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the state of COMPETITION

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While the cellophane fallacy is a recurring theme in competition law fairytales, you don't often see it in real life. But in the recent Cement Australia (Flyash) *decision, cellophane was front and centre. The decision raises questions about defining markets, applying the hypothetical monopolist test and even our approach to examining misuse of market power.*

This month's TSoC has philosophy, fine music and lots of cellophane-clad ideas to unwrap. Select a beverage of your choosing, kick back and enjoy.

Unwrapping a fallacy: market definition, market power & cellophane

There are some motherhood statements of competition law that – while true – can be difficult to understand in the abstract. Just what does it mean, for instance, that market definition is a purposive exercise? When applied to a practical example, this statement's not too hard to grasp. But practical examples aren't particularly common.

Beware the cellophane fallacy is a similar motherhood statement. Other than the original cellophane decision, it's hard to point to real life cases where it has been relevant. But with the recent *Cement Australia* judgment, we have a concrete (!) example that gives rise to some interesting issues.

Basic principles of market definition

Market definition is all about identifying the close constraints on a given firm whose conduct or proposed merger is under examination. Generally, a firm's pricing and production decisions are constrained to the extent that buyers are willing to switch to other products and/or other producers are willing to offer an alternative product, if the original supplier increases its prices.

Starting with the target firm's product and location, one considers the likely product and spatial (geographic) substitution – by customers *and* suppliers – in response to a relatively small but significant, non-transitory increase in price (**SSNIP**). This is also known as the hypothetical monopolist test.

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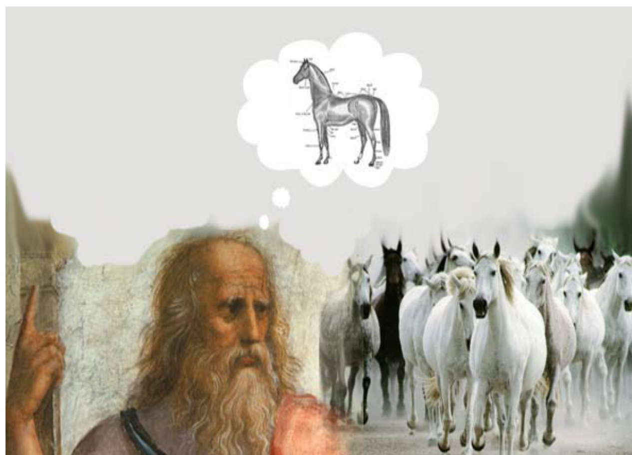
Cellophane - when placed in the hands of economists - can be used to wrap up all sorts of interesting ideas.

For product dimension, one assumes that *all* suppliers of the relevant product jointly impose a SSNIP. What then happens to patterns of consumption or supply? Higher profits per sale will clearly be offset by fewer sales: the question is to what extent. So the boundaries of the "product dimension" are progressively expanded until the SSNIP is profit maximising (ie the higher prices are worth more than the lost sales) because all closely substitutable products are captured. A similar exercise is undertaken to determine the geographic boundaries of the market.

The starting point for applying a SSNIP is the competitive price – generally speaking, this is the cost of production along with an allowance for a "normal" profit. But the price that we *see* in the market may not be the competitive price. We expect in a competitive market that the competitive price and the market price will – over the long-run – be equivalent. But market power or anti-competitive conduct can mean that the market price and the competitive price diverge. And that's when things get tricky.

The cellophane theory can be an abstract concept, but *Cement Australia* provides a rare practical example

The competitive price is an economic equivalent to Plato's forms. It's an idea in our head which the market price imitates: the more competitive the market, the better the imitation. But the competitive price is elusive: just like a Platonic form, it's hard to articulate or – to put it in economic terms – to calculate. So the market price – being the only *known* factor – is our general starting point. What happens, then, when the market price isn't a good reflection of the ideal that is the competitive price?



That Arts degree is more handy than many people give it credit for... Here, Plato explains the competitive price vs the market price.

Unsurprisingly, any divergence can skew our understanding of the patterns of substitution or, more accurately, the conclusions that should be drawn from those patterns. The case in which this first came to a head is an old American decision, *United States v Du Pont*.

Du Pont: the origins of the cellophane fallacy

In 1955 the US Department of Justice (**DOJ**) alleged that Du Pont was in breach of section 2 of the Sherman Act which prohibits (actual or attempted) monopolisation. Du Pont produced cellophane; although Du Pont hadn't invented the product, it had acquired the relevant patent in the 1920s and added a further patent enabling shrink wrapping (providing a degree of moisture protection for the wrapped item).

> *Moistureproof cellophane is highly transparent, tears readily but has high bursting strength, is highly impervious to moisture and gases, and is resistant to grease and oils. Heat sealable, printable, and adapted to use on wrapping machines, it makes an excellent packaging material for both display and protection of commodities.*

By the time of the DOJ action, Du Pont produced about 75% of all cellophane sold in the United States. There were other flexible wrapping materials such as foil or greaseproof paper, but none possessed all the properties of cellophane. The DOJ consequently alleged a cellophane market but Du Pont argued that a "flexible wrappings" market was more appropriate. Ultimately, the Supreme Court found that customers in this broader market were extremely sensitive to changes in price or quality. Thus, the broader market applied and – due to the constraints imposed by other participants in this market – Du Pont was not capable of monopolisation.

The court's decision was criticised for failing to understand that it was Du Pont's exercise of market power itself (in the form of monopoly prices) that meant that consumers considered these other products to be substitutes. If the price sensitivity of consumers was assessed when cellophane was sold at the *competitive* price, then the patterns of substitution would have been vastly different.

In other words, if iPads were the only devices of their type, they could be sold at such a high price that consumers would consider laptops + mobile phones to be a substitute. But if iPads are sold at cost + a reasonable margin (ie the competitive price), this "alternative" no longer looks so attractive. So a SSNIP based on that price is likely to be profitable.

Variations on a theme

Thus emerged the "cellophane fallacy" (or theory or trap). Over the years, layers of complexity have been added. For example, Church and Ware suggest that it may occur where the hypothetical monopolist test is applied in the context of a merger:

> *Suppose that prior to the merger there are two firms in the "true" antitrust market, and those two firms have been able to coordinate their behavior, act like a monopolist, and raise prices. Because their collusive arrangement is unstable, they propose to merge in order to cement their monopoly gains. Basing the hypothetical monopolist test on prevailing (collusive) prices will miss the exercise of market power by the colluding firms, lead to a broadening of the market, and, potentially, a failure to recognize and challenge anticompetitive mergers. Using the competitive price instead would avoid this error.*

Likewise a "reverse cellophane fallacy" can arise. While the cellophane fallacy generally results in markets that are too broad, its mirror image leads to markets that are too narrow. This can be problematic where eg regulated pricing means the market price is below the competitive price. It's even possible for a reverse cellophane fallacy and a standard cellophane fallacy to occur at different functional levels of the same market. While true as a matter of theory, trying to understand how this might arise in practice can make your head spin.

Indeed, in the sixty years since *US v Du Pont*, economists have created such a variety of rifts on the cellophane fallacy that Bach himself would be impressed. But while the complexity of Bach makes for beautiful listening, only the most skilled musicians can play his fugues with dexterity. Likewise, although these economic contributions are extremely valuable, it's increasingly difficult for the average Jo(e) to understand what a cellophane fallacy looks like, let alone its implications.

Cement Australia (the *Flyash* decision)

In *ACCC v Cement Australia* (also referred to as *Flyash*), the competition issue concerned the exclusionary nature of various contracts for the supply of flyash in South East Queensland. Flyash is a waste product created by burning black coal when generating electricity. Power stations must dispose of it, which normally costs money. But flyash can also be used as a partial replacement for (the more expensive) cement. So in the 1960s, Pozzolanic (later acquired by Cement Australia) started a business acquiring flyash from Queensland power stations. Suddenly, flyash changed from a liability to an asset.

The ACCC's case concerned contracts that Pozzolanic had reached with the operators of power stations in SE Queensland. These contracts, the ACCC alleged, excluded potential competitors; hence, they had the purpose and (likely) effect of substantially lessening competition in the flyash market in contravention of s45. The ACCC also alleged that Pozzolanic had a substantial degree of power in the relevant market and that, in relation to particular contracts, it had taken advantage of that market power for a proscribed purpose in contravention of s46.

For now, we won't be examining the alleged conduct closely. Our interest is how the markets were defined for the purpose of analysis. Each of the parties called an economic expert – the ACCC called Greg Houston (of NERA) and Cement Australia called Professor George Hay from Cornell University. Intriguingly, only Houston provided opinion evidence on the issue of market definition.

The absence of close technical substitutes for flyash meant that the garden variety version of the cellophane fallacy – eg whether cement was a substitute – was never in question. But Pozzolanic controlled 85% of available flyash in SE Queensland and was the only viable source of supply to concrete producers. Indeed, at the relevant time, its flyash was said to be $10 a tonne more than it would have been if Pozzolanic faced a competitive market. This raised questions, therefore, about product definition, in particular the grade of flyash Pozzolanic acquired/supplied as well as its bundling tendencies. It also impacted on the geographic dimension of the market.

The product dimension

Flyash comes in various grades and the industry evidence suggested that the grade used has no particular impact on the strength of the end product (concrete). But Pozzolanic only dealt in fine grade flyash, the most expensive. Although coarser grades were clearly technical substitutes, it was unclear whether they were economic substitutes.

In trying to resolve this, Greenwood J observed that the perceived substitutability of the various grades was "almost certainly due to the *influence* and, in truth, *dominance*, of Pozzolanic in shaping the features of that demand as the dominant supplier of that particular product". Ultimately, he found that the relevant market was for fine grade flyash. That said, it was hard to determined whether that was because users considered fine grade to be necessary, or if they simply accepted this as the only option. So, interestingly, Pozzolanic's market power may have resulted in a narrowing of the product dimension, rather than a broadening.

A similar issue was whether the relevant product was flyash only or a bundle comprising flyash and its delivery. This was because, despite requests, Pozzolanic only supplied flyash on a delivered basis. Even while recognising Pozzolanic's behaviour, Greenwood J concluded that the appropriate market should be for *delivered* flyash:

> *Delivered pricing was… an integral element of [Pozzolanic's] product supply and I accept that in defining the market so as to test, at least for s46 purposes, whether a relevant corporation enjoyed market power, it is artificial to separate out facets of delivery or transportation controlled by Pozzolanic, as a separate service in a separate market.*

Greenwood J seems to be indicating that, if a firm chooses to integrate, the integrated products should be treated jointly when undertaking a competition analysis.

This issue has come up in other competition cases, arising under both Part IV (anti-competitive conduct) and Part IIIA (access). It was a central issue in *Davids Holdings*, *Composite Buyers* and more recently in *Metcash*, as well as in *Services Sydney*.

The first three cases concerned the degree of competition between national supermarket chains which were vertically integrated, and functionally distinct independent wholesalers and retailers. In the Competition Tribunal's view, resolution of whether or not to "bundle" the functions was said to depend on whether one could assess the competition issue at one functional level without also taking account of the other. The position in *Services Sydney* was more akin to that in *Flyash* as Services Sydney was and had always been a monopoly supplier of sewage services. In that case (an access matter), whether separate functional markets should be identified was found to depend on the extent of the efficiency gains from integration (and the loss associated with allowing access).

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Always obliging, Pozzolanic wouldn't dream of asking its customers to accept anything but the finest quality flyash or to effect their own delivery. So how should its conduct be factored in when defining the market?

In the *Flyash* case, there appears to be no compelling economic reason for bundling the supply of flyash and its delivery. The evidence showed that some concrete producers who sourced flyash from Pozzolanic's plant wanted to supply their own transport. Absent significant efficiencies from bundling and given the demand for separate transport services, in a competitive market, it is unlikely that *only* delivered flyash would be offered. Ultimately, in a variation on the cellophane fallacy, the decision to treat the relevant market as being one for delivered product means that two separate functional dimensions have been run together.

Of course, that is not necessarily a problem. But here, by treating flyash and delivery jointly, the market definition fails to prompt competition inquiries in relation to substitution options based on delivery terms and conditions. In part, Pozzolanic's bundling motivated some concrete producers to seek flyash supply outside of SE Queensland, thus affecting the analysis of the geographic dimension of the market.

The geographic dimension

For this issue, the key question was whether the market should be confined to SE Queensland or extended to pick up the Hunter Valley in NSW and areas in central Queensland.

Pozzolanic's activities focused on SE Queensland. Greg Houston (for the ACCC) was concerned that "applying a SSNIP to the price charged by Pozzolanic… [may lead to the] impression that concrete grade flyash produced in SEQ can be substituted for cement or for imports of flyash from more distant locations".

The evidence showed that the delivered price for flyash was based on the best alternative price/cost of supply to the particular customer – prices were higher the further the customer was away from alternative sources of supply.

Houston observed:

> *[Where] Pozzolanic was the sole supplier of concrete grade flyash in SEQ and is not capacity constrained, it is unremarkable that import [of flyash from other places] and cement prices are proximate. A profit maximising firm supplying virtually the entire SEQ market can be expected to raise its prices to a level just below that of the next available substitute. However, this does not demonstrate that application of a SSNIP test warrants the product or geographic dimensions of the market being expanded.*

Having identified the risk of the cellophane fallacy, Houston took the unusual step of estimating the competitive price and comparing it with the market price. On his analysis, the market price persistently exceeded the competitive price by significantly more than a SSNIP.

Greenwood J accepted his evidence. While he acknowledged that there were sales from outside the SE Queensland area,

> *the election by… buyers to purchase [elsewhere] is emblematic of nonrivalrous next best alternative pricing by an SEQ supplier enjoying substantial control of SEQ flyash sources by reason of its contracts; predominant market share; and a capacity to dictate delivered pricing terms of product supply constrained only by the landed cost... at southern overlap areas of the outer edge of the geographic boundary.*

Implications of the cellophane fallacy

Returning from this practical example to the theory, what lessons can be learnt? The implications of the cellophane fallacy for market definition and competition analysis are twofold.

First, the market price will not approximate the competitive price so observed substitution behaviour can lead to misleading conclusions. More significantly, however, to determine whether the cellophane fallacy needs to be taken into account, an assessment of substantial market power is required *prior* to defining the market – whether the alleged contravention relates to s46 or to some other section.

The first observation contains no surprises (although it can be difficult to honour). The second, however, flies in face of the accepted approach and indeed seems at odds with McHugh J in *Boral* (see at [262]). But, at discussed below, it's completely in line with the High Court in *Queensland Wire.*

> The implications of the cellophane fallacy are two-fold:
>
> First, you can't apply a SSNIP unquestioningly and you might not be able to trust evidence of substitutability.
>
> Second (and harder to reconcile with authority), you shouldn't start defining the market without first having considered market power.

Can you trust the evidence?

If market power is being exercised, thereby influencing actual and perceived substitution, what should you make of the evidence? As Greenwood J observed in *Flyash*:

> *the best evidence of the field of actual potential transactions [sic] comes from those people who engage in those transactions... [But] Because individuals very often live within the limits of their own experience, market participants giving evidence of actual transactions and actual experience might not be astute to the diversity of substitution possibilities which constrain a firm's ability to give less and charge more. On the other hand, depending upon the dynamic character of the rivalrous possibilities, the relevant market participants may have been particularly conscious of the substitution possibilities confronting them.*

If on-the-ground assessments of substitutability are unreliable, what evidence can be adduced to establish the relevant market? In *Flyash* this was resolved relatively easily (at least for the product dimension), primarily because there were no close technical substitutes. Flyash's particular characteristics mean that so long as it is at least 5% cheaper than cement, it will be used as a substitute to the maximum extent possible.

Where there are various options, one approach is to consider whether any claimed alternatives were seen as substitutes *prior* to any alleged market power. Another possibility may be to consider what happens in similar (competitive) markets elsewhere. But, while superficially attractive, this approach can have shortcomings if other differences in market conditions are not properly understood.

Ultimately, where market power may mean a divergence between the market price and competitive price, substitutability tends to be assessed qualitatively – in other words, largely based upon functional or technical interchangeability. Where this occurs, there is the associated risk of a false negative (Type II error). Whether this risk is too high needs to be considered before the accepted way of approaching market definition is overturned.

So how to apply a SSNIP? Notwithstanding these problems, there is still a tendency to trust quantitative assessments more than their qualitative equivalent. So a more fundamental difficulty created by the cellophane fallacy is that the market price will not provide an appropriate basis for applying a SSNIP.

It is rare indeed to have a party estimate the competitive price, as occurred in *Flyash*. NERA observes:

> *[I]n practice it is extremely difficult and in most cases impossible to determine the competitive price level. This difficulty has profound implications for the application of the SSNIP test to the assessment of dominance. In particular, the inability to define the competitive price level means that empirical evidence designed to assess the degree of substitution between products at existing prices is much less useful in defining relevant markets in dominance cases… This is not to say that observable industry behaviour and data can provide no useful evidence in discriminating between competing market definition claims, but that great care needs to be exercised to ensure that what is identified is not merely substitution at monopoly prices.*

The pragmatic but usually unstated solution is to consider whether potential alternatives are technically substitutable. If not, they can be ignored. But things are just not always that easy – if the price difference between the relevant products is less than a SSNIP, then generally it is considered that the products are substitutable. Again, this can lead to Type II errors – ie, incorrectly favouring a monopolist. This issue is touched upon overleaf.

Identifying market power absent market definition

Finally, it needs to be acknowledged that the usual process of first defining the market and then determining the extent of market power is not helpful when market power is already being exercised and has altered the observed market responses from what they would have been under competitive conditions.

Market definition and competition analysis are part of the same process and are separated only as a matter of convenience. As Mason CJ and Wilson J observed in *Queensland Wire*:

> *In identifying the relevant market, it must be borne in mind that the object is to discover the degree of the defendant's market power. Defining the market and evaluating the degree of power in that market are part of the same process, and it is for the sake of simplicity of analysis that the two are separated.*

Sometimes you can conclude there is substantial market power without first defining the market in detail. In *Queensland Wire*, for example, the court was satisfied that, irrespective of the product dimension of the market, BHP was a monopolist (being Australia's only steel producer at the time). In *NT Power*, a similar conclusion was open about the Power and Water Authority, which owned the electricity transmission network; likewise, Melway's dominance of street directory sales in Melbourne led to an easy conclusion.

In *Flyash*, Greenwood J provides a long list of factors to support his finding that Pozzolanic had substantial market power. Even prior to this, in the context of market definition, he finds that Pozzolanic "exercised substantial control over the sources of SEQ unprocessed flyash out of which concrete grade flyash was either processed or isolated". Pozzolanic was a monopoly supplier of flyash in Queensland so it was not too difficult to determine its market power – at least in a general sense – prior to defining the market.

But where a firm is said to have substantial market power falling short of actual monopoly, proceeding without defining the market properly may not be easy or even possible. The temptation may be to ask who the firms' competitors are, but this in fact begs the question by presupposing or implying a market definition.

Concluding thoughts

Flyash is a timely reminder that the cellophane fallacy is one of a number of factors that can distort the application of the hypothetical monopolist test via a SSNIP.

Potentially there is a risk of the fallacy whenever a firm has substantial market power (resulting in a distortion of the market price). Normally, pricing above the competitive level tends to broaden the range of substitutes on the demand and/or the supply sides of the market. Yet, as shown in *Flyash*, market power can be used to narrow substitution options. This may occur by denying consumers an otherwise available choice (eg pick-up vs delivery) or even convincing them that there is no viable alternative (fine grade vs coarser grades).

Our current tools for defining markets and assessing market power – by failing to properly account for the cellophane fallacy – tend to imply a systemic bias in favour of alleged monopolists. Consequently, the choice of a SSNIP becomes critical – the larger the SSNIP, the greater the bias. The recent tendency to move from a SSNIP of 5% to 10% needs to be considered in this context: perhaps where a larger SSNIP is used, there should be some justification supplied for the choice. Where there is any risk of the cellophane fallacy occurring, a small SSNIP should be preferred.

In short, we need to be alert to cellophane's many risks… but – at least at this stage – not so alarmed that we abandon substitutability and SSNIP tests as our principal tools for defining markets.

Rhonda has written a more detailed piece considering the implications of the Cement Australia *decision and outlining further variations on the cellophane fallacy. We'll let you know of publication details when they're sorted.*

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