A Further Step to Deregulation, or the Risk to Destroy the Incumbent: Chile's Local Telephony Market

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Abstract

There is no experience in the world where entry in local telephony has been as significant as in Chile. This paper addresses the question whether local telephony in Chile is competitive enough so as to deregulate rates. We analyze competition among LEX and the degree of substitution between local and mobile telephony. We conclude that asymmetric regulation and in particular, the rigid structure imposed to the regulated LEX has not only negatively affected it, but also compromises the investment in the whole sector. Consequently, deregulation became highly recommended.

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1. Introduction

Privatization and deregulation in the long distance and in the local telephony market (i.e., local exchange carriers, LEX) in Chile was a pioneer effort and has deserved the most remarkable signals of approval.[2] The way deregulation in telecommunications was implemented, particularly in long distance, where vertical integration was allowed and only conduct regulation was in place, seemed risky, but was one of the most innovative policies ever adopted by regulatory agencies. The different decisions and rulings of the Telecommunications Undersecretaryship (Subtel) and the Antitrust Commission have been equally important in facilitating interconnection between the different LEX and in encouraging the growth of mobile telephone services (cellular and PCS). Together, these were decisive in eliminating the de facto monopoly CTC Chile (CTC) had enjoyed for many years. Thus, it was in Chile where the possibility of competition for LEX really started, while in all the world legal and de facto monopolies were still thriving for that same service.

The entry of new LEX and mobile operators in Chile has been, from the world experience, to some extent exceptional. There is no experience in the world where entry has been as strong and significant, despite the fact that the incumbent had invested large amounts not to see their market share drastically reduced. This has been possible basically due to the obligation that incumbents have to grant interconnections to new entrants at terms and rates fixed (regulated) beforehand.

Since no direct policies aimed at favoring new entrants have been brought. Even though for many the idea that the market is still far from being considered competitive (e.g. Newberry, 2000), this evidence contests the ideas set forth by Armstrong, Cowan and Vickers (1994) and Vickers (1998), who suggest that only through subsidies to the entrants this entry would take place.

The question addressed in this paper is whether the local telephony segment in Chile is competitive enough so as to deregulate rates. It is evident that the market has been becoming increasingly competitive, and moreover, that the same deregulation scheme, initially conceived and implemented in a simple and direct manner, became increasingly more complex, reducing the net benefits to be accrued from regulating rates.

The paper has three sections that follow this introduction. The second section analyzes the basic conceptual elements of the regulatory model and the practices in Chile. The third section describes the sector's performance, analyzes the extent of competition in the telephony market and, in particular, the market strength wielded by CTC. The fourth section concludes.

[2] See, for instance, Sigmund (1990), Hachette and Luders (1993); Galal (1992); Paredes (1995), Beca (1991), Gutiérrez and Berg (2000), Levy and Spiller (1996) and Ramamurti (1996).

2. Theory and Practice of Regulation in Chile

Regulation in telecommunications focuses in the telephony segment because it is deemed to have the greatest characteristics of a natural monopoly.[3] Actually, there was consensus by the end of the eighties in considering this segment as a clear case of a natural monopoly. Such a consideration meant, in practice, that each operator should enjoy, either on a legal or on a de facto basis, a regime of exclusivity in its service area. As a consequence, rates should be regulated.

But, the idea that in local telephony segment a natural monopoly exists derives from the economies of scale and the economies of scope associated with the provision of the service. These economies of scale, however, as an outcome of digitalization, have been disappearing because the significant decrease in costs and the modular features of LEX.

In all, the use of multi-pair cables, channeling, posts and other assets whose use is shared, enable operators to reduce costs as a function of the number of subscribers or lines sharing the same infrastructure. This is the foundation for the existence of economies of density, proportional to the number of lines in a given area served by a given LEX. In turn, the existence of economies of density enables some carriers to gear their strategies to very dense segments and thus, even though they do not have a great number of clients, they may compete with no problems with others that are obliged to serve greater areas having heterogeneous densities.

Another type of economy featured in the local telephony segment and which may make entry difficult are the "economies of network." These economies also generate advantages for the carrier that has a greater number of clients, but they are not due to technological reasons of cost, but due to a client effect; that is, because it is more attractive for users to have the possibility to interact with a greater numbers of users.

Technological progress has enabled the industry to down-scale the efficient sizes of LEX and, consequently, the existence of economies of scale became less important. In turn, to prevent economies of network from limiting entry, the regulation in Chile, as in the case of other countries, makes interconnection mandatory and sets its rate. However, as discussed below, freedom of entry, along with regulation, has created important practical problems.

2.1 Regulation in Chile

In 1978, the National Telecommunications Policy, the groundwork of the current legal framework eliminated discriminatory practices in favor of State-owned LEX, despite the existence of a virtual State-owned monopoly. Telecommunications public utilities and sound and television broadcasting would be normally operated through third parties and that the concessions, authorizations, permits and licenses would be granted by the State by objective and clearly established criteria in the law. Telecommunications public utilities would be organized so as to allow a broad participation of all sectors, both State-owned and private, avoiding LEX featuring monopolistic traits. It also made a reference to the rate system, both in and out of the national territory, by establishing that the rates, in principle, would be freely agreed on between service providers and users. However, the regulatory authority reserved the responsibility of

[3] For a discussion of a more recent situation within the industry, see Laffont, Rey and Tirole, 1998a, 1998b; and Armstrong, 2001.

setting rates both for public utilities as well as for services to be provided among the LEX that participate in the provision of the final service.

In 1982 the General Telecommunications Law was enacted, and since then it is the basis of the regulation that governs the sector. In addition, other legal and statutory bodies, such as decisions from the General Audit Office and rulings from the Antitrust Agencies, are also a part of the regulatory framework that governs the sector. The key aspects of the regulation provided in the law are three: i) freedom of entry; ii) compulsory interconnection and iii) rate freedom, with regulation as an exception.

Freedom of entry is provided in the law, as it states that concessions are to be awarded to whoever applies for them. Only in the case in which, due to technological limitations there should not exist a possibility to grant licenses to all applicants, they are to be awarded through a public bidding process. The terms for a concession are provided in the law for a period of 30 years and are renewable for similar periods at the request of the interested party.

Interconnection is compulsory, and its rates, terms and procedures are regulated. Those entering the market must make the necessary installations to reach the point of interconnection (defined by Subtel) with the network of the already existing operator. The Law obliges each carrier to accept the applications for interconnection filed by other carriers, and the terms and procedures to compute the interconnection costs are defined within the same law and in a number of complementary rules. [4] Notwithstanding, for years it was not possible to establish interconnections by the mutual consent of the parties involved and a number of lawsuits ensued. The implementation of the multi-carrier system, the rate decree approved for CTC in 1994 and some provisions enacted by Subtel with regard to the terms and conditions for interconnections, finally solved the problems that, in actual practice made entry difficult or barred it.[5]

Finally, a statutory principle is the establishment of free rates (the first section of article 29 in the general Telecommunications Law), with the exception of interconnections, where the law provides that the rates applied between concession operators for the services provided trough interconnections are subject to rate regulation. The law also establishes that when the Antitrust Commission states that for certain services there do not exist conditions to warrant a free rate system, they have to be set following a very detailed procedure. The steps to be followed provide that the demand for each carrier, area and service is to be estimated. The costs as determined are not those for a real carrier, but for an efficient model carrier in the geographic area determined by the concession.

2.2 Towards a More Complex Regulation

Should the Antitrust Commission determine the service cannot be provided competitively, rates are set for an efficient theoretical LEX in the concession area of the real company. This, in a context of non-exclusive concessions, leads to the possibility of defining two o more different efficient LEX in the same area. This, obviously, lacks any economic sense.

[4] See Spiller and Cardelli (1997), Hausmann and Tardiff (1995) and Bishop et al. (1995). See also Coloma and Herrera (1990), Fontaine and Valdés (1989) for specific aspects of the regulation.
[5] Spiller and Cardelli (1997) perform a very good comparative analysis, focusing on the Chilean case and other small countries with successful experiences.

The option in Chile was to follow an asymmetrical regulation scheme. That is, only regulate the dominant LEX and liberate the remaining ones from regulation.[6] The argument to do so is basically that price regulation for the dominant determines a cap in the market. The entry of new carriers will imply a fall in rates and, therefore, it could well be useless to once again set rates for LEX that enter a market previously served by another one.[7]

This approach, however, has several drawbacks. The main problem that concerns the regulator originates from partial overlapping; if a new entrant applies a lower rate than that set for the incumbent, the latter should lower the rate to compete.[8] This, however, is impracticable if regulation forces a uniform rate in all the area served, as it is the case in Chile.

Cream skimming would be avoided with different rates explained by costs (e.g., associated with density), or having as many areas as cost differences can be identified. There is a number of rates that make cream skimming not be profitable. Such ideas, however, were in actual practice ruled out in the regulation decree ruling the sector since 1999, though specifically applied to CTC, the dominant LEX in Chile.[9]

Leaving the entrant in a more favorable position than the one held by an incumbent is even more problematic when regulation not only involves the level, but also the structure of rates (i.e. composition of fixed and variable charges, hourly discounts, etc.). A new entrant, whose rate structure is free and that competes with a regulated incumbent is afforded evident advantages of flexibility regarding the structure. If we think in the case of Chile, where the growth of the LEX critically depends on the market of second dwellings, summer or recreational housing, which are used sporadically and by new segments (e.g., young people, additional lines, or low income households), structure is critical.

This problem for the incumbent may be simply illustrated considering the structure of a fixed charge and a variable charge (e.g., per minute). Such a structure may, for certain segments, be very inadequate. Intensive Internet users, for instance, would prefer unlimited broadband access for a flat rate, that is commonly offered by non regulated LEX. In the case of vacation homes, a combination of a lower fixed charge and a higher variable charge is convenient for users, who may, as an option, resort to either mobile phone services, non-fixed charges or to unregulated LEX, who have the capacity to offer such rate combinations. On the other hand, for the low-income segments, a mobile telephone services prepayment card does not burden with the fixed monthly charge that in the year 2002 is about 12% the minimum wage, applied regardless of the use of the telephone. This scheme has the additional advantage that it enables users to control

[6] Accordingly, a solution that has been put forth in the 1997 diagnosis was that the rate structure for the regulated operator should be flexible enough to adapt to the cost structure that the carrier in fact does have. It was possible to achieve this by making the criteria for rate determination, in line with the development of "basket price caps" or simply by accepting that he entry is an evidence of competition and thus liberalizing rates.

[7] For an analysis of different regulation aspects, see De Fraja (1997), Lyon and Huang (1995), Hausmann and Sidak (1999) and Bourreau and Dogan (2000).

[8] In order that this possibility may exist, it is not required that the entrant should have a better technology, it suffices only that it have a greater concentration of clients, as in the network business, the economies of density are critical.

[9] In such decree law, CTC proposed the existence of 33 rate areas, but due to politic considerations, the same four areas established in 1994 were kept.

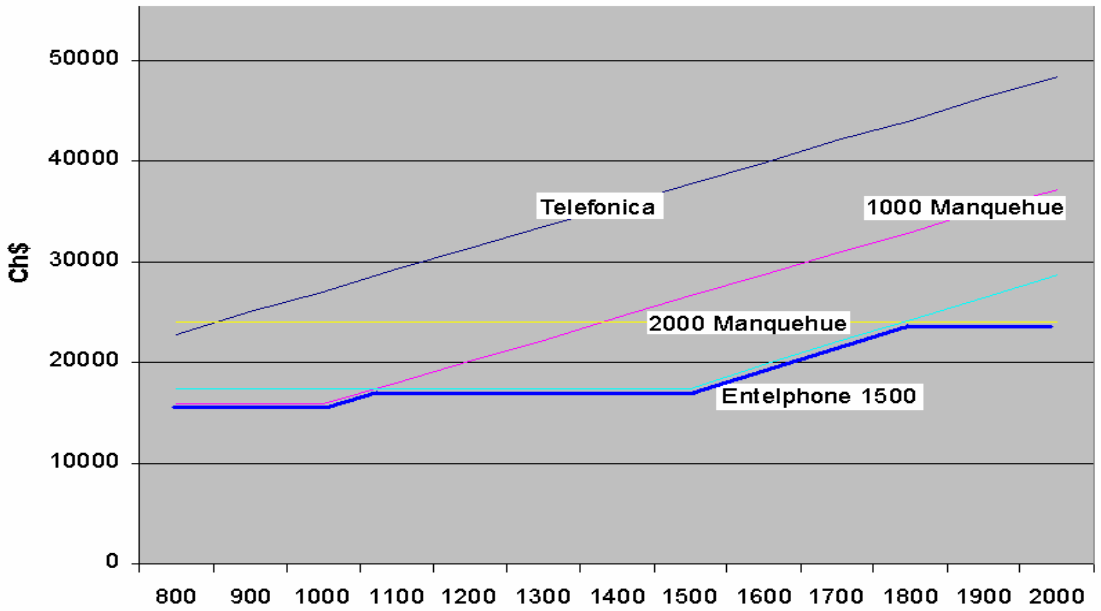
their bill. In sum, regulation does not allow a regulated LEX to adapt to its clients' needs and to replicate the plans offered by its competitors.

There is clear evidence showing the problem for the regulated carrier. A number of plans are offered by the unregulated LEX, that the incumbent cannot replicate. Non regulated LEX offer multiple plans, including fixed charges higher than those set by the regulator, minutes free of charge included in fixed charges, hourly structure different to that determined for CTC, flat rates for all hours, for low hours or for frequent numbers, and discounts in the fixed charges for the purchase of a package of services, different rates within the same rate area, and more expensive hourly charge for low hours.

An example of some of the possibilities included in a number of the plans offered by the LEX, as well as by their rival deregulated mobile carriers are shown in Figure 1, for a high consumption segment. This figure shows that for those traffic levels, there exist in the market cheaper alternative plans offered by one or more carriers than that CTC is forced to apply.[10] Obviously, the existence of flat rates benefit heavy traffic non regulated LEX users and prepaid cards benefit light traffic users.

Figure 1

Telefonica Rates and the Cheapest Alternatives (high traffic segment)



[10] For other levels of consumption, the same occurs; that is, there are alternative plans that are more convenient than those offered by CTC. For more details, see Paredes (2000).

Summing up, the standing rate regulation not only adversely affect CTC due to the level of rates to which it is subject, but mainly because it allows very little flexibility to make offers to groups, which in terms of their essential traits, are different and captured by its competitors. Hence, in competitive contexts, where the segmentation by clients is necessary, the lack of tolls that make it possible to provide "customized" services as unregulated competitors may do, leads to a loss of competitiveness. Adapting the rate structure and offering different plans allows gaining access to new clients which, in contexts where there exist strong economies of density, may make the difference between competing or not successfully.

3. Competition and Performance

3.1 Overall Performance

Table 1 shows two indicators of competition in LEX. In the first place, a strong increase in the number of lines in service, which went up from 550,124 in 1980 to 718,659 in 1985, and reached 3,387,529 in the year 2000. This has allowed for an increase in the penetration of LEX that was practically doubled over the last five years. However, the same table shows a remarkable decrease in rate of growth of LEX that should not be attributable to the stagnation starting by the end of 1988. That fall may be explained by both the level of the rates established for CTC (e.g., Harberger, 2001), and as suggested above, by the rigidity of the regulation affecting only the regulated firm.

Thus, table 1 also shows that the growth of mobile telephony more than offsets the slowdown in the basic telephony. Between 1996 and 2000, they increased by ten times, which makes mobile telephone services more important than local exchange telephone services. Accordingly, measured in terms of total subscribers, CTC's participation has gone down from 95% at the end of the eighties to 62% at the end of the nineties. This has occurred despite the important investment made by CTC.

Regarding rates, they are not easy to determine due to their different components. However, three elements suggest the total price paid by consumers have felt. In the first place, the waiting lists felt from 241,000 in 1992 (20% of the subscribers) to zero in the year 2000. In the second place, no regulated LEX launched offers to attract segments of clients that entail rates that are far below even of those applied to CTC. Finally, regulated rates have been falling. We shall return to the aspect that relates to the rate level.

Table 1

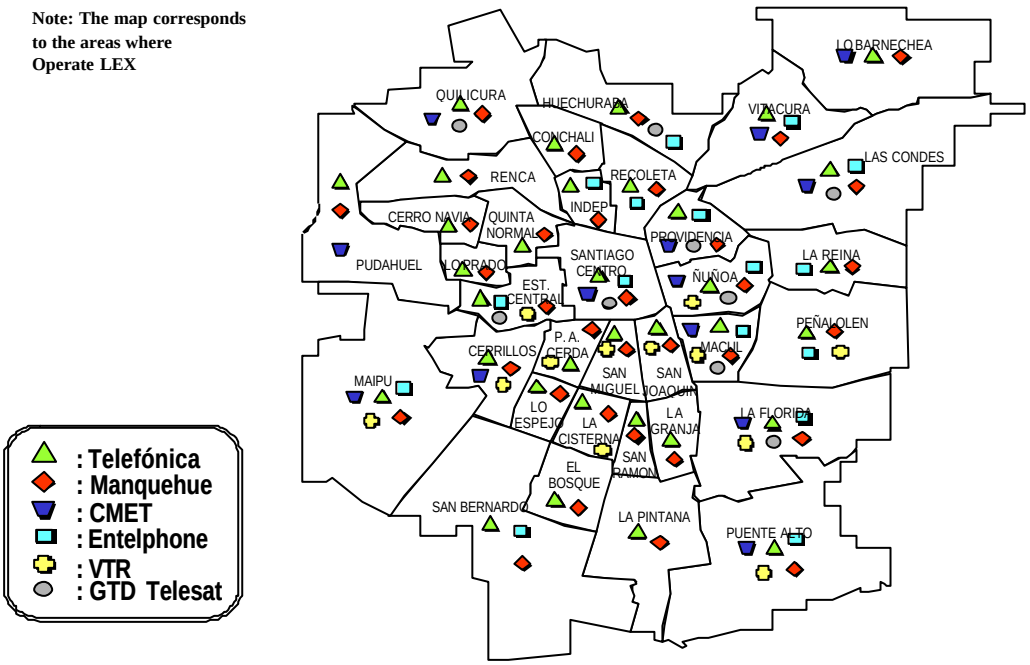
Growth in Telecommunications										
Indicator	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Nº of local telephones (1)	1,056,781	1,283,876	1,250,685	1,634,393	1,891,163	2,264,342	2,693,286	3,046,698	3,108,799	3,387,529
Rate of growth (%) (1)	22.3	21.5	18.4	7.5	15.7	19.7	18.9	13.1	2.0	9.0
Penetration local telephony (1)	7.9	9.4	11	11.6	13.2	15.6	18.3	20.4	20.6	22.1
Nº mobile telephones (1)	36,136	64,438	85,186	115,691	197,314	319,474	409,740	964,248	2,260,687	3,401,525
Rate of growth (%)(1)	159.6	78.3	32.2	35.8	70.6	61.9	28.3	135.3	134.5	50.5
Penetration Mobile Telephony (1)	0.3	0.5	0.6	0.8	1.4	2.2	2.8	6.5	15	22.2
Nº Lines Total	1.092.917	1.348.314	1.605.871	1.750.084	2.088.477	2.583.816	3.103.026	4.010.946	5.39.486	6,789,054
Rate of growth (%) (1)	23,4	23,4	19,1	9,0	19,3	23,7	20,1	29,3	33,9	26.4
Penetration (local + Mobil)	8,2	9,9	11,6	12,4	14,6	17,8	21,1	26,9	35,6	44,3
Rate of growth GDP (%) (2)	8	12.3	7	5.7	10.6	7.4	6.6	3.2	-1.0	4.4
Rate of growth GDP Telecomm (%) (2)	26.7	20	11.6	15.2	21.3	18.9	26.2	20.8	0.65	8.0
Sources: (1) Subtel, Informe de estadísticas básicas del sector de las telecomunicaciones en Chile, Sept. 2000; (2) Banco Central de Chile, Anuario de cuentas nacionales 1999.										

3.2 Competition in Local Telephony

Regulatory advances and technological progress have significantly changed the competitive map not only in Santiago, but also in all the country. Until 1982, the local telephony segment was segmented; CTC was the only operator in all the Regions, except for the Tenth and Eleventh Regions, where the carrier Telefonica del Sur (CNT) and its subsidiary Telcoy were the sole LEX.

Even though the entry of new LEX was never forbidden, only until the beginning of the 90s the entry and expansion of new operators took place, though first marginally and primarily in Santiago and the Fifth Region. Obviously, it was foreseeable that entry should occur initially in these areas, the ones with higher traffic. As from 1995, entry intensified and no longer concentrated in sectors with higher traffic in Santiago and the Fifth Region, covering practically all the primary areas of the country and, even, the rural areas, including sectors with a low level of income. This entry meant that in Santiago and in several other cities in the country, virtually each family has the possibility of choosing at least between two LEX, since there exists an almost complete overlapping of concessions. In the case of Santiago, this is illustrated in Figure 2, where six LEX display great overlapping. Although less intensive, such situation also applies for the rest of the country (Table 2).[11] All these LEX have fully operational networks, covering the entire concession area that was assigned to them. Consequently, these concessions allow them to provide the service, in the event that it is request. This, in practice, is an important source of market contestability or of potential competition.

Figure 2
Overlapping Local Exchange Operators in Santiago



[11] In the case of the Tenth and Eleventh Regions, since 1998 CNT and Telcoy face the competition of CTC. CNT, in turn, has expanded to Temuco and to Concepción and will continue to do so to other cities in Chile.

Table 2

Subscribers per Zone and LEX
(November 2000)

Zona Primaria	CTC	EntelPhone	Telesat	Manquehue Net	CMET	CNT	Telcoy	VTR	Cías Rurales
Arica	31,318								
Iquique	40,160	1,466	2,444					6,487	
Antofagasta	86,015	2,243	899					12,737	
Copiapó	32,752								
La Serena	61,567								407
Ovalle	17,184								
Quillota	32,975				11,040				
Valparaíso	225,446	523	615		19,377			2,329	
Los Andes	31,387				4,763				
San Antonio	26,866								
Santiago	1,557,698	107,606	36,695	74,141	35,002			85,792	1,514
Rancagua	56,866				21,094				
Curicó	37,997				3,065				
Talca	39,577				2,271				1,820
Linares	19,168				833				2,439
Chillán	40,254				6,588				3,455
Concepción	173,036	1,888				377		16,058	
Los Angeles	29,959								2,427
Temuco	76,636		690			24,877			3,731
Valdivia	5,508					33,915			755
Osorno	6,306					30,414			1,034
Pto Montt	8,133					54,839			815
Coyhaique	1,412						14,680		
P. Arenas	39,014								
Total	**2,677,234**	**113,726**	**41,343**	**74,141**	**104,033**	**144,422**	**14,680**	**123,403**	**18,397**

Source: CTC.

3.3 Competition of Mobile Telephone Services

Mobile telephony is the clearest channel through which competition to LEX can be effective. Cellular telephones and PCS are forms of communication that at present substitute in a practically perfect manner the service provided by LEX. Over the last years, Subtel granted several concessions to operate mobile telephony. CTC and Bellsouth obtained concessions in the Fifth and Metropolitan Regions, while Telcom (a related carrier to Entel) and VTR obtained concessions in the rest of the country.[12] In November 1995, Subtel invited to a public bid to award the tree national concessions for mobile telephone services in the PCS system. Four operators of PCS started operating through the entire country: CTC (through its subsidiary Telefónica Móvil), Entel (through its subsidiary Entel PCS), Bellsouth and Smartcom. A second substantial change occurred with the start-up of the Calling Party Pays System. As an outcome, the number of mobile telephones that by 1995 there were less than 200,000 nowadays exceeds the number of local telephony subscribers, as the former have become — for many users, in special from the low income sectors — in a perfect substitute of the latter. Table 3 shows the growth of mobile telephone services.

The high penetration and investment in mobile telephone services was in part possible due to the way in which the band of 1900 MHz was awarded. Although the process has been questioned (e.g., Paredes and Sánchez, 2000), it brought about important investment and rates reductions.[13]

3.3 Competition of Telephony provided through Cable TV Networks

The use of Cable TV networks to offer telephony, in a complementary and simultaneous manner to the Cable TV services, has become an important source of real and potential competition for LEX. In the year 2001, the major Cable TV carriers, VTR and Metropolis Intercom, have deployed two networks that pass through approximately 1.6 and 1.1 million households ("home-passed"), respectively. In all, approximately 25% of these home passed are already clients of Cable TV in Chile. Estimates available show that with an average additional investment of approximately US$ 400 per line, the coaxial cable networks of the Cable TV carriers are adapted to provide telephony, without affecting the television service which continues to be essentially uni-directional. In addition, a special terminal (*set-top box*) in the home of the subscriber, which at present has a cost of about US$ 350 is required. Consequently, with an estimated additional investment of US$ 750, it is possible to provide telephony to a Cable TV subscriber.

[12] This result was possible because at the time concessions were awarded by order of arrival and not through public bidding processes. Besides, strictly speaking, CTC also obtained concessions for cellular telephone services in regions other than the Fifth and Metropolitan Regions, especially in the Tenth and Eleventh Region, because Telcoy did not file any application.

[13] Also, the high interconnection charges for mobile carriers helped to reduce the rates.

Table 3

Mobile Subscribers

Region	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000(e)
I Iquique	0	0	409	1,648	4,166	6,405	8,705	20,228	66,290	93,139
II Antofagasta	0	0	494	1,759	4,396	5,515	10,298	24,284	78,010	103,894
III Copiapó	0	0	144	1,026	894	1,977	2,522	8,538	19,932	33,171
IV La Serena	421	973	1,267	1,659	3,294	6,205	9,303	23,614	63,124	89,126
V Valparaiso	5,393	8,771	11,925	16,205	24,095	39,787	47,203	97,620	219,957	330,604
VI Rancagua	1,159	2,269	4,049	4,334	5,778	12,668	13,199	29,340	66,229	104,739
VII Talca	1,234	2,638	3,779	4,493	6,080	9,537	12,678	31,317	89,192	134,656
VIII Concepción	1,842	4,381	6,468	6,849	10,034	20,382	21,458	64,652	163,310	272,946
IX Temuco	761	2,008	3,262	4,135	4,422	10,648	9,101	21,647	78,534	106,513
X Puerto Montt	1,589	4,000	5,971	6,792	11,107	15,761	20,572	40,581	76,926	82,034
XI Coihaique	0	0	0	0	0	176	750	1,510	7,705	11,945
XII Punta Arenas	0	0	190	311	494	871	2,451	5,752	15,176	29,735
RM Santiago	23,737	39,398	47,228	66,480	122,554	189,542	251,500	595,165	1,316,302	1,907,498
TOTAL	**36,136**	**64,438**	**85,186**	**115,691**	**197,314**	**319,474**	**409,740**	**964,248**	**2,260,687**	**3,300,000**
Rate of growth (%)	**159.6**	**78.3**	**32.2**	**35.8**	**70.6**	**61.9**	**28.3**	**135.3**	**134.5**	**45.9**
Penetration Mobile	**0.3**	**0.5**	**0.6**	**0.8**	**1.4**	**2.2**	**2.8**	**6.5**	**15**	**22.5**

(e) estimated by CTC
Source: Subtel, http://www.subtel.cl

In the rate study for CTC in 1999 the incremental cost of technical investment in a normal telephone network was estimated at US$ 767 by the regulator. The cost per line in technical investment to implement telephony through the Cable TV network is lower, so home passed are potential clients and a clear source of competition, especially in residential sectors in all the cities in the country where Cable TV carriers have concentrated their presence.

The potential competition to CTC by the networks of Cable TV is high. VTR has a third of its “home passed” equipped with bi-directional facilities, and it projects to cover an 80% of the "home passed" of the year 2001, which is equivalent to approximately 1.3 million households. Thus, only at the level of VTR, 1.3 million households will have potential possibility of giving up the CTC telephone service (or for that matter, of any other operator) and subscribe to the service offered by VTR. Moreover, in September 2000, VTR already had 112,000 subscribers to telephony through the cable, which stood for roughly 27% of total subscribers to the Cable TV.

Furthermore, and resorting to the same bi-directional network, VTR has started to offer a broad band Internet service, for a flat rate less than US$ 40. This is another strong threat to traditional telephone carriers who must bill a variable charge for access to Internet. For high traffic clients at least, it is becoming much more convenient to give up the conventional telephony lines and connect to the broad band Internet service provided by VTR or any other carrier offering a similar service for a flat rate.[14]

3.4 Technological Evolution

Apart from the already existing competition between LEX and mobile telephony and that provided through Cable TV and other networks, the sector in Chile follows the technological changes in the world.[15] Among the recent regulatory and technological landmarks that offer a greater possibility of entry and competition to LEX it is worth mentioning the disaggregation of the "subscriber loop," ordered by the Antitrust Commission and effective as from the year 2000.[16] In the same sense, in the year 2000, the regulator enacted the technical provision that assigns the spectrum for Advanced Digital Mobile Telephone Service, also known as the Third Generation Mobile Telephone Services or 3 G. The impact of this width of band assigned to 3G becomes evident if we consider that currently the four operators of mobile telephone services manage a total of 140 MHz, with which they able to provide services to a total market that exceeds 3 million subscribers. In any event, mobile telephone services in 3G will be supported on the transmission of packages, which will mean a performance (number of clients per MHz) that is much higher than that attained by the current mobile telephone services networks.

Table 4 illustrates the competition faced by CTC in terms of different market definition criteria or competitors. Up to the beginnings of the 1990s, on the basis of any market definition CTC's market share was close 95% at a national level, and decreased in the year 2000 to 83.4% when the market considers only LEX and to 48,3% when mobile telephony are part of the market definition. Such decrease in participation is even greater if we consider the substitution potential afforded by telephony provided through Cable TV. All in all, this occurred despite the important increase of CTC subscribersable 4

[14] All these arguments do not consider that it is perfectly possible to make voice communications through Internet, which represents a new threat to traditional telephone carriers.

[15] With WLL up to 6 new operators of local exchange telephone services will be able to operate in Chile and that will provide wireless services, that is, without any need for an external exchange based on cables.

[16] In the year 2001 there exist contracts through which CTC sells parts of its networks to its competitors. This is a real means that facilitates entry and shows that CTC cannot limit entry.

Telephony Market in Chile
(December, 1999)

REGIÓN	Local exchange subscribers in Chile (1) (2)		Mobile Suscribers (1) (2)		Cable TV Suscribers (3)	Total Suscribers	Home Passed (4)	%Telefónica CTC Chile				% TELEFÓNICA (CTC + MÓVIL)		
	Totals	CTC	Totals (M)	CTC		F + M + CATV	(a julio 2000)	F	F + M	F + M + CATV	F+M+ H-P	F + M	F + M + CATV	F + M + H-P
I	73,585	73,299	66,290	27,709	32,744	172,619	121,443	99.6%	52.4%	42%	28%	72.2%	58.5%	38.7%
II	98,329	87,571	78,010	32,491	40,250	216,589	150,527	89.1%	49.7%	40%	27%	68.1%	55.4%	36.7%
III	31,217	31,216	19,932	10,001	8,555	59,704	32,048	100.0%	61.0%	52%	38%	80.6%	69.0%	49.5%
IV	75,942	75,868	63,124	21,166	15,394	154,460	57,297	99.9%	54.6%	49%	39%	69.8%	62.8%	49.4%
V	342,248	307,116	219,957	74,087	111,311	673,516	412,120	89.7%	54.6%	46%	32%	67.8%	56.6%	39.1%
VI	89,925	70,366	66,229	28,036	24,586	180,740	90,997	78.2%	45.1%	39%	28%	63.0%	54.4%	39.8%
VII	83,896	77,342	89,192	31,733	20,029	193,117	74,778	92.2%	44.7%	40%	31%	63.0%	56.5%	44.0%
VIII	254,254	240,136	163,310	47,618	51,031	468,595	189,981	94.4%	57.5%	51%	40%	68.9%	61.4%	47.4%
IX	95,662	76,054	78,534	36,612	18,355	192,551	67,979	79.5%	43.7%	39%	31%	64.7%	58.5%	46.5%
X	137,990	17,335	76,926	29,033	31,878	246,794	118,075	12.6%	8.1%	7%	5%	21.6%	18.8%	13.9%
XI	15,099	1,396	7,705	2,706	4,571	27,375	17,481	9.2%	6.1%	5%	3%	18.0%	15.0%	10.2%
XII	36,245	36,230	15,176	8,462	-	51,422	-	100.0%	70.5%	70%	70%	86.9%	86.9%	86.9%
RM	1,774,407	1,498,468	1,316,302	405,934	290,628	3,381,337	1,376,256	84.4%	48.5%	44%	34%	61.6%	56.3%	42.6%
TOT	3,108,799	2,592,397	2,260,687	755,588	649,332	6,018,818	2,708,980	83.4%	48.3%	43%	32%	62.4%	55.6%	41.4%

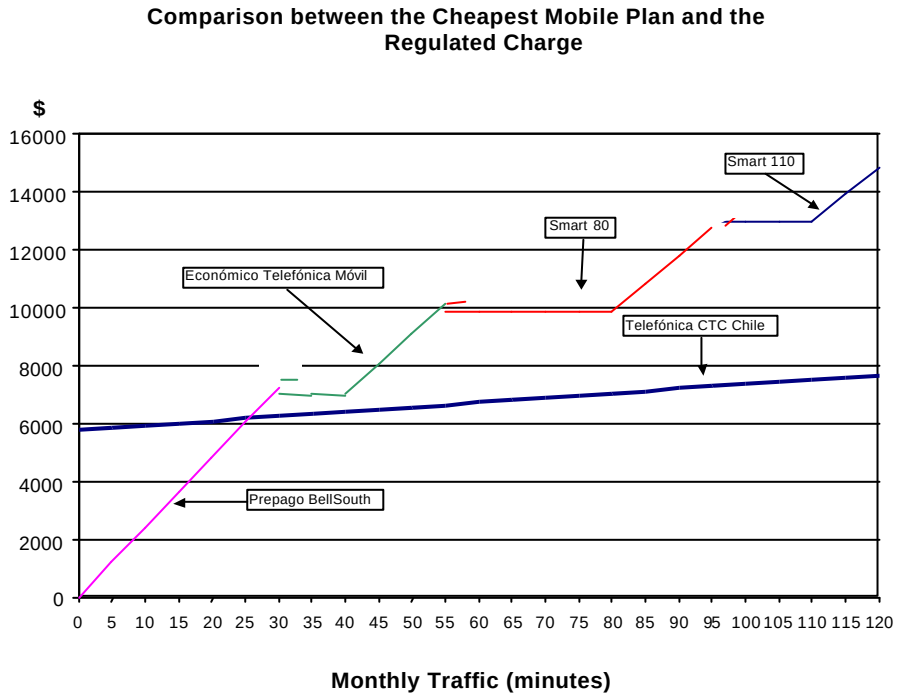
Sources☹1) http://www.subtel.cl; (2) Telefónica CTC Chile; (3) Consejo Nacional de Televisión; (4) Telefónica CTC Chile, For Metrópolis Intercom, and http://www.unitedglobal.com/laChile , for VTR.

3.5 Actual Substitution between LEX and Mobile Telephony

The real degree of substitution between local telephony and that provided through TV cable and between the former and mobile telephony is technically high and can be considered perfect substitutes, as the latter provides at least the same services as LEX. However, from the economic standpoint, the relevant substitution concept, in addition to the technical component, calls for equivalent rates. In other words, if mobile telephony provides the same service than local telephony, the first is not an economic substitute of the latter if the rate is significantly higher.

Figure 4 compares, for different levels of traffic, the cheapest offer of mobile carriers effective in August 2000, with the CTC rate. This difference represents a highest bound, as mobile telephony usually do not charge long distance services and offers rates that are significantly lower for calls between mobile telephones belonging to the same carrier. For low traffic levels, the rate offered by at least a mobile carrier is the lowest. For high traffic levels, this is not so, though the difference does not exceed 65%, which is lower than the valuation that consumers give to the additional services associated with mobility (Valdés, 1994).[17]

Figure 4



[17] Besides mobility, the additional services include a greater control of the account, and the absence of a compulsory fixed charge.

4. Conclusions

Chile's local telephony segment is competitive and highly contestable. A number of suitable technologies to compete efficiently with LEX exist, interconnection changes are clearly defined and entry is possible with very small plants. Thus, even if CTC may maintain a high participation in lines under a narrowly market definition, it is not in a position to exert any monopoly power.

The position which mobile telephone services holds is particularly important, as it not only has become the most dynamic segment, but also the most important one. The existence of four competitors in the mobile segment, which represent important groups of world telecommunications (Telefónica, Telecom Italy, Bellsouth and Endesa Spain), shows that mobile telephony is a clear alternative to local telephony. The existence of plans which are more convenient than those of the rate decree effective for CTC, show that there is a very relevant economic substitution, which would prevent CTC to exert monopoly power.

Rate regulation become more complex over the years and the negative impact of the regulation on investment suggests that their deregulation is necessary. Asymmetric regulation has faced serious methodological and practical problems that prevent regulated operators from competing. The definition of very broad rate areas favors cream skimming. In actual fact, this regulation which is aimed at setting rates for a dominant operator, loses its purpose when leaves the regulated carrier with a rigid rate structure and a position that is hardly suitable to adequately compete. Consequently, a major problem of asymmetrical regulation is that it limits the capacity of the regulated carrier to compete. This may prevent the incumbent from investing, which not only runs counter with the purpose of regulation, but may also lead to compromising the investment and growth of the network.

To the extent that all telecommunications operators in Chile (LEX, mobile and long distance telephone services) heavily depends on CTC network, the lower investment in CTC as in any other operator may delay improvements in the service. In particular, the accesses to Internet should be made primarily through broad band technologies, which are relatively more expensive.

The quite obvious conclusion, in the sense that Chile may give a new step in matters of regulation, this time by liberalizing rates, has faced two objections that are so different in nature, that they are contradictory. The first states that once deregulated, CTC may make an abusive use of the monopolistic power, increasing rates. The second is that after it is deregulated, CTC may reduce rates and hence predate its rivals.

Even if the market were neither contestable nor competitive, or if there were a reasonable doubt as to which is the degree of competition and if it is a good decision to deregulate the rates to the public, deregulation seems a good policy. The risk of a wrong decision is reduced by obliging the regulated carrier to have the offer established in the rate decree in its menu of offers. Specifically, the offer that originates from standing regulation should continue to be applied, regardless of whether the carrier may offer a flat rate or some other menu. In this way, consumers, if jeopardized by a menu that does not satisfy them, will simply not take it.

In the case the risk associates with predatory behavior, which is more debatable from a practical and theoretical standpoint, it could also be solved in a manner that though it retains certain

rigidity for the regulated LEX, it reduces it and gives more leeway to compete. This consists in allowing the regulated LEX to offer menus and discounts only to the extent that they are not better to those offered by its competitors.

In any of these events, deregulating the LEX reduces the probability of harming consumers, and also reduces the risk of destroying an incumbent.

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