

THE MISUSE OF PROFIT MARGINS TO INFER MARKET POWER

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ABSTRACT

Profit margins are not reliable evidence from which to infer market power in anti-trust cases. The use of accounting profit margins has no economic justification in dominance proceedings. Its use can increase the frequency and magnitude of enforcement errors. To illustrate, we examine the case of Telcel, which Mexican regulators declared dominant in mobile telephony on the basis of Telcel's profit margins. We show that, to the contrary, Telcel's margins were actually within the bounds of regularly observed profit margins in the telecommunications industry.

JEL: D02; D43; D61; K21; K23; L13; L44; L51; L96

I. INTRODUCTION

Evaluating a firm's market power is fundamental to scrutinizing anticompetitive conduct. Identifying firms that have substantial market power enables courts and competition authorities to distinguish between conduct that might harm consumers and conduct that cannot. Similarly, remedies in competition law should address only conduct that seriously threatens competition. A court or enforcement agency cannot increase competition by constraining the behavior of a firm lacking market power. To the contrary, doing so will decrease the incentives of both the firm and its rivals to compete vigorously. Moreover, prosecuting a firm lacking market power wastes public resources because the costs that the competition authority incurs necessarily exceed the nonexistent benefits of attacking conduct that cannot reduce competition.

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Courts and competition authorities around the globe typically rely on indirect evidence of market power, such as market share and barriers to entry.¹ In contrast, evidence related to firm characteristics, such as the size of the firm or the firm's profit margins, plays a limited role in evaluating market power.² Significant concerns attend the use of a firm's profit margin to infer its market power.³ Neither economic theory nor empirical evidence indicates a dispositive relationship between profit margins and the possession of market power. The European Court of Justice, for example, has observed that a "low profit margin is not inconsistent with a monopoly situation, just as high profits can be consistent with a situation of effective competition."⁴ Supracompetitive profits may result from a factor other than market power, such as superior management. Furthermore, in industries with high sunk investment, high profit margins are consistent with a dynamically competitive market.⁵ Using a firm's profit data to infer market power might therefore lead a court or competition authority to the wrong conclusion.

It is therefore no surprise that most jurisdictions do *not* consider high profit margins to constitute evidence of market power.⁶ Exceptions to this prevailing practice nonetheless exist. In particular, in 2012 the Comisión Federal de Competencia (Cofeco) in Mexico declared Telcel to be dominant in the national market for mobile telephony by relying upon Telcel's accounting profits to infer market power.⁷ In this article, we explain how Cofeco's use of accounting profit margins to infer market power in its dominance declaration contradicts economic theory. Reliance on Telcel's profit data could produce misleading conclusions about market power. Such errors are not costless because they are likely to harm competition and consumers.⁸ It is more plausible that Telcel's high accounting profits resulted from astute management and marketing, rather than the exercise of market power. Telcel achieves similar profit margins in countries where it is not the largest wireless provider. That fact supports the hypothesis that high profit margins result from good

¹ See, e.g., Organisation For Economic Co-operation and Development (OECD), *Techniques and Evidentiary Issues in Proving Dominance/Monopoly Power* (2006), available at www.oecd.org/competition/abuse/41651328.pdf [hereinafter OECD]; INTERNATIONAL COMPETITION NETWORK, UNILATERAL CONDUCT WORKBOOK (2011).

² See, e.g., Office of Fair Trading, *Assessment of Market Power: Understanding Competition Law* § 6.6 (2004) ("High prices or profits alone are not sufficient proof that an undertaking has market power.").

³ See, e.g., Richard Schmalensee, *Another Look at Market Power*, 95 HARV. L. REV. 1789, 1805 (1982).

⁴ *United Brands Co. v. Commission* 27/76, [1978] E.C.R. 207, 235.

⁵ See, e.g., J. Gregory Sidak & David J. Teece, *Dynamic Competition in Antitrust Law*, 5 J. COMPETITION L. & ECON. 581 (2009).

⁶ See, e.g., OECD, *supra* note 1, at 9 ("Direct evidence of substantial market power, such as a firm's profitability, is not frequently used in single firm conduct cases.").

⁷ COFECO, RESOLUCIÓN DOMINANCIA DC082007_EN 165 (2012) (English translation provided by América Móvil) [hereinafter COFECO DOMINANCE RESOLUTION].

⁸ See Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984).

management and innovation; the same fact is inconsistent with the hypothesis that high margins result from the exercise of market power. The Telcel example shows why profit margins are not a reliable proxy for a firm's market power. Antitrust remedies predicated on such a finding of market power carry an unacceptable risk of harming innovation, competition, and consumers.

In Part II, we explain why profit margins do not reliably indicate market power. First, accounting profits do not indicate whether a firm is earning positive *economic* profits. Only economic profits are possibly relevant and reliable for evaluating market power. Cofeco's reliance on Telcel's accounting profit as evidence to prove market power is therefore unsound. Second, even economic profits are generally not a reliable proxy for market power. Factors unrelated to market power can influence a firm's profit margins, such as a firm's management, cost structure, and exogenous factors beyond the firm's control. In our estimation, Telcel's superior profits appear to result from its entrepreneurial activity in the market for prepaid mobile services, rather than its market power.

In Part III, we explain why using profit margins to evaluate market power increases the probability of both false negative and false positive errors and also increases the magnitude of the social costs associated with erroneous decisions. These costs take the form of reduced investment by both the alleged monopolist and its competitors. The expected costs to Mexican consumers from such errors are likely to negate or exceed any benefit that antitrust enforcers might expect to derive from using profit margins as a shortcut to evaluate market power.

In Part IV, we analyze the EBITDA (earnings before interest, taxes, depreciation, and amortization) margins of other mobile operators to evaluate empirically Cofeco's conclusion that Telcel's above-average EBITDA margins indicate market power. Although Telcel's EBITDA margins are high, they are not unusual compared with América Móvil's brands in other countries, including América Móvil's brands that have market shares below 50 percent. Similarly, at least nine countries have brands other than América Móvil that have EBITDA margins above 50 percent but market shares below 40 percent. The empirical evidence shows that there is no clear relationship between profit margins and market power in these markets for mobile telecommunications services. Consequently, profit margins cannot be a reliable proxy for the existence of substantial and durable market power.

II. ARE PROFIT MARGINS RELEVANT TO EVALUATING MARKET POWER?

Cofeco evaluated Telcel's market power based on its profit margins—more precisely, accounting profits and EBITDA. Accounting profits, however, do not correspond to firm's economic profit and consequently are not relevant to evaluating market power. At the same time, a firm's economic profit is not by itself evidence that the firm possesses market power. Factors unrelated to market power affect a firm's profit margin. Even when economic profits are

high, one must determine whether those profits are scarcity rents, entrepreneurial rents, or monopoly rents. Without making such a determination, one cannot accurately assess whether high profit margins pose an antitrust concern.

A. Accounting Profits Versus Economic Profits

There are important differences between accounting profit and economic profit. Accounting profit is the difference between a firm's revenues and its operating expenses (or explicit costs). Economic profit is the difference between a firm's revenues, operating expenses, and the *opportunity cost* of the inputs used to make the firm's sales.⁹ That is, economic profits account for real costs, not historical or bookkeeping costs, and the cost of using a unit of a resource is the maximum amount that a unit could earn elsewhere.¹⁰ For example, suppose that a firm has capital equipment with a resale value of \$4 million. Say the firm uses that equipment to earn revenues of \$1 million in one year while having spent \$700,000 on inputs. It earned an accounting profit of \$300,000 (equal to \$1 million – \$700,000). However, suppose that the firm could have instead sold its equipment for \$4 million, deposited the money in a savings account, and earned \$400,000 in interest in the same year. The firm thus incurred a negative economic profit (a loss) of \$100,000 (equal to \$1 million – \$700,000 – \$400,000). The firm has a positive accounting profit, but a negative economic profit. (Similarly, as Franklin Fisher and John McGowan explained in their noted article, no relationship exists between the economic rate of return and accounting rates of return.¹¹)

Another measure of economic profits is revenues minus labor, material, and capital cost.¹² It is in the measurement of capital costs that economic and accounting profits differ. Economic profits subtract the *replacement* cost of capital—the forward-looking, long-run cost of buying a capital asset of comparable quality and use.¹³ In contrast, accounting profits use the book value of capital, equal to the historical cost of capital and a measure of depreciation

⁹ See, e.g., PAUL KRUGMAN & ROBIN WELLS, *MICROECONOMICS* 227–28 (Macmillan 2008); JACK HIRSHLEIFER, AMIHAI GLAZER & DAVID HIRSHLEIFER, *PRICE THEORY AND APPLICATIONS: DECISIONS, MARKETS, AND INFORMATION* 160 (Cambridge Univ. Press 2005). Antitrust scholarship has long recognized this understanding of economic profits. See, e.g., ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 97 (Basic Books 1978). “Normal profit” is the difference between the accounting profit and economic profit, which equals the opportunity cost of the resource at issue. See, e.g., DENNIS W. CARLTON & JEFFREY M. PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* 35 (3d ed., Addison-Wesley 2000).

¹⁰ BORK, *supra* note 9, at 97.

¹¹ Franklin M. Fisher & John J. McGowan, *On the Misuse of Accounting Rates of Return to Infer Monopoly Profits*, 73 *AM. ECON. REV.* 82 (1983).

¹² CARLTON & PERLOFF, *supra* note 9, at 239.

¹³ *Id.*

(which also differs when measured using economic versus accounting methods).¹⁴ Because the value of capital changes over time, the replacement cost of capital can diverge greatly from its historical cost. Therefore, accounting profits need not equal economic profits, nor is there any direct relationship between accounting and economic profits.

The distinction between economic and accounting profits is essential, because only economic profits are relevant to evaluating the degree of a firm's market power. First principles of economics teach that, in the long-run equilibrium of a perfectly competitive market with free entry, economic profits—not accounting profits—equal zero.¹⁵ When a firm has market power, it will earn positive economic profits in the long run (that is, *after* all entry has already occurred). Therefore, when using profits to evaluate market power, one must use economic, not accounting profits.

It is nevertheless important to add that even positive economic profits are not sufficient evidence to conclude that a firm has market power. First, even in a perfectly competitive market, *short-run* economic profits can be positive.¹⁶ Second, zero economic profits occur only in *perfectly* competitive markets, but a market need not be perfectly competitive to be workably competitive. So, even if a firm earns positive economic profit, it does not necessarily have the power to set prices unilaterally, without regard to the behavior of its competitors.

B. EBITDA and Economic Profit

EBITDA is one of several accounting proxies for a firm's financial performance or operational profitability.¹⁷ EBITDA represents the firm's revenues minus expenses, not including expenses associated with interest payments, taxes, depreciation, and amortization. EBITDA is most commonly used in lending. For example, a lender may use the ratio of a borrower's debt to its EBITDA—the firm's leverage ratio—to determine how much debt the borrower has in relation to its operational profitability.¹⁸ Lenders also use the interest coverage ratio, equal to EBITDA divided by interest expenses, to

¹⁴ *Id.*

¹⁵ *See, e.g., id.* at 237.

¹⁶ *See id.*; Yale Brozen, *Bain's Concentration and Rates of Return Revisited*, 14 J.L. & ECON. 351 (1971).

¹⁷ *See, e.g.,* HERBERT B. MAYO, INVESTMENT: AN INTRODUCTION 433 (Cengage Learning 2007); BELVERD E. NEEDLES, MARIAN POWERS & SUSAN V. CROSSON, PRINCIPLES OF ACCOUNTING 673 (Cengage Learning 2010); EUGENE F. BRIGHAM & JOEL F. HOUSTON, FUNDAMENTALS OF FINANCIAL MANAGEMENT 74 (Cengage Learning 2007). Other measures of a firm's cash flows include EBIT and EBITA.

¹⁸ *See, e.g.,* JOSHUA ROSENBAUM & JOSHUA PEARL, INVESTMENT BANKING: VALUATION, LEVERAGE BUYOUTS, AND MERGERS AND ACQUISITIONS 38 (John Wiley & Sons 2009).

gauge the borrower's ability to meet its loan obligations using profits and cash flow designated for working and replacement capital.¹⁹

Cofeco used EBITDA to assess Telcel's profitability and compare Telcel's profitability with the profitability of its competitors on the rationale that "EBITDA is a standard indicator utilized to show the financial results of a business."²⁰ According to Cofeco, because Telcel's EBITDA as a percentage of its income (Telcel's EBITDA margin) in 2007 exceeded the EBITDA margins of its competitors and of operators in other OECD countries, Telcel's EBITDA supported a finding of dominance.²¹

As we explained above, however, accounting profits, including EBITDA, do not measure economic profits and therefore are not useful in evaluating market power. EBITDA might be particularly misleading in capital-intensive industries such as telecommunications.²² América Móvil told its shareholders that depreciation is "a significant element of [its] costs and expenses, amounting in 2011 to Ps. 82.6 billion, or 16.2% of [its] operating costs and expenses."²³ Network operators' interest expenses will also be high relative to less capital-intensive firms due to greater debt financing of large infrastructure investments. Without subtracting out interest, depreciation, and amortization, EBITDA exaggerates a firm's profitability and long-run performance.

EBITDA is also not useful in comparing performance across firms in capital-intensive industries. According to Cofeco, in 2007, Telcel's EBITDA margin, at 53.3 percent, was "high compared with the rest of the operators in Mexico as well as those of operators in other countries."²⁴ However, the EBITDA margin varies from year to year for each operator. Some operators can experience a lag between the time that they make investments and the time that those investments begin to yield positive returns. Fisher and McGowan observe that

¹⁹ See, e.g., TIM KOLLER, MARC GOEDHART & DAVID WESSELS, MCKINSEY & CO. INC. VALUATION: MEASURING AND MANAGING THE VALUE OF COMPANIES 180 (Jon Wiley & Sons 2010); BRIGHAM & HOUSTON, *supra* note 17, at 111.

²⁰ COFECO DOMINANCE RESOLUTION, *supra* note 7, at 165 (also explaining that EBITDA "is an indicator commonly utilized by various international organizations and institutions that evaluate performance in the mobile telecommunications sector at the international level, as well as in financial reports that such companies are accustomed to report to the stock markets in which they participate").

²¹ *Id.* at 213.

²² See, e.g., Franklin M. Fisher, *Economic Analysis and "Bright-Line" Tests*, 4 J. COMPETITION L. & ECON. 129, 139 (2008) ("A . . . fatal misconception is that accounting rates of return can be used to measure economic rates of return . . . Except in cases, such as trucks, where the capital equipment involved can be bought and sold on a thick second-hand market, accounting rates of return bear almost no necessary relation to true economic rates of return. This has been known for more than 20 years.")

²³ América Móvil, Annual Report 86 (Form 20-F) (Apr. 30, 2012).

²⁴ COFECO DOMINANCE RESOLUTION, *supra* note 7, at 212.

[t]here is every reason to suppose that firms differ in the time shapes of their investments, and that a particular firm's investments will also differ among themselves. Thus, comparisons of accounting rates of returns to make inferences about monopoly profits is a baseless procedure.²⁵

Comparing firms' EBITDA margins in a snapshot of time does not provide information on the ability of any operator to sustain a price increase profitably in the long run. In other words, EBITDA margins do not provide useful information in the evaluation of the firm's market power.

C. Profit Margins and Market Power

Only economic profit, not accounting profit, might be a valid indicator of a firm's market power. For several reasons, however, data about economic profit are rarely used to examine the firm's market position. First, data about a firm's economic profit—such as the firm's profit margin—are difficult to obtain. Second, even if profit margin data were available, they are not necessarily positively correlated with the firm's market power.

1. Factors Other Than Market Power Determine a Firm's Profit Margins

A firm's profit margin does not depend only on a firm's market power. Effective management, recovery of sunk and fixed costs, and macroeconomic factors are only several examples of other variables that affect a firm's profit margin.

a. Management

A firm's management affects its profit margins. A firm whose management wastes resources on unproductive uses will lower the firm's margins by raising costs. A firm can also pursue unsuccessful marketing strategies, resulting in low revenues, which also lowers profit margins. A firm can thus have market power but have low margins due to poor management. In contrast, when management lowers costs by implementing efficiency-enhancing measures or increases revenues by marketing to untapped, high-yield markets, it increases the firm's profit margins. An efficient management can thus substantially increase the firm's profit although the market position of the firm remains stable. It is therefore possible that Telcel's high profit margins indicate superior management rather than market power.

A firm's profit also changes over time depending on how resources are managed. Consider the case of an operator that reduces its expenditure in network maintenance and marketing. This operator would earn high profits in the short run, as its subscriber revenue would not fall as quickly as its costs. However, as postpaid subscriptions expire or as prepaid subscribers purchase new handsets, the company would likely lose market share. Despite this

²⁵ Fisher & McGowan, *supra* note 11, at 89.

operator's high profit margin, its market power is likely to decrease in the long run. A parallel story can be told for a company that is spending significantly on marketing to develop a strong brand. It will have low profits in the short run, but potentially high market power in the long run.²⁶ It is thus evident that profit margins and market power are not necessarily positively correlated.

b. Recovery of Sunk Costs and Changes in Fixed Costs

Prices exceeding marginal costs are common in industries with low marginal costs and high sunk costs, such as telecommunications. A mobile operator's willingness to make continued investments in its network depends on its ability to recover its sunk costs. Because the marginal costs of providing mobile services are low, the firm needs to price its products above marginal cost.²⁷ A positive profit margin does not, however, indicate market power: rather, it is a function of the firm's sunk investments. High price-cost margins are necessary to induce investment. They are a perfectly rational business strategy even in a highly competitive market.

With respect to fixed costs, a firm's profit margin will rise as its average fixed costs fall. Changes in fixed costs, rather than market power, could explain Telcel's increasing profit margin up to 2007.²⁸ The cost of Telcel's inputs includes *both* marginal costs *and* fixed costs—including infrastructure maintenance, upgrades, and expansion, as well as advertising and other subscriber-acquisition costs. One would expect that following a mobile operator's entry, its fixed costs are high because it must build its network and establish its brand. The operator's high fixed costs lower its profit margin at the time of entry.

As the network matures, though, the operator can lower its fixed costs—for instance, because the operator has established its brand name and can spend less on advertising. With fixed costs falling over time, average fixed costs will fall, even holding the number of subscribers constant. The operator's average fixed costs will also fall if it gains subscribers but does not increase fixed costs. Due to its falling average fixed costs over time, the operator will experience increasing profit margins over time, unrelated to market power.

c. External Factors Can Cause Profit Margins to Vary

A firm's profit margin might also vary due to external factors that are beyond its control. Macroeconomic conditions, such as a change in the currency strength, are a good example. In the second quarter of 2012, América Móvil reported a decline in earnings, partially a result of the peso's having fallen 4.1

²⁶ See, e.g., Brozen, *supra* note 16 (showing that the relationship between profits and market concentration depends on whether the industries studied are in long-run equilibrium).

²⁷ William J. Baumol & David F. Bradford, *Optimal Departures from Marginal Cost Pricing*, 60 AM. ECON. REV. 265 (1970) ("Generally, prices which deviate in a systematic manner from marginal costs will be required for an optimal allocation of resources, even in the absence of externalities.").

²⁸ COFECO DOMINANCE RESOLUTION, *supra* note 7, at 213.

percent against the dollar in that quarter.²⁹ If the peso were suddenly to appreciate, one would observe a rise in Telcel's profit margin. In addition, in this case, an increase in profit margin does not indicate an increase in market power, but rather it is attributable to external factors.

Another external variable that affects a firm's profit margin is the behavior of its competitors. If Telcel's competitors choose not to compete aggressively for new consumers or for Telcel's existing subscribers, Telcel will maintain high profit margins. A competitor may choose not to compete aggressively if it believes that it will maximize its profits by maintaining limited market shares. For example, Nextel reports to its shareholders that it limits its market to "targeted," "higher value" customers, such as business customers.³⁰ If telecom companies choose not to compete, Telcel can enjoy high profit margins without having durable market power.

2. Firms with Market Power Can Have Low Profit Margins

It is clear from the above that there is no direct relationship between the firm's profit margins and the existence of market power.³¹ A firm can have market power and still have low profit margins. Even if a monopolist is charging the monopoly price, it will have a low profit margin if its costs are abnormally high. A poorly managed monopolist may have high costs due to inefficient practices. Entry barriers could prevent the entry of more efficient competitors that could under-price the monopolist;³² thus, the monopolist could maintain market power and low profit margins over the long run. This point underscores the futility of using profit margins to measure market power.

It is not unheard of for firms with market power to have low profit margins. In the United States, since 2008, Sirius XM has been the only provider of satellite digital radio services (SDARS) in the United States. However, in 2009, 2010, and 2011, Sirius XM reported profit margins of -14.2 percent, 1.5 percent, and 14.2 percent.³³ The U.S. Postal Service has a statutory monopoly over mail delivery, yet it incurred net losses in 2009, 2010, and 2011, with profit margins of -7.5 percent, -12.5 percent, and -5.5 percent, respectively.³⁴

²⁹ Brendan Case & Crayton Harrison, *America Movil Second-Quarter Profit Slumps 46% on Peso*, BLOOMBERG (July 27, 2012, 4:23 PM), <http://www.bloomberg.com/news/2012-07-26/america-movil-second-quarter-profit-slumps-46-on-peso.html>.

³⁰ NII Holdings, Inc., Annual Report 3 (Form 10-K) (filed Feb. 23, 2012) [hereinafter NII Holdings, Inc. 2011 Annual Report].

³¹ See, e.g., GEORGE J. STIGLER, *CAPITAL AND THE RATES OF RETURN IN MANUFACTURING INDUSTRIES* 55 (1963) ("No one would argue that the existence of the average rate of return in an industry proved that the industry is competitive.").

³² See, e.g., CARLTON & PERLOFF, *supra* note 9, at 250; Michael A. Salinger, *Tobin's q, Unionization, and the Concentration-Profits Relationship*, 15 RAND J. ECON. 159 (1984).

³³ Sirius XM Radio Inc., Annual Report 26 (Form 10-K) (Feb. 9, 2012).

³⁴ U.S. POSTAL SERVICE, 2011 ANNUAL REPORT TO CONGRESS AND COMPREHENSIVE STATEMENT ON POSTAL OPERATIONS 2 (2011), available at <http://about.usps.com/publications/annual-report-comprehensive-statement-2011/annual-report-comprehensive-statement-2011.pdf>.

The U.S. Postal Service has cited its “inflexible” business model³⁵ and high costs as reasons for its losses.³⁶

The profit margins of Sirius XM and the U.S. Postal Service are low. However, findings of non-dominance for Sirius XM and the U.S. Postal Service, based solely on their low profit margins, would not withstand even brief scrutiny. A finding of dominance for a firm based on its high profit margins is equally questionable.

3. *Use of Profit Margins Can Bias Inferences of Market Power When High Price-Cost Margins Exist Alongside Demand Complementarities*

The relevant question that needs to be answered in evaluating market power is whether the firm can unilaterally set prices, or profitably maintain a price increase. In the case of Telcel, two traits discipline its prices: (1) high price-cost margins, and (2) demand complementarities. First, for firms with high fixed costs and low variable costs, such as Telcel, a large share of the cost of providing a service is common cost. Therefore, the price-cost margin of each of the firm’s products will be high. Consequently, when the firm raises its price by an amount that causes only a small reduction in sales, it nonetheless incurs a large loss, because its lost revenue will exceed its avoided costs.³⁷ The avoided costs are small because much of the cost of providing the service is common cost and is thus not avoided. Therefore, even though the firm’s profit margin is high, it has little, if any, ability to sustain a profitable price increase.

Second, in instances where a firm sells complementary products, analyzing only a single product to infer market power is inadequate. Telcel’s incentive to raise prices is reduced because it sells complementary products, such as voice service, data service, and handsets. A price increase of one product will cause the firm to lose customers in the complementary products.³⁸ For example, if Telcel were to raise the price of its voice plans, it would reduce demand for its handsets. The forgone profits from lost handset sales could render the price increase on voice plans unprofitable. Failure to account for these losses would overstate Telcel’s market power.³⁹

Even for a single product, Telcel experiences demand complementarity in terms of network effects. The value of a subscription to Telcel’s network

³⁵ *Id.* at 6.

³⁶ *Id.* at 4 (describing that to reduce losses, the Postal Service has undertaken “actions to improve its long-term cost structure and advanced a series of proposals to improve its business model”).

³⁷ Dennis Weisman, *When Can Regulation Defer to Competition for Constraining Market Power?: Complements and Critical Elasticities*, 2 J. COMPETITION L. & ECON. 101, 102 (2006) (“Price increases that produce even small reductions in demand can generate large losses in contribution to joint and common costs because the firm’s revenues decline much more than the costs it can avoid.”).

³⁸ See Timothy J. Tardiff & Dennis L. Weisman, *The Dominant Firm Revisited*, 5 J. COMPETITION L. & ECON. 517, 524 (2009); Dennis Weisman, *Assessing Market Power: The Trade-off Between Market Concentration and Multi-Market Participation*, 1 J. COMPETITION L. & ECON. 339 (2005).

³⁹ See Tardiff & Weisman, *supra* note 38, at 523.

increases for a given consumer as the size of the network grows. Put differently, as Telcel gains more subscribers, a consumer's willingness to pay for a Telcel subscription rises. Because Telcel's competitors are also subject to network effects, the amount by which Telcel can increase its prices before a critical share of its customers switch to a competing network is less than in a market without network effects.

Finally, the *combined* effect of high price-cost margins and demand complementarities further diminishes Telcel's market power.⁴⁰ For example, Telcel offers voice and data plans, which are complementary. Both voice and data services have high price-cost margins. An increase in voice prices will reduce demand for data service. Further, due to the high price-cost margin of data service, that reduction in demand will impose a large loss on Telcel. Consequently, Telcel has little incentive to raise its voice prices.

In short, Telcel's high profit margins combined with demand complementarities in its services constrain its ability to raise prices. It is therefore not surprising that one observes both high profit margins for Telcel and mobile prices in Mexico that are some of the lowest in Latin America.⁴¹

D. Are the Firm's Rents the Product of Entrepreneurial Activity?

Profit margins consist of rents. To determine whether one is observing a firm with market power, one must analyze the nature of rents. There are different types of rents: scarcity rents, entrepreneurial rents, and monopoly rents.⁴² Only monopoly rent raises antitrust concerns. Based on Telcel's innovative product offerings and aggressive marketing strategies to marginal consumers, it appears that Telcel's rents are entrepreneurial rents. They should hence not trigger antitrust concerns.

1. The Nature of a Firm's Rents Can Identify Whether Profits Arise from Market Power or from Competition

A firm earns scarcity rents when its output is below the "competitive" level due to limited availability of the scarce inputs underpinning the firm's competitive advantage.⁴³ A firm temporarily constrained by its stock of scarce resources

⁴⁰ See Weisman, *supra* note 37.

⁴¹ As of the second quarter of 2012, wireless revenues per minute in Mexico were lower than those in Argentina, Brazil, Chile, Colombia, and Peru. BANK OF AMERICA—MERRILL LYNCH, GLOBAL WIRELESS MATRIX 2Q Y2012, tbl.2 (July 12, 2012) [hereinafter 2Q Y2012 GLOBAL WIRELESS MATRIX].

⁴² Scarcity, entrepreneurial, and monopoly rents are also known as Ricardian, Schumpeterian, and Porterian rents, respectively. The discussion of rents draws from David J. Teece & Mary Coleman, *The Meaning of Monopoly: Antitrust Analysis in High-Technology Industries*, 43 ANTITRUST BULL. 801, 818–23 (1998); Sidak & Teece, *supra* note 5; Comments of J. Gregory Sidak & David J. Teece, Horizontal Merger Guidelines Review Project, No. P092900 (Fed. Trade Comm'n 2009).

⁴³ See Teece & Coleman, *supra* note 42, at 819.

may have both a high market share and high profit margins, but this profit does not imply that the firm is restricting its output anticompetitively. It might be that the innovator is simply collecting sufficient scarcity rents to cover its initial investment. These rents encourage other innovators and entrepreneurs to invest in the relevant market.

Entrepreneurial rents are a product of a firm's "product and process innovations and/or unique business routines (knowledge assets)."⁴⁴ The owner of the unique knowledge assets often enjoys a temporary period of excess returns. However, competitors eventually imitate those assets. When competitors adopt the same practice that a competition authority is investigating, that practice is not likely to be anticompetitive.⁴⁵ The firm's superior profits are the return to innovation, necessary to induce investment by the firm and its competitors. Such rents are therefore desirable, and their existence should not be a premise that the innovator has market power.

Unlike scarcity and entrepreneurial rents, the sole type of rent that ought to motivate antitrust concern is monopoly rent. These rents stem from the naked exercise of market power—for example, exclusionary conduct lacking efficiency justifications.⁴⁶

2. *Are Telcel's Profits Entrepreneurial Rents?*

The sources of Telcel's high profit margins seem best described as entrepreneurial—not monopolistic—rents. Telcel was able to obtain high profit margins by its foresight and efficiency.⁴⁷ In particular, Telcel aggressively marketed its prepaid services to rural and low-income consumers in Mexico, who were (and still are) neglected by its competitors.

Telcel obtained a concession to provide mobile service in Mexico City in 1984.⁴⁸ By 1991, Telcel had obtained concessions for all of Mexico's nine

⁴⁴ *Id.* at 820.

⁴⁵ See, e.g., *Rothery Storage & Van Co. v. Atlas Van Lines, Inc.*, 792 F.2d 210, 227 (D.C. Cir. 1986) ("That the challenged practice . . . 'may have redeeming competitive virtues' is shown by the fact that all [competitors] use the practice" (quoting *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1, 13 (1979))).

⁴⁶ See Teece & Coleman, *supra* note 42, at 822; Michael Porter, *The Contribution of Industrial Organization to Strategic Management*, 6 ACAD. MGMT. REV. 612 (1981). Even when a joint venture or contract restrains competition, it may not be anticompetitive as a matter of antitrust law if it creates efficiencies that increase consumer welfare. See *Rothery*, 792 F.2d at 224 ("The challenged agreements are ancillary in that they enhance the efficiency of that union.").

⁴⁷ See *United States v. Alum. Co. of Am.*, 148 F.2d 416, 430 (2d Cir. 1945) ("A single producer may be the survivor out of a group of active competitors, merely by virtue of his superior skill, foresight and industry. In such cases . . . [t]he successful competitor, having been urged to compete, must not be turned upon when he wins."); PHILLIP E. AREEDA & DONALD F. TURNER, 3 ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶ 626a-b (Aspen 1978).

⁴⁸ History, TELCEL, http://www.telcel.com/portal/footer/nuestra_empresa/historia.html?mid=4910.

regions, allowing it to offer nationwide mobile service.⁴⁹ It offered new payment services and pursued marketing strategies that expanded its subscriber base quickly. Telcel was the first mobile operator in Mexico to market extensively to prepaid users rather than postpaid users.⁵⁰ It introduced prepaid phone cards, branded “Amigo” kits or cards, in 1996.⁵¹ Telcel promoted those cards heavily, even by “putting vendors in yellow jumpsuits at major road intersections for added convenience.”⁵² From 1995 to 1996 alone, Telcel gained 257,662 customers, an increase of 64.6 percent.⁵³

By offering prepaid plans, Telcel attracted Mexico’s middle- and low-income customers, who had previously been priced out of the market. Because the share of lower-income consumers in Mexico is relatively high,⁵⁴ it is no surprise that attracting Mexico’s lower-income consumers resulted in Telcel’s acquisition and maintenance of a high share of subscribers.

Telcel also marketed new products to geographical areas that its competitors had not entered. In October 2002, Telcel introduced its GSM network, allowing coverage of an additional 71 cities in Mexico where Telcel was the sole provider of GSM services at the time.⁵⁵ Over half a million customers had signed up for the new GSM service by the year’s end.⁵⁶

In contrast, Telcel’s competitors were less aggressive in targeting the prepaid market and rural consumers. By the end of 1997, Iusacell had offered prepaid plans in only two coverage regions, and only 50 percent of its customers were prepaid.⁵⁷ Nextel explicitly tells its shareholders that one of its core strategic principles is “*focusing on higher value customer segments* such as segments that comprise the small, medium and large business markets, as well as certain targeted consumer market segments that value our differentiated wireless communications services.”⁵⁸ Likewise, Telefónica tells its shareholders that it has pursued the same strategy, including a corporate “focus on capturing high-value customers.”⁵⁹

⁴⁹ *Id.*

⁵⁰ Felix Salmon, *Local Operators Drive the Wireless Revolution Forward*, 395 EUROMONEY 88, 89 (2002).

⁵¹ GERARD GOGGIN, *GLOBAL MOBILE MEDIA 23* (Taylor & Francis 2010).

⁵² John Moody, *Mexican Cellphone Provider Expanding in Latin America*, N.Y. TIMES (Sept. 11, 2003), <http://www.nytimes.com/2003/09/11/business/mexican-cellphone-provider-expanding-in-latin-america.html?pagewanted=2>.

⁵³ TELÉFONOS DE MÉXICO, 1996 INFORME ANUAL [ANNUAL REPORT] 3 (1996).

⁵⁴ Among OECD countries, Mexico has the highest percentage of population with an income below 40 percent of the current median income. The same result holds if the threshold is 50 percent or 60 percent of the current median income. *Statistics, Income Distribution—Poverty*, OECD, <http://stats.oecd.org/Index.aspx?DataSetCode=POVERTY>.

⁵⁵ AMÉRICA MÓVIL, S.A. DE C.V., 2002 ANNUAL REPORT 15, 19 (2002).

⁵⁶ *Id.*

⁵⁷ Grupo Iusacell, S.A. de C.V., Annual Report 14 (Form 20-F) (1998).

⁵⁸ NII Holdings, Inc. 2011 Annual Report, *supra* note 30, at 3.

⁵⁹ TELEFÓNICA, S.A., JANUARY-DECEMBER 2011 RESULTS 9 (2012).

Telcel's competitors, in other words, chose not to compete for rural and lower-income customers. Therefore, Telcel's profits from capturing that part of the market resulted not from market power but from a valid business strategy. Telcel's success should not trigger antitrust concern. The relevant counterfactual to Telcel's so-called dominance is *no* mobile service in areas where Telcel is the sole provider.

Telcel's profit margins exemplify entrepreneurial rents. By offering a new product to a large group of consumers, Telcel quickly acquired a large number of subscribers and associated high profits. Due to slow imitation from its competitors, Telcel has been able to sustain those entrepreneurial rents. The profit margins that have served as a basis for Cofeco's dominance finding do not result from market power.

III. THE INCREASED PROBABILITY OF ENFORCEMENT ERRORS

Relying on profit margins to infer market power is likely to increase the number of erroneous decisions. Court and competition authorities might deem a company a monopolist when it is not and thus condemn a legitimate business practice as anticompetitive. The result would be a "false positive" error. Alternatively, they might conclude that a company lacks market power and incorrectly condone a practice that is anticompetitive, committing a "false negative" error. Each kind of error produces different social costs. Enforcement of competition law must therefore "be guided by basic economic analysis, otherwise the law acts blindly upon forces it does not understand and produces results it does not intend."⁶⁰

A. False Negatives When Firms with Significant Market Power Are Poorly Managed

False negatives occur when the competition authority permits conduct that harms competition.⁶¹ The cost to society is the harm to competition that results from the conduct in question. However, the welfare costs of false negatives will decrease with time, given that monopoly is inherently self-destructive.⁶² Monopoly prices will attract potential entrants and will correct the negative welfare effect. Competition law can accelerate that process.

With respect to evaluation of market power, a false negative would consist of a finding of non-dominance for a firm that truly occupies a dominant position. By relying on profit margins, a competition authority could erroneously deem a firm with market power but with a low profit margin to be nondominant.

⁶⁰ BORK, *supra* note 9, at 91.

⁶¹ See Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984); Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMPETITION L. & ECON. 153, 158–59 (2010).

⁶² Easterbrook, *supra* note 61, at 2.

Because a profit margin consists of present costs that will yield future benefits (such as fixed costs in advertising), it is possible for a dominant firm to have low profit levels in the short run (but to increase its profit margin in the future). Likewise, poor management of a firm with market power can erode profits and hide the presence of market power.

However, a finding of non-dominance is not tantamount to antitrust immunity. If the dominant firm (that has been mistakenly deemed non-dominant) engages in anticompetitive conduct, it can still face future prosecution. Despite the lower costs of false negatives relative to false positives, regulators should nevertheless try to avoid them whenever possible.

B. False Positives When Well-Managed Firms Earn Profits in Competitive Industries, Especially in Industries with High Fixed Costs

False positives occur when the competition authority condemns legitimate conduct as anticompetitive. In a dominance proceeding, a false positive would consist of a finding of dominance for a firm that actually cannot exercise market power in the relevant market. A serious problem of selection bias is present. The use of profits to infer market power is prone to punishing a firm that is better managed and has lower costs than its competitors. No rational antitrust enforcement agency will spend its resources prosecuting losers rather than winners. Firms targeted for dominance proceedings are more likely to be profitable than unprofitable. False positives are therefore more likely to result from dominance proceedings than are false negatives.

The social cost of false condemnation in competition law is high. Frank Easterbrook has observed: “If the court errs by condemning a beneficial practice, the benefits may be lost for good. Any other firm that uses the condemned practice faces sanctions in the name of *stare decisis*, no matter the benefits.”⁶³ Similarly, competition law “should not interfere with any firm size created by internal growth, and this is true whether the result is monopoly or oligopoly.”⁶⁴ Firm growth through lawful means leads to greater efficiency benefits to consumers, so a high probability exists that antitrust intervention in such contexts will destroy significant amounts of consumer welfare.⁶⁵

A rational firm will not pursue practices that have been found to be illegal under competition law. The firm would expect that any gains from the condemned practice would be forfeited by future enforcement actions, which would impose additional costs on the firm. The practice would then have a negative expected value. The fear of facing antitrust liability can consequently

⁶³ *Id.*

⁶⁴ See BORK, *supra* note 9, at 178; *Rothery*, 792 F.2d at 215 (explaining that “[t]o apply so rigid and simplistic an approach” of declaring all boycotts or restraints of trade *per se* illegal “would be to destroy many common and entirely beneficial business arrangements”).

⁶⁵ BORK, *supra* note 9, at 178, 192.

deter firms' procompetitive practices and desirable investment. Dynamic competition would diminish, and consumers would suffer.

In addition to any lost welfare from distortions to the market in the short run, if the firm is subjected to *ex ante* dominance regulation following the erroneous finding of dominance, the firm will have less incentive to invest and grow in the long run. Firms that operate in multiple jurisdictions will also be more likely to channel future investment to other jurisdictions.⁶⁶ Likewise, smaller firms may be discouraged from expanding due to fear that they, too, will be incorrectly deemed dominant.

The social cost of false positives can be particularly high in dynamic, innovative industries. The erroneous condemnation of new product or process innovations will dampen innovation across the economy. Yet innovative industries are particularly susceptible to false positives, because innovation involves new products and practices. Because little is known about the practices that spawn new products, the initial likelihood that these practices will be falsely condemned is biased upward. Therefore, in innovative industries, we should expect false positives to carry a substantial cost and occur with a relatively higher probability.

C. The Increased Likelihood of Regulatory Errors Erodes Any Value Derived from Using Profit Margins in Market Power Analysis

The perverse result of using profits as a proxy for market power is that they increase the probability of *both* false negative and false positive errors. Poorly managed but dominant firms escape regulation, while well-managed, innovative firms are punished. The result is the exact opposite of competition.

Cofeco notes in its dominance resolution that information about profit margins is "potentially beneficial to the analysis."⁶⁷ However, the expected value of the harm that can result from an erroneous dominance finding based on profit margins overshadows the expected value of the benefit from prophylactically declaring a firm to be dominant. Mexican consumers would bear the costs of erroneous enforcement decisions.

IV. IS TELCEL'S EBITDA IN MEXICO HIGHER THAN THE EBITDAS OF OPERATORS OUTSIDE MEXICO?

In its dominance resolution, Cofeco states that Telcel's profits are high compared with operators in other countries.⁶⁸ In fact, however, Telcel's EBITDA

⁶⁶ See, e.g., Robert M. Feinberg & Thomas A. Husted, *Patterns of Establishment Entry and State-Level Antitrust*, 7 J. COMPETITION L. & ECON. 813 (2011) (finding reduced entry incentives in states with higher levels of antitrust enforcement).

⁶⁷ COFECO DOMINANCE RESOLUTION, *supra* note 7, at 165.

⁶⁸ *Id.* at 212.

is comparable to the EBITDAs of other América Móvil brands and to the EBITDAs of other operators outside Mexico. These operators vary in market share, and many have market shares too low to justify having significant market power.

A. Is Telcel's Financial Performance Consistent with América Móvil's Brands Outside Mexico?

EBITDA is a poor measure of economic profits. Moreover, economic profits are a poor indicator of market power. Nonetheless, as Cofeco observes, EBITDA is often used in dominance proceedings around the world.⁶⁹ That Telcel has the highest EBITDA margin among mobile operators in Mexico is indisputable. However, Telcel's EBITDA margin is not unusual among América Móvil's brands. One observes comparable EBITDA margins in other countries where América Móvil operates.

As of March 2012, Telcel's EBITDA margin in Mexico was 58.4 percent.⁷⁰ This figure is a significant reduction from an EBITDA margin of 66.0 percent in June of 2010.⁷¹ Nonetheless, it is still the highest in Mexico.⁷² Overall, Telcel's EBITDA margin was 19.4 percent greater than the average EBITDA margin. Although this performance is impressive, for an América Móvil brand it is not unusual. By way of comparison, Table 1 presents the EBITDA margins for América Móvil's brands in Argentina, Colombia, and Peru.

Two results stand out from Table 1. First, Telcel's performance in Mexico is not unique among América Móvil's brands. If one examines solely the magnitude of the EBITDA margins in each country, the margin of the América Móvil brand is between 50 and 60 percent. In each case, América Móvil's brand has outperformed the national average EBITDA by approximately 20 to 30 percent.

Second, América Móvil's margins are comparable across these countries even though its market share varies by up to 100 percent—from 35 percent in Argentina to 70 percent in Mexico. With a market share in Argentina that is approximately half of Telcel's market share, Claro outperforms the national average EBITDA margin by approximately 29 percent, versus only 19 percent in Mexico. In fact, in these four countries, América Móvil's relative performance has an inverse relation to its market share. That is, the higher the margin as a percentage of the national average, the *lower* the market share. The market shares in these three countries vary so much that Telcel's superior EBITDA cannot indicate market power.

⁶⁹ *Id.* at 165.

⁷⁰ 2Q Y2012 GLOBAL WIRELESS MATRIX, *supra* note 41. EBITDA margin is calculated as EBITDA divided by total service revenues.

⁷¹ *Id.*

⁷² *Id.*

Table 1. EBITDA for América Móvil brands, March 2012

Country	Brand	América Móvil EBITDA Margin	National Average EBITDA Margin	América Móvil EBITDA Margin as a Percentage of the National Average	América Móvil Market Share
Argentina	Claro	51.0%	39.4%	129.4%	34.6%
Colombia	Comcel	58.8%	48.4%	121.5%	63.1%
Mexico	Telcel	58.4%	48.9%	119.4%	70.1%
Peru	Claro Peru	51.7%	41.0%	126.1%	42.2%

Note: National Average EBITDA margin is for mobile services, as presented in the Merrill Lynch Global Wireless Matrix.

Source: 2Q Y2012 GLOBAL WIRELESS MATRIX, *supra* note 41.

B. Is Telcel's Financial Performance Consistent with Operators Outside Mexico?

Numerous examples exist in other countries of mobile operators having EBITDA margins similar to Telcel's. Table 2 lists the operators included in the Bank of America-Merrill Lynch Global Wireless Matrix that also had EBITDA margins exceeding 50 percent in March 2012. To eliminate the possibility that the listed operators have market power, we include only operators with a mobile subscriber share of less than 40 percent.

In the 49 countries in the dataset, nine operators have EBITDA margins exceeding 50 percent and market shares less than 40 percent. These operators achieve their high EBITDA margins in nine different countries. The Czech Republic and Italy each have two operators with EBITDA margins exceeding 50 percent. In Canada, one operator (MTS) has an EBITDA margin of 55 percent while having less than 2 percent of the national market.

In more than one-third of the countries in the dataset, at least one operator has an EBITDA margin exceeding 50 percent.⁷³ This rate of occurrence suggests that Telcel's margin is not unusual. Margins exceeding 50 percent are observed both in developing countries, such as Iraq and Malaysia, and in developed countries, such as Canada and Spain. Some operators have achieved EBITDA margins exceeding 50 percent in two different countries, such as Vodafone in Italy and Portugal and Telefónica in the Czech Republic and Spain. Therefore, Telcel's high margins in Mexico are not unique. Similar margins are observed throughout the world.

Figure 1 plots EBITDA margins against market shares for the operators listed in Table 2. There is no clear pattern between market share and EBITDA. Each of the above operators does not plausibly have market power, yet each has a high EBITDA margin. Among these operators, there is no evidence that EBITDA increases as market share increases.

⁷³ In 21 of the 49 countries, at least one operator had an EBITDA margin of 50 percent or greater in the first quarter of 2012. 2Q Y2012 GLOBAL WIRELESS MATRIX, *supra* note 41.

Table 2. EBITDA for non-América Móvil brands with market shares below 40%, March 2012

Country	Operator	EBITDA Margin	Market Share
Canada	MTS	55.0%	1.9%
Czech Republic	Telefónica O2 CZ	52.1%	36.3%
Czech Republic	T-Mobile	53.5%	39.4%
Iraq	AsiaCell	56.1%	36.6%
Israel	Cellcom	52.1%	34.4%
Italy	TIM	51.3%	34.9%
Italy	Vodafone	55.7%	32.3%
Malaysia	Maxis	50.8%	36.6%
Philippines	Globe Telecom	55.8%	31.9%
Portugal	Vodafone	50.1%	35.8%
Spain	Movistar	53.8%	38.7%

Source: 2Q Y2012 GLOBAL WIRELESS MATRIX, *supra* note 41.

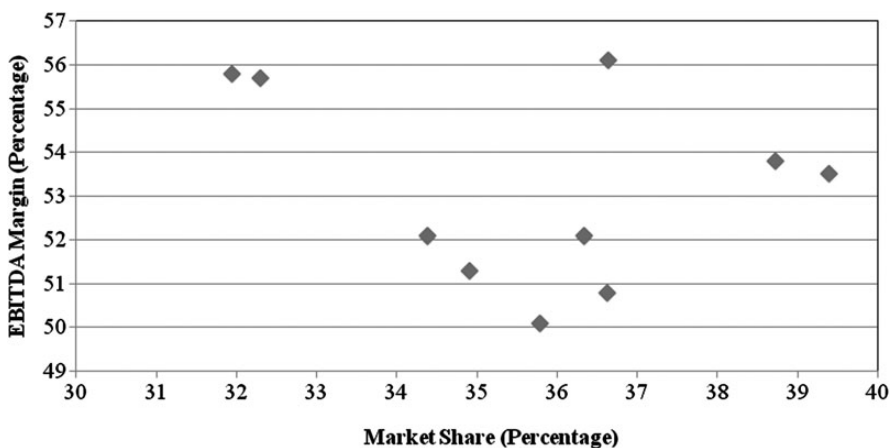


Figure 1. EBITDA and market share for non-América Móvil brands, March 2012.

Note: We exclude MTS of Canada for visual purposes only given its market share of 1.9 percent.

Source: 2Q Y2012 GLOBAL WIRELESS MATRIX, *supra* note 41.

Finally, the operators in Table 2 have generated high EBITDA margins that are similar to Telcel’s margin in Mexico, but each has a market share below 40 percent. Consequently, they cannot be considered to be dominant in their markets. This survey of other countries confirms that a high EBITDA margin is not a reliable indicator of a firm’s market power.

V. CONCLUSION

Courts and competition authorities should exercise caution when considering profit margins as evidence of a firm’s market power. No significant relationship

between profit margins and market power exists. The use of profit margins as a proxy for market power increases the likelihood of erroneous decisions that can harm competition and consumers. Cofeco's dominance ruling concerning Telcel in Mexico shows how profit margin can be misinterpreted. Telcel's high profit margins likely stem from its aggressive marketing of prepaid calling plans, not the exercise of market power. Those margins are comparable to the margins of other operators, including operators with significantly lower market shares. Cofeco and other competition authorities should therefore be skeptical of the use of a firm's profit margins to infer market power.