and goods markets. On one hand, these institutional changes generate greater transaction costs for rural households in dynamic areas, and on the other, they create incentives for producers to form coalitions in an attempt to capture greater profits in goods and services.

Our second hypothesis is that growing aggregate income and new types of economic activity in dynamic areas have not led to a comparable improvement in terms of equity, and that the reason for this lies in the fact that individuals' ability to find work in new economic activities is not evenly distributed through the population, for individuals with greater assets adapt more successfully to the new local realities.

ANALYTICAL APPROACH

According to Williamson (2000), social analysis occurs on four levels. The first is social theory; the second the economics of property rights; the third looks at transaction costs; and the fourth analyses an economy's resource allocations (in terms of both firms and families).

The arrangements that determine the institutional, political and management environment – consisting of both formal and informal rules – occur at the second level (North, 2005), while intra-industry arrangements occur at the third level (Williamson, 1985).

The dynamics of an area may thus be analysed from two points of view: the governance structure of markets and the types of transactions that result (Williamson, 2000), and the presence or lack of coalitions that are more successful than other actors in taking advantage of the formal and informal rules governing commercial relationships in the market.

To bring both market governance structures and the existence of incentives for the formation of coalitions to bear on an analysis of area differences, we may profitably adapt the classification proposed by Williamson (1979), in which transaction frequency in a market and the types of product traded are analysed in their relation to the existence or absence of incentives for coalition-building, as in the table below.

Table 2: Market governance structure, resulting transactions, and role of coalitions.

Transaction Frequency	Possibility of coalition	Type of product/input	
		Generic	Specific
Non-recurrent	Yes	Spot transactions in a context of asymmetrical information	Contracts in an environment where there are third parties to ensure compliance in a context of asymmetrical information
	No	Spot transactions	Contracts in an environment where there are third parties to ensure compliance
Recurrent	Yes	Spot transactions in a context of asymmetrical information	Differing degrees of vertical integration under conditions of asymmetrical information
	No	Spot transactions	Differing degrees of vertical integration without information asymmetry

This classification scheme helps us understand different markets not only from the point of view of their governance structures, but also in terms of the relationship between these structures and the existence of coalitions or groups that take advantage of certain conditions, to the detriment of others. In the case of spot transactions, for instance, Williamson predicts transactions without transaction costs, independent of transaction frequency. If we take coalitions into account, however, we can see transactions providing benefits for one group to the detriment of another in cases where one agent has more information than the other.

According to Rodick (2003), two basic conditions can create incentives for the formation of coalitions in an area: (a) a small number of actors, and (b) asymmetrical availability of information relevant to sales/purchase decisions. However, this framework may be expanded to include other variables, such as the financial weakness of one of the agents, perish-ability of product, etc.

These two incentives-creating conditions presumably limit the competitive functioning of a market, generating opportunities for rents based on the asymmetrical distribution of information, or on the limited number of agents in an area. Such phenomena may occur in markets with differentiated products as well as markets with homogeneous products, regardless of the frequency with which buyers and sellers transact business with each other.

In general, an agent will prefer market conditions that favour him, in the sense of allowing him to determine the rules applying to quality, amounts and payment provisions, and under which the entry of other operators into the market is limited in a way that allows the agent to control price and other conditions surrounding the exchange of goods and services through tacit or formal agreements. This situation can come about when there are incentives for the formation of coalitions in recurrent markets for differentiated products (see the grey area of Table 2).

Another type of situation presumably attractive to economic agents is where relationships are governed by formal or informal contractual agreements for specific products but not on a recurrent or frequent basis, and of course with incentives for forming coalitions, though transaction costs in such situations may be so high that they inhibit their actual creation. For instance, the absence of legal frameworks or their unenforceability, lack of trust between parties, etc. may create incentives for vertical integration at any level.

One of the consequences of the development of markets in rural areas is a shift from generic markets to markets for more differentiated products. Since farm production must be responsive to consumers' emerging demands for quality, safety, etc., new types of jobs develop in rural areas, requiring workers with different attributes who are capable of performing more complex tasks.

Shifts toward more highly differentiated products and/or services generate higher transaction costs in these markets. Decision-making agents find themselves increasingly having to deal with situations in which the possibility of exercising rationality is circumscribed. This creates incentives for seeking different types of vertical integration, especially in the absence of institutions that help enforce contracts (Schejtman, 1998).

Diminishing availability of information, or the inability of different agents to handle all the information needed for rational decision-making (i.e. conditions of limited rationality) creates an environment that increases incentives for coalitions.

In summary, more dynamic rural areas may tend to develop economic activities that produce more differentiated goods, which leads to some level of vertical integration between firms and producers. If there are few operators, or information is limited, the incentive for coalition is greater, for small producers will achieve more benefits in such a situation than in a more competitive environment. On the labour side, moreover, there is a need for workers to develop new abilities. A gap is created between those with more education and those from poorer, less educated backgrounds.

MATERIAL AND METHOD

To identify the dynamic economic activities in an area, we opted to use the horizontal household surveys of 1994 and 2003. Two areas were selected, under the criterion that each: (a) include more than one municipality (comuna) covered by the 1994 and 2003 CASEN surveys, (b) have a population that is more than 70% rural, and (c) vary in the type of market that they have.

Since the household surveys available in Chile are horizontal, it is impossible to make a longitudinal study of households and individuals that will show precisely which workers are connected with dynamic activities.

Nevertheless, the household surveys do make it possible indirectly to ascertain the dynamics of an area's economic activity by looking at changes in employment between one point in time and another. For example, one can compare the number of persons employed in a given economic activity in a geographical area during a particular year with the number similarly employed in a different year.

Using Chile's household surveys in this way, we can compare the number of people employed and wages at different times down to the third ISIC classification level, since each interviewee reports on the type of employment in which s/he is involved, the specific work performed within the firm or in the economic area in which the interviewee works, and the main activity of the firm(s).

Thus, data from the 1994 and 2003 CASEN surveys identify (to the third classification level) those

groups of economic activity that increased, both in terms of absolute number of persons employed, and in terms of the percentage of all employment in the area.

Once the most dynamic economic activities are determined in this way, one can compare the attributes of workers in these activities with the attributes of workers in other activities, examining independently the figures for the two years (1994 and 2003).

Our proposal, for the purpose of this analysis, is to adapt a conditional probability model that will tell us whether individual attributes such as sex, age, schooling and area of residence affect opportunity for employment in a dynamic sector within a given area.

Logit analysis can then provide a window on the relationship between individual attributes and the attributes' contribution to individuals' probability of working in a dynamic economic activity.

The general model follows the following definition:

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = \beta_1 + \beta_i X_i + u_i \quad (\text{eq1})$$

where L_i is the logarithm of the ratio of the two probabilities (the probability of working in a dynamic activity, and the probability of not doing so). The β_i parameters indicate the change in the probability of working in a dynamic activity, given the presence of attributes X_i . The β_1 parameter represents the probability of working in a dynamic activity without attributes X_i .

Once the most dynamic activities were identified, the fieldwork for the case studies was designed. In each of the geographical areas selected for the study, economic sectors were chosen for the purposes of gathering primary information through interviews with actors directly involved in the both the products and labour markets.

The case studies concentrated on determining what characteristics define product and labour transactions. In particular, the aim was to determine the structural characteristics of governance in the institutions that create the framework for such transactions, and the frequency of the transactions (see Table 2).

In addition, interviews with different individuals were used to determine what level of information was available, and to estimate the number of actors present in the area for each resulting type of institutional structure governing commerce. Thus, the matrix proposed by Williamson was reconstructed, incorporating a new vector representing information relating to the existence or absence of incentives for coalition-building.

Coalitions in an area vary depending on the conditions in response to which they arise, which may range from the very simple (e.g., major access problems to an area that limit the number of intermediaries, which creates incentives for 'coalition by default,' without any need for explicit coordination of prices, quantities, payment conditions, etc.) to situations where a coalition functions as a cartel or articulated network of relationships to promote public policy favourable to the group and detrimental to another group.

The work reported on here considered only two variables affecting incentives for coalitions: the number of actors, and the accessibility of relevant information. It would be important for subsequent studies, however, to examine a number of other variables, such as type of product (the more perishable, the less negotiating power the producers have), access to financing, loan interest rates, road and farm infrastructure, etc.

In short, the case studies seek to establish a relationship between an area's institutional arrangements, the transaction costs resulting from them, and the presence or absence of incentives for coalitions, given the distribution of information and number of actors involved.

The case studies included twenty interviews in each of the two areas, with actors of different types, decided on beforehand on the basis of secondary information regarding representative types of economic activities in the two areas.

RESULTS

Description of the selected areas

Two areas were selected for the study. Activity in the first focuses on intensive agriculture made possible by irrigation, quality infrastructure and climatic conditions that make it possible to grow a wide range of major and minor vegetable and fruit crops. Here, the dynamic of investment, economic growth and development of new economic activities (e.g., agroindustrial development) around a primary agricultural sector has been an important factor in the last few years.

The second area has more climate and soil constraints. Consequently, there is less diversity of production, which is concentrated in forestry and traditional agriculture.

As Figure 1 shows, the municipalities in the first area are Teno, Romeral and Molina. Curicó, though contiguous with the area composed of these three, is not included, primarily because its population size and density would make it dominate the analysis if it were included.



Figure 1: Map of the municipalities making up area 2

The municipalities in area 2 are Quillón, Ranquil, Portezuelo, Coelemu, Trehuaco, Cobquecura, Quirihue and Ninhue, as shown in Figure 2.



Figure 2: Map of the municipalities making up area 2

Table 3 presents descriptive data on the two areas selected for study.

A first characteristic differentiating the two areas is their capacity to absorb population. Specifically, the population of area 1 increased 7% in approximately 10 years, while the population of area 2 declined on the order of 4% during the same period.

The average size of farms in the two areas is also different, being smaller in area 2 due to the fact that a high proportion of them (33%) are subsistence farms. In addition, the quality of resources, as measured by the availability of water for irrigation, is greater in area 1 than in area 2.

Though area 1 has a higher income level than 2, income rose more in area 2 than in area 1 between 1994 and 2003, revealing a slow converging trend of income levels in the two areas.

Table 3: Demographic and economic characteristics of the two selected areas.

	AREA 1	AREA 2
Population, 2003	76,824	70,531
Change in population, 1994–2003	5,429	-3,448
Total area (square kilometres)	3,767	3,170
Square kilometres per inhabitant	20	22
Number of farms	3,435	8,610
Average farm size (hectares)	85	26
Surface area irrigated (hectares)	12	0
Subsistence farms (%)	20	33
Small commercial farms (%)	61	61
Medium-size commercial farms (%)	6	2
Large farming operations (%)	7	0
Change in percentage of poverty (1994–2003)	13	15
Poverty, 2003 (%)	20	28
Change in total household income (2003–1994) (\$)	38,437	77,697
Income level, 2003 (\$)	305,154	259,605
Gini autonomous per capita income, 2003 (*100)	48	48
Gini total per capita income 2003 (*100)	45	48

Source: 2002 population and housing census; CASEN 1994 and 2003; ODEPA 2001.

The improvement in income is reflected in a significant decline in poverty over time. However, in area 2, the poverty level in 2003 (28%) was greater than in area 1.

In terms of income distribution, as measured by the Gini coefficient, if only autonomous income (i.e., not including monetary transfers) is considered, there is no difference between the two areas. If monetary transfers are included, however, the indicator improves in area 1.

Definition of dynamic economic activities in the two areas

A dynamic economic activity in an area is defined as one in which employment (as a percentage) rose between 1994 and 2003. For the purposes of this classification, different economic activities to the third level of the ISIC classification were considered. The results are shown in the following table.

Table 4: Dynamic activities in each of the two areas

	% of total jobs	Rate of job growth (1994–2003/1994)	Rate of growth of monthly wage (2003– 1994/1994)
Area 1			
Food	8	111	-13.5
Construction	5	65	-74.6
Retail	8	43	+19
Domestic Service	5	60	+26
Total	26		
Area 2			
Forestry	5	49	+8.5
Domestic Service	9	70	+52.5
Total	15		

As the table shows, economic development in area 1 is based on more diverse activities, which, as a whole, account for 26% of the area's employment. Area 2 has less dynamic activity and the activity is more precarious, as well as representing a smaller proportion of the area's employment.

Though both areas show progress in reducing poverty and raising incomes during the period, the expansion in area 2 is based on a more precarious and less stable economic base.

In summary, the two areas show different patterns of development. The first might be called strong dynamic growth. Here, processing activity in areas such as the food industry is expanding, and there is a greater range of economic activities in which people can find jobs. In area 2, on the other hand, dynamic growth is precarious or unstable. This is due to the fact that the growth is based on a small number of economic activities, and that they are marginal in nature (e.g., jobs in wood cutting and domestic service).

It is important to stress that a more dynamic economy does not necessarily mean better monthly wages. On the contrary, real wages between 1994 and 2003 declined in two types of employment in area 1 (industry and construction), while wages in domestic services rose significantly in both areas. In the end, what affects family incomes and reduces poverty is the number of workers more than the income per worker.

It is important to ascertain whether personal attributes contribute to finding work in dynamic activities. If dynamic activities select workers on the basis of specific attributes, e.g., educational level, and these are not evenly distributed in the population, the results of the economic expansion will be less inclusive.

One way of determining whether such a selective bias exists in a sector is by applying a logistic regression model, such as the one in equation 1, to the economically active population employed in dynamic activities, as well as to the EAP working in non-dynamic activities, in each of the two areas separately, revealing whether given attributes in fact improve workers' chances of finding a job in a dynamic sector. The results are shown in the following table.

Table 5: Results of the logistic regression for the two areas.

(Dependent variable = 1 if the worker is employed in an economic sector defined as dynamic).

	Area 1		Area 2	
	Coefficient	Probability	Coefficient	Probability
Age (years)	-0.033	0.407	-0.006	0.847
Sex (1 = male)	-0.665	0.001	-1.002	0.000
Household size	0.101	0.064	0.005	0.921
Schooling (years)	0.261	0.004	0.155	0.046
Schooling squared	-0.009	0.067	-0.008	0.063
Age squared	0.000	0.259	-0.000	0.917
Area of residence (1 = urban)	1.466	0.000	1.083	0.000
Children <18 in household (1 = yes)	-0.805	0.001	0.202	0.299
Job finding networks (1 = family)	-0.159	0.425	0.003	0.576
Constant	-1.741	0.071	-1.149	0.209

The analysis shows that attributes contributing to finding jobs in dynamic activities are generally equally present in the two areas. The probability of finding such jobs increases for residents in the areas' urban zones, however. The effect of schooling is limited. I.e., there is a threshold beyond which more education does not increase the probability of working in a dynamic activity.

The indices of workers' education and urban residence are higher in area 1 than in area 2.

These findings suggest that though the areas are not similar in their dynamic activities (e.g., in the types of jobs created), the personal attributes that allow workers to move into a dynamic activity are the same in the areas' very different contexts. This is quite an important finding, since though dynamic jobs in poor areas are extremely precarious, they favour those individuals who have more capacity as workers (e.g., as reflected in schooling level) and who have more access to transportation (urban location). This suggests that it would be desirable for levels of investment in infrastructure and human capital to be independent of areas' economic potential.

In terms of working hypotheses, the results suggest that the development of economic activity, in both dynamic or less dynamic areas, tends to generate inequality because of the fact that the attributes required to work in expanding economic sectors are not evenly distributed in the population. In other words, independent of the characteristics of the area, jobs in the more dynamic activities tend to be obtained by only a part of the population, in this case the more educated stratum and those residing in urban areas.

From a policy point of view, this suggests that efforts to improve infrastructure (connectivity) and education require the same degree of attention regardless of whether the area is economically dynamic, assuming that the goal is to generate more equitable economic development.

Types of, and changes in type of, contracts in the labour and products market.

Based on this knowledge concerning the areas' more dynamic and important activities, we proceeded to case studies.

Interviews with different types of actors connected with the economic activities of interest were conducted in each of the two areas. The interviews were designed to investigate the governance structure of the markets and detect possible incentives for the formation of coalitions.

Once the fieldwork phase was complete, the information was organised, and the markets in the two areas were categorised on the basis set forth above (Table 2). Tables 6 and 7 show the result, a classification scheme applying to the two markets.

Table 6: Governance structure of markets and coalitions in area 1

Transaction frequency	Possibility of coalition	Type of product/input	
		Generic	Specific
Not recurrent	Yes		Contract farming with agro-industry; berry production
	No	Vegetable market Temporary wage-labour market	
Recurrent	Yes		
	No		Temporary wage-labour market in agro-industry Berry sales to intermediaries

Table 7: Governance structure of markets and coalitions in area 2

Transaction frequency	Possibility of coalition	Type of product/input	
		Generic	Specific
Not recurrent	Yes		
	No	Bulk grape market	Contracted wine-grape production
Recurrent	Yes		Forestry wage-labour market
	No	Bulk wine market	

The case studies show, first, that when spot markets are involved, regardless of whether they feature recurrent or non-recurrent transactions, there is no incentive for the formation of coalitions. For instance, the temporary labour market, in both area 1 and area 2, follows a non-recurrent pattern, and both employers and workers are price takers. In addition, information on wages for agricultural work are known, and workers have mobility and can seek jobs in different locations within the area. The same is true in the market for agricultural products bought and sold on the farm through intermediaries, or sold directly by growers at local markets. In area 2, for instance, growers sell grapes, as well as wine, in bulk, to intermediaries, and are fully cognisant of market conditions before making decisions on transactions. There are estimated to be approximately 200 buyers and over 3,000 grape and wine producers, which creates a highly competitive market without incentives for coalition.

The bulk wine market, spot markets

According to the 1997 farm census, the area has 5,520 wine-producing families on a total land area of 11,273 hectares.

According to municipal data, close to 70% of the land area devoted to wine growing is devoted to the Italia grape. Thus, the main product is wine from this grape, which is sold primarily in bulk. The remaining percentage is primarily local red wine produced with little technical expertise or equipment, and thus of low quality and price.

There is no major experience in the area in terms of generating value added, creating product differentiation or innovating, either on the production side or in marketing the wine. Packagers, who have more capital, dominate the market. They both bottle their own production and absorb that of other small wine makers, then marketing in the local and regional market.

In addition to the area producers purchasing wine in bulk, a good number of intermediaries are active in the market, and thus competition is quite lively.

Prices are generally set by agreement between producers and buyers on the basis of market conditions determined by the large purchasing wineries, in particular Concha y Toro. The commercial relationships created here are durable, and their level of formality depends on the type of producer involved and the quantity of wine sold, formality increasing with quantity.

On the other hand, markets that involve more specific products generate coalitions or quasi-coalitions. In the market for fresh products for agro-industry in area 1, for example, though competition is sharp and firms attempt to capture the best providers to ensure quality, the maximum reference prices set at the beginning of each season are 'discussed' beforehand by the main operators. This informal agreement, however, becomes less of a factor as the harvest proceeds, since the number of operators increases, with a very significant number of intermediaries entering the market and disseminating price information.

Product-specific contracts are also employed – the most demand being for apples, berries, tomatoes and grapes – and forms of payment vary from weekly to monthly from one agroindustrial firm to another. The delayed liquidity does not seem to be an obstacle to the entry of small producers, since, as noted above, most have incomes from non-contractual sales and sales of other products.

Finally, in area 2, quite a clear coalition situation is evident in the forestry labour market. A small number of firms control the sector, and they have implemented an outsourcing strategy over a substantial period of time, which has succeeded in fragmenting the unions and virtually eliminating them as a bargaining force. The result of this imbalance of power is that wages are based on the national minimum wage, not on the marginal value of work in the industry. Workers have little negotiating leverage, since other economic activities in the area are scarce, and migration is one of the few alternatives available. Furthermore, and probably more important yet, the capital that dominates the forestry industry is powerful at the national level, and directly influences the decision-makers involved in setting the minimum wages that are so important in the industry.

Contract farming, an example of quasi-coalition

For producers, contract farming, besides providing a degree of stability, represents access to technical advisory services, advances of money to prepare land, and sometimes support in obtaining bank loans. Moreover, the cost of making contracts is borne by the agroindustrial firm.

The main disadvantages of this type of arrangement nevertheless fall on the producers, whose per-hectare profits tend to be lower than when they sell at market prices without contracts. However, perhaps the most significant disadvantage has to do with fulfilment of commitments. The producers are at a great handicap here, because though the agroindustrial firms demand that the volume of product specified in contracts be available, they do not necessarily buy that amount.

This is a major factor explaining the a phenomenon mentioned by different agents in the products market, to the effect that agro-industry has the upper hand by far. For though information on prices, contractual conditions and quality are generally transparent, the rules of the game may be changed or skirted as changes take place in the market in which the particular agroindustrial firm is positioned.

In addition, some actors comment that the purchase prices set at the beginning of the harvest are coordinated by agroindustrial firms. This would seem to be confirmed by the minimal price differences between purchasers, and the fact that the relatively low number of agroindustrial firms in the area (around 30) would facilitate such coordination.

The transaction costs for agro-industry appear to be the principal determinant of the use or absence of contracts. In the case of raspberries, for instance, the cost of making a contract with a producer who grows less than one hectare is about the same as the cost of making a contract with a 20-hectare producer. This has a direct impact on the intermediary market, since intermediaries end up buying lower volumes and selling what they accumulate to agro-industry by contract.

Though quality may be a barrier to some producers' access to this type of contract, there has been a trend among producers, over the years, to ensure minimum quality standards in their crops, a development that has been accompanied by improvements in prices and markets. This process has been driven by agroindustrial firms themselves, as well as by public agencies like INDAP. It is of note that those growers using new technologies are the ones who have achieved the most and improved their profits to the greatest extent over the years.

The differences between the areas are affected by the fact that as economies become more complex, they produce more differentiated products, creating incentives for market arrangements involving formal or informal contracts. This, in turn, increases transaction costs and creates an incentive to increase scale of operation.

Vertical integration and increasing scale tend to promote coalition-building, since they create situations in which a small number of operators dominate a market because they are able to control the prices of products and services by virtue of their access to a large portion of the relevant information. Forestry is an example.

In summary, economic activity tends to be more diverse in dynamic areas. Area 1, for instance, has not only primary food-production activity, but construction, commerce and services. This diversity leads to greater job creation, as well as more female participation in the labour force. In a highly deregulated environment, however, wages do not increase evenly (indeed, they fall in some activities). The institutions governing relationships in the agricultural products market tend to be more complex, leading to increasing transaction costs. This, in conjunction with the fact that there are fewer large operators in the market, creates incentives for coalitions as a way of obtaining rents, either by virtue of superior access to information, or through sheer market power, which some operators have in sufficient quantity.

The forestry labour market, an example of the coalition process

Forestry production in this field basically depends on three firms: Celco, with 60% of the market, and Mininco and Masisa with 30%, the remaining 10% being distributed among smaller and more specialized firms.

The forestry labour market is a temporary job market, since the forestry cycle is subject to climatic factors, access to wooded areas being difficult at some times of the year. The firms have realized that the constraints inherent in this intermittent pattern can be attenuated by management plans that shift the different phases of the work among different locations according to the season. As planting is in progress in one location, for example, forest management and protection are occurring in another, and harvesting elsewhere again. The corresponding rotation or shifting of the labour force from one place to another over time makes it possible for work to be performed more nearly throughout the year.

Another important phenomenon in the sector is outsourcing, i.e., the use of service firms that contract with operators to perform tree farming and production activity. Competition here is intense, and the technical and financial margins that govern outsourcing are very tight.

One clear result of the outsourcing is the fragmentation of the sector's workforce, which is now spread throughout many different firms that function as intermediaries between the labour force and the forestry firms. This sharply limits workers' ability to bargain.

Another very significant factor is the increasing importance of skilled labour as the industry becomes more technically sophisticated. This occurs primarily in certain types of work, such as production activities involving specific machinery, and so-called critical activities such as pruning, thinning, harvesting and application of chemicals.

The need for skilled labour is also driven by demanding certification processes in the industry, though there continue to be labour-intensive tasks (e.g., planting) that do not require such specialization.

Labour contracts in the forestry sector tend to be formal. Payment is based on the minimum wage, and even pay for piecework is calculated in reference to the minimum wage. Wages tend to be higher for operators of complex machinery the use of which requires pre-existing skills or training.

CONCLUSIONS

The institutional arrangements that govern the labour and product market tend to differ as a function of whether they are in the economically dynamic area or in the less dynamic area. Spot market activity plays a greater role in the non-dynamic area, while the more dynamic area features products with quality parameters that call for other types of arrangements (formal and informal) to ensure adequate and timely supply. The shift away from spot markets to other types of arrangements can create incentives for the formation of local coalitions as a way of obtaining more favourable conditions for doing business. Such incentives generally emerge in situations where there are few operators and/or when information important to decision-making is not transparently available.

The attributes needed to find work in dynamic economic activities are the same in the dynamic and the non-dynamic area. Education, female sex and urban place of residence increase the probability that a worker will find employment in a dynamic activity. Thus, the difference between employment success in the dynamic area and the less dynamic one is not a function of the attributes required, but of the incidence of those attributes, which varies from one area to the other.

The shift from spot markets to more complex contractual arrangements in more dynamic areas increases producers' transaction costs. This increase tends to displace smaller farmers and farmers with fewer technical resources.

Given institutional dynamics that tend to increase transaction costs and create incentives for coalition, public policy has a great deal of room for action through strategies with various focuses: reducing transaction costs in order to bring small farmers into more dynamic markets; providing greater access to information that affects price negotiations; and supporting technological innovation and putting farmers in a better position to bargain with buyers.

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