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Mamma Mia! Mis-using Abba Lerner's index to measure market power

In August 2018, the Federal Government released the Final Report of the Productivity Commission's (PC) inquiry into competition in Australia's financial system.

One of the main findings of that inquiry was that price competition in the banking system was limited and reinforced by opaque pricing and obfuscation.[1] The basis for this finding was that all banks – large and small in Australia – exhibited pricing power.[2] The PC argued that banks, particularly the largest four banks in Australia, had substantial pricing power and were able to use that market power to keep prices above marginal costs.

That important finding was alleged to be supported by analysis undertaken by the PC using the Lerner index, which it claimed showed that all banks in Australia had market power, but that the major banks were the "dominant force in the market" and, as a result, were able to charge higher premiums above their marginal costs compared with other institutions.[3]

This Brief explains why the use of the Lerner index to determine whether a firm has market power is flawed and casts doubt on the PC's findings that all banks in Australia possess market power and moreover, that the major banks, in particular, have been able to set prices above competitive levels to the detriment of consumers.

Do banks in Australia have market power?

A prerequisite for any finding that banks have sustained prices above competitive levels to the detriment of consumers is that banks must possess some market power. The general feeling in Australia was that the four largest banks had such power.[4]

Identifying when a firm, or a group of firms, have market power is a complex task. The first challenge is to define what is meant by market power. Here, the PC was fortunate to be guided by Australia's competition watchdog, the Australian Competition and Consumer Commission (ACCC) which correctly defined market power as the ability of a firm to profitably sustain prices above competitive levels.[5]

However, that definition of market power raises a second challenge. That challenge is that it will often be difficult to identify what the competitive price in any industry actually is, which means that the existence of market power usually has to be inferred indirectly from the characteristics of the industry and the nature of competition within the market. The PC seemed to understand this and undertook two lines of inquiry to assess whether and to what extent banks in Australia possessed market power.

First, the PC identified a number of features which it alleged contributed to the market power of banks, and in particular, the major banks. These included their size and the substantial geographic reach of the major banks, which allowed them to spread their fixed costs across a broader asset base,[6] their strong brands and perception that they are safe and stable,[7] and, importantly, their ability to raise funds at lower costs than smaller banks.

Second, it considered the extent of concentration in the banking system. Here it found that the four major banks had a combined market share of over 70 per cent across many product lines and that this combined share had increased slightly over the past few years.[8] Although there is a long tail of smaller banks operating in Australia, the PC was keen to emphasise that, in its view, these smaller banks were not capable of challenging the market position of the major banks.[9]

1. Productivity Commission 2018, Competition in the Australian Financial System, Report no. 89, Canberra (hereafter "PC"), p.110.
2. The meaning of pricing power set out in the report is unclear. The PC defines it as the ability to pass through price increases to customers (see page 109 of the final report), but this is at best imprecise and at worst incorrect. It also used the terms "pricing power" and "market power" interchangeably in its final report (see page 82) so we interpret any reference to pricing power to refer to market power in this Brief.
3. PC, p.108.
4. Collectively, the four largest banks in Australia – the Commonwealth Bank of Australia, Westpac, Australia and New Zealand Banking Group, and the National Australia Bank are referred to by the PC as the "major banks".
5. See PC, p.98.
6. PC, p.99.
7. PC, p.102.
8. PC, p.106.
9. PC, p.100.

In its findings, the PC ignores the fact that competition between the major banks might well be sufficient to prevent any of them individually exercising market power.[10] Indeed, the PC's own analysis appears to confirm this, noting that discounting by major banks was vigorous – the majority of home loans offered by major banks were offered at lower rates than the standard variable rate and that, for major banks, the gap between the actual interest rate paid by consumers and the standard variable rate had actually increased over time.[11]

Clearly, it was difficult for the PC to rely on the first line of inquiry to support a finding that the major banks had market power. Many of the features of the banking market that the PC identified as giving major banks an advantage over smaller banks were plainly pro-competitive. Lower costs of accessing funds compared to smaller banks and the benefits associated with greater physical presence and stronger brands were things that benefitted consumers and which they evidently valued, as confirmed by the results of customer surveys which showed that consumers were generally satisfied with their chosen institution.[12]

For these reasons, the PC relied more heavily on its second line of inquiry, which was that the banking market was highly concentrated.

Does high concentration mean less competition?

The PC approached the question of whether high concentration meant markets were less competitive with an open mind. It stated that "high concentration, on its own, was not indicative of market power resulting in inefficient pricing or (tacitly collusive) oligopoly behaviour"[13] and noted the arguments of the major banks that competition was vigorous.[14]

The approach that the PC took to determine whether the allegedly concentrated banking market was characterised by vigorous competition on the one hand or whether it was indicative of market power resulting in inefficient pricing or (tacitly collusive) oligopoly behaviour on the other hand, was to analyse the data it had collected. Specifically, it attempted to measure the pricing (or market) power held by major banks and other Australian-owned banks using aggregated data on the interest rates charged and the costs incurred by each group of institutions.[15]

The analytical tool it used to consider whether a single bank or a group of banks could increase prices (in the form of fees or interest rates) above their marginal costs for a sustained period, was the Lerner index, named after Abba Lerner, the economist that developed the measure in 1934.[16]

The Lerner index measures the extent to which prices in the relevant market depart from short-run marginal costs. The index produces a range between zero and one, with zero meaning that prices equal short-run marginal costs. In the case of monopoly, the index equals the inverse of the market elasticity of demand. The PC argued that any number above zero indicates pricing power[17] and the value of the index can be compared across individual firms or groups of firms to ascertain relative pricing power.

The PC's starting point was that in a competitive market, prices are expected to equal marginal cost and therefore the value of the index would be zero,[18] so it should not have been surprised to find that all banks, both large and small, in Australia were held to possess some degree of market power. Specifically, it found that the Lerner index for market power was around 0.5 (or 50 per cent) for the major banks and 0.25 (or 25 per cent) for the other Australian-owned banks. It was then able to assertively conclude that "the major banks are the dominant force in the market" and that approximately half of the loan price that they charge to their customers is a premium over the marginal cost – double that of other Australian-owned banks.[19]

10. See for example *Australian Securities and Investments Commission v Westpac Banking Corporation* (No2) [2018] FCA 751, para 1717, where Beach J referred to expert testimony from Simon Bishop from RBB Economics who "cogently" illustrated the importance of competitive responses in the banking sector with reference to standard economic models of oligopoly.

11. PC, p.349-351.

12. PC, p.102.

13. PC, p.107.

14. PC, p.107.

15. PC, p.108.

16. The PC estimates marginal costs by following an approach used by the World Bank of first estimating total costs and then differentiating with respect to quantity to obtain marginal costs. This excludes labour, property and equipment and technology. See PC, p.236.

17. See note a in Figure 3.3 on p.108.

18. See note a in Figure 3.3 on p.108.

19. PC, p.108.

Did the PC get it wrong?

Most economists would readily agree that public policy ought to be capable of preventing any firms with market power from sustaining prices above competitive levels to the detriment of consumers so a finding that all banks have market power is an extremely important one. But was it correct?

Unfortunately for those expecting a sensible assessment of the state of competition in the banking sector in Australia from a serious body, the PC got it wrong. It used the wrong benchmark to measure market power.

If market power is defined as the extent to which prices depart from the theoretical ideal found in perfectly competitive markets, then the Lerner index is a simple and intuitive measure. As the PC noted, in a perfectly competitive environment, prices are expected to equal marginal cost and the value of the Lerner index is zero. In such a stylised environment, any number above zero indicates pricing power.[20]

The problem, of course, is that the text-book standard model of perfect competition is rarely, if ever, observed in the real world, and certainly not a useful benchmark for which to measure market power in banking. Where firms incur fixed costs, for example, the competitive market price will necessarily exceed the short run marginal cost; otherwise no firm would be able to operate profitably.[21]

The effect of the PC ignoring fixed costs and using the Lerner index was that it attributed all of the divergence between price and short-run marginal cost to market power resulting in the bizarre finding that all banks, both large and small, in Australia were held to possess some degree of market power.

Furthermore, the attempt to use the Lerner index to shed some light on the relative pricing power of different banks in Australia is deeply flawed. The ability of the major banks to increase prices above short run marginal costs more than smaller banks tells you nothing about whether they have market power. As discussed above, market power is the ability of a firm to profitably sustain prices above competitive levels. The PC had already found that major banks had a more substantial geographic reach and stronger brands than minor banks. These features, along the ability of major banks to access funding at lower rates than other banks, meant that the higher margins earned by major banks were more likely to reflect efficiencies in operations rather than increased pricing power.

What was the nature of the "market power" in banking?

Although the Lerner index is incapable of providing any insights into whether major banks in Australia have market power, it is worth understanding how major banks could have market power. In general, market power could be attributed to one firm or to a group of firms. The former case is referred to as single firm dominance (or unilateral effects), while the latter is referred to as collective dominance (or coordinated effects).

Although both the draft report and final report of the PC found that the four major banks held substantial market power, the draft report was silent on whether that dominance reflected single firm dominance or collective dominance.

Single firm dominance was unlikely. The major banks each pointed to the relatively modest shares of the market that each of the major banks commanded – between 16 to 23 per cent – to argue that none of the major banks held a dominant enough position individually to sustain uncompetitive prices. If one bank would try to sustain prices above competitive levels, consumers could switch to any of the other banks – major or minor – that operated in the remaining 77 to 84 per cent of the market. In other words, if one of the major banks attempted to increase fees or interest rates to borrowers, this would generate a competitive response by another of the major banks.

20. PC, p.108.

21. The PC's measure of marginal cost used to derive the index of market power disregards the costs associated with labour, property and equipment, and technology as these were deemed relatively fixed and not considered to drive marginal costs. See PC, p.236.

Given that the market evidence suggested unilateral effects were unlikely the PC in the final report instead chose to focus instead on the major banks as a group.[22] In other words, the PC found the major banks were *collectively* dominant, meaning that the major banks do not face significant competitive constraints from minor banks in Australia and that the major banks are able to adopt a model of parallel behaviour that reduces the effectiveness of competition between themselves.

The PC's finding that the major banks were collectively dominant was seemingly supported by two academic articles that argued that even if a firm is not considered individually dominant in a market, non-competitive outcomes can emerge in a range of circumstances, from tacit collusion to individual rivalry in highly concentrated markets.[23] It then discussed that departures from competition across these market structures allowed individuals or groups of firms to use their market power either to maintain prices at non-competitive levels, to minimise innovations or to deter new entrants.

But while identifying a set of conditions from the academic literature to help identify when firms might be collectively dominant is a valid starting point for a competitive assessment (although one might have expected a more thorough review of the literature than the two studies identified by the PC), it is not the end of the analysis. What is needed, instead, is a detailed examination of whether the conditions identified in the literature apply in this case.[24]

The PC report contained no discussion of whether the conditions identified in the literature it relied on applied to banking in Australia. The PC seemed content to identify a number of different ways that firms might engage in collective dominance without attempting to turn these into a coherent theory of harm. That may well be because such a theory of harm is difficult to construct even on purely theoretical grounds let alone to test in practice. However, a rigorous and serious examination of the state of competition in the banking sector in Australia demanded that the PC do more than simply assume that the major banks are the "dominant force that controls the market" based on an extremely thin literature review presented in only short two paragraphs of the 868 page Final Report.

Conclusions

A finding that the major banks hold substantial market power and as a result have sustained prices above competitive levels to the detriment of consumers is a serious one. If correct, measures to improve the competitiveness of the Australian banking sector could lead to lower rates for borrowers, higher rates for depositors and more innovative services that make customers more satisfied with their bank.

Unfortunately, despite promising a rigorous analysis, the PC's approach was to apply a simple tool to measure the extent to which prices were above the competitive level which relied on a benchmark that the PC knew – or should have known – was wrong for the banking industry. It then assumed that the major banks were collectively dominant – a concept that European regulators have largely moved away from over the past decade – without setting out the conditions that would be needed for that to happen and without testing whether those conditions were met in this case.

It is unusual in a serious inquiry into the competitiveness of the banking industry to see any weight placed on a simple tool such as the Lerner index to measure market power directly. As a result, the PC has not been able to shed any light on the key question of whether the major banks are able to sustain prices above competitive levels. Perhaps the best recommendation to come out of its report was the call for the ACCC to act as the competition champion. The ACCC's first task should be to put the PC's Final Report to one side and undertake its own assessment to test whether the major banks in Australia have market power and are able to profitably sustain prices above competitive levels to the detriment of consumers.

22. PC, p.104.

23. Ivaldi, M., Jullien, B., Rey, P., Seabright, P., and Tirole, J., 'The economics of unilateral effects' (2003), Interim Report for DG Competition, European Commission; Mas-Ruiz, F. J., Ruiz-Moreno, F., and Ladrón de Guevara Martínez, A., 'Asymmetric rivalry within and between strategic groups' (2014), Strategic Management Journal, Vol. 35, No. 3, pp.419-439.

24. The conditions required for a finding of tacit collusion in one of the two articles referred to by the PC was that the firms have an incentive to set a price higher than the price they otherwise would, because of the fear that, if they do not do so, other firms would react by setting lower prices in the future. That requires the major banks to establish a focal point around which they can coordinate their pricing and to develop ways to protect the price from potentially destabilising action from other major banks as well as from banks outside of any coordinating group that can undercut the major banks and take market share.