# Competition policy in Chile

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## 1. Introduction: a good starting point

Chile has by now a well-deserved reputation of being an open and free economy. During the seventies, eighties and, to a lesser degree, nineties, many bold but appropriate regulatory innovations were introduced, tariff and non-tariff barriers to trade slashed, industries liberalized and assets privatized.[1] All in all, these reforms significantly improved resource allocation and served Chile remarkably well. Nonetheless, this note will argue that further liberalization in many markets is needed. To achieve that goal, competition policy must be significantly improved.

"Competition policy" is a somewhat imprecise term and to make progress I will try to narrow down its aim in section 2. In essence, I will argue, it should strive to (a) reduce costs (entry, fixed and variable) where that is technically feasible; (b) reduce the costs of reallocating resources across firms and sectors; and (c) foster tough price competition—i.e. introduce policies that reduce the equilibrium distance of price and marginal cost. I will show that these three aims naturally emerge from an equilibrium model of industrial structure. This model also suggests that most of what can be called "competition policy" is an array of discretionary (but not arbitrary) interventions in specific markets to introduce specific rules. Because of this, policy based on sound general rules is not sufficient and execution of specific interventions is central.

Before proceeding, I call attention to a caveat. Because the purpose of this note is to identify problems, I will not spend much time describing what is currently working well. But it is important to keep in mind that competition policies are generally sensible and appropriate in Chile. For example, Figure 1, which shows the 2004 index of regulatory quality computed every other year by the World Bank Institute, indicates that as far the quality of policies is concerned, Chile ranks in

[1] An interesting account is Wisecarver (1985).

the league of developed countries: Chile's percentile rank is 94.1, above the OECD average of 90.6 and well above the average of Chile's upper middle income category (63.0). This ranking suggests that whatever changes need to be made (and there are many), they are not radical, but rather incremental improvements of what already exists.[2]

The rest of the note proceeds as follows. In section 2 a simple conceptual equilibrium framework is developed. In section 3 I use this framework to evaluate competition policy in Chile. In section 4 I give examples of specific markets where competition could be fostered. Section 5 concludes.

## 2. Competition policy: a simple conceptual framework

This section is based on Galetovic and Sanhueza (2004a), and applies ideas developed by Sutton (1991). The main point is as follows. Competition policies can be classified in three categories: reduction of costs (entry, fixed and variable); reduction of reallocation costs; and fostering tough price competition. Moreover, the interaction of the three categories can be analyzed within a simple equilibrium framework.

I will start by studying a perfectly competitive industry. Of course, in such an industry there is no scope to foster tough price competition—by definition, price equals marginal cost and price competition is as tough as it can possibly be. Nevertheless, even in a perfectly competitive industry there is scope for competition policy, if regulations, rules or industry practices increase entry and reallocation costs.

The analysis then proceeds to imperfectly competitive industries, where the toughness of price competition becomes central. This will allow us to make three important conceptual points: first, fostering less concentrated markets is the wrong goal for competition policy. Second, as a general rule entry cannot be relied as a sufficient cure for competition ills because the number of firms is not the only (in many cases not even the main) determinant of the toughness of price competition. Third, competition policy interventions are, by their very nature, specific and require an understanding of the particularities of each market. Sound general policy rules are by far not sufficient.

### 2.1. Industrial structure and perfect competition: entry and resource reallocation

**A simple model**  The simplest model of equilibrium industrial structure is perfect competition. To simplify, assume $m$ identical firms with standard U-shaped cost curves. Then there are three

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[2] The Index of Regulatory Quality is focused on policies. It includes measures of the incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development. See Kaufman et al. (2003).

equilibrium conditions. The first says that in equilibrium, price equals marginal cost, viz.

$$p = c_{\mathrm{mc}}(q; \mathcal{C}), \tag{2.1}$$

where $p$ is the market price, $c_{\mathrm{mc}}$ is the marginal cost function, $q$ is the quantity produced by each firm, and $\mathcal{C}$ is a variable which summarizes the effect of competition policies (more on this later). This condition, of course, is the defining characteristic of perfect competition.

The second equilibrium condition says that in equilibrium the quantity demanded must be equal to the quantity supplied by the $m$ firms, that is.

$$D(p) = mq, \tag{2.2}$$

where $D$ is the relevant demand function.

Last, the third condition determines the equilibrium number of firms. If there is free entry, and the sunk entry cost is $\sigma(\mathcal{C})$, then the zero profit condition is

$$[p - c_{\mathrm{ac}}(q; \mathcal{C})] \times q = \sigma(\mathcal{C}), \tag{2.3}$$

where $c_{\mathrm{ac}}(q; \mathcal{C})$ is the short-run average cost function.

Now endogenous variables are $p$, $q$ and $m$. As is well known, the combination $[p^*(\mathcal{C}), q^*(\mathcal{C}), m^*(\mathcal{C})]$ is an equilibrium if simultaneously it satisfies (2.1), (2.2) and (2.3).

Alternatively, sometimes policy regulates the number of firms, and sets a ceiling $\overline{m}(\mathcal{C})$. Then, as long as $\overline{m}(\mathcal{C}) < m^*(\mathcal{C})$, equilibrium is determined by (2.1) and (2.2) only.

It is quite straightforward to see that even in a perfectly competitive industry competition policy $\mathcal{C}$ can affect the equilibrium performance. But before getting into the analysis, it is useful to look at the standard condition from a slightly different perspective.

**Short and long-run equilibrium industrial structure**   To begin, note that (2.1) and (2.2) are short-run conditions—that is, they hold at every moment. In the short run, the number of firms is given and exogenous, and there is a direct relation between the number of firms and the equilibrium price. It is easy to show that if cost and demand functions satisfy standard conditions, the equilibrium price, $p$, falls as the (exogenous) number of firms, $m$, increases. The reason is straightforward: starting from a given short-run equilibrium, if the number of firms falls, then there is excess demand. If firms produce more, they will run up their marginal cost curve and the equilibrium price will increase. In Figure 2 this relationship is plotted with the $pp$ curve.

The negative slope of the $pp$ curve is predicted by almost any theoretical model, no matter whether competition is perfect or imperfect (see Sutton [1991]), and has strong empirical backing (see, for example, Weiss [1989]). But it is important to note that this is a short-run relationship,

because it takes the number of firms as exogenous. For this reason the $pp$ curve is neither sufficient to study equilibrium market structure, nor to assess competition policy.

Thus, to close the model the long-run equilibrium condition (2.3) is necessary. There is nothing new or surprising here, except for the fact that the higher the long-run equilibrium price, the *more* firms there will be in the market.[3] Why?

The explanation runs as follows. An alternative interpretation of condition (2.3)

$$[p - c_{\mathrm{ac}}(q; \mathcal{C})] \times q = \sigma(\mathcal{C})$$

is that in the long run price $p$ must be such that margin $[p - c_{\mathrm{ac}}(q; \mathcal{C})]$ times volume $q$ must cover the entry cost $\sigma(\mathcal{C})$. Hence, the higher the long-run equilibrium price, volume $q$ necessary to cover $\sigma(\mathcal{C})$ is smaller.

Now for a given $p$, the total quantity demanded in equilibrium is $D(p)$ and per firm volume is $q = \frac{D(p)}{m}$. Thus we can rewrite condition (2.3) as

$$\left\{ p - c_{\mathrm{ac}} \left[ \frac{D(p)}{m}; \mathcal{C} \right] \right\} \times \frac{D(p)}{m} = \sigma(\mathcal{C}).$$

It is easy to see now that if volume per firm falls, then there is room for more firms in the market. In Figure 2 this relationship is plotted as the curve $ss$: the higher is $p$, the larger is $m$ in equilibrium.

Equilibrium market structure is characterized by the intersection of the $pp$ and $ss$ curves (see Figure 2). Thus, one can split the analysis in two parts: on the one hand, the $pp$ curve summarizes competition among firms who are in the market. In the short run, $m$ is fixed and industry equilibrium occurs on the $pp$ curve. On the other hand, the $ss$ curve summarizes the determinants of entry. In the long run margins should be large enough for firms to cover their entry cost and obtain a normal return. We are now ready to analyze competition policy.

**Competition policy in a perfectly competitive industry**  A competition policy for a perfectly competitive industry might seem a contradiction in terms. Nevertheless, the model suggests four types of policies that may be "anticompetitive".

**Implication 1.** *Entry restrictions are anticompetitive.*

There might be an explicit restriction to entry thus fixing a maximum number of firms $\overline{m} < m^*$. Even though in equilibrium price will equal marginal cost, it will be higher than average

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[3]**Proof**. Let $[p - c_{\mathrm{me}}(q)]D(p)$ firms' aggregate profits at price $p$. If the entry cost equals $\sigma$, then firms will make zero profits if

$$[p - c_{\mathrm{me}}(q)]\frac{D(p)}{m} \equiv \sigma.$$

Now the standard conditions over cost and demand functions imply that as long as $p$ is smaller than the monopoly price, $[p - c_{\mathrm{me}}(q)]D(p)$ is increasing in $p$ and decreasing in $m$, which establishes the result.

cost and incumbent firms will obtain rents. Among these policies is, for example, the classic textbook example of New York's taxi medallions. Restrictions to entry into the professions is another classic example.

**Implication 2.** *Regulations that increase the cost of entry increase costs and equilibrium prices.*

For example, in Chile non-prescription drugs must be sold in a pharmacy, which rules out supermarket shelves. Thus, while there is free entry into the activity of selling non-prescription drugs, the cost of entry is higher because some forms of selling are ruled out by regulation.

**Implication 3.** *Regulations may affect the technology of production and increase the costs of bringing the goods to market.*

For example, in Chile pharmacies are not allowed to display non prescription drugs on self-serve shelves; they have to be requested verbally to a store attendant. This increases the marginal cost of selling drugs and its price, even when there is perfect competition in pharmacy retailing. As another example, Customs in Chile imposes consumers very cumbersome and bureaucratic requirements, which increases the costs of small purchases, making foreign competition of mail order services less effective.

**Implication 4.** *Regulation may impair the reallocation and mobility of resources across firms and sectors.*

Even though this is not present in this simple model, many regulations can impair the mobility of resources across firms and sectors. These regulations make it more costly to enter and exit industries and do have competitive effects, especially by slowing industrial adjustments to technological or demand shocks.

### 2.2. Industrial structure and imperfect competition: the toughness of price competition

Imperfect competition does not affect conditions (2.2) and (2.3): of course, in equilibrium it is still the case that the quantity supplied must equal the quantity demanded and, if entry is free, profits will be competed away in equilibrium. But, by definition in an imperfectly competitive market price differs from marginal cost, that is

$$p = [1 + v(\mathcal{C})] \cdot c_{\mathrm{mc}}(q), \tag{2.4}$$

where $v$ is the margin or *mark up* above marginal cost, which we will assume constant for simplicity.[4] In this case $v$ parametrizes what Sutton (1991) calls *the toughness of price competition*. If $v$ is small, the equilibrium price will be close to marginal cost and price competition will be "tough"; the opposite occurs if $v$ is large.

**The determinants of the toughness of price competition**   It is easy to see that $v$ shifts the $pp$ curve upwards—for a given $m$, the equilibrium price is higher if price competition is weaker (see Figure 3, where $p^c p^c$ is the curve in a perfectly competitive market. But what determines the toughness of price competition?

The legion of IO models developed since the seventies can be understood as a systematic exploration of its determinants. We know, for example, that product differentiation, switching costs, search costs, collusion or transport costs all relax price competition. The mechanics of each case are different, but for the purposes of this note it is enough to summarize them with the help of a simple identity.

Note that the unilateral gain of being more aggressive (e.g. lowering prices or increasing production), call it $\Delta\pi$, is equal to the difference between incremental income ($\Delta I$) and incremental cost ($\Delta c$), viz.

$$\Delta\pi \equiv \Delta I - \Delta c.$$

This difference can be decomposed as follows:

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\begin{aligned}
\Delta I - \Delta c \ &\cong\ (q \cdot \Delta p + p \cdot \Delta q) - c_{\mathrm{mc}}\Delta q \qquad\qquad (2.5)\\
&=\ (p - c_{\mathrm{mc}}) \cdot \Delta q + q \cdot \Delta p.
\end{aligned}
$$

The first term in expression (2.5) says that a unilateral deviation increases sales, and the change in profits depends on the price-marginal cost margin. The second term indicates that being more aggressive comes at a cost: the price will fall and existing sales will generate less revenues.

Thus, a large margin $p - c_{\mathrm{mc}}$ or a small response of price to changes in quantity (i.e. $\left|\frac{\Delta p}{\Delta q}\right|$ large) foster tough price competition, as these examples illustrate.

Example 1: Consider the canonical (if extreme) example of Bertrand competition among firms with identical marginal costs who produce an homogeneous good. A unilateral and minuscule reduction in price:

- Strongly increases sales (that is, $(p - c_{\mathrm{mc}}) \cdot \Delta q$ is large).

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[4]Clearly, this assumption doeas not hold in many standard models. For example, in Cournot.the equilibrium price-marginal cost margin falls as the number of firms increases. But nothing of substance is lost with this simplification in the analysis that follows.

- Barely changes the price, hence $q \cdot \Delta p$ is negligible.

Hence, price competition is very tough and prices such that $p - c_{\mathrm{me}} > 0$ are unsustainable in equilibrium.

**Example 2**: Similarly, in a perfectly competitive market margins such that $p - c_{\mathrm{mc}} > 0$ are unsustainable, even in the short run, because a negligible reduction in price substantially increases sales and income.

**Example 3**: On the contrary, assume a market where changing suppliers is cumbersome and costly, because a contract has to be broken and a sales representative must visit the customer and convince her to switch (see the pension fund case below). Even a large reduction in price barely increases sales if consumers don't switch. Hence $(p - c_{\mathrm{mc}}) \cdot \Delta q$ is small. On the other hand, a unilateral price reduction reduces income from sales to existing customers: $|q \cdot \Delta p|$ is large in absolute value. In this case, price competition is not tough.

**Example 4**: Last, consider the standard case of collusion sustained by punishments in a repeated game. Collusion increases the margin $p - c_{\mathrm{mc}}$; the role of the punishment is to make $\left| \frac{\Delta p}{\Delta q} \right|$ large.

Some of the things that soften price competition and determine $v$ are facts of life, and little can be done against them. Technically, the toughness of price competition is a function of structural parameters, just as those that determine production functions. For example, transport costs structurally limit the toughness of price competition among retail outlets spread in a city.

Others, however, must be the target of competition policies. First, in all markets firms will try to collude or device contrivances to soften price competition.[5] For example, sometimes firms will try to increase switching costs. Second, in many case, regulations tend to soften price competition. For example, in Chile there is widespread agreement that charging different prices to different customers should not be allowed unless justified by cost differences. The reasoning is that price discrimination not justified by cost differences is prima facie evidence of exploitation of market power. Nevertheless, if firms are not allowed to selectively, then any price cut costs $q \cdot \Delta p$ in lost revenue. Consequently, cutting prices is more costly and price competition is weaker (see the telecom and pension fund examples below).

**The intensity of price competition and equilibrium market structure**   Equilibrium market structure is found where $pp$ and $ss$ curves intersect (see Figure 3). And now note that *ceteris*

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[5]As Adam Smith said, "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices."

*paribus*, the tougher price competition, the lower is the equilibrium price and the *more* concentrated is the market. This might not seem intuitive, but the economics is straightforward. *Ceteris paribus*, weaker price competition implies a larger equilibrium price-marginal cost margin for any given number of firms in the market. And a higher equilibrium margin requires a smaller volume of sales to cover the entry cost $\sigma(\mathcal{C})$, hence lower concentration. Thus, even though there is a short run relationship that runs from more firms (i.e. less concentration) to lower prices, the equilibrium relationship runs the other way round: *ceteris paribus* lower prices attract fewer firms in equilibrium.

It can be shown that tougher price competition also increases average firm productivity size, reduces productivity dispersion among firms, and weeds out less productive firms. This effect cannot be captured in this model with homogeneous firms, but it can been shown, for example, with a straightforward application of Syverson's (2004) model of an homogeneous good produced in many locations. The logic is as follows. Tougher price competition means a lower short-run equilibrium prices for any given number of firms and productivity distribution. This implies that, for a given entry cost $\sigma$, less efficient firms will find it increasingly harder to cover costs. As a result, average productivity will be higher and so will be the average size of a firm.

**Competition policy in an imperfectly competitive market**   A number of implications follow.

**Implication 5.** *Competition policy should not be based on the premise that "more firms, more competition."*

As a policy prescription, this rule is misleading at best. It confuses a short-run relationship that is certainly present in that data and has been confirmed by many empirical studies (see, e.g. Weiss, 1989), with the long-run equilibrium relationship, which should be the aim of competition policy.

This confusion is of practical importance in Chile. Authorities constantly worry about concentration, and many times take it to be a sufficient statistic of the intensity of competition. For example, in some cases increasing the number of competitors has been an explicit goal of policy, and several measures have been taken to weaken price competition, increase margins and foster entry. The argument has been that by protecting competitors they will foster competition (see the telecom example below). Another example is the consolidation that has occurred during the last ten years in several retail sectors (e.g. supermarkets, pharmacies, hardware stores), which has been received with mixed feelings: on the one hand, it is argued, the fall in margins benefits consumers. But, on the other hand, the exit of smaller firms and higher concentration might reduce competition and hurt them. The equilibrium framework developed in this note suggests that these apprehensions are misplaced: concentration has increased precisely because equilibrium margins

have fallen. Margins will increase a bit as smaller and less efficient firms exit, but will be lower in the long run equilibrium than before the consolidation started—otherwise small firms would not exit.

**Implication 6.** *Fostering tough price competition should perhaps be the central aim of competition policy.*

The reason is that tougher price competition unambiguously leads to lower prices, lower price-marginal cost margins and higher average productivity. Sometimes, fostering price competition will be a matter of punishing or prohibiting anticompetitive contrivances devised by incumbents. In other cases, it will consist in removing regulations that weaken price competition (see the telecom example below). And in a few cases, it will call to a redesign of the market (see the public transport and pension fund examples below). Be it as it may, it is central to keep in mind that tougher price competition in a given market will tend to concentrate it.

**Implication 7.** *Entry is not necessarily a cure against weak price competition.*

Of course, *ceteris paribus*, prices fall as more firms are in the market—this is the *pp* curve—and, moreover, margins may by themselves fall as the number of firms grows. But the price-marginal cost margin need not disappear as more firms enter, because the toughness of price competition is not a function of just $m$. Moreover, as is well known, with imperfect competition too many firms try to compete away the rent created by the equilibrium price-marginal cost margin, and entry is in general excessive.

This is not to suggests that competition policy should aim to attain the optimal number of firms in each market via taxes on entry or, even worse, by trying to regulate the number of firms. The informational requirements of such a policy would be formidable and in my view there is little doubt it would do more harm than good. But it does suggest that entry is of limited help in markets where price competition is weak (see the public transport and pension fund examples below). Hence, a competition policy based on just checking whether there is free entry will be incomplete.

**Implication 8.** *Competition policy is overwhelmingly made of discretionary (but not arbitrary) interventions in specific markets.*

The reason is fundamental. As Sutton (1991) has convincingly argued, one cannot hope to identify the determinants of market structure and performance from aggregate cross-industry relationships. Hence, a competition policy based only on cross-industry relationships is ineffective at best and sometimes even harmful, because it suffers from a fundamental identification problem. At the same time, in many cases it is possible to understand the determinants of structure and

performance of a given industry if one looks carefully at its specific circumstances: technology, demand and history. Now anticompetitive regulations or contrivances by incumbent firms, which raise costs or weaken price competition, are market-specific. Consequently, they must be evaluated case by case.

## 3. Competition policy in Chile

### 3.1. The *Fiscalía* and Competition Tribunal

The two main legal institutions in charge of competition in Chile are the *Fiscalía Nacional Económica* and the Competition Tribunal. The *Fiscalía* is in charge of investigating markets and prosecute anticompetitive acts. Its aim should be to defend the public interest. The Tribunal hears the cases and decides, but cannot initiate an investigation[6].

Under the recent modification to the law, cases that are reviewed by the Tribunal can be adversary (when a private party of the *Fiscalía* sues somebody for anticompetitive practices) or non-adversary, where somebody asks the Tribunal whether a given practice or event (e.g. a merger) is anticompetitive. In both cases, the Tribunal issues a verdict, which can be appealed to the Supreme Court. The Tribunal can also fine those it determines are guilty—the maximum fine is about $11 million). In addition, the Tribunal can suggest changes to laws when it thinks that they harm competition.

Historically a substantial fraction of cases have been initiated by a firm who sues, claiming that it is being hurt by an anticompetitive practice of the defendant. Also, the *Fiscalía* has been active, both initiating cases and joining plaintiffs. By contrast, and for obvious reasons, consumers rarely sue for anticompetitive behavior.

Cases initiated by competitors should be looked at with skepticism, however. Market competition is, by its very nature, adversary, and a firm which competes more aggressively and lowers price almost by definition hurts competitors. For example, it is quite telling that in many merger cases the competitors of the merged firms have been the most vocal opposers. This is remarkable, for market power is a public good: if the merged firm succeeds in raising prices, all firms in the market will benefit![7] Thus, it is unlikely that tougher competition will be fostered by competitors suing each other. On the contrary, it seems that in many cases the real intention of the plaintiff is to hurt the defendant by

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[6] The competition law is DL N$^o$211 of 1973, which has been modified several times. The most recent change, which created the Competition Tribunal, was passed in 2003. Formerly, cases were reviewed by the Resolutory Commission. The law can be downloaded at www.tdlc.cl.

[7] Of course, arguing predatory behavior is the means to square the circle: Not surprisingly, inmany cases where a firm sues another it argues that the defendant is predating to drive him out of business. Predation argumets are usually suspect because their economic rationale is generally weak.

One can think of two safeguards against firms gaming the system to hurt competitors. First, high standards of economic analysis. Second, allowing the Tribunal to dismiss cases that are not well justified by the plaintiff.

Nevertheless, the general quality of the economic analysis made by parties and the *Fiscalía* is quite poor. It is seldom the case that claims are supported rigorous conceptual analysis, let alone by any empirical evidence. But even worse, frequently even basic concepts are misused. Thus, in recent years, the *Comisión Resolutiva*, the forebear of the Tribunal, argued in a ruling against a chain store with a 7% market share, that the interior of each *store* was a relevant market by itself (see more details in the next section). Many times, the rulings have been devised to protect competitors from firms that were setting prices more aggressively. Even worse, some years ago in a conflict between milk producers and distributors the *Comisión Resolutiva* attempted to make firms agree on fixing higher prices![8]

## 3.2. Government policy and competition

The second large institution which affects competition in a number of dimensions is the central government. It does so through at least three channels. First, the ministries are in charge of executing sectorial policies. Most of the time, a specific ministry receives a mandate by law to regulate certain aspects of an industry (e.g. quality, entry, production technologies). But the law gives it a wide mandate to the government to apply the law and allows it exercise considerable discretion. For this reason, administrative decisions and norms determine to a large degree the competitive effect of a given regulation regulation. For example, the Ministry of Transport, through the *Junta de Aereonáutica Civil* (JAC), is in charge of regulating air transport. The law states the general rule that Chilean skies are open, but allows JAC to close them to airlines of countries that, in turn, impose restrictions to Chilean airlines. Because most countries will tighten restrictions if Chile does, in practice policy is determined by the JACs stance on negotiating international air transport treaties. JAC could reduce competition by limiting the number of flights that other countries' airlines can do to Chile, which would prompt these countries to reduce the frequency of flights allotted to Chilean airlines. (Fortunately, in recent years JAC has consistently tried to open skies whenever possible).

Second, there are also general regulations (e.g. tax, labor, environmental, sanitary) that affect costs (entry, fixed and variable) and have competitive effects. These regulations are applied by specific agencies of the central government which have wide mandate. In many cases,

Third, most of the time the government has the initiative when it comes to modifying laws and initiate discussions in Congress. Hence, most changes to regulations (e.g. a market liberalization)

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[8]The Commission backed out after 50 economists signed a letter arguing that competition authorities should not encourage firms to fix higher prices.

will simply not happen unless the government takes the initiative.

Even though Chile has sensible regulations and mild red-tape by comparison to many other countries, there is still a legion of regulations that could be removed or improved and which currently increase costs, impair mobility across firms and sectors or weaken price competition. Unfortunately, a detailed survey of them has not yet been done, and consequently there is no systematic policy of improving competitive conditions. One of the suggestions made by the Jadresic commission in 1999, which was commissioned with proposing changes to regulatory institutions (see Jadresic et al. 2001) was to establish an undersecretary in charge of research who would report to the Minister of Economics and advice him in formulating policy. Perhaps this undersecretary should be in charge of a systematic policy of removing the obstacles to competition that have been created by the central government over the years.

## 4. Some examples

### 4.1. Best-practice standards

**The multicarrier: a blueprint for competition policy?** *The following is an example of careful liberalization and market design that fostered tough price competition.*

Following a long legal battle, the multicarrier long-distance telecom system was introduced in Chile in late 1994. Until then, national and international long-distance had been provided by a regulated monopoly, Entel, which was shielded from entry by law. Since then, entry into long distance is free, and so are tariffs. These fell abruptly overnight and traffic doubled in less than one year. Price competition has been intense ever since and tariffs have remained low. For example, today one can call the United States during business hours for less than US$ 0.25 per minute. By contrast, according to Fischer and Serra (2002), the price per minute would be US$ 2.40 had tariffs remained regulated.

A superficial analysis might conclude that entry by itself made tariffs plunge. Nevertheless, careful examination suggests that the price fall would have been much smaller, had entry not been combined with three specific design details. First, each carrier was assigned a two-digit identification number that could be accessed from any phone.[9] Keeping identification simple made it easy to remember them; combined with the ability to access the carrier from any phone, this made switching from one carrier to another very easy.[10] Second, the *Comisión Resolutiva* ruled that it was anticompetitive for carriers to offer lower tariffs in exchange for physically disconnecting a phone's access to competitors. As is well known, by crating a switching cost such offers would have

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[9] By then almost all of Chile's network was digital, which made direct access technically feasible.

[10] All carrier number started with 1, and were distinguished by their next two digits—hence, effectively each carrier is identifies by two digits. Of course, the most attractive number was 123, which was obtained by Entel, the former monopoly.

create a prisoner's dilemma, soften price competition and resulted in higher equilibrium prices. Third, de facto there has been no obligation to charge the same tariffs to all customers. This reduces the cost of offering a lower tariff to a new client —one need not reduce the tariffs charged to existing customers—and by doing so price competition is tougher.

## 4.2. Market redesign to toughen price competition

**Public transport: a liberalization that cannot work well**     *This case illustrates that monopoly pricing may result even if the industry where concentration is negligible.*

Public transport is a notorious industry in Chile[11]. It is, of course, highly visible but, in addition, it has never worked well. Until the late seventies the State heavily regulated the sector. It fixed tariffs, decided which routes would be served and fixed the number of buses by regulating permits to enter the industry. In 1979 entry and routes were liberalized and in 1983 tariffs were set free.

At first sight it seems hard to find an industry more suitable for intense competition. In 2001 there were 8.148 buses in Santiago; 30,2% were owned by firms with only one bus, 19% by firms with two buses and only 7,8% by firms with more than 50 buses. And, perhaps, that was impression of those who liberalized the market. Thus, allowing free entry should have made tariffs fall—again, the logic that directly follows from the *pp* curve. But, as Figure 4 suggests, quite the opposite seemed to happen: during the eighties both the number of buses and tariffs increased significantly[12].

How can one explain Figure 4? Assume for a moment that, for some reason, prices exogenously rise and there is free entry. Then the *ss* curve suggests that capacity should increase, as more and more buses enter to take advantage of high prices. But what prevents prices from falling? Gómez-Lobo et al. (2005) show that price competition is structurally nonexistent in a bus market with small firms. The reason is as follows. Assume that there are two types of buses, those with a high tariff and those with a low tariff, and that the fraction of cheap buses is "small". Now consider a passenger who sees an expensive bus approaching. She must choose between paying the high price or wait for a cheap bus. Now Gómez- Lobo et al. (2005) show that even if the wait is only 4 minutes (the average wait in Santiago) a worker earning the minimum wage would rather take the expensive bus, unless cheap buses charge less than half.[13] Thus, it doesn't make sense to lower the tariff to become a cheap bus, because it would be too expensive. Effectively, then, each

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[11]This is based on Gómez-Lobo et al. (2005).

[12]This is even more puzzling considering the following two facts. First, between 1982 and 1985 Chile lived through one of its worst recessions ever—GDP fell about 14% in 1982. Despite of that, tariffs increased and entry was substantial. Second, one cannot attribute the increase in the number of buses to initial undersupply and the reason is as follows. The consensus is that 8,000 buses is too much.On the other hand, between 1982 and 2002 Santiago's population increased by about one million, and the number of trips in buses more than doubled.

[13]This estimation assumes that the probability that the next bus is cheap is 10%.

bus has—literally—a local monopoly power and it can be shown that the monopoly price is the only equilibrium. Thus, in a liberalized market the *pp* curve is effectively flat at the level of the monopoly price!

What is the solution to soft price competition? Gómez-Lobo et al. (2005) explain that the correct policy is radical redesign. The right to serve the bus market should be allocated in a competitive auction for the lowest tariff. This is the path that has been followed, albeit imperfectly, by the Chilean regulator since the early the nineties. In fact, the fall in both tariffs and the number of buses which appears in Figure 4 can be attributed to the first auction which took place in 1990, after an attempted boycott by bus owners. The competition induced by the auction has been insufficient, however: Gómez-Lobo et al. (2005) estimate that currently the industry earns rents of about 65 million each year, about 10% of ticket sales.

**Private social security and the AFPs: the need to redesign the market** *The following is an industry where price competition is soft and only radical market redesign can toughen it. Moreover, this case also illustrates that discretionary administrative rules can significantly affect industry performance.*

In Chile social security was privatized in 1981, when the so-called *administradoras de fondos de pensiones* (AFPs) were created. Entry into the industry is regulated—AFPs can't do anything else—but free. Similarly, each AFP is free to choose its commission, but it must charge the same percentage to all affiliates.[14]

It was assumed that free entry would yield a competitive industry. In practice, direct price competition has been almost nonexistent and commissions have been historically quite high.[15] On the contrary, for many years high margins stimulated expenditures in sales representatives, who especially targeted competitors' high-income affiliates. Sales representatives were paid a success fee for attracting a new affiliate, and they spent part of it to (illegally) lure their targets with money and prizes, thus introducing an imperfect substitute of direct price competition. But while this induced some limited demand sensitivity to commissions, it is a quite expensive way of doing it. Valdés (2005) estimates that the (equivalent) monthly cost of contacting and switching an affiliate is about 1% of the median salary.

Since 1997, however, and with the help of the social security regulator, AFPs succeeded in coordinating to drastically reduce sales efforts and make it very difficult to develop a sales force. A mandatory instruction issued by the regulator in November 1997 temporarily prohibited to hire new vendors, and allowed AFPs to coordinate to fire most of their sales forces.[16] In October

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[14]The commission is proportional to the affiliate's salary and is paid monthly.

[15]Valdés (2005) shows that currently commissions average 2,30% of the affiliate's salary. (1% pays for disability insurance).

[16]Circular 999 of the Superintendecia de Administradoras de Fondos de Pensiones.

1998 the regulator introduced further rules that allowed AFPs to enforce non-competition in sales efforts. The so-called *circular* $N^o$ 1,051 forced each AFP to inform all others before hiring a new vendor. Moreover, henceforth entrants had to inform incumbents not only about its intentions to hire vendors, but also to reveal their identities one month in advance. This effectively banned further entry into the AFP industry.[17]

In exchange of these "coordination" measures, the regulator extracted a small reduction of commissions from AFPs. But because sales expenditures drastically fell, AFPs returns on assets soared from the already high figure of 18% between 1993 and 1997 to 53% between 1999 and 2003.[18]

Why is price competition almost inexistent in this industry? There is little doubt that the obligation to charge the same commission to all affiliates makes a price cut very expensive— exactly the opposite of what happens in the long-distance telecom market. But the fundamental reason is that most affiliates would not switch in response to a unilateral cut in commissions which is advertised in the media. And the reason is that most of them neither understands what a commission is nor is able to compute a simple percentage.[19] This is compounded by the fact that switching without a vendor is costly: the affiliate must inform herself by visiting potential AFPs, visit her current AFP to notify about the switch, fill in a lot of forms, and all this has to be done during business hours—precisely while the affiliate must show up at work.

How can one toughen price competition? Valdés (2005) proposes a clever scheme. Low-salary affiliates would be randomly allocated to large groups of 500,000 affiliates and AFPs would compete for serving them for periods of three years. Each group would be allocated in a competitive auction to the AFP bidding the lowest commission.[20] It is quite obvious that now price competition would be tough: by marginally lowering the commission below their competitors, an AFP would capture 500,000 affiliates. Valdés estimates that auction would lower monthly commissions from the current 2.30% of the affiliate's salary to 1.48%.

Last, the preceding analysis suggests again that entry is insufficient to make the market more competitive. This is an issue of practical importance in the AFP market, for currently there is a heated debate on whether commercial banks should be allowed to enter the AFP business. As things currently stand, entry by banks would have little impact on commissions, but would surely lead to a new escalation in sales efforts. From a social perspective, entry in these conditions probably makes little sense. But were Valdés's scheme to be adopted, entry by banks would add competitors

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[17]This rule was abolished in 2001, but by then the industry had coordinated in the new equilibrium.

[18]See Valdés and Marinovic (2004). Note that these are returns over the assets needed to produce the services provided by AFPs; it is *not* the return on the pension fund.

[19]According to Larraín (2004, pp. 10 and 13), a survey taken by the social security regulator revealed taht 95% of affiliated does not know the commission it pays. Only 1% of affiliates reads the periodic statement of accounts sent by AFPs, where the commission is reported.

[20]I don't have space here to explain the detailed disign of this scheme, but the interested reader can consult the full-fledged proposal in Valdés (2005).

in the auction, and surely help to lower commissions even more.

### 4.3. Liberalization

**A stalled liberalization: electricity retailing**   *The following is an example where a market needs to be liberalized but the government protractedly fails to do so.*[21]

Electricity was the first network industry to be restructured in Chile. In the early 1980s generation, transmission and distribution were functionally separated and marginal-cost dispatch of generation was introduced. The industry was then privatized in the late 1980s.

All in all industry performance has been satisfactory. Ever since the industry was privatized, capacity grew *pari passu* with demand and this was achieved with falling prices: while until the early nineties the monomic price of energy hovered around US\$60/MWh, it fell to less than US\$35/MWh after the arrival of Argentine natural gas in 1998. Recently the price of electricity has risen in response to the Argentine refusal to allow further exports of natural gas to Chile.

But while competition in generation has been intense, very little has been done to liberalize electricity retailing. Currently electricity distribution (the cables that conduct electricity) and retail (the selling of energy and power) are vertically integrated. When the industry was restructures in the early eighties two types of customers were defined, regulated and "free". Free customers are those whose connected power exceeds 2 MW and must contract their supply either with a generator or with a distribution company at unregulated prices. Customers with connected power of less than 2MW were defined as "regulated." Even today, they pay a regulated price for energy and power (the so-called node price), and an additional charge for using the distribution system.[22]

Distribution tariffs paid by regulated clients are fixed every four years by the regulator. An important omission in the law is that until recently, it did not regulate the distribution charge that a free customer had to pay. This effectively excluded generators from serving free clients located within the service area of a distribution company, because the distribution company could render uncompetitive whatever terms a generator offers, simply by increasing the distribution charge. In fact, so far only once did a generator win a contract to serve a free client located within the service area of a distribution company —the state-owned Santiago Metro—, and then because the government made a political decision to do so.

A second consequence of vertical integration is the rigid and inadequate retail tariff structure. There are many different regulated tariffs which vary with the type of connection (high or low tension) or the hours where power consumption is measured, but with each one the customer's bill

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[21]This is based on my reserach of the electricity sector, which has been financed by AES Gener, S.A. The opinions are my own and do not represent those of AES Gener S.A.

[22]In 2004 the limit was reduced to 500 kW, but the new free customers retain the right to remain as regulated customers.

is the result of an addition of four charges:

$$\text{(fixed charge)} + \text{(distribution charge)} + \text{(energy charge)} + \text{(peak power charge)}.$$

The first two items pay for the cost of distributing electricity. The fixed charge pays for the cost of running the service (e.g. metering, billing) and the distribution charge pays for the wires. On the other hand, charges for energy and power are, in fact, retail charges.

Most tariffs differentiate these four charges. But, at the same time, the overwhelming majority of customers pays a simple tariff—the so-called BT1 tariff— that combines distribution, energy and power charges in one per kwh rate.[23] Thus, about 40% of the amount paid for each kwh in fact remunerates distribution facilities; another 15-20% pays for peak power demand; and the rest pays for energy.

The virtue of the BT1 tariff is its simplicity, but it is quite inefficient.[24] First, customers use too little energy because it costs too much at the margin. Galetovic et al. (2004) estimate that at current residential consumption levels, the yearly welfare loss is of the order of US$ 50 million.

Second, because the BT-1 tariff does not differentiate energy from power charges, residential users do not receive any incentives to cut power consumption at peak hours. Galetovic et al. (2004) show that one could cut the cost of supplying residential customers by about US$ 2/MWh by increasing their load factor from the current 70% to the system average, 74%.[25]

Last, no regulated energy rate, BT-1 or other, reflects short-run supply conditions. Hence when energy is scarce (for example, when there is a draught) too much is consumed, and the opposite occurs when energy is abundant (for example, during a wet year). In an important paper, Montero and Rudnick (2001) have estimated that if energy rates would reflect its current opportunity cost generation capacity could be cut by at least 20%.[26]

The solution is to liberalize electricity retailing, separating it from distribution.[27] Separation means that wires are priced and let separately from energy and power sales. Distribution tariffs would still be regulated, essentially in the same way as today, but electricity would be sold by retailers who, in turn, would buy it from generators. Retailers would be free to set contract conditions and both the price structure and level.

What would liberalization achieve? Consider first deficits and outages. As seen before, today

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[23] There is also a per kWh surcharge during the winter months which is paid by customers that consume more than 200 kWh. The surcharge affects not more than 10% of residential customers.

[24] When the law was written in 1982, meters for energy and power were very expensive, but the enormous advance of microelectronics in the last 25 years has made them quite cheap.

[25] The load factor is the ratio of peak power consumption to average power consumption. A ratio of one implies that the customer's load is constant all the time.

[26] To arrive to this figure I parametrized Rudnick and Montero's model with the elasticity of residendial energy demand in Chile estimated by Benavente et al. (2005).

[27] More details can be seen in Galetovic et al. (2004).

consumers do not perceive that when scarce, the opportunity cost of electricity is much higher than the normal price. A retailer would have incentives to find those consumers who are willing to reduce energy consumption at the lowest cost. By doing so, an deficit would result only in fewer consumed kwh, not in outages, and the cost of matching available energy with demand would be minimized. Second, pricing wires separately from the electricity flowing over them allows retailers to design efficient price structures adapted to consumer preferences. Most of the inefficiencies of the current price structure would be competed away.

It is important to stress that retail liberalization must be complemented with at least two specific regulations. First, prudential regulation of electricity retailers must be introduced. The reason is that all users are connected to the same grid, and when in deficit, an outage will occur if nobody reduces consumption. Retailers must have incentives to enforce their contracts, and must either contract enough energy and power to meet them or write contracts that force users to reduce consumption when there is a shortage. Otherwise, an opportunistic retailer could sell "cheap" electricity and default when a deficit occurs. Second, for very small customers it might be advisable to adopt an auction system similar to the one proposed by Valdés (2005) for the AFPs.

### 4.4. Regulations and contrivances to soften price competition

**Banks, credit taxes and switching costs**    *The following is an example of taxes and regulations that create switching cost and thus relax price competition.*

Switching costs are one of the main determinants of the toughness of price competition. In Chile, there are several regulations that probably relax price competition among banks by increasing the cost of switching. There is no hard evidence on this, but one may think that such regulations affect smaller firms more: as Figure 5 shows, the average number of banks per firm increases with firm size. Moreover, returns by banks have been historically quite high, above 20%, which suggests that there may be a competition problem.[28]

A significant cost is created by a tax, the so-called *impuesto de timbres y estampillas.* [29]Each credit must pay 0.134% per month over the amount lent, with a maximum of 1.608% for terms of 12 months or more. A credit line, which by definition is short term, pays 0.134% per month over the average balance. A key characteristic of the tax is that it is charged any time a new document is issued. Thus, technically it is not a tax on debts but on the operation that creates a debt. Consequently, any time a new debt is acquired, the tax has to be paid again. It follows that to gain borrower with debts with another bank, a competing bank must not only offer a marginally better interest rate, but one that is low enough to pay the tax again. The shield to competition offered

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[28]On the other hand, access to credit in Chile seems to be quite good, comparable to access in the U.S. See Benavente, Galetovic and Sanhueza (2005).

[29]Stamp and Postage tax.

by the tax is substantial. For example, if the one-year interest rate is 5%, and the maturity of the loan is a year or less, a competing bank has to offer an yearly rate of 3.39% to match the cost of staying with the incumbent bank—a rate that is 0.678 that of the incumbent bank.

Beyond the credit tax, banks have designed contrivances to soften competition. An important one is the cost of switching collateral from one bank to another. All legal paperwork to do so has to be redone, which is costly and time consuming.[30] But, perhaps far more important, borrowers complain that it is a burocratic nightmare, because the incumbent bank has a lot of discretion to decide when it liberates the collateral. In 2002 it was proposed to create special firms that would certify and monitor guarantees. That would allow to switch them from one bank to another with a mere accounting operation. But progress has been very slow.

Third, one should mention that a strength of the banking system is the quality of the information about borrowers' indebtness and behavior—in fact, World Bank (2005) assigns Chile the highest possible score this dimension. Nevertheless, periodically politicians propose to debilitate this information system, arguing that "every one deserves a second opportunity". The evident consequence is that many borrower would be redlined. A not-so-obvious consequence is that borrowers who are not redlined would, nonetheless, pay higher rates, because the informational monopoly of each bank would be stronger.

### 4.5. Classic competition policy and economic analysis

**Economic analysis and the *Fiscalía*** *The following is an example where poor economics analysis of the* Fiscalía *led to prosecution of a pro competitive practice. It suggests that the quality of economic analysis brought to bear on antitrust cases is very low.*[31]

Vertical relationships have always troubled Chilean competition authorities. In 1998 the *Comisión Resolutiva* decided to prosecute Copec, a gasoline distributor, for telling her four franchisees in Punta Arenas, a small city in the extreme south of Chile, to lower their gasoline prices. The plaintiff argued that by doing so Copec was expropriating them, and the *Fiscalía* basically bought the argument. The *Fiscalía* also argue that fixing resale prices was anticompetitive because it could foster price distortions.

It is very unlikely that Copec had any ability to expropriate franchise holders, because it owned all the assets—franchise holders only operated the gas station. Thus, there was no room for opportunism. Moreover, it is likely that gas stations in Punta Arenas colluded to fix prices, and that was against Copec's interests. To begin, there were only 11 gas stations in the whole city. Next, price dispersion across gas station was negligible before Copec told her franchise holders to

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[30]World Bank (2005) estimates that the direct pecuniary cost of create collateral is 5,3% of per capita income (about US$300). This is not much for a large firm, but it becomes important for smaller firms s

[31]This follows Galetovic and Sanhueza (1999), a report commissiones by Copec, the defendant in the case.

lower prices. Third, margins in Punta Arenas (the difference between selling price at the gas station and the price at which Copec sold to her franchise holders) were about three times those prevalent in Santiago, and higher than in other cities of similar size. Now a basic result of the theory of vertical control (see Spengler, 1950) indicates that even had Copec been a monopoly (which it was not) society gained if it fixed its profit-maximizing downstream price. The *Fiscalía* should not have prosecuted a practice that was harmless at best and probably pro competitive. Moreover, it required only basic IO to figure out this.

**Using thy neighbors assets without paying for them is not procompetitive**    *The following is an example where the Comisión Resolutiva punished firms with a 7% market share for not letting banks use their assets for free to make consumer loans, and argued that each store is a relevant market. It suggests, again, that the quality of economic analysis brought to bear on antitrust cases is sometimes very low*[32].

Interest rates fell sharply in Chile at the beginning of this decade. To increase usage of credit cards (a quite profitable business for banks), they began to offer their clients a promotion called "three installments, no interest". Consumers who took the offer could pay a purchase in three monthly installments without paying any interest. Of course, the credit card issuer gained the commission it charges business for each purchase.

Many retail stores adhered to the promotion. But the three largest chain department stores, Almacenes Paris, Falabella and Ripley did not. They argued that this promotion was, in fact, consumer credit which competed with their own consumer credit operation. So they refused to ask customers who got to the counter to pay with credit card whether they desired to pay in three installments. Both the banks and the *Fiscalía* argued that this refusal hurt consumers and was anticompetitive and sued the three department stores. Essentially, they asked the tribunal to force the chain stores to use their systems and personnel to offer banks' consumer credit.

The general rule in any market economy is that no firm has any obligation to lend her assets to competitors. And from the standpoint of competition, this rule admits only one exception.: it is generally accepted that owners of essential facilities should grant access in non-discriminatory terms and be compensated for the economic costs of granting access to the essential facility. A facility is, in turn, essential to participate in a market if three conditions simultaneously hold (see Gellhorn and Kovacic, 1994, pp. 151 and 152).

(i) access must be truly "essential," not merely "convenient" or "less expensive";

(ii) the competitor cannot replicate the facility, because it would be uneconomic to do it;[33]

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[32]This is based on Caballero and Galetovic (2003), a report commissiones by Ripley, one of the defendants in the case.

[33]Whish (2001, p. 621) notes that in Europe it is also required that replicating the facility by uneconomic for competitors that operates at a scale similar to that of the owner of teh facility.

(iii) There must be enough spare capacity to accommodate the competitor.

So the issue at stake was whether the counters within each store, electronic systems and personnel were essential facilities to offer consumer credit (it should be noted that, in addition, both banks and the *Fiscalía* argued that there was no obligation for banks to pay anything for the use of the facilities).

A cursory look at market shares would have been enough to dismiss the claim that these were essential facilities to offer consumer credit. Each department store accounted for a small share of total consumer credit: Almacenes Paris had just 3.84%; Falabella, 6.16%; and Ripley, 4,02%. Their combined shares were smaller than that of the largest bank (Santander, with 15,86% of the market). Thus, one wonders why the *Fiscalía* chose to pursue this case. But more was yet to come. The ruling of the *Comisión Resolutiva* favored the banks and the *Fiscalía* 4-1.[34] How did they square the essential facility doctrine with market share data? Well, they decided without further justification that each of the *stores* operated by a chain store was in and by itself a relevant market! The ruling was appealed to the Supreme Court. But the Court dismissed it arguing that the concept of relevant market was irrelevant in competition matters!

**Fixed telephony: more firms, more competition ... and high prices?** *The following is an example where the goal of fostering competitors leads to a policy that weakens price competition and, in the end, pursues seemingly inconsistent goals.*[35]

The basic tenets of the law that regulates telecoms in Chile are these: no legal monopolies are granted to any firm; technical interconnection at regulated access charges is mandatory; and firms are free to set end user tariffs unless the Competition Tribunal says that the firm is "dominant". The law also regulates service quality.

All these regulations are sensible, and as a consequence, the tariffs of the main telephone operator, CTC, have been regulated every four years while, at the same time, entry of new operators, who are free to fix their tariffs, has been substantial—CTC's share in total fixed lines fell from 94% in 1990 to 76.1% in 2001,[36] while coverage expanded significantly: in 1990 there were 864.000 fixed phones and penetration was very low at only 6.5 phones per 100 inhabitants. In 2003, by contrast, fixed lines had multiplied almost by four to more than 3,2 million and penetration had increased to 20.5 phones per 100 inhabitants. Nevertheless, neither residential nor commercial tariffs fell much during the nineties. For example, Fischer and Serra (2002) show that the bill of an average family *increased* by 16% between 1987 and 1998; only in the 1999 review tariffs fell 11%.[37]

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[34]It must be stated that the four favorable votes were from lawyers. The one vote against the decision was of the economist member opf the tribunal, who made exactly the same argument presented here.

[35]This is based on my reserach of the telecom sector, which has been financed by Telefónica CTC S.A. The opinions are my own and do not represent those of Telefónica CTC S.A.

[36]See Fischer and Serra (2002, table 2).

[37]It is important to note that large commercial users probably get far better deals, as competition for them is

Barely changing tariffs may seem inconsistent with substantial entry—if the focus is on the *pp* curve, that is. But once the *ss* curve enters into the picture, it is easy to rationalize what happened. Entrants are allowed to target entry areas selectively. Thus, they have concentrated in high-income, high-traffic areas. On the other hand, CTCs tariffs are set for the whole city. Thus, if CTC wants to compete more aggressively in areas targeted by entrants, it must lower its tariff in the whole city. CTC did not gain by doing that, and entrants essentially freely chose to set the same tariff as CTC.

Why didn't the regulator allow CTC to lower tariffs selectively? Essentially, it argued that by doing so it fostered competition by making entry attractive. Eventually, so the argument runs, price regulation will no longer be necessary because there will be enough firms in the market to render it "competitive". But this is inconsistent. For either competition is feasible in that industry, and then tariffs should be liberated at once;[38] or else soft price competition sustained by the regulator is needed to allow the existence of many firms. In fact, it is well known that there are density economies in fixed line access, and this makes id doubtful that the final goal of free tariffs and many firms is ever attainable.

In 2004 the Competition Tribunal allowed CTC to offer alternative tariffs to users provided that they can always return to the regulated tariff and that offers are made to all clients, regardless of their location. This, will probably increase the intensity of price competition, because by targeting high-volume users CTC will be able to compete more intensely in areas where entry has already occurred. But it still leaves open whether such competition is feasible in the long-run, given the existence of density economies.

### 4.6. Regulations and the cost of doing business

**Protectionism and custom administration**   *The following is an example of a public service that imposes arbitrary rules that make foreign competition less intense.*

It is well known that one of the most effective competition policies is to open the economy to foreign competition. Chile is, by and large, quite open, yet its Customs service imposes a series of arbitrary administrative rules that impair competition. I will discuss two of them.

First, while the taxes that imports must pay are set by law, the Customs service has discretion to set an arbitrary valuation to calculate the amount owed by the importer. Allowing customs some discretion in these matters is advisable, for otherwise importers would consistently fraudulently report lower buying prices, to pay fewer taxes. But it stands to reason that such alternative prices

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intense. Unfortunately, there is no price data to evaluate this claim.

[38] Of course, the argument here is that unless tariffs are kept high by regulation, CTC will predate her rivals. But this argument is dubious, considering that telecom companies are all owned by multinationals. Chile is a minuscule fraction of their operations and all have access to world capital markets.

should be set with reasonably objective criteria. In practice, the Customs service just tells what price it deems acceptable, and discards evidence to the contrary as it sees fit.[39]

A study that documents the size that such a bias can reach is Venturelli's (2003). In Chile there is a protectionist price support scheme whose aim is to sustain a minimum price for sugar, wheat and, until 2003, eating oil. It works by adding a specific duty to imports, so that the import price cum regular taxes cum import duties cum specific duty equals the minimum price. Venturelli showed that most of the time Customs ignored the actual price paid by importers and assumed a lower one. Thus, it charged a higher specific duty which, on average, *doubled* the effective protection that favored local producers had the law had been applied.

Second, Customs follows extremely bureaucratic and cumbersome procedures, especially when it comes to small packages. First, you are notified by mail that there is a package waiting for you in a specific Customs office.[40] Then you have to go to that office and obtain an invoice, which states how much taxes and import duties you ow. Then you have to go to a bank to pay (they close at 2PM). Next you return to the Customs office to pick up the package, but before 2:30 PM. All this might seem anecdotal, but it is not. For example, retail branches like apparel, electronics, books and others could be made far more competitive taking advantage of large retailers who sell overseas via Internet. But it is quite obvious that if you have to add several hours to the cost of each shipment, this alternative is far less attractive.

Sometimes Customs even violates the law. For example, the free trade agreement that Chile signed with Canada eliminated tariffs. It was thus with some surprise that the buyer of a Honda Pilot jeep built in Canada realized that Customs had charged the general import duty, thus ignoring the free trade agreement. He complained, but Customs ignored the complaint. Only after winning the case in the Supreme Court did the buyer get the paid import duties back. But this was not the end of the story. Customs kept charging import duties to cars imported from Canada. When importers cited the Supreme Court ruling, Customs said that it only affected the specific case that was ruled. Thus, to have the law applied, one has to make the long road up to the Supreme Court.

**Red tape, entry, exit and SMEs**   *The following suggests that regulations that affect SMEs could be improved, sometimes substantially.*

By international standards, Chile is a quite business-friendly country. In part, this is consequence of sound policies but, on the other hand, it also reflects that most other countries have chosen bad policies. For this reason, the room for improvement is still substantial. This is apparent

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[39] My spouse once bought some books from Barnes and Noble on line. Customs estimated that a Barnes and Noble invoice was not an adequate proof of the price paid for the books and produced its own estimate—much higher than the price effectively paid. Also, sometimes books are assessed by ... weight!

[40] If you miss these notice (which frequently happens, because mail is quite unreliable in Chile) you may lose your shipment. Supposedly, these wares are sold by auction.

from Table 1, which presents five set of indicators of the cost of doing business in Chile and the rest of the world which come from the *Doing Business* data base (see World Bank, 2005). In general, Chile ranks better than both the world average (column 3) and its region, Latin America and the Caribbean (column 4); and is comparable to the OECD (column 5). But when one looks at column 2, which reports the best practice, it is clear that there is much room for improvement.

Consider first the indicators of entry and the cost of registering property, both an indication of the ease with which resources can enter a given activity. In Chile one has to do nine procedures which take, on average, 27 days. Nevertheless, in Australia the number of procedures is only 2 and it takes only two days to complete them. Closer examination indicates that one has to visit a notary public and the public registry (*conservador de bienes raíces)*; visit the tax authority twice; and go to the municipality Registering property is also time consuming: it takes 31 days and 6 procedures. In Norway, by contrast, there is only one procedure, which takes one day to complete.

The room for improvement in bankruptcy rules is even larger. To begin, it takes very long to complete the proceeding. The 5.6 years compare quite unfavorably with the world average (3.1 years), Chile's region (3.7 years) and the OECD (1.7 years). It is far from best practice, 0.4 years in Ireland. Also, the direct cost absorbs 18% of the value of the estate, but after the whole process only 19.3% of the debt is recovered. Again far away from best practice: for example, bankruptcy proceedings absorb only 1% of the estate in Finland, Kuwait, The Netherlands or Norway; and creditors recover more than 90% in Japan, Singapore, Finland or Taiwan. It is not very surprising that bankruptcy procedures are seldom used in Chile.

## 5. Conclusion

This note makes three points about competition policy. First, its aims should be to eliminate regulations that increase costs and impair factor mobility; and to foster tough price competition. Second, competition policy is, by its very nature, a matter of detail. Which measures will reduce costs or foster tough price competition are market specific. This is not to say that there are no general rules. The point, however, is that these general rules are insufficient to guide an intervention in a specific market. Sound economic analysis of the specifics of the case is key when designing interventions. Third, simplistic policy rules are many times useless or even harmful. The reason is fundamental: one cannot identify the determinants of market structure from cross-industry regressions. There are particularly two rules which should not be followed: First, "more firms, more competition" is an inadequate guide for policy. This goal often leads to measures that soften price competition. Second, entry is not a sufficient cure against lack of competition. While free entry is in most cases the only sensible rule, many times it won't be useful to toughen price competition. To finish I will make a few recommendations for improving competition policy in Chile.

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### 5.1. Government competition policy

As seen in this paper, sectoral government policy can affect competition, and particularly the costs of entry, operation and exit. The following specifc recommendations follow.

**Recommendation 1.** *Sectoral government policies must acknowledge that many of its rules affect entry, variable and exit costs.*

**Recommendation 2.** *In Chile there is much room to improve, simplify and remove government regulations that hamper competition.*

**Recommendation 3.** *The government should make a systematic survey of sectoral rules and regulations that harm competition. It should then proceed to systematically improve, simplify or remove them.*

**Recommendation 4.** *Lowering the costs of clearing customs is an effective competition policy in many markets.*

### 5.2. Antitrust authorities and competition policy

Institutional design of competition authorities has been considerably improved in recent years. However, the practice of antitrust should be improved.

**Recommendation 5.** *Both the* Fiscalía Nacional Económica *and the Competition tribunal should strive to considerably improve the quality of the economic analysis brought to bear on antitrust cases.*

**Recommendation 6.** *Competition authorities should be aware that currently firms are frequently using the Competition Tribunal to harm competitors.*

**Recommendation 7.** *The Competition Tribunal should be allowed to dismiss competition cases which have no economic justification.*

### 5.3. Competition policy in general

The analysis in this paper has some implications for competition policy in general, which should guide both competition authorities and the government.

**Recommendation 8.** *Fostering tough price competition should be a central goal of competition policy.*

**Recommendation 9.** *Fostering competitors should not be a goal of competition policy.*

**Recommendation 10.** *In many markets careful design is key to foster tough price competition.*

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# Figure 1
# Regulatory quality in Chile
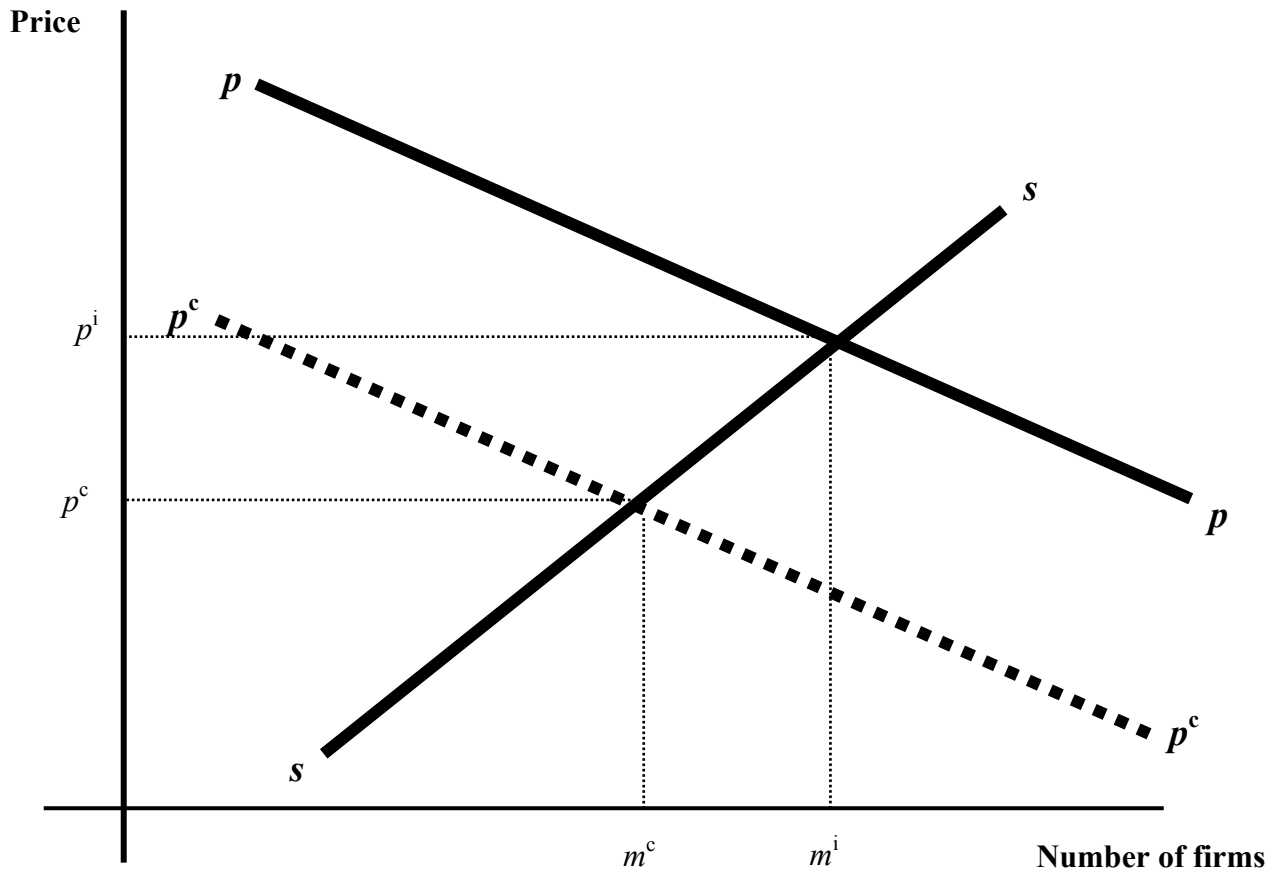# and the rest of the world
# (2004)
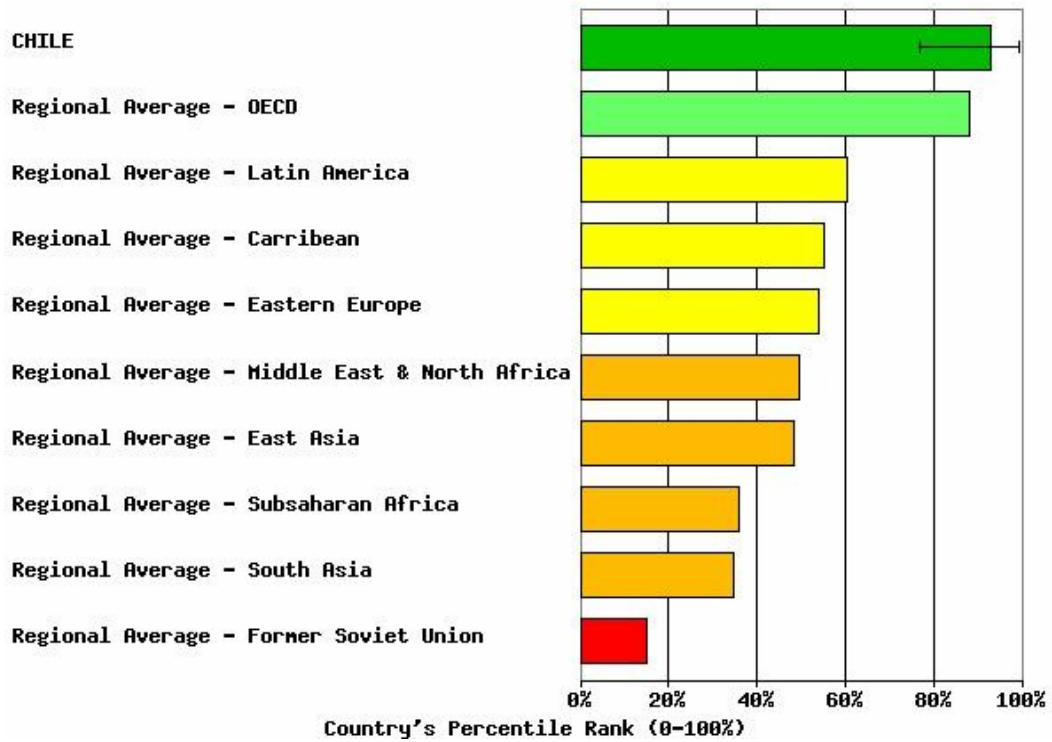


The graph shows Chile's score in the WBI's Index of Regulatory Quality. The black line is a 95% confidence interval around Chile's 94,1% percentile rank.

# Figure 2
## Equilibrium market structure
## in a perfectly competitive industry
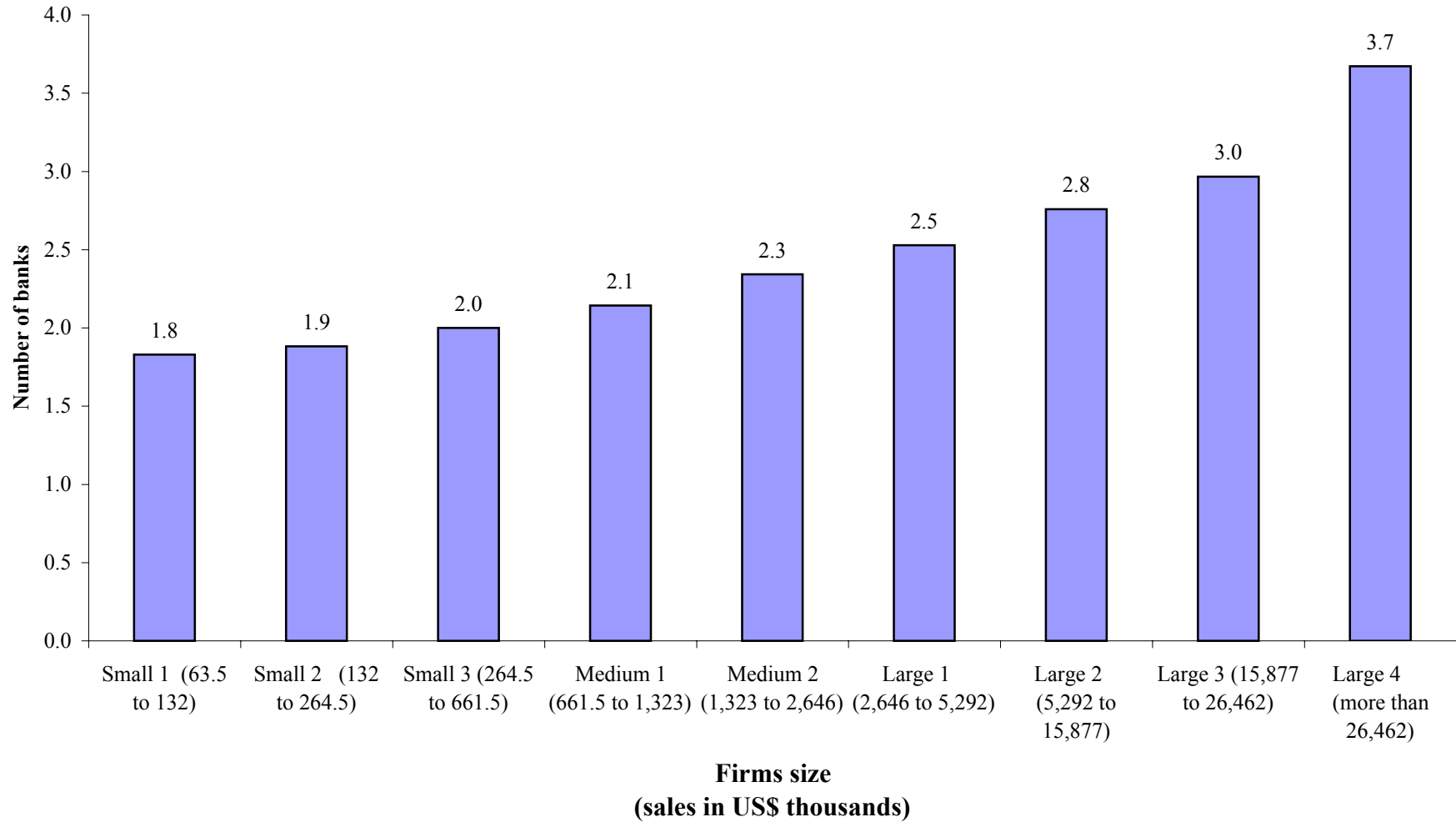
Price

$p$

$p^*$

$s$

$s$

$p$

$m^*$
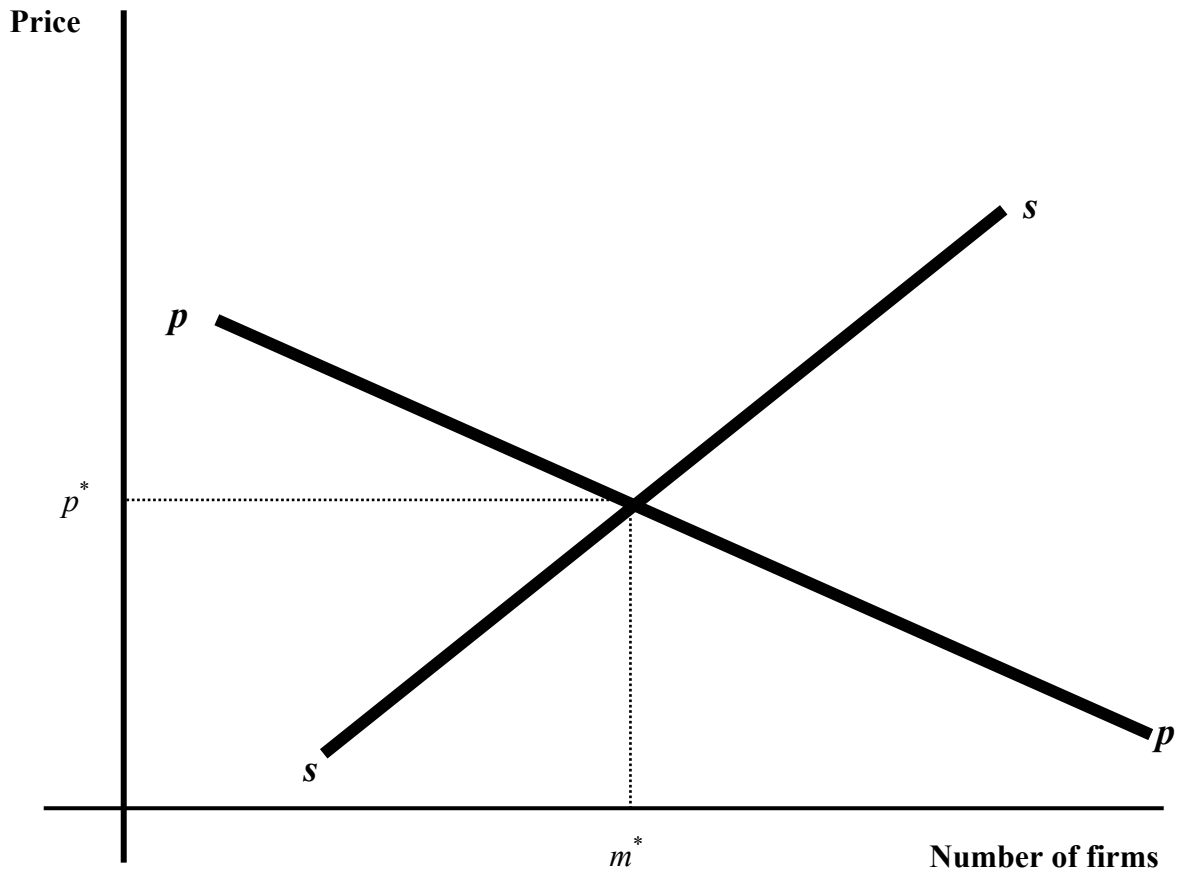
Number of firms

# Figure 3
## Equilibrium market structure
## in an imperfectly competitive industry

**Figure 4**
**Number of buses and tariffs**
**1979-2001**
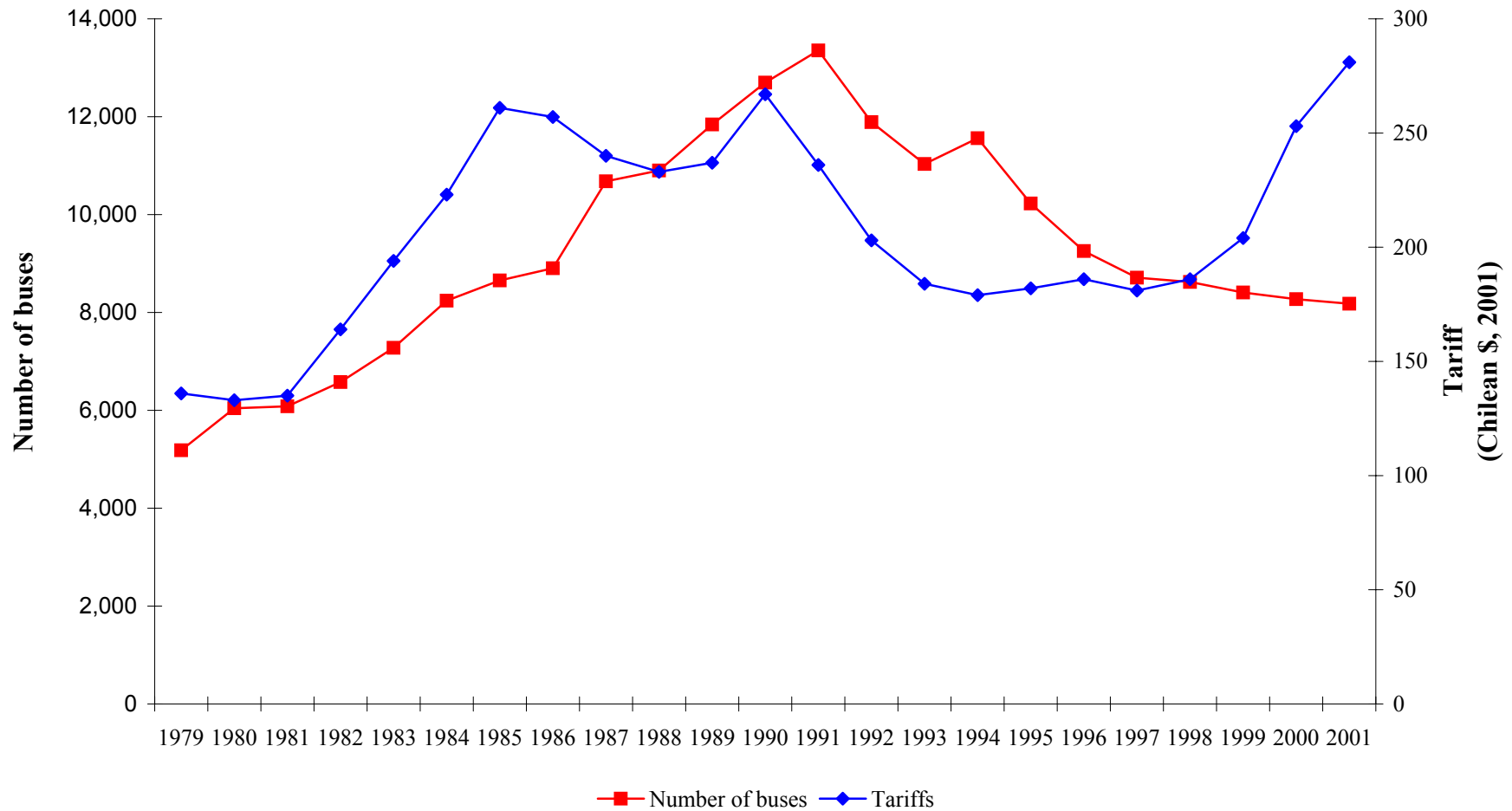
# Figure 5
# Number of banks per firm with debt



**Number of banks** (y-axis)

4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0

| Category | Value |
|---|---|
| Small 1 (63.5 to 132) | 1.8 |
| Small 2 (132 to 264.5) | 1.9 |
| Small 3 (264.5 to 661.5) | 2.0 |
| Medium 1 (661.5 to 1,323) | 2.1 |
| Medium 2 (1,323 to 2,646) | 2.3 |
| Large 1 (2,646 to 5,292) | 2.5 |
| Large 2 (5,292 to 15,877) | 2.8 |
| Large 3 (15,877 to 26,462) | 3.0 |
| Large 4 (more than 26,462) | 3.7 |

**Firms size**
**(sales in US$ thousands)**

# Table 1
# The cost of doing business in Chile

|  | (1)<br>Chile | (2)<br>Best | (3)<br>OECD | (4)<br>World<br>average | (5)<br>Latin<br>America<br>&Caribbean |
|---|---|---|---|---|---|
| **Entry costs** | | | | | |
| Number of procedures | 9 | 2 | 6 | 9.6 | 11 |
| Time (days)[1] | 27 | 2 | 25 | 49.3 | 70 |
| Cost (% of income per capita)[2] | 10.0 | 0 | 8.0 | 78.7 | 60.4 |
| Minimum capital (% of income per capita) | 0 | 0 | 44.1 | 177.3 | 28.9 |
| **Registering property** | | | | | |
| Number of procedures | 6 | 1 | 4 | 6.2 | 6 |
| Time (days)[1] | 31 | 1 | 34 | 81.3 | 56 |
| Cost (% of property value)[2] | 1.4 | 0 | 4.9 | 6.8 | 5.6 |
| **Exit and bankruptcy** | | | | | |
| Time (years) | 5.6 | 0.4 | 1.7 | 3.1 | 3.7 |
| Cost (% of estate) | 18 | 1.0 | 6.8 | 28 | 15.8 |
| Recovery rate (% of debt) | 19.3 | 92.4 | 72.1 | 16.9 | 26.6 |

Source: World Bank (2005).

Notes: (1) Calendar days. (2) Includes only direct costs, not the opportunity cost of the time devoted to complete the procedures.