

The Use of Profitability in Competition Analysis: Role and Reasoning

This research note examines the role of profitability in competition analyses, particularly in the context of the South African private hospital market. The motivation for this is that the draft Statement of Issues for the market inquiry by the South African Competition Commission (CC) into the private healthcare sector states that “the Panel would like to understand... the determination of profits and whether these levels of profitability are consistent with a competitive and sustainable sector”.

With the above in mind, the aim of this note is to provide an overview of the relevant literature on the role of profitability in competition analyses and to show the benefits and drawbacks of relying on profit measures as indicators of market power or the abuse thereof in competition cases. In this note we point out that there is a large divide between the proponents of the use of profitability as an indicator of market power, and its opponents. In a paper by CRA, it is concluded that: “In general, profitability analysis will not provide useful information for competition analysis, and worse yet, is likely to be highly misleading... Although there is some superficial attractiveness to the position that profitability analysis is useful, it nonetheless remains the case that public policy interventions should not be based on flawed measures of the degree of competition in a market”¹. The further issue is that while profitability analysis has found some application in excessive pricing cases, the relevant question for current purposes is whether this is a useful exercise in the context of market inquiries, and more specifically, the private healthcare inquiry of the CC.

We commence this note with an overview of the theoretical grounds for considering profitability in competition analyses. It is then explained why the accurate measurement of long-run economic profitability is difficult, especially for a complex firm and/or industry. Given this problem, we caution against the comparison of economic profitability between firms.

Following from this the note explains why, contrary to economic theory, some firms may experience positive economic profitability for extended periods of time. It is stated that this may be due to various reasons

1. CRA Competition Policy Discussion Papers, December 2003. “The (Mis)Use of Profitability Analysis in Competition Law Cases”. Pages 9-10.

beyond market power exertion, including: good management and/or strategy, a firm's cost structure, the relevant market's structure based on benign factors, and external factors such as the macroeconomic environment.

We review the use of profitability in competition analyses in various other jurisdictions of the world. This review confirms the findings of this note with regard to the practical and theoretical problems with profitability in competition analyses.

From our research we find that at best, the profitability of a firm may provide insight into the functioning of a market. However, attention must be drawn to the fact that there are significant practical and theoretical problems with using this measure as a basis from which to draw conclusions in competition analyses. At best, profitability should be one measure used together with other market indicators to form a view of overall competition in a market. As reported by the OFT²: "Therefore, profitability analysis should be seen as one among a number of complementary economic indicators and techniques that can be used together in a competition policy analysis."

1 Introduction

In the past, competition authorities have investigated markets for competition problems when profitability was found to be "excessive". In the pending healthcare market inquiry, the CC may follow the approach of the recent UK inquiry into private healthcare and use profitability as a point of departure. Given that South African private hospitals in general have experienced profitability levels³ that are sometimes perceived as "high", profitability may be used as an initial indicator of the exertion

of market power. However, as we point out below, this approach is not necessarily the best one, and is generally not supported by economic theory.

The underlying economic theory for using profitability analysis is that where market power is present (in concentrated markets) firms will have some level of control over prices, volume, or quality, and might use this market power to achieve higher profitability over time. This uni-directional theory is also known as the Structure-Conduct-Performance (SCP) theory, which sees a lack of ef-

fective competition leading to market power and hence, abnormal economic profitability.

The use of profitability has however been discredited on a number of theoretical grounds in recent years (along with the SCP framework), and the practicalities of such an analysis have also been criticised as being subjective. There is a growing consensus that there is not a simple linear relationship between concentration and performance (profitability). Instead, the focus in competition cases has shifted to effects-based analyses and specific theories

2. Office of Fair Trading (2003). "Assessing Profitability in Competition Policy Analysis". Economic Discussion Paper 6.

3. Reported EBIDTA margins for Life Healthcare Group are around 27% (2011, 2012), while MCSA margins are around 21% (2011, 2012) and Net-care margins around 20% (2011, 2012) [SA operations].

of harm. This is in recognition of the limited value of relying solely on profitability analysis to understand market structure and market power in an industry.

Against this background, we will examine the use of profitability in competition analyses, based on the international literature. We will review the theoretical justification for, and the practical and theoretical difficulties with the application of profitability analyses in this context. We will also cite some recent examples from international and local cases where it has been applied (or rejected).

2 Theoretical justification

As pointed out above, the underlying theory for analysing profitability in competition cases is that market power is higher in concentrated markets. Analysing profitability is hence a short-cut means to assess structure and conduct. For this reason, the approach is often termed the direct approach.

Despite criticism of this approach in the economic literature (more on this below), this approach was taken by the UK

Competition Commission in their 2013 analysis of hospital profitability.⁴ The UK Competition Commission found that certain hospitals were earning excessive economic profits due to market power.⁵ More specifically in the final report, the CMA⁶ (the regulatory body that replaced the UK Competition Commission) found: "From our profitability analysis, we concluded that during the period under review BMI, HCA and Spire have been earning returns substantially and persistently in excess of the cost of capital." (We will deal with profitability measurements more thoroughly below.)

At the outset, and given the above context, it is necessary to understand what constitutes excessive or high profitability and whether this is theoretically a competition concern.

Basic economic theory states that in long run equilibrium of a perfectly competitive market with free entry, economic profits will equal zero (where the market price is equal to the marginal cost of production). These firms will then produce at minimum efficient scale, where their average costs equal their

marginal cost. Theoretically, the long run is the period of time in which all factors of production and costs are variable.

Therefore, from a theoretical perspective, if an industry exhibits positive economic profits, it may be interpreted that the industry is not perfectly competitive. If this is the case in the short run (assuming free entry) outsiders will have the incentive to enter the market, resulting in increased output and lower prices in the market. Firms should, therefore, theoretically not be able to earn positive economic profits in the long run, unless the market is not competitive.

Accordingly – if a profitability analysis shows that a firm, business unit or specific product consistently earns positive economic profits – it has the ability to set prices, volume or quality differently to the competitive level, without it resulting in increased competition from entry. This may be because the market is not competitive and requires regulatory intervention. This is also in accordance with the definition of market power in the SA Competition Act, where market

4. UK Competition Commission. 1 March 2013. *Profitability Analysis. Private Healthcare Market Investigation*.

5. This finding was later rebuked by 2 of the 5 UK CC healthcare inquiry panel members. This is documented in the UK Market Inquiry Final Report of 2 April 2014.

6. CMA. "Private Healthcare Market Investigation – Final Report". 2 April 2014, page 7, paragraph 38.

power is defined as: “the power of a firm to control prices, or to exclude competition or to behave to an appreciable extent independently of its competitors, customers or suppliers.”⁷

However, this is only one of many explanations for the observation of positive economic profits. There are significant practical and theoretical concerns with such straightforward profitability interpretation in competition cases. The practical difficulties will be expanded on in section 3, and the theoretical issues will be expanded on in section 4.

3 Practical difficulties: calculating economic profits

In this section we explain what economic profits are, how these are calculated, and what problems are likely to be encountered in doing so.

3.1 Economic profitability: definition

Economic profitability, rather than accounting profitability,⁸ is the relevant profitability indicator to accurately understand

a firm’s or a market’s functioning over the long term. Whilst accounting profits may be of interest to understand the operational side of the business, these cannot provide information concerning entry barriers and the long run equilibrium, nor about the presence or absence of monopoly profits.⁹ These are central to analysing the competition situation in a market.

Practically, economic profits are calculated as revenues minus labour, material and capital costs. These capital costs need to account for the replacement cost of capital (accounting profits account for the book value of capital). Concisely, economic profits consider real costs, not just bookkeeping costs. “Real costs” include the costs of using a unit of a resource that could be used elsewhere to earn profits. Because the value of capital changes over time, the replacement cost of capital can diverge greatly from the historical cost.

Therefore, accounting and economic profits are expected to be vastly different and lack a direct correlation. To illustrate this, consider juxtaposing accounting and economic rates

of return for firms that have different distributions of investments over time. Theoretically, in long run equilibrium of a perfectly competitive market with free entry, economic profits will equal zero – but this applies only to economic profits, not accounting profits.

Accurately calculating the replacement cost of capital for economic profitability is not a simple task and may easily be manipulated – intentionally or unintentionally – to lead to vastly different economic profit estimates. This illustrates the first problem in affording economic profits a central place in competition analysis.

We address the reader who wants to understand the above-described caveat mathematically (simply and concisely explained) next (with a summary in section 3.3).

3.2 Economic profitability: calculation

Long term economic profits have commonly been calculated by using the internal rate of return (IRR) and the net present value (NPV) methods. The IRR is the discount rate or rate of

7. SA Competition Act (number 89 of 1998), section 1(1)(xiv).

8. The most common measure of accounting profit is EBITDAR (earnings before interest, taxes, depreciation, amortisation and rent). Other measures such as return on sales (ROS) or return on capital employed (ROCE) may also be used.

9. For more discussion on this point, please see: Fisher, F.M. & McGowan, J.J., 1983. *On the Misuse of Accounting Rates of Return to Infer Monopoly Profits*. *American Economic Review*, No. 82 (1983); and Benston, G.J., 1982. *Accounting Numbers and Economic Values*. *The Antitrust Bulletin*, 1982.

return that equates the present value of a set of cash flows arising from economic activities to an initial capital investment. The 'truncated IRR' refers to the modified methodology that calculates the actual profitability for a specified period of time. This is calculated as:

$$V_0 = \sum_{t=1}^{t=N} \left(\frac{CF_t}{(1+r)^t} \right) + \frac{V_N}{(1+r)^t}$$

In the above, V_0 is the market value of capital employed in period $t=0$, CF_t is the net cash flow in period t , r is the IRR and V_N is the market value of capital employed in period $t=N$.

The alternative, the NPV method, is the sum of the net cash flows arising from economic activities in different time periods discounted at the cost of capital, minus the initial investment at the start of the period of analysis. The 'truncated NPV' is the NPV for a specified period of time. This is calculated as:

$$NPV = \sum_{t=1}^{t=N} \left(\frac{CF_t}{(1+WACC)^t} \right) + \frac{V_N}{(1+WACC)^N} - V_0$$

In the above, NPV is the net present value, CF_t is the net

cash flow in period t , WACC is the weighted average cost of capital, V_0 is the market value of capital employed in period $t=0$ and V_N is the market value of capital employed in period $t=N$.

The reason for the truncated IRR and NPV specifications above, rather than the concise versions (which simply do not have the second term in each of the above formulas), is that the truncated forms include also the terminal value of the capital employed. This is important as the capital's terminal value can result in expected profits outside of the analysis period, impacting the assessment of profits within the period being analysed. The estimation of the market value of the opening and closing capital invested is usually done using the Modern Equivalent Asset (MEA) technique. This estimates the lowest cost of purchasing assets today that can deliver the same set of goods and services as the existing assets, allowing for the assets' remaining life. For the sake of accuracy and objectivity, this should be based on the current, best practice technology, using

the optimal configuration of assets to deliver the goods and services as efficiently as possible.

The requirement for a cost of capital estimate is common to both the simple and truncated forms of the IRR and NPV methods. In the NPV method, this requirement is explicit by the specification of WACC in the formula. In the IRR method, the resulting IRR needs to be compared with the cost of capital. The WACC is the most common method for this and is calculated as:

$$Pre-tax WACC = \frac{D}{V}k_d + \frac{E}{V}k_e \left(\frac{1}{1-T} \right)$$

In the above, D is the debt capital, E is the equity capital, V is the market value of capital employed, k_d is the cost of debt capital, k_e is the cost of equity capital and T is the marginal corporate income tax rate.¹⁰

The established model to calculate the cost of equity is the capital asset pricing model (CAPM). This states that the required return or the opportunity cost of capital is the return on risk-free securities (R_f), plus the firm's systemic risk (beta),

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10. Profitability can be assessed either before or after tax, provided that the cash flows of revenues and costs are prepared on a consistent basis.

multiplied by the equity market risk premium ($R_m - R_f$):

$$K_e = R_f + \beta(R_m - R_f)$$

The risk free rate, R_f , is objectively specified as the yield on a long-term government bond (in South Africa the R157 is usually used). Beta indicates how the price of a firm's share responds to changes in the market portfolio. This has to be calculated based on historical data using econometric methods. On this point, the literature holds much debate regarding the appropriate data frequency (daily, weekly, monthly) and the period (1, 3, 5 or more years). The fact that there has been no within or between industry consensus found on these points leaves subjectivity in the calculation. The return on the market portfolio, $R_m - R_f$, indicates the return expected by investors on an equity market portfolio relative to the risk free rate. This must also be calculated by econometric methods and the period of analysis is again subjective – ideally, one should use a very long period to eliminate return volatility. Unfortunately, long periods (whilst

the long term of an industry cannot be perfectly defined, many researchers recommend the use of at least 10 years) of data are seldom available.

Whilst most investment analysts and investors calculate WACC by way of the CAPM model, many local and international companies use a discount or hurdle rate (as a cost of capital) in their investment decisions that is higher than the WACC calculated by the investor or analyst. This is due to the concern that the cost of equity capital captured in the WACC does not cover all of the specific risks arising from a project, especially when it has above-average risk. Accordingly, many firms determine that it is necessary when using the WACC to add a specific risk premium.

3.3 Economic profitability: summary of practical difficulties

The above explanation indicates that it is very difficult to estimate economic profits in such a way that they can confidently be used to evaluate a firm and benchmark their performance with that of others.

As previously discussed, basic economic theory states that in the long-run equilibrium of a perfectly competitive market with free entry, economic profits will equal zero. The initial problem in practically applying this theory is that it is seldom (especially in South Africa) the case that one has all of the necessary financial data over the long term (for t and N in the IRR and NPV calculations) and the calculations required may allow for subjectivity in their detail (specifically in calculating the market value of capital and the cost of equity).

The practical difficulties around profitability measures have been illustrated well in the Mittal excessive pricing case in South Africa. Although various experts submitted detailed data on profitability levels, the Competition Tribunal found that this was not helpful in their determination. Generally, these methods included various profitability measures as discussed in section 3.2 above.¹¹

We have therefore shown in this section that the calculation of economic profits is not

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11. For a good overview of these issues see: Calcagno, C & Walker, M (2010). "Excessive pricing: Towards Clarity and Economic Coherence". *Journal of Competition Law & Economics*, 6(4), pp 891-910.

simple and that it is difficult to take the resultant figures as accurate and compare these across firms. Also, for the purposes of competition analysis, economic profit is the correct indicator. Accounting profit can only indicate how a business is performing on the operational side and it is expected that economic and accounting profits may greatly diverge. This is due to expected differences in the detail of methodology and data availability.

Assuming however that there is a satisfactory measure for economic profit, in the next section we turn to the important question of whether a finding of positive economic profits can immediately be interpreted as the use (or abuse) of market power.

4 Theoretical failings: reasons for positive economic profits

The theoretical problems with using profitability in competi-

tion analysis concern the fact that there are a number of reasons why a firm may make positive economic profits for extended periods¹² of time. For example, this may be due to:

- Rewards for competitive advantages, deriving from management and/or strategy, that lead to
 - superior efficiency (Ricardian rents) and
 - successful risks and innovation (Schumpeterian rents);
- The result of a firm's specific cost structure;
- The result of a market structure not being perfectly competitive;
- The result of external factors; and
- The result of having and exercising market power.

To reiterate, a firm's profit margin does not depend only on its market power. Inferring the abuse of market power simply from the observation of positive economic profits does not take into account

that the profits may derive from another source. In what follows we expand on these other sources, as listed above.

4.1 A firm's management and/or strategy

A firm's management and/or strategy may influence its profitability. The existence of this relationship incentivises firms to carry out business in a sustainable way. When analysing this, one should be aware of potential survivorship bias that may mask the relationship between management/strategy and profitability.

Inefficient management and/or strategy may raise costs and/or lower revenues. Per illustration, lack of general foresight and timely investment may be evident in implementation of inadequate staff training or facilities maintenance, untargeted research and development (R&D) projects and ineffective waste management. These may increase costs (for initial outlay, but also over time) and

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12. We have explained that 'the long run' is a conceptual time period in which all factors of production and costs are variable. It is very challenging to determine the long run for the private hospital market in South Africa. This is due to data constraints and also due to the dynamically changing nature of the market. The latter may include the changing of the actual market definition, not just the changing of market participants. For these reasons, we refer to the data such as those in the South African private hospital market as being for 'an extended period of time'.

decrease revenue (over time). On the other hand, efficient and superior management and/or strategy may decrease costs and/or increase revenue. For example, good foresight and related early investment may be evident in adequate staff training and facilities maintenance, targeted R&D projects and effective waste management. These may initially increase outlay costs but then decrease costs and increase revenues over time.

4.2 A firm's cost structure

A firm's cost structure, particularly related to sunk costs, may influence its profitability.

A firm's prices may be higher than marginal costs for an extended period of time if sunk costs (which may be modelled as fixed if financed in such a way, i.e. for substantial upfront building expenses or equipment investment) are high and marginal costs (i.e. for consumer and staff acquisition) are relatively low. Simply, this means that average total costs are above marginal costs and prices are hence set above marginal costs.

This initial cost-price scenario is particularly pronounced in industries that require substantial upfront capital investment to form a sustainable re-

sponse to high demand levels. Over time – possibly quite an extended period of time depending on the size of the sunk costs and the nature of the industry – it is expected that fixed costs would fall and marginal costs may rise. This means that average total costs would be brought nearer to marginal costs. Theoretically, in the long run equilibrium of a perfectly competitive market with free entry, this would lead to prices being equal to marginal costs.

With this change over time, one may observe a change in profitability. A change in profitability from such a source has no relation to a change in market power or any anti-competitive behaviour.

4.3 Markets that are not perfectly competitive

Positive economic profits might occur because one or more of the assumptions that underlie the theory of perfect competition are not upheld in the market under investigation.

For example, in the South African private hospital sector, the assumption of free entry did not always hold. Hospital licenses, which historically have taken significant amounts of time to be granted and require a hospital to demonstrate the demand for the new hospital, have served as a

regulatory barrier to the market. In addition to this, high initial capital investment requirements characterise the hospital market. Neither of these is unique to South Africa, also characterising hospital markets internationally.¹³

As discussed in section 4.2, industries with high entry barriers may pronounce the need to price above marginal cost for an extended period of time. This ensures that the limited participants in the market are able to function sustainably so as not to cause a sudden negative supply shock if one of the participants in the market were to experience financial strain.

In summary, due to exogenous factors, a market may not be perfectly competitive and hence economic profitability may be positive. **This, however, is not due to anti-competitive market power exertion and does not necessarily mean that the market is not workably competitive.**

4.4 External factors

The external factors that a firm are exposed to may influence its profitability.

The macroeconomic environment is one example of an external factor over which the firm has no control. Exposure

13. For example, in the UK, the Care Quality Commission (CQC) regulates hospitals. In appendix E of the UK Commission's inquiry it is also stated that the need for economies of scale with limited market size serves as an entry barrier to the market. Accordingly, investment in facilities and staff were said to be requirements to gain sufficient patient volumes for efficiency.

to smooth/volatile currencies may impact profitability, just as interest rates and business confidence levels may do.

A second common example of an external factor is the behaviour of other competing/complementary firms. A competitor may choose not to compete aggressively if doing so maximises their profitability. A competitor may also choose to change its competitive position, for example, to serve a niche market. A complementary firm may increase or decrease its offering.

Other examples of external factors may be luck/chance, as well as unexpected increases in demand (with effects being further pronounced if economies of scale are achieved).

Each of these factors may affect the profitability of the firm of interest. In each case these may be found to be exogenous to the firm of interest and therefore bring no competition concern.

4.5 Market power, if exercised through theories of harm

A firm's market power, if exercised, may influence its profitability. This may be through specific theories of harm that may

be price- or non-price related. For example, a firm with market power may have the ability to control prices, volumes and/or quality in such a way that promotes its profitability.

These theories of harm need to be tested. In doing so, profitability analysis should serve as a complementary analysis, not a means to decide which firms require investigation at the level of specific theories of harm. This is for the reasons discussed above – wherein it was shown that neglect of other potential influences of profitability may cause one to interpret high profitability as market power exertion when that is not the case.¹⁴ For instance, a firm with high profitability may be brought under serious investigation, when in fact this is due to good management. On the other hand, a firm with low profitability may be excluded from investigation, when in fact it may be charging a monopoly price and incurring high costs due to poor management. This would punish well-managed firms and reward poorly managed firms.¹⁵

This note has thus far provided factual reasoning and methods for, as well as challenges with, the use of profitability in competition analysis. Against this

background, it is clear that a more prudent approach to investigate the exercise of market power is through analysis of indirect evidence by specific theories of harm. These specific theories of harm may be price and non-price related, with each being investigated to provide a deeper understanding of the relevant competitive dynamics. In the next section we look to other jurisdictions to understand if this is the case in practice.

5 Examples from other jurisdictions

We now turn to the role of profitability in competition analysis in different jurisdictions. To do so we review competition regulation, academic literature and precedent cases. We find that the US and Europe (excluding the UK) do not commonly draw competition conclusions from profitability analyses. On the other hand, we find precedents where the other jurisdictions – for example that of the UK – have drawn competition conclusions from profitability analyses.

5.1 US

The 1981 publication by Schmalensee¹⁶ indicates early

14. Bork, R. H. and Sidak, G. 2013. "The Misuse of Profit Margins to Infer Market Power." *Journal of Competition Law & Economics*. Vol 9., No. 3, pp. 511-530.

15. Sylvester, A. 2013. "Using Profitability Measures in Competition Analysis in South Africa." *Competition Commission of South Africa*.

16. Professor of applied economics at the Sloan School of Management, Massachusetts Institute of Technology.

perspectives in the US with regard to using profitability to establish market power: "There are, however, three serious problems with using profitability to gauge market power. First, it is very difficult in practice to measure actual profitability, and it may be even more difficult to measure excess profits. There are no simple, generally valid techniques for obtaining accurate estimates of these quantities, though advances have been made in this area recently and continued progress is likely. Second, the absence of significant excess profit does not establish the absence of significant market power. The costs of obtaining or keeping such power, as well as waste caused by managers not subject to competitive pressures, reduce observed profits, but represent real social costs of market power. Finally, substantial excess profits can arise in the short run even in perfectly competitive markets. Such profits provide essential signals to guide the flow of investment funds in market economies. Therefore, even if all measurement problems are solved, profitability is an unreliable measure of short run mar-

ket power. Nevertheless, persistent excess profits provide a good indication of long run power."¹⁷

Following such literature, the 1995–1998 case of Blue Cross & Blue Shield United of Wisconsin v. Marshfield Clinic is a commonly used precedent in the US for the case against market power conclusions being inferred from profitability analyses. The case relates to an alleged dominant position of Marshfield Clinic (a provider of medical services) by Blue Cross & Blue Shield (a health insurer, acting in this case together with its health maintenance organisation (HMO)).

The judge of this case was Judge Posner of the US Court of Appeals, a global leader in the field of law and economics.¹⁸ In the 1995 judgement¹⁹ Posner stated: "It is always treacherous to try to infer monopoly power from a high rate of return. Taking the second point first, not only do measured rates of return reflect accounting conventions more than they do real profits (or losses), as an economist would understand these terms... but there is not even a good economic

theory that associates monopoly power with a high rate of return. Firms compete to become and to remain monopolists, and the process of competition erodes their profits. Conversely, competitive firms may be highly profitable merely by virtue of having low costs as a result of superior efficiency, yet not sufficiently lower costs than all other competitors to enable the firm to take over its market and become a monopolist. As for high prices, one of the complaints against HMOs is that they skimp on service. One HMO may charge higher prices than other HMOs, not because it has a monopoly, but because it is offering better service than the other HMOs in its market. Compcare itself stresses the quality of the Marshfield Clinic's doctors, as part of its argument that it cannot succeed unless the Clinic is forced to join it. Generally you must pay more for higher quality."

More recent sources of literature that highlight the US' position on profitability in competition analysis include the 2003 academic paper by Baumol²⁰ and Swanson²¹ and the 2009

17. Schmalensee, R., 1981. *Another Look at Market Power*. Harvard Law Review, Vol. 95.

18. Richard Posner is a judge for the United States Court of Appeals for the Seventh Circuit in Chicago, as well as a Senior Lecturer at the University of Chicago Law School. He is a leading figure in the field of law and economics, and was identified by *The Journal of Legal Studies* as the most cited legal scholar of the 20th century, having authored over 40 books.

19. United States Court of Appeals, 2007. *Blue Cross & Blue Shield United of Wisconsin v. Marshfield Clinic*. Available online: <http://openjurist.org/65/f3d/1406/blue-cross-blue-shield-united-of-wisconsin-v-marshfield-clinic>

20. Professor of economics at New York University and Professor Emeritus, Princeton University.

21. Member of the California Bar.

and 2013 academic papers by Sidak²² and Teece²³, and Sidak and Bork,²⁴ respectively. Relating to Judge Posner's point on measured rates of return, Baumol and Swanson²⁵ state: "There can be little doubt about the general absence of defensible data on the economic profit rate; that is, the excess of revenue over cost inclusive of all pertinent opportunity costs and calculated as a percentage return on the total investment (real assets) of the firm, after economic depreciation."

Relating then to Judge Posner's point on economic theory, Sidak and Teece (2009) state that "supra-competitive 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."²⁶

Sidak and Bork (2013) additionally advocate that: "Neither

economic theory nor empirical evidence indicates a dispositive relationship between profit margins and the possession of market power... Using a firm's profit data to infer market power might therefore lead a court or competition authority to the wrong conclusion."²⁷

Finally, with reference directly to the US Competition and Monopoly 2008 publication by the US Department of Justice: "Relying exclusively on direct evidence of profits to establish monopoly power presents a number of difficult issues... when all relevant economic costs are properly accounted for, what may at first seem to be a supra-competitive return may be no more than a competitive one (or vice versa)... In short, direct evidence of a firm's profits, margins, or demand elasticity is not likely to provide an accurate or reliable alternative to the traditional approach of first defining the relevant market and then examining market shares and

entry conditions, when trying to determine whether the firm possesses monopoly power... Focussing on anticompetitive effects, such as the reduction of output, may be more useful than focussing on profits, price-cost margins, or demand elasticity."²⁸

The above evidence from various sources – case precedent, academic literature, and regulation reports – indicates that competition authorities in the US do not commonly draw conclusions of market power/ dominance from analyses of profitability. Their reasoning, as set out above, is that it is challenging to take into account all costs to accurately estimate economic profitability, and that even then there may be many benign (to competition concerns) reasons for the finding of positive economic profitability.

5.2 Europe (excluding the UK)

The 1978 case of United Brands Company and United Brands Continental BV v Commission of the European Communi-

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- 22. Chairman, Criterion Economics, LLC, Washington, DC; Ronald Coase Professor of Law and Economics, Tilburg Law and Economics Centre.
 - 23. Faculty Director, Institute for Business Innovation (Berkeley); Director, Centre for Global Strategy and Governance (Berkeley).
 - 24. Former Circuit Judge of the US Court of Appeals for the District of Columbia Circuit, Former Solicitor General of the United States.
 - 25. Baumol, W.J. & Swanson, D.G., 2003. *The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria of Market Power*. *Journal of Antitrust Law*, Vol. 70, p. 684.
 - 26. Sidak, J.G. & Teece, D.J., 2009. *Dynamic Competition in Antitrust Law*. *Journal of Competition Law and Economics*, Vol. 5, No. 4, pp. 581-631.
 - 27. Sidak, J.G. & Bork, R.H., 2013. *The Misuse of Profit Margins to Infer Market Power*. *Journal of Competition Law and Economics*, Vol. 9, No. 3, pp.511-530.
 - 28. US Department of Justice, 2008. *Competition and Monopoly: Single-Firm Conduct under Section 2 of the Sherman Act*. This section has since been withdrawn so as to revise it for a more aggressive approach in dominance proceedings. Nevertheless the points referred to are not the subject of debate, as stated in: <http://www.ftc.gov/news-events/press-releases/2008/09/ftc-commissioners-react-department-justice-report-competition-and>
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ties²⁹ is a commonly used precedent in Europe (excluding the UK) for the case against market power conclusions being inferred from profitability analyses. The case relates to alleged abuse of a dominant position by United Brands Company, the importer of the Chiquita brand of Latin American bananas.

In the judgement by the European court, the following was stated (paragraph 126): “An undertaking’s economic strength is not measured by its profitability; a reduced profit margin or even losses for a time are not incompatible with a dominant position, just as large profits may be compatible with a situation where there is effective competition. The fact that an undertaking’s profitability is for a time moderate or non-existent must be considered in the light of the whole of that undertaking’s operations.”

With regard to the speculation of excess profitability of the firm, the Court stated (paragraph 251): “This excess could, *inter alia*, be determined objectively if it were possible for it to be calculated by making a comparison between the selling price of the product in question and its cost of pro-

duction, which would disclose the amount of the profit margin. However, the commission has not done this since it has not analysed UBC’s costs structure.”

The 1983 case of *NV Nederlandsche Banden Industrie Michelin v Commission of the European Communities*³⁰ is also a seminal case. This case relates to abuse of a dominant position by the provision of discounts on tyres. Herein (paragraph 11) it is stated: “Temporary unprofitability or even losses are not inconsistent with the existence of a dominant position. By the same token, the fact that the prices charged by the undertaking concerned do not constitute an abuse and are not even particularly high does not justify the conclusion that a dominant position does not exist.”

A more recent – but also commonly cited – precedent for the case against market power conclusions inferred from profitability analyses, is the 1997–2004 case of *Scandlines Sverige AB v Port of Helsingborg*.³¹ The case relates to an alleged abuse of a dominant position by the Port of Helsingborg. After explaining the difficulty of measuring profits in such a way that they

can be comparable between ports that are determined reasonable benchmarks, the Court judgement goes on to state that (paragraphs 157 and 214):

“An analysis of excessive or unfair pricing abuse must focus on the price charged, and its relation to the economic value of the product. While a comparison of prices and costs, which reveals the profit margin of a particular company, may serve as a first step in such an analysis, this in itself cannot be conclusive as it regards the existence of an abuse... A comparison between the profits of the ferry-operations in different ports would be too dependent on the markets in which they operate, the individual cost structure of the companies (possible economies of scope and scale, existence of cost efficiencies), the level of their investments, how these are financed as well as internal decisions with regards to the remuneration of the shareholders.”

The above three cases relate to Article 82 (ex Article 86) of the EC Treaty, which deals with the abuse of dominance. In 2005 the European Commission published a discussion paper on the

29. European Court, 1978. *United Brands Company and United Brands Continental BV v Commission*. Available online: http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!CELEXnumdoc&lg=en&numdoc=61976J0027

30. Judgment of the Court of 9 November 1983. - *NV Nederlandsche Banden Industrie Michelin v Commission of the European Communities*. - Abuse of a Dominant Position - Discounts on Tyre Purchases. - Case 322/81.

31. Commission of the European Communities, 2004. Case COMP/A.36.568/D3 – *Scandlines Sverige AB v Port of Helsingborg*. Available online: http://ec.europa.eu/competition/antitrust/cases/dec_docs/36568/36568_44_4.pdf

application of this article to exclusionary abuses. In paragraph 26 of the discussion paper it is stated: "Higher than normal profits may be an indication of a lack of competitive constraints on an undertaking. In general, the way in which a firm acts in a market may in itself be indicative of substantial market power, for instance where an undertaking increases its price while benefiting from falling costs. However, an undertaking's economic strength cannot be measured by its profitability at any specific point in time; even short-run losses are not incompatible with a dominant position."³²

These three precedents, in conjunction with Article 82 of the EC Treaty and its 2005 discussion document, illustrate that competition authorities in Europe do not commonly draw any conclusions of market power/ dominance from analyses of profitability. Their reasoning, as set out

above, is that it is very difficult to arrive at an accurate and comparable measure of profitability.

5.3 UK

From precedent competition cases, it seems that the UK is a jurisdiction that does afford profitability a central role in competition analysis and has in some cases drawn conclusions of market power from profitability.

In the UK private healthcare inquiry's provisional results of 28 August 2013, the opening paragraph on the point of profitability states (p.232): "An important indicator of competition in a market is the level of profits of the firms involved... competition should put pressure on profit levels, so that they move toward the cost of capital in the medium to long run... A situation where profits are persistently above the cost of capital for firms that represent a substantial part of the market could be an

indication of limitations in the competitive process." The discussion in the report goes on to explain that the UK Competition Commission (UK CC) analysed economic profits over a 5-year period, January 2007–January 2012. They determine that this is sufficient time to understand profit persistence and that they chose this period due to structural changes³³ in the market prior to those dates. The report goes on to show that BMI, HCA and Spire are, according to this measure, earning persistent profits in excess of the cost of capital. The authorities then explain that the results of their analyses with regard to concentration, prices and profits align to support insufficient competitive constraints at the local level.³⁴

The approach of drawing a competition conclusion from profitability is not entirely new in that jurisdiction. The OFT's market power guidelines state:

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Econex has extensive experience in competition economics, international trade and regulatory analysis. We have an established reputation for providing expert economic advice in high profile mergers and complaints that appear before the competition authorities. Some of the highlights include the complaint against British American Tobacco, the merger between MTN and iTalk, the complaint against Senwes and the acquisition of KayaFM by Primedia. More recently, Econex acted as expert economists in the Glencore/Xstrata merger. Apart from competition work, we have also been involved in trade matters, including the analysis of the effects of tariffs, export taxes and anti-dumping duties. As a result of our work in competition proceedings we have invaluable experience in some of the sectors of the South African economy where regulation continues to play an important role, e.g. the telecommunications, health and energy sectors. We use economic knowledge of these sectors to analyse specific problems for some of the larger telecommunications, health and energy companies.

32. European Commission, 2005. *DG Competition Discussion Paper on the Application of Article 82 of the Treaty to Exclusionary Abuses*. Brussels, 2005.
 33. In 2006 the NHS underwent reorganisation. Strategic health authorities (SHAs) were reduced from 28 to 10. The number of primary care trusts (PCTs) fell from 303 to 152.
 34. UK CC, 2013. *Private Healthcare Market Investigation: Provisional Findings Report*, pp. 232-249. This was later rebuked, see footnote 5.

“An undertaking’s conduct in a market or its financial performance may, in itself, provide evidence that it possesses market power.”³⁵ Note that this differs from the definition of market power in the SA Competition Act where there is no reference to a firm’s performance or profit (see section 2 above). Additional examples where profitability was afforded significant focus in the UK CC’s evaluation of market power include the investigations into the supply of banking services to SMEs,³⁶ store credit card services³⁷ and the home credit market.³⁸

Nevertheless, in each of these cases, profitability was analysed alongside other relevant indicators, such as prices or market concentration levels. In each of the above cases, the final conclusion was not drawn solely from profitability, despite it having a role in this regard.

In the home credit market case it was stated: “We believe that profitability remains just one indicator of the extent of competition in a market and we therefore do not draw conclu-

sions from our profitability analysis alone. Indeed, we have not sought to do so in this case.”³⁹

Additionally, in the OFT’s assessment of market power guidelines (paragraph 6.6), it is stated: **“High prices or profits alone are not sufficient proof that an undertaking has market power:** high profits may represent a return on previous innovation, or result from changing demand conditions. As such, they may be consistent with a competitive market, where undertakings are able to take advantage of profitable opportunities when they exist. However, persistent significantly high returns, relative to those that would prevail in a competitive market of similar risk and rate of innovation, may suggest that market power does exist. This would be especially so if those high returns did not stimulate new entry or innovation.”⁴⁰ It is apparent from the information reviewed for the UK that the competition authorities have in some cases drawn conclusions about market power from an analysis of profitability. However, in these cases, this was done alongside analyses of in-

direct evidence, such that a final conclusion was not drawn solely from profitability, but rather in conjunction therewith. This nevertheless differs to the approach of the US and Europe (excluding the UK), as summarised in the last paragraphs of section 5.1 and 5.2 respectively, where profitability is in most cases excluded altogether from competition analyses due to the measurement and inference problems discussed.

5.4 OECD

Section 5.1 – 5.3 discuss the approaches of specific countries’ competition authorities regarding the assessment of market power. It is clear that these approaches do differ from country to country. Global antitrust organisations have attempted to bridge this gap and stimulate discussion on such matters. Two of the largest global antitrust organisations are the International Competition Network (ICN) and the Competition Committee of the Organisation for Cooperation and Development (OECD).

The results of the ICN’s 2007 questionnaire⁴¹ on “the objec-

35. OFT, 2004. *Assessment of Market Power*, p. 25.

36. OFT, 2002. *Banking Services to SMEs*, December 2002.

37. OFT, 2006. *Store Cards Market Investigation*, March 2006.

38. OFT, 2010. *Review of High Cost Credit*. June 2010.

39. Quoted in Felet, A. & Moilola, T., 2010. *The Use of Competition Analysis by Competition Authorities*.

40. See footnote 39.

41. ICN, 2007. *Report on the Objectives of Unilateral Conduct Laws, Assessment of Dominance/ Substantial Market Power, and State-Created Monopolies*. Available online at: <http://www.internationalcompetitionnetwork.org/uploads/library/doc353.pdf>

tives of unilateral conduct laws, assessment of dominance/ substantial market power, and state-created monopolies” provide information on how different jurisdictions around the world determine market power and the exertion thereof. Questioning 32 ICN members,⁴² it was found that only 17 of these consider profit levels as possible factors to be assessed for single-firm dominance/ substantial market power (these responses do not allow for an understanding of whether conclusions were drawn solely from the analysis thereof when used, or if profitability analyses were rather considered alongside many other more informative analyses). It was found that other jurisdictions reject the use of this criterion, with cautions about potential errors from using profit levels to establish dominance.

In 2006, the OECD Competition Committee also debated evi-

dentiary issues related to proving dominance/ market power. In the official roundtable document⁴³ that summarised what was discussed at the meeting, it was stated: “One can try to examine whether a firm’s profitability is consistent with the finding that the firm has substantial market power. There are a number of significant concerns associated with this methodology, including the difficulty in obtaining accurate economic profitability data from accounting data, the difficulty in ascertaining the competitive norm for a comparison, the possibility that supra-competitive profits may be explained by factors other than substantial, durable market power, and the difficulty in obtaining data about long term profitability. Profitability data therefore play a limited role in the analysis of substantial market power.” (Page 9, executive summary). In summary, it was then stated: “Direct evidence of

substantial market power, such as a firm’s profitability, is not frequently used in single firm conduct cases. Methods for directly measuring market power are very data-intensive and even if the necessary data are available, they are typically subject to different interpretations and therefore will not conclusively establish that a firm has the requisite degree of market power. However, direct evidence may be useful to support a finding of substantial market power in the appropriate circumstances, provided it is used in conjunction with other evidence.” (Page 9, executive summary).

Reference within the roundtable document explains the arrival at the above statements. In discussing different approaches to establish evidence of substantial market power, it was stated: “Another approach which might be useful in certain circumstances is to determine whether a firm’s

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42. ICN has 35 members, although only 32 of these responded for this question. The full list of members is: Australia, Brazil, Bulgaria, Canada, Chile, Czech Republic, European Union, France, Germany, Hungary, Ireland, Israel, Italy, Jamaica, Japan, Jersey, Korea, Latvia, Mexico, Netherlands, New Zealand, Pakistan, Romania, Russia, Serbia, Singapore, Slovak Republic, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, and United States

43. OECD, 2006. *Policy Roundtables” Evidentiary Issues in Proving Dominance*. Available online: <http://www.oecd.org/competition/abuse/41651328.pdf>

performance (profitability) is consistent with the finding that the firm has substantial market power. The inquiry is focused on whether a firm's persistent profits can be considered excessive, compared to some measurement of the competitive norm. Looking at economic profits to determine market power would make intuitive sense: in a model of perfect competition, firms would earn zero economic profits, whereas in a model of monopoly, the firm would earn very large profits. Thus, determining that a firm's profits are closer to the upper end in this 'competition spectrum' should be a proxy for the firm's market power."

"It should therefore not come as a surprise that competition authorities and courts have looked to profitability as evidence of market power. The Canadian Competition Tribunal has considered profits as evidence for substantial market power.⁴⁴ The Commission's decision in Microsoft also included a reference to Microsoft's profitability to support the finding of dominance."⁴⁵

"The economic and legal literature, however, while generally supportive of the logic behind the use of profitability estimates, has in general been rather sceptical about the use of profitability data as evidence of substantial market power... Given that a firm's profits and rates of return typically are based on accounting data, rather than on profits in an economic sense, even commentators who support the idea of using profitability data to infer market power acknowledge the practical difficulties in methods of economic profit estimation."

"In addition, excess profits could be rewards for taking risks and rewards to a competitive advantage such as superior efficiency, and therefore have perfectly legitimate reasons. It has thus been proposed that excess profits should be considered as evidence of market power only if they are not attributable to superior performance; put positively, persistent excess profits could be relevant evidence if they are the result of a firm's ability to reduce output."

"It is also not clear whether the lack of excessive profitability should be treated as relevant evidence for the absence of market power. Some have argued that profits persistently below competitive levels should indicate that a firm does not have significant market power. But others have pointed out that the lack of excessive profitabil-

ity is not necessarily an indication that a firm does not have substantial market power as it may spend profits to insulate itself from competition, or undertake unprofitable expenditures."

"Despite these problems, it appears that measuring profitability might in the right circumstances be a useful method to support the finding of dominance or suggest the absence of market power, *if relevant and reliable data are available and subject to a careful examination and interpretation* (Econex emphasis). High rates of profitability would not provide decisive proof of substantial market power, but could be relevant if they have been persistent and are consistent with other evidence pointing in the same direction."

In this section we have sought to understand which jurisdictions around the world analyse profitability in assessing market power. From our review of case precedents, academic literature, and regulation guidelines we have established that the US and Europe (excluding the UK) generally do not favour the use of profitability analyses for this purpose. Nevertheless, we have found that some other jurisdictions – including the UK – do use

44. *Canada (Director of Investigation and Research) v. Tele-Direct (Publications) Inc.*, (1997), 73 C.P.R. (3d) 1, Section VI.B.I. (finding that defendant's profits were persuasive evidence of market power and rejecting defendant's arguments that profits reflected only accounting profits and/or reflect a return on intangible assets).

45. *Commission Decision Microsoft*, paragraph 464 (finding that Microsoft's 81% profit margin for Windows was "high by any measure").

profitability in assessing market power. Nevertheless, from the cases reviewed, it is evident that the UK does not rely solely on profitability to draw conclusions about competition, but rather use it in conjunction with other factors. Reviewing the findings of prominent global antitrust discussions, we find that strong reservations remain against the use of profitability in assessing market power, due to potential errors in calculation and interpretation. This conclusion is even more pertinent if the profitability analysis does not form part of a wider inquiry considering other indicators of market power.

6 Conclusion

In this research note, we have reviewed the theoretical reasoning for including profitability analyses in competition analysis. Following this, we explained what economic profits are, how these are practically calculated, and what problems are likely to be encountered in doing so. Thereafter, we reviewed the theoretical reasons for why a firm may make positive economic profits. Finally, we looked to other jurisdictions to understand how profitability has been used in competition analysis in other parts of the world.

In summary, we have found that profitability analyses for the purposes of competition analysis are fraught with practical problems and have been criticised heavily on theoretical grounds. Accordingly, they cannot be central in competition analysis and do not provide a basis from which competition conclusions can be drawn. At best, they can provide insight into the functioning of a market; such as how supply and demand conditions have changed over time – as well as the requirements to remain in the industry to serve consumers effectively, efficiently and sustainably.

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