

Transaction Cost Economics: Applications to Competition Policy in South Africa

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Abstract

There have been a number of advances in industrial and organisational economics in the last forty years many of which have implications for competition policy. One of the most important has been the contribution of Transaction Cost Economics (TCE) to the understanding of how the characteristics and dimensions of transactions influence decisions regarding economic organisation including the vertical and horizontal boundaries between firms and markets, the reasons for mergers and the motivations for non-standard contractual arrangements between firms. Transaction cost analysis can be applied to issues of competition policy where its conclusions regarding whether firms' conduct is anti-competitive differ in some cases from alternative models of imperfect competition and market power derived from standard neo-classical economics and applications of game theory. This paper outlines the principles of transaction cost economics, reviews some empirical evidence for the theory and discusses the application of transaction cost economics to issues of competition policy in South Africa including the analysis of the competitive effects of vertical mergers and restrictive vertical practices.

This paper assesses the role and application of Transaction Cost Economics (TCE) to the formulation and implementation of competition policy in South Africa. Transaction cost analysis has been one of a number of important developments in industrial economics and the economics of organisations in the last forty years. Based on the insight that the nature and characteristics of transactions influence economic organisation, TCE has been used to explain the horizontal and vertical boundaries of firms, the structure of hybrid organisations such as joint ventures and strategic alliances, the reasons for mergers and the motivations for non-standard contractual arrangements between firms.

Besides TCE, other significant advances in industrial economics during this period include modern imperfect competition/new industrial organisation theories, agency/mechanism design models, property rights theories, the resource-based/competences view of the firm (incorporating the dynamic capabilities literature), contract theory and evolutionary theories of the firm.

Many of these new developments including transaction cost economics have important applications to competition policy. Economics is acknowledged by competition authorities and lawyers as having a central role to play in the formulation and implementation of legal rules for enforcing effective competition in markets. In the United States antitrust policy in the last century has been strongly influenced for much of the period by trends in economic thinking regarding the effects of competition on economic efficiency. (Kovacic and Shapiro 2000). From the end of the Second World War to the early 1970s antitrust enforcement was interventionist with its economic foundations based on the structure-conduct-performance paradigm (SCP) of the "Harvard School".² The theoretical weaknesses

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²The Harvard school included legal scholars such as Philip Areeda and Donald Turner who were influenced by the work of, inter alia, the economists Edward Chamberlain, Edward Mason and especially Joe Bain. Influential developments in industrial organisation that strongly influenced the enforcement of antitrust policy during the period were two of Bain's books, *Barriers to New Competition* and *Industrial Organization and Antitrust Policy* by Kaysen and Turner.

of the structuralist approach and the lack of empirical support for the SCP (Posner 1979) led in the late 1960s and early 1970s to extensive criticism of antitrust policy and the Harvard School by a number of influential economic and legal scholars at the University of Chicago.³ Basing their arguments on neoclassical price theory and the benefits of free markets, the Chicago School argued there were economic efficiency explanations for many economic phenomena criticised as anti-competitive by the Harvard School, in particular the latter's "inhospitable" approach to market structures with high levels of supplier or buyer concentration, and its hostile attitude towards mergers and non-standard vertical contractual agreements between firms.⁴

The influence of the Chicago School led to a more permissive antitrust policy in the 1970s and 1980s. Examples include the approach toward non-price vertical restraints following the landmark decision of *Continental T.V. Inc v. GTE Sylvania Inc.* (433 U.S. 36 [1977]) regarding non-price vertical restraints (henceforth warranting rule of reason analysis rather than per se prohibition), the introduction of the *Horizontal Merger Guidelines* in 1982 and the *Vertical Restraints Guidelines* in 1985.⁵

However, beginning in the 1980s other economists developed new game theoretic models of imperfect competition and industrial organisation which supported concerns by an increasing number of antitrust scholars and practitioners that the efficiency explanations of the Chicago School, while valid in certain cases and circumstances, were insufficient and inadequate explanations of firm conduct or market structure and generally led to a too lenient interpretation of antitrust law.

Largely derived from an analysis of competition in oligopolistic markets, many of these new game theoretic models by "Post-Chicago School" economists identified both the ability and incentives of firms to act anti-competitively through strategies designed to exploit unilateral or collective market power. Contributions to the literature include models of explicit and tacit collusion (Green and Porter 1984, Ivaldi et al 2003); horizontal mergers (Farrell and Shapiro 1990); the use of vertical integration strategies to foreclose markets to competitors by "restoring monopoly power" (Hart and Tirole 1990, Rey and Tirole 2007), raising rivals' costs (Krattenmaker and Salop 1986, Salop and Scheffman 1983), vertical mergers facilitating collusion (Nocke and White 2007); and anti-competitive vertical mergers (Riordan and Salop 1995). Other work by economists in the Post-Chicago anti-trust law and economics school demonstrated that vertical restraints such as exclusive dealing, tying and predatory pricing are potentially anti-competitive and reduce consumer welfare (Salop 1993, Rey and Vergé 2008, Wright 2010).

The Chicago School and Post-Chicago School models, which have developed according to Kovacic and Shapiro into a post-Chicago synthesis in the last twenty years, have influenced not only antitrust policy in the U.S. but to some extent competition policy in the European Union and other countries as well. Some practitioners have gone as far to argue that there is now a "common school of thought" regarding the economics of competition law and policy (Vickers 2002, Freeman 2009)

Advocates of the application of transaction cost economics to competition policy are likely to dispute these conclusions. Joskow (2002) comments:

"At the present time TCE and PCALE (Post-Chicago school of antitrust law and economics) are like ships passing in the night. The development of sound antitrust legal rules and remedies would benefit from integrating these approaches and recognizing that they are compliments (sic) rather than substitutes."

TCE has been less influential with competition authorities despite offering workable rules and analytical tools for assessing firm behaviour and a large, broadly corroborative body of empirical

³ Leading scholars in the Chicago School include Aaron Director, Robert Bork, Richard Posner, Frank Easterbrook and George Stigler.

⁴ An example is the 'inhospitality tradition' in U.S. Antitrust policy during the 1960s which Williamson (1985) criticises and states: "[It] held that nonstandard modes of contracting were presumptively anticompetitive. The argument, moreover, was very sweeping. No effort was made to delimit applications to a subset of activity where the anticompetitive concerns were thought to be especially severe. Rather, customer, territorial, and related contract restraints were held to be presumptively unlawful, without qualification."⁴

⁵ The *Guidelines* were rescinded by the incoming Clinton Administration. There are currently no formal guidelines for vertical restraints in the United States.

research to support its main propositions and conclusions. Some of Williamson's early work on transaction cost analysis (Williamson 1971, 1975, 1979,) was stimulated by what he considered the defective economic reasoning of some antitrust decisions in the 1960s. An example is his criticism of *United States v. Arnold, Schwinn and Co* (388 U.S. 365 1967) a case which led to per se prohibition of non-price vertical restraints. The reversal to a rule of reason approach resulting from the *Sylvania* case (1977) however, probably owes more to the Chicago School's influence than to any contribution by TCE.

More broadly, despite the efforts of Muris (2003) and an increasing number of papers and articles supporting the importance of transaction costs to antitrust economics (Hovenkamp 2010a, 2010b, Lafontaine and Slade 2010 and Wright 2010) there is little evidence to suggest that TCE has had a major impact on mainstream economic and legal thinking regarding competition policy. Textbooks on industrial organisation, microeconomics, and introductory economics that are likely to be studied or consulted by competition lawyers hardly mention transaction cost analysis.⁶ Nor do specialist texts on the economics of competition discuss to any significant extent the application of transaction cost analysis to competition policy, for example Viscusi, Harrington Jr., and Vernon, *Economics of Regulation and Antitrust* (2005),⁷ Motta, *Competition Policy, Theory and Practice* (2004),⁸ Bishop and Walker, *The Economics of EC Competition Law* (2010),⁹ and Buccirosi (ed.), *Handbook of Antitrust Economics* (2008). The impact of TCE on standard legal texts is also minimal. For instance, Whish in chapter one of his *Competition Law* (2009) discusses "competition policy and economics" but does not mention transaction cost economics.¹⁰

Similarly, recent surveys of competition economics and policy have paid little attention to the contributions of transaction cost analysis. Kovacic and Shapiro (2000) in their review of a century of economic and legal thinking on antitrust policy do not discuss transaction cost models while Vickers (2002) briefly mentions Williamson's work on "markets versus hierarchies" without any analysis of his contributions to antitrust economics.

In South Africa there appears to have been little recognition or application of concepts of transaction cost analysis to competition policy. A review of Competition Tribunal cases where transaction costs are likely to be important does not reveal significant evidence of transaction cost reasoning, for example in the assessment of vertical mergers or restrictive vertical practices. There also does not appear to be any significant literature on transaction cost economics in South African competition law publications. Neuhoff, Govender, Versfeld and Dingley (2006) refer to some concepts of transaction costs such as relationship-specific investments but the authors do not explicitly use transaction cost analysis in their discussion of efficiency gains arising from restrictive vertical agreements or in their discussion of vertical mergers. Similarly, in Brassey (ed. 2002) there is no explicit discussion of transaction costs analysis in the chapters on restrictive vertical practices and mergers and merger control.

Of course, the reason for this neglect could be that transaction costs are unimportant to competition policy. This however, is unlikely. The conclusions of TCE with regard to the competitive nature of

⁶ Many popular texts on industrial organisation give scant coverage to transaction cost economics. Examples are: Church and Ware, *Industrial Organization, A Strategic Approach* (2000); Tirole, *The Theory of Industrial Organization* (1988); Pepall, Richards and Norman, *Industrial Organization* (third edition, 2005); Belleflamme and Peitz, *Industrial Organization, Markets and Strategies*, (2010). A recent derivative of Pepall et al's book, *Contemporary Industrial Organization* (2010) devotes a whole chapter to vertical mergers including antitrust applications without once mentioning the transaction cost justification for vertical mergers. Notable exceptions are Martin, *Industrial Organization in Context* (2010) and Carlton and Perloff, *Modern Industrial Organization* (fourth edition, 2005).

⁷ In their chapter on vertical mergers and vertical restraints, the authors make a brief reference to Milgrom and Roberts' discussion of transaction costs in their book *Economics, Organizations and Management* (1992)

⁸ Motta mentions a transaction cost concept of relationship specific investments and opportunistic behaviour in his discussion of Vertical Restraints and Vertical Mergers (chapter six) but does not provide a transaction cost analysis of the issues. There is no reference to Williamson's work in the bibliography except his article on welfare trade-offs in antitrust analysis. Chapter six provides a detailed discussion of Post-Chicago game-theoretic models and some comparisons with the Chicago School approach.

⁹ The authors discuss the role of transaction costs analysis in their chapter on vertical restraints but not in their chapter on non-horizontal mergers. The book has two references to Williamson's work in its 25 pages of bibliography.

¹⁰ There is also no mention of transaction costs in the book's extensive bibliography and index.

vertical restraints and vertical mergers are often different to those of neoclassical economics, the Chicago School and the post-Chicago School. Given the empirical evidence supporting TCE, a failure to consider transaction cost models exposes competition authorities to making errors in attempting to distinguish between competitive and anticompetitive behaviour. For example, in explaining firms' practices of vertical restraints what neo-classical theory or the post-Chicago models may consider as the exploitation of market power may in TCE terms be efficiency-enhancing responses of firms to the need to economise on transaction costs.

Furthermore, transaction costs are an important element of the total costs of production in an economy and have a significant effect on economic efficiency. As Arrow (1969) states, "transaction costs are the costs of running the economic system" while Wallis and North (1986) have estimated that the transaction sector in the United States accounted for 45% of the country's GNP in 1970.¹¹ Strategies by firms to reduce transaction costs result in lower prices and other benefits to consumers, one of the objectives of competition policy and a focus of attention for competition authorities.

Another possible criticism is that TCE lacks empirical validity. However, transaction cost models have been widely tested and the evidence is largely supportive. As Carlton and Perloff (2005) argue, "the transaction cost approach has been very successful because of its broad explanatory power," and by applying "formal price theory analysis, the transaction cost approach uses differences in transaction costs to explain why structure, conduct and performance vary across industries"¹²

Joskow (2010) takes a similar view in his study of vertical integration and criticises the contributions of Post-Chicago School industrial organisation models:

"Our understanding of vertical integration has been advanced considerably by Oliver Williamson's work on transaction cost economics and more generally on the development of organizational theories of vertical integration and nonstandard contracts that focus on the costs and benefits of nonstandard contractual arrangements and internal organization."

"There is substantial support in the empirical literature for transaction cost and related theories of vertical integration. There is minimal empirical support for theories that turn on efforts by firms to respond to market power problems or anticompetitive foreclosure motivations. This implies as well that there is little empirical support for the antitrust law's traditional suspicion of and hostility toward vertical integration and related nonstandard vertical contractual arrangements except under extreme conditions where firms controlling bottleneck monopoly facilities have the incentive and ability to exercise an anti-competitive foreclosure strategy. There is very substantial empirical support for transaction cost economics theories of vertical integration and nonstandard contracts, but much less support for other organization economics theories."

Further support for TCE comes from Lafontaine and Slade (2010) who are also critical of market power arguments to explain non-standard forms of inter-firm contractual behaviour. In their review of evidence for transaction cost analysis of vertical market restrictions, the authors reach the conclusion that although the evidence should be treated with caution:

"The empirical literature that we summarize is highly supportive of transaction cost arguments, not because we only selected supportive studies but because support is pervasive. Perhaps more important, the empirical literature reveals that efficiency enhancing rather than market-power strengthening motives explain most of the restrictive clauses found in inter-firm contracts. As Williamson remarked, not only was a market power argument for the use of various contracting practices too easy, 'since any inventive economist could always discover some monopoly purpose, however remote or insubstantial, lurking somewhere, but it discouraged efforts to investigate whether the business practice in question had other origins (as well or instead).'"

Given these contrasting views of the importance and relevance of TCE and orthodox economic theories to explain firm behaviour, market structure and market performance, this paper evaluates the importance of TCE to competition authorities in their assessment of alleged anti-competitive behaviour and in the development of legal rules and remedies for competition policy. The conclusion is that transaction cost economics enhances and complements neoclassical and modern industrial

¹¹ Wallis and North define transaction costs as the "costs of making exchanges", the costs of performing the transaction function. Because of the difficulty of observing transaction costs in the economy, the authors measured "transaction services" as a proxy for transaction costs. Transaction services are that part of transaction costs that result in a market exchange. They represent the resource costs of making market exchanges.

¹² Carlton and Perloff (2005), page 5.

organisation theories by stressing that the institutional framework of markets matters and that the economic organisation of *firms* as well as *markets* is important in understanding firm conduct, market structure and market performance. Consequently, a greater application of transaction cost reasoning is likely to lead to a reduction in the risks of errors in the formulation and implementation of competition policy.

The paper is in three sections. Section one outlines the principles of transaction cost economics and briefly discusses empirical evidence for its main propositions and conclusions. Section two discusses the role of transaction cost analysis in the assessment of competitive behaviour including vertical mergers and vertical restraints. Section three provides a brief conclusion.

Section One: Principles of Transaction Cost Economics

Transaction Cost Economics is a branch of New Institutional Economics and focuses on the role and effects of transaction costs on the economic behaviour of individuals and organisations. The earliest work on transaction cost analysis is attributed to Ronald Coase (1937)¹³ who asked the question why some economic activities are organised through markets and other activities are organised within firms, given that both are alternative methods of coordinating activities in an economy. In market exchanges the price mechanism determines the allocation of resources and directs production while in firms, entrepreneurs and managers coordinate and direct resources and production, generally without the use of the price mechanism. What explains the choice of these different methods of economic coordination? Coase concluded that the primary reason why firms exist in a specialised exchange economy is not because of technological factors but because “there is a cost of using the price mechanism.”

While not using the term “transaction costs,” Coase cited examples of these costs as the costs of discovering what market prices are and the costs of negotiating and concluding contracts. The costs of market exchanges could be avoided through allocating resources through administrative decisions in a firm. However, since there were also costs of coordinating activities within firms, Coase argued that the boundaries of the firm were determined by the comparative costs of coordination and production in market and intrafirm transactions.¹⁴

Building on the insights of Coase, Oliver Williamson is primarily responsible for the development of transaction cost economics. Acknowledging the work of earlier writers (including Commons 1934, Llewellyn 1931, Barnard 1938, Hayek 1945, Simon 1957, Chandler 1962 and Arrow 1969), Williamson combined elements of economics, law and organisational theory with the objective of developing a “predictive law of economic organization.”¹⁵ In a series of books (1975, 1985, 1996) and articles Williamson distinguishes TCE from other theories of economic organisation¹⁶ by arguing that compared to standard economic theory, transaction cost economics is interdisciplinary, more micro-analytical, has different behavioural assumptions to neo-classical economics, regards the firm as a governance structure rather than a production function, and places importance on the effects of institutions¹⁷ on economic behaviour.

Besides Williamson other important contributions to transaction cost economics include Klein, Crawford and Alchian (1978) and the early empirical work of, inter alia, Monterverde and Teece (1982), Stuckey (1983), Masten (1984), Crocker and Masten (1988) and Joskow (1985, 1987).

¹³ Williamson (2009).

¹⁴ Coase (1937, p394) argues that the scope or size of the firm occurs when “a point is reached where the costs of organising an extra transaction within the firm are equal to the costs involved in carrying out the transaction in the open market.”

¹⁵ Ibid.

¹⁶ For example, technological or market power approaches to economic organisation.

¹⁷ Williamson (1985 p408) argues that “Transaction costs economics holds that microeconomic institutions play a crucial, subtle, and relatively neglected role in explaining differential economic performance - over time, within and between industries, within and between nation states and socio-political systems.

TCE adopts a more micro-analytical approach to economic phenomena compared to neo-classical economics and industrial organisation theory. The basic unit of analysis is the economic transaction: a transfer of a good or service from one party to another rather than the unit of analysis used in neoclassical theory of a price and output of a good, service or resource. Williamson defines a transaction more precisely as occurring when “a good or service is transferred across a technologically separable interface. One stage of activity terminates and another begins.”

Transactions in an economy take place either as market exchanges between buyers and sellers or by administrative decisions within firms. The organisation of transactions in a modern market economy varies widely, with a continuum of governance structures including spot market exchanges, short-term and long-term contracts of varying complexity, hybrid organisations such as joint ventures and strategic alliances, and different types of vertical integration. For instance, a motor manufacturer may buy a component used in the assembly of a vehicle by purchasing in the spot market, agreeing a long-term exclusive contract with a specialist component supplier, jointly producing the component with another vehicle manufacturer or backwardly integrating and making the component itself.

All transactions involve costs which are “the costs of establishing and administering business relationships within and between firms or individuals.”¹⁸ In spot market exchanges it is costly for buyers and sellers to find each other, and to negotiate and bargain the terms of exchange. If the parties enter into contracts where value is exchanged over time there are additional ex-ante costs of formulating, drafting, negotiating and safeguarding the terms and conditions of the contracts. There are also the ex-post transaction costs of monitoring and enforcing compliance with the contract including where necessary arbitration, litigation and court costs.¹⁹ For intrafirm transactions, there are the management costs of coordination and motivation. Milgrom and Roberts (1992) state:

“Transaction costs are the costs of negotiating and carrying out transactions. They include *coordination costs*, such as the costs of monitoring the environment, planning and bargaining to decide what needs to be done, and *motivation costs*, such as the costs of measuring performance, providing incentives, and enforcing agreements to ensure that people follow instructions, honor commitments, and keep agreements.”

Individuals and firms try to economise on transaction costs in a similar way to minimising the costs of production. The choice of the economic organisation of a transaction is based on the principle that:

“Transactions, which differ in their attributes, are assigned to governance structures, which differ in their organizational costs and competencies, so as to effect a discriminating (mainly transaction cost economizing) match. (Williamson 1985)²⁰

The organisational arrangements of a transaction depend therefore not only on the production costs of the product or service involved but also on the characteristics and dimensions of transaction costs. Consider a motor manufacturer evaluating the “make or buy” decision for a vehicle component. It will calculate the costs of internal production compared to outsourcing to a component supplier. The decision will be influenced by technological factors such as economies of scale and scope, competitive conditions in the component market and the agency and influence²¹ costs associated with internal production.²² The manufacturer will evaluate the comparative transaction costs of different forms of market exchanges, such as buying in the spot market or agreeing a long-term contract with a supplier. The final decision will be determined by choosing the economic organisation of activities that minimises the sum of transaction and production costs.

In his analysis of these problems of economic organisation, Williamson uses some behavioural assumptions that are different to orthodox microeconomic theory and introduces a number of new

¹⁸ Lafontaine and Slade (2012, forthcoming).

¹⁹ According to Williamson (1996, page 379) transaction costs are “the ex-ante costs of drafting, negotiating, and *safeguarding* an agreement and, more especially, the ex post costs of maladaptation and adjustment that arise when contract execution is misaligned as a result of gaps, errors, omissions, and unanticipated disturbances; the costs of running the economic system.”

²⁰ Williamson (1985) p387-8.

²¹ The costs of internal activities made by managers and other individuals to influence the distribution of benefits inside a firm or other organisation.

²² The firm could also consider a hybrid organisation for the transactions such as a joint venture or strategic alliance.

concepts including *incomplete contracts*, *the fundamental transformation*, *asset-specificity*, and the *hold-up problem*²³.

The two important behavioural assumptions in transaction cost analysis are bounded rationality and opportunism.²⁴ Unlike the strong rationality assumptions of utility maximising individuals and profit-maximising firms used in neo-classical theory, Williamson argues that people have bounded rationality, a form of rationality where individuals are “*intendedly* rational, but only *limitedly* so” (Simon 1961).²⁵ Bounded rationality results from people’s limited cognitive capabilities and ability to process information, incomplete knowledge of the environment, imperfect powers of deduction and inference as well as emotional and subconscious influences on behaviour that affect decision-making.

The second behavioural assumption is that individuals will act opportunistically, defined by Williamson as “self-interest seeking with guile.”²⁶ He argues:

This includes but is scarcely limited to blatant forms, such as lying, stealing, and cheating. More generally, opportunism refers to the incomplete or distorted disclosure of information, especially to calculated efforts to mislead, distort, disguise, obfuscate, or otherwise confuse. It is responsible for real or contrived conditions of information asymmetry, which vastly complicate problems of economic organization.”

These behavioural assumptions have important implications for transacting parties entering contracts. Where there is uncertainty and complexity in the economic environment all contracts are unavoidably incomplete. Because of bounded rationality individuals cannot anticipate all possible contingencies arising from a contract; or agree on a set of reactions for every contingency; or completely specify or measure performance in a contract. Moreover, incomplete contracts provide opportunities for parties to engage in opportunistic behaviour. To avoid these contractual hazards parties attempt to safeguard their interests by ex-ante contractual arrangements and other strategies,²⁷ albeit at a cost and incompletely.

Another problem contracting parties confront is the ‘Fundamental Transformation’ of their trading relationship after they have entered the contract. Prior to the contract there is a “large numbers” bargaining situation where each partner has a choice between alternative potential trading partners, especially in a competitive market. However, after a contract with a specific counterparty is signed the bargaining situation is transformed into a “small numbers” situation where ex-post bargaining occurs only with that trading partner, resulting in a bilateral monopoly relationship. A vehicle manufacturer intending to outsource the supply of a component often has a choice to buy from several suppliers. However, once a decision is made and a contract signed the manufacturer and component supplier are “locked-in” to a binding bilateral relationship for the period of the contract. Thereafter, since contracts are incomplete, each party has the problem of exposure to different interpretations of the terms and conditions of the contract or being “held-up” by opportunistic behaviour from the counterparty, both of which can harm profitability.

The hold-up problem occurs when one or both parties attempt to appropriate through opportunistic behaviour the quasi-rents generated from their relationship. A quasi-rent is a return in excess of the minimum to keep a resource in its current use.²⁸ Where quasi-rents are large and there is an opportunity to appropriate them from the other party the result is often a costly ex-post process of haggling, renegotiating and bargaining between the parties.

²³ The term hold-up in this context is attributed to Victor Goldberg (Goldberg, V., (1976) Regulation and Administered Contracts. *Bell Journal of Economics*, 7, 426-48).

²⁴ Williamson also uses a third assumption that individuals are risk-neutral (Williamson 1985, p388).

²⁵ Quoted by Williamson (1985, page 45). Later, Simon argued, “There can no longer be any doubt that the micro assumptions of [economic] theory – the assumptions of perfect rationality – are contrary to fact. It is not a question of approximation; they do not even remotely describe the processes that human beings use for making decisions in complex situations.” Source: Simon, H.A., (1978) Rational Decision Making in Business Organizations. *American Economic Review*, 69, 493-513.

²⁶ Williamson (1985, p47-8). Williamson does not argue that all people are opportunistic all of the time or some people are opportunistic all of the time. Rather some people are opportunistic some of the time which in a world of uncertainty, when the opportunism may be difficult to anticipate, means that people will attempt to ex ante safeguard their interests in transactions with counterparties.

²⁷ Other strategies include developing reputational capital and standby production facilities as a hedge against hold-up by a supplier.

²⁸ Milgrom and Roberts (1992, p602).

The seriousness of the hold-up problem and the appropriation of quasi-rents depends on the dimensions of the transaction, which Williamson describes as being (1) the frequency of the transactions between the parties; (2) the degree and nature of uncertainty affecting the transactions and (3) the condition of asset specificity that supports transactions. Of these, asset specificity is the most important. Asset specificity is “the degree to which an asset can be redeployed to alternative uses and by alternative users without sacrifice of productive value.”²⁹ There are several types of asset specificity that influence transaction costs including:

- Site specificity where the buyer and seller are in close proximity to each other or in a “cheek-by-jowl” relationship, in order to minimise transport or inventory costs. Examples are storage tanks at an oil refinery and “mine-mouth” electricity generation plants.
- Physical asset specificity such as investments in plant and equipment that have design or operating characteristics tailored to a particular transaction. Examples are moulds for making glass bottles, and tools and dies used for the manufacture of a specific motor vehicle.
- Human asset specificity. A worker or group of workers may have skills and knowledge which are important for a particular set of transactions but less valuable in other production activities. Examples are specialist technical staff such as chemical engineers and aircraft designers.
- Dedicated assets: investments in assets such as plant and equipment by a firm which are made to meet the requirements of a specific customer that otherwise would not be made.
- Brand name capital: investments in intangible assets.
- Temporal specificity: when efficient production is dependent on timeous delivery of raw materials or other inputs in the production process. Small delays in delivery or refusal to accept delivery can result in significant losses. Examples are supplies of inputs in the agri-food industries.

The result of investing in relationship-specific assets which support a transaction is to create the quasi-rents that expose companies to the hold-up problem or other forms of opportunism in a trading relationship. Consider the case of a component manufacturer that enters into a five-year contract to supply a fixed amount of a component to a vehicle manufacturer. The supplier invests in specialised tools, dies and equipment that are relationship-specific to the contract with the manufacturer. The investment is financed through a lease that costs R50 million for the five-year period. The other costs of production, which are variable, are R100 million for the period. The manufacturer agrees to pay the supplier R200 million over the period of the contract providing an expected profit to the supplier of R50 million.

The component is designed specifically for the manufacturer but can be modified and sold to another customer for R140 million during the same period as the contract to the manufacturer. The quasi-rent in the contract is R60 million which is the difference between the expected revenue of R200 million and R140 million, the ex-post opportunity cost of the contract. This represents the next best alternative to the supplier which is the sale of the modified component to another customer.

After the contract is signed the supplier is locked-in to the relationship with the vehicle manufacturer. If the contract is incomplete the component supplier is exposed to a hold-up should the manufacturer attempt to re-negotiate the contract after it is signed. The manufacturer may claim that the quality of the component is not as agreed, or that the service level is below that promised in the contract, or market conditions have changed and it cannot afford to pay R200 million. In these circumstances the manufacturer may offer a price of R170 million to the supplier rather than the agreed R200 million. The expected profit of the contract to the supplier is now not R50 million (revenue of R200 million less relationship-asset costs of R50 million and other production costs of R100 million, a total of R150 million) but R20 million (the offer of R170 million less the cost of R150 million). Of the R60 million quasi-rent to the supplier, R30 million has been appropriated by the manufacturer.

²⁹ Williamson (1989) p142.

If the threat of the manufacturer not to pay R200 million is credible and the success of litigation is not certain (and costly), the supplier may agree to the revised contract and the appropriation of part of its quasi-rent. Note that if the relationship assets were completely dedicated-assets to the customer and were therefore of no value in an alternative use, the quasi-rent increases to R100 million (R200 million less variable costs of production of R100 million). In an extreme case the supplier could, ex-post, accept a contract price of R100 million rather than R200 million which would just cover its variable costs of production, the relationship-specific costs being essentially sunk costs.³⁰ In this case the manufacturer has been able to appropriate all of the supplier's quasi-rent from the contract.

The potential for hold-up and other opportunistic behaviour when relationship-specific assets exist generally leads to ex-ante efforts to negotiate terms and conditions in contracts that offer protection for both parties. There is considerable evidence to show that firms do design contracts that involve arrangements aimed at mitigating contractual hazards arising when investments in relationship-specific assets are significant (Joskow 2010, Lafontaine and Slade 2010). However, these arrangements are costly, time-consuming to agree, and are never totally successful when contracts are incomplete. Another market strategy to mitigate the threat is investments to improve ex-post bargaining positions but this is also costly and reduces the profitability of a contract.

The existence of large quasi-rents arising from investments in relationship-specific assets can also generate distrust between the parties and lower the incentives to invest in specific assets, in doing so having the harmful effect of reducing the level of potentially value-creating transactions. In these circumstances one remedy to economise on these actual and potential transaction costs is vertical integration by either or both parties. In the example of the vehicle component manufacturer, forward integration is probably not feasible but a vehicle manufacturer facing a hold-up problem from a component supplier will often have the ability to integrate backwardly. Monteverde and Teece (1982) showed that in the United States vehicle industry General Motors and Ford produced components themselves rather than outsourcing to specialist suppliers when the components required significant relationship-specific investments ("applications engineering effort" that involved higher human specificity). Earlier in the history of the industry, the merger between General Motors and Fisher Body in 1926 was the result of problems arising from a 1919 ten-year agreement for Fisher to supply General Motors with vehicle bodies as an exclusive supplier. Opportunistic pricing by Fisher and its refusal to move its body plant close to General Motor's assembly plants (which would have led to large relationship-specific investments by Fisher) led to General Motors acquiring full control of Fisher (Klein, Crawford and Alchian 1979).

While reducing the transaction costs of market exchanges such as economising on the contracting costs necessary to avoid opportunistic behaviour, vertical integration also has transaction costs. These costs arise from the coordination of new activities integrated into the firm and the possible increase in production costs arising from an inability to benefit from technological economies of scale and scope. The internal incentives for efficient production can also be lower than for market suppliers subject to the discipline of competition.

Consequently, the dimensions of transactions, particularly the existence of relationship-specific assets and the size of quasi-rents, largely determine whether economic activities are organised through market transactions of various kinds coordinated by the price mechanism or by administrative decisions within firms. Where the business relationship is not complex, and asset specificity is low, resulting in little exposure to opportunistic behaviour, market transactions in the form of spot markets and standardised contracts are the likely most efficient modes of governance for transactions. As the importance of relationship-specific assets and the complexity of the transaction increases the preferred mode of governance for transactions will shift towards longer, less-standardised contractual arrangements between trading partners and internal production through backward or forward vertical integration.

³⁰ Assuming it does not renege on its obligations to the lessor.

Empirical Support for Transaction Cost Economics

Transaction cost economics has been widely tested empirically and has been shown to have significant predictive power, especially the importance of asset specificity in explaining vertical relationships between firms and the vertical boundaries of firms (Whinston 2003). Williamson (2009) states:

“Transaction cost economics both makes predictions and submits them to empirical testing. Not only did empirical tests of transaction cost economics number over 800 in 2006 but they have been broadly corroborative.”

Surveys of empirical research on TCE include Shelanski and Klein (1995) and Macher and Richman (2008), both of which find considerable support for the main predictions of the theory. More critical surveys are by David and Han (2004) and Carter and Hodgson (2006). In his survey of theories of vertical integration, Joskow (2010) concludes there is strong support for TCE. In their review of the empirical research on vertical market restrictions Lafontaine and Slade (2010) also find pervasive support for transaction cost explanations. Single-industry studies largely confirm the main tenets of the transaction costs approach. Among many examples are the aluminium industry (Stuckey 1983), aerospace industry (Masten, 1984), coal supplies to electricity generating plants (Joskow, 1985, 1987), natural gas contracts (Crocker and Masten 1988) vehicle manufacturing (Monterverde and Teece 1982) and the distribution of industrial goods (John and Weitz 1988).

While having broad empirical support, transaction cost economics has been subject to a variety of criticisms. Mainstream economists have criticised TCE for not being sufficiently formalised while evolutionary economists’ criticisms focus on the lack of dynamic analysis in transaction cost models. More generally, Foss and Klein (2010) have reviewed some of the critiques which are largely sourced from “sociologists, heterodox economists and management scholars.” Some criticisms focus on the behavioural assumptions of bounded rationality and opportunism. Others, notably by management scholars, argue that the economic organisation of firms, including their horizontal and vertical boundaries, is driven more by the “capabilities,” “dynamic capabilities” or “competences” of firms than by transaction cost considerations (Augier and Teece 2008).

In summary, the transaction cost approach to economic organisation focuses on how variations in the nature of transactions and their costs lead to a diverse range of modes of governance in the conduct of trade in an economy. The level and nature of transaction costs are determined by the existence of relationship-specific assets that support the transaction, the complexity of the transaction, the frequency of the transaction, and the size of quasi-rents arising from the transaction. Profit-seeking firms attempt to economise on their transaction costs in conditions of incomplete contracts, exposure to losses from opportunistic behaviour by counterparties and the possibility of unexpected ex-post transaction costs arising from the monitoring and enforcement of contractual arrangements with other firms. Their choice of the mode of governance for their activities depends on decisions to minimise their transaction and production costs, decisions which have an important effect not only on the horizontal and vertical boundaries of their activities but also on the economic organisation of their supply chain and competitive conditions in their industry.

Section Two: Applications to Competition Policy

There is a consensus among competition authorities and lawyers that economics plays an important and growing role in the formulation and implementation of competition policy. In their review of a century of antitrust policy in the United States, Kovacic and Shapiro (2000) argued that economists have made two major contributions to antitrust policy, firstly, by making the case for competition as a superior mechanism to extensive government intervention in the economy for governing the economy and, secondly, to provide a guide to the formation of antitrust policy. They concluded:

“Today, the links between economics and law have become institutionalized with increasing presence of an economic perspective in law schools, extensive and explicit judicial reliance on economic theory, and with the substantial presence of economists in the government antitrust agencies”

The growing influence of economics on the formulation and implementation of competition policies is similar in other countries. For example, in the European Union recent trends in competition policy include a gradual shift from a rules-based towards an ‘effects-based approach, grounded in sound economics.’ The increased use of economic reasoning is reflected in both recent decisions of the Commission and in the issue of policy guidelines such as the Horizontal Merger Guidelines (2004), Exclusionary Conduct by Dominant Undertakings (2009), Guidelines on Vertical Restraints (2010) and Guidelines on Horizontal Cooperation Agreements (2010).

One of the contributions of economic analysis to competition policy is the understanding of the effects of competition on economic efficiency and consumer welfare. An objective of the Competition Act in South Africa and many other jurisdictions is to promote an efficient economic environment. Neoclassical and Industrial Organisation economists refer to three types of efficiency in an economy: allocative, production and dynamic. Allocative efficiency refers to the degree to which resources available to society are allocated to their most valuable use. Production efficiency occurs when a given volume of output is produced at the lowest possible resource cost. Dynamic efficiency refers to the optimal introduction of new products and production processes over time. Dynamic efficiency leads to greater productive and allocative efficiency over time.

However, the concept of transaction cost efficiency as an objective of competition policy does not appear in the vocabulary of economic efficiency in neo-classical economics or industrial organisation theory. Yet transaction costs are significant in an economy as Wallis and North (1986) have demonstrated. Transaction cost economics argues that firms strive to economise on transaction costs through efficient governance structures of their production activities. Reducing or minimising transaction costs in an economy will therefore lead to outcomes as for other types of economic efficiency namely lower prices, higher levels of output, improved quality of products and services and increased rates of innovation.

Neglecting or under-estimating transaction costs leads to risks regarding the effectiveness of competition policy. In particular, it leads to the possibility of errors in the assessment of firm behaviour by competition authorities where conduct is perceived to be anti-competitive when in fact it is pro-competitive. The risks apply to horizontal practices and mergers but especially vertical mergers and vertical contractual relationships such as exclusive dealing and exclusive distribution agreements, tying, resale price maintenance and price discrimination.

These risks exist because standard neo-classical economics and industrial organisation theory, which is the primary source of economic advice and analysis provided to competition authorities, do not recognise or assume away transaction costs and the institutional framework of markets. Instead firms are regarded as profit-maximising ‘black boxes,’ transforming inputs into outputs according to the technological characteristics of their production functions. Critics of the neo-classical approach such as Coase³¹ (1991) argue that neo-classical theory studies a system:

“... which lives in the minds of economists but not on earth. I have called the result “blackboard economics.” The firm and the market appear by name but they lack any substance. The firm in mainstream economic theory has often been described as a “black box.” And so it is. This is very extraordinary given that most resources in a modern economic system are employed within firms, with how these resources are used dependent on administrative decisions and not directly on the operation of the market. Consequently, *the efficiency of the economic system depends to a very considerable extent on how these organisations conduct their affairs*, particularly, of course, the modern corporation. Even more surprising, given their interest in the pricing system, is the neglect of the market or more specifically the institutional arrangements which govern the process of exchange. As these institutional arrangements determine to a large extent what is produced, what we have is a very incomplete theory.” (italics added)

One of the weaknesses of neoclassical theory is that if firms are acting in a way inconsistent with the theory of competitive markets, their behaviour is presumed to be based on an abuse of market power or an uncompetitive market structure. This leads to an over-emphasis on these variables as explanations for both firm behaviour and market performance. Coase (1972) identified the problem:

³¹ Coase, R.H. Prize Lecture, The Sveriges Riskbank Prize in Economic Sciences in Memory of Alfred Nobel 1991

“One important result with this preoccupation with the monopoly problem is that if an economist finds something – a business practice of one sort or another – that he does not understand, he looks for a monopoly explanation. And as in this field we are very ignorant, the number of ununderstandable practices tends to be rather large, and the reliance on monopoly explanation, frequent.”

The issue is important because transaction cost economics offers explanations of firm behaviour that are sometimes contrary to the market power models of neo-classical and industrial organisation theory. For example, whereas vertical restraints or mergers in Post-Chicago School game-theoretic models are regarded as being anti-competitive exercises of market power, transaction cost economics explains them as strategies to economise on transaction costs arising from vertical relationships. Similarly, certain market structures may be the result not of market power but the outcome of transaction cost economising behaviour by firms. The issue is not that the game theoretic models are wrong but, by providing inadequate explanations of firm behaviour, they cannot provide by themselves clear guidance to the development of legal rules for competition policy.

A further problem for the application of game theoretic models of modern industrial organisation theory to competition policy is their lack of empirical validation. Joskow (2002) states:

“PCALE has shown that a variety of market imperfections can *theoretically* lead to the *possibility* that vertical integration and vertical contractual restraints can enhance market power upstream and/or downstream and, as a result, lead to higher prices, higher costs, and welfare losses.” (italics in original)

“... PCALE has not produced much in the way of solid empirical research that demonstrates that these theoretical possibilities are in fact observed in real markets, the situations where they are most likely to be observed, and where they are, they lead to significant increases in prices and/or costs and reductions in economic efficiency.”

Joskow then argues that the exclusion of TCE models poses problems for competition policy:

“Moreover, the failure to incorporate theoretical and empirical research in TCE makes it very difficult to evaluate the kinds of trade-offs between market power and efficiencies that are relevant to developing and applying good legal rules or for designing efficient remedies to competitive concerns. These remedies may include restrictions on contracting practices, divestiture of assets, or rejections of merger applications. It is here where TCE provides important theoretical and empirical insights, and these insights have been largely ignored by PCALE”

Of course, market power and market structure are important in understanding competition in markets and recent game theoretic models have provided new and important insights into firm behaviour in oligopolistic markets. Nevertheless, a reliance on these theories derived solely from general, non-case-specific modelling alone is flawed and insufficient for sound competition analysis. By offering richer, more realistic and empirically sound models of firm behaviour and market structure, transaction cost analysis can enhance and complement neoclassical and industrial organisation theories to provide more accurate assessments of competitive behaviour and market structures. The result is likely to be improved decision-making by competition authorities and better legal rules and remedies.

Transaction cost economics is concerned primarily with vertical rather than horizontal relationships between firms. While it can be important in understanding the rationale for joint ventures³² and some horizontal mergers the value of TCE is focused on vertical mergers, vertical restraints and remedies. It therefore is most effective in understanding firm behaviour in the intermediate stages of an industry’s supply chain rather than the behaviour of firms in relation to consumers in end-user markets.

³² Werden has analysed the benefits of joint ventures in terms of reducing the transaction costs of market exchanges. “Joint ventures sometimes avoid problems with the use of market mechanisms for exchange. Perhaps most importantly, joint ventures owned by participants can avoid problems commonly arising in long-term supply, licensing, and similar contractual relationships. Such long-term relationships generally lead to investments in assets that are, to some extent at least, specific to that relationship. Such relationships also may eliminate the need for one party to make certain investments because another party has made them. In either event there is a risk of opportunistic exploitation of one party by another, and the added control possible in joint ventures may mitigate or eliminate this risk.” Werden later discusses the efficiency-enhancing advantages of restrictions on joint venture participants to avoid opportunistic behaviour by members against other members of the venture. Werden, G.J., (1998) Antitrust Analysis of Joint Ventures: An Overview. *Antitrust Law Journal*, 66, 701-35.

Transaction cost analysis can be used in two broad ways in the assessment of competition in markets. Firstly, it provides a set of analytical tools for the assessment of firm behaviour and market structures. Secondly, where anticompetitive behaviour is found or a vertical merger is deemed to be substantially lessening competition, transaction cost reasoning can identify and assess any pro-competitive gains arising from that conduct or the merger. In addition, transaction cost analysis can help competition authorities in devising efficient remedies.

Two areas of competition analysis where transaction cost analysis is important is the assessment of vertical mergers and vertical restrictions including those used by dominant firms.

Vertical Mergers

A vertical merger is a merger between two firms that operate in different stages of an industry supply chain. Generally, vertical mergers raise fewer concerns for competition authorities than horizontal mergers. Firstly, unlike horizontal mergers, vertical mergers do not involve the loss of direct competition between the merging parties in the same markets. Secondly, since the merging firms supply complementary rather than substitute products, vertical mergers can be pro-competitive by providing substantial scope for efficiencies. One example is when the merger internalises a market externality arising from double marginalisation.³³ In this case a vertical merger will lead to both lower prices to consumers and an increase in economic efficiency. Other efficiency-enhancing benefits of integration are “better co-ordination in terms of product design, the organisation of the production process, and the way in which the products are sold.”³⁴

Vertical mergers can reduce effective competition when the firms involved have substantial market power in one or more of the markets in the supply chain. There are three major concerns. Firstly, non-coordinated or unilateral effects can occur where the merger leads to market foreclosure of competitors. Secondly, co-ordinated effects may arise where after the merger, the merged firm and other market participants are able to increase their collective market power by improving the coordination of their activities, harming consumers, for example, by raising prices in the industry. Thirdly, a vertical merger may also raise competitive concerns if it raises barriers to entry where potential entrants are required to enter both downstream and upstream markets in order to compete effectively, thereby increasing their capital and sunk costs of entry.

The arguments of market foreclosure in the assessment of potentially anti-competitive vertical mergers are generally analysed through the application of Post-Chicago game-theoretic models of strategic behaviour in oligopolistic markets (Motta 2004). There are two types of foreclosure, customer and input foreclosure. In both instances the merged parties may post-merger have the ability and incentives to hamper and eliminate actual or potential rivals’ access to inputs or markets, in doing so reducing these firms’ abilities to compete in the merged firms’ markets. As a result of the foreclosure the merging companies and perhaps their competitors as well will be able to raise prices in the market or in other ways harm consumer welfare.

The Transaction Cost Economics approach to vertical mergers is based on different and complementary insights into vertical integration compared to the market imperfection models of neo-classical economics and Post-Chicago School models.

Transaction cost economics is based on the principle that firms strive to choose the most efficient form of economic organisation to meet their profit objectives. Over time firms will adapt their organisational structure, including their vertical boundaries, to changes in their technological, market, competitive and institutional environment and the relative transaction costs involved in market

³³ Double marginalisation occurs when a firm sells a product to another firm that in turn sells to the final consumer. If both firms have market power, each will price by placing a mark-up over marginal cost. This double mark-up raises the price above the price that a vertically integrated firm would set for the product.

³⁴ European Commission (2008), *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings*. The Guidelines also state that integration may decrease transaction costs.

exchanges compared to coordinating production activities within the firm. Firms that select efficient organisational structures will obtain a competitive advantage and grow and become more profitable over time compared to their rivals during the industry's life cycle. In response, other firms in order to remain competitive will imitate and adopt over time to the most efficient form of organisation. As a result, the structure of vertical coordination in a supply chain will evolve over time and reflect the vertical boundaries chosen by industry participants.

In this context, vertical mergers occur because they are efficiency-enhancing strategies of vertical integration adopted by firms to eliminate the transaction costs of market exchanges. Furthermore, the decision to integrate vertically through a merger is perceived by the parties as a superior strategy to one or both firms independently vertically integrating through backward integration or forward integration from their core activities.

Vertical integration through merger, however, is not costless. Besides the administrative costs of the merger, the merged firm will face increased bureaucratic and management costs from managing the enlarged entity and internal production costs of the product or service now being "made" rather than "bought."

An example of how transaction costs determine the level of vertical integration and encourage vertical mergers in a supply chain is the broiler industry in South Africa. Broilers are chickens bred and reared for their meat. The South African poultry meat industry (broilers, turkeys, ducks, geese and other fowls) is the largest agricultural industry in the country with gross farm income in 2010 of R22,9 billion, representing 35% of the gross income of total animal production and 17% of the gross income of all agricultural products produced in the country.³⁵ Broiler meat is the largest source of animal protein consumed in South Africa with per capita annual consumption of 32,0 kg per person in 2010.³⁶ Total broiler production by domestic producers was nearly 970 million birds slaughtered in 2010, almost all supplied to the local market. Imports accounted for approximately 16% of South African consumption in 2010.

Transaction cost economics argues that the economic organisation of the industry such as the extent of vertical integration will reflect transaction cost economising strategies of firms in the supply chain particularly where relationship-specific assets are important in supporting production activities and vertical relationships between firms are complex. In the broiler industry the supply chain consists of a production cycle of approximately 22 months consisting of the breeding, hatching and rearing of great-grandparent, grand-parent and parent birds, the hatching of broiler stock, the rearing of broilers, the slaughter and processing of broilers and their distribution and delivery to wholesalers, retailers and consumers. The supply chain also includes the supply of feed and other inputs to the breeding and broiler stock.

The broiler industry is capital intensive and there is a high level of asset specificity in the production process. Examples of site specificity are the location of hatcheries and breeding farms which are close to broiler farms to minimise transport costs and the risks of stock mortality. Many of the production assets of breeding and broiler farms are immobile and highly specific to the industry, having little or no value in alternative uses. Examples are chicken houses; automatic feeding, watering, ventilation and waste disposal facilities; chick sorting equipment; and highly specialised mechanical slaughtering and processing machinery. There is also time or temporal specificity. Breeding stock, eggs and broilers are all perishable assets and commodities. Producers in the supply chain are vulnerable to the hold-up problem or other opportunistic behaviour by counterparties through the delay or non-delivery of stock through the supply chain. The perishability of the product and inputs also adds complexity to market transactions because the quality of the breeding and broiler stock can deteriorate or reduce, for instance from disease or inefficiencies in feeding, watering and veterinary care.

³⁵ Source: Southern African Poultry Association (SAPA) Industry Profile 2010 quoting statistics from the Department of Agriculture, Fisheries and Forestry.

³⁶ Source: SAPA Industry Profile 2010.

A transaction cost analysis of an industry concludes that where asset specificity is high the most efficient form of economic organisation in the industry is usually a high level of vertical integration. The organisation of the broiler industry is consistent with this analysis. In South Africa a high proportion of domestic output is supplied by a few large vertically integrated producers that are involved in all of the major stages of the supply chain.³⁷ Two firms, Rainbow Chicken and Astral Foods accounted for an estimated 45% of domestic production in 2010 and the largest seven producers (Rainbow, Astral, Country Bird, Pioneer, Afgri, Sovereign and Fouries) supplied nearly 75% of the industry's production in that year.³⁸ Rainbow, the largest supplier in the South African market has an organisational structure that is typical of these vertically integrated producers. The company operates a "farm to fork" strategy, owning feed mills, breeder farms, hatcheries, broiler farms, processing plants, cold storage facilities, warehouses, and a vehicle logistics company to deliver the company's products. The organisational structure of the South African broiler industry is similar to many other countries where large vertically integrated firms are also responsible for a high proportion of industry production.

Firms that wish to enter or expand in the broiler market therefore are likely to pursue policies of vertical integration to achieve competitiveness in the market. Vertical mergers can be a quicker and more efficient means of achieving these objectives than backward or forward integration from the core activities of the firm. Cases before the Competition Tribunal in recent years indicate that some firms have used vertical mergers to this end.

In 2006 the Competition Tribunal approved the vertical merger between Afgri Operations and Daybreak Farms (Case no: 113/LM/Nov05). The motivation for the merger was Afgri's strategy of entering the broiler market "to ensure growth for its animal feed business." Daybreak was a "fully integrated broiler producer" and the merger resulted in the vertical integration of a poultry feed business with broiler production. The "Reasons for Decision" showed that the Tribunal considered the issue of potential customer and input foreclosure arising from the merger but the document contains no reference to transaction cost reasoning in the decision. Similarly, in 2010 the Tribunal approved the merger between Daybreak Farms and Rossgro Chickens (Case no: 57/LM/Sep10) which involved vertical relationships between the parties. Again, in its Reasons for Decision the Tribunal considered the foreclosure arguments but did not mention any transaction cost arguments. In these two cases a transaction cost approach would have provided strong support for the Tribunal's decisions.

In an earlier case the Tribunal considered the proposed merger between Astral Foods and National Chick (Case no: 69/AM/Dec01). The Competition Commission had prohibited the merger and the parties appealed to the Tribunal. The merger had both vertical and horizontal aspects. In its consideration of the vertical relationships the Tribunal was concerned that the merger would "cause significant foreclosure of existing firms, increase significant barriers to entry that already exist, or significantly raise the cost of existing rivals." The Tribunal concluded that all factors were present in the merger. The Tribunal decided that while the concerns were important a prohibition was too drastic particularly as some of the structural problems were likely to be temporary. It approved the merger with a number of conditions. The Tribunal's Reason for Decision considered in detail the foreclosure arguments but did not discuss any transaction cost implications of the merger. While it would not be appropriate to speculate on the outcome of the decision if transaction cost arguments were applied it is possible that a more lenient view of the merger could have resulted either from an assessment of the reasons for the merger or in terms of section 12A(1)(a)(i) of the Act whether the merger would result in pro-competitive gains that would offset the substantial lessening of competition.

³⁷ The major producers also have long-term production contracts (typically three years) with specialised growers for broiler rearing. The integrators usually supply the chicks, feed and other inputs and buy all of the output of the grower.

³⁸ Source: Rainbow Chicken Limited, Reviewed Abridged Interim Results 12 Months Ended 31 March 2011. Investor Presentation 24 May 2011. The market shares are management estimates using SAPA market data.

Restrictive Vertical Practices

Another important application of transaction cost reasoning to the competition policy is cases involving restrictive vertical practices and cases of abuse of dominance through vertical anti-competitive strategies.

Firms in their vertical market relationships with other firms have a wide range of organisational arrangements to choose from, ranging from ad hoc sales and purchases in spot markets to formal and informal contracts of varying length and complexity. These market exchanges occur when firms believe they are more profitable arrangements than vertical integration or hybrid forms of organisation such as joint ventures and strategic alliances.

Where there are repeated purchases or sales with counterparties, firms often find agreements, whether contracts or arrangements or understandings, are more efficient than spot market exchanges. In many of these agreements firms impose restrictions or restraints on their counterparties. Typical restraints comprise exclusive dealing, exclusive territories, selective distribution, tying and bundling strategies and resale price maintenance.

While recognising that vertical agreements can often be pro-competitive, competition authorities regard vertical restraints with suspicion because they can be anticompetitive by reducing inter-brand and intra-brand competition in markets. Although existing in all stages of the supply chain, most vertical restraints of interest to competition authorities are in downstream markets, between manufacturers and their distributors and retailers or between franchisors and franchisees.

Economists have provided a variety of theories to explain vertical agreements including property rights theory and agency theories. Orthodox industrial organisation theories of anticompetitive firm conduct include vertical price fixing (resale price maintenance), creating monopoly power (exclusive territories), building barriers to entry (exclusive dealing), customer and input foreclosure, and supporting or strengthening the collusive activities of manufacturers and retailers. Their effects harm consumers by, inter alia, increasing prices, limiting the choice of products including price-service combinations and distribution formats, lowering the quality of products and reducing product innovation.

The transaction cost economic approach is different. In the absence of a few exceptions involving highly concentrated markets with substantial barriers to entry or strongly dominant firms, vertical restraints are regarded as efficiency-enhancing mechanisms to reduce transaction costs arising from the ex-ante and ex-post costs of writing, monitoring and enforcing contracts and other agreements, and also to mitigate the risks of opportunistic behaviour by counterparties (the hold-up problem). By economising on transaction costs vertical restraints are efficiency-enhancing, enabling both parties to be more competitive in their markets and resulting in pro-competitive benefits for consumers.

According to the TCE approach, the underlying problem in vertical relationships is the divergence and conflict of interests between upstream and downstream firms, particularly between manufacturers and retailers. In these circumstances imposing restrictions on each other's conduct helps to align incentives to the benefit of both parties. The nature and scope of the restraint will be influenced by the level of asset specificity, uncertainty and complexity involved in the transactions.

The primary concern in vertical market relationships is the hold-up problem where relationship-specific investments are made by one or both parties to support the transactions between them. These assets generate quasi-rents that can be appropriated by the other party's opportunistic behaviour. Vertical restrictions are a measure to reduce the ability and incentives of firms to act opportunistically and to encourage investments in relationship-specific assets.

Consider a manufacturer that makes large customer-specific investments in its retailers by training sales and service staff and providing sales and service facilities at the retailer's premises. The

manufacturer is concerned that the retailer may use these investments to promote competitors' brands. To avoid retailer "free-riding" on its investments the manufacturer will impose an exclusive dealing constraint on the retailer that prevents it from selling competitors' products. The restraint protects the manufacturer against potential retailer opportunism and encourages investments that otherwise would not be profitable. Other vertical restraints work in a similar way.

There is considerable evidence to indicate widespread use of vertical restrictions between manufacturers and their distributors and retailers in many industries and many examples of combinations of vertical restraints between the parties. In a recent survey of the literature Lafontaine and Slade (2010) reviewed the effects of vertical restrictions on prices, costs and consumption in a number of industries in the United States and Europe. The industries covered exclusive dealing and exclusive territories in beer retailing and distribution; exclusive territories in vehicle distribution and franchising; tying in film distribution; resale price maintenance in a variety of industries; sourcing restrictions on purchases in petroleum products; and restrictive licensing on entry in magazine distribution.

Lafontaine and Slade found the results "striking" and that the effects of privately imposed vertical restraints "benefit consumers or at least do not harm them" and "... voluntary adopted restraints are associated with lower costs, greater consumption, and better chances of firm survival." The authors concluded:

"... The empirical literature supports Williamson's contention that "Contrary to the inhospitality tradition, contractual constraints can and often do serve legitimate economic purposes. Specifically, vertical restraints may be needed lest subgoal pursuit by the individual parts destroy the viability of the system"" and

"... we endorse the idea that, faced with a vertical market restriction, the burden of evidence should be placed on the competition authorities to demonstrate that the arrangement is harmful."

Lafontaine and Slade as well as other empirical research confirm the basic tenets of transaction cost economics that vertical restrictions are generally efficiency-enhancing mechanisms to enable firms to be more competitive in their markets by reducing their transaction costs. Whilst acknowledging the fact that dominant firms and firms operating tight oligopolies may use vertical restraints as instruments to exploit their market power, these are likely to be exceptions to the general case.

Section Three: Conclusion

Transaction cost economics offers competition authorities a set of analytical tools and models for assessing firms' competitive behaviour and market structure based on realistic assumptions and a large, broadly corroborative body of empirical research to support its main propositions and conclusions. In particular, it provides better explanations of most vertical relationships than market power theories derived from neoclassical economics and game theoretic models of industrial organisation. Transaction cost analysis enhances and complements neoclassical and industrial organisation theories to provide more accurate assessments of competitive behaviour and market structures. The greater use of transaction cost economics to competition analysis is likely to result in improved decision-making by competition authorities and better legal rules and remedies for competition policy.

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