Peer Review of "Expert report of Greg Houston" and Dr. Jeff Bennett's "Peer review of expert report of Greg Houston"

A report for Coolmore Australia

by

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1. Introduction

Coolmore Australia asked me to prepare this document after analyzing the "Expert report of Greg Houston" as well as the "Peer review of the expert report of Greg Houston" prepared by Dr. Jeff Bennett. Mr. Houston's report was written with regards to Anglo American Metallurgical Coal Pty Ltd's application for planning approval for the proposed Drayton South Coal Project following the Planning Assessment Commission report that recommended refusal of the application. Dr. Bennett's report considers the same questions raised in Mr. Houston's report, and while approaching them somewhat differently, arrives at the same conclusions. However, Mr. Houston's and Dr. Bennett's reports both contain a number of statements which indicate a lack of understanding of and experience with the Thoroughbred breeding industry; as a result, many of the conclusions they draw are incorrect.

1.1 Summary of Qualifications

I am an associate professor in Agricultural Economics at the University of Kentucky in Lexington, KY, USA. I was hired in 2008 with the charge to conduct economic research on the equine industry. In addition, I served as the Director of the UK Ag Equine Programs and Dickson Professor of Equine Science and Management from 2013 – 2016. Prior to my appointment at the University of Kentucky, I spent six years on the faculty at Duke University's Fuqua School of Business. I completed my PhD in Economics at Texas A&M University in 2002.

Much of my equine-related research has been published in peer-reviewed journals. Most of this research lies in the field of price analysis in the Thoroughbred industry. I have published papers on determinants of Thoroughbred stud fees as well as determinants of sales prices for Thoroughbred yearlings and two-year-olds. In addition, I served as the lead investigator for the 2012 Kentucky Equine Survey, which sought to characterize the importance and impact of the equine industry in Kentucky. An overview of the study was published as a peer-reviewed chapter in a book called *The New Equine Economy in the 21st Century*.

Few universities have faculty positions devoted to studying equine markets. However, with the University of Kentucky being located in the self-proclaimed "Horse Capital of the World," it has the unique ability to serve this rich and highly-integrated equine economic cluster. Conducting research here and being involved in the industry firsthand has provided me with greater insight into the similarities and differences between the Thoroughbred industry and other types of industries.

1.2 Structure of Report

Section 2 identifies the four general ideas presented by Mr. Houston and Dr. Bennett which lead to incorrect conclusions because they are based inaccurate assumptions for the Thoroughbred breeding industry. Each of those points is expanded upon separately in sections 3 – 6. Section 7 concludes.

2. Main Points of Contention

There are four general ideas presented in various places throughout Mr. Houston's report which ultimately help him arrive at the conclusion that Coolmore and Darley are better off not leaving the Upper Hunter region, but if they choose to do so, that the region would be unaffected. These ideas are based on assumptions (implied or stated) that are incorrect as they pertain to the Thoroughbred breeding industry, and consequently the conclusions drawn from them are erroneous. The four ideas presented below can best be summarized as follows:

- Barriers to entry in the Thoroughbred breeding business are low
- The perception of the stud farms in the minds of their customers is inconsequential to farm profits
- In the Thoroughbred breeding industry, stallions follow the broodmares
- The equine critical industry cluster (CIC) in the Upper Hunter region would not be affected by the departure of Coolmore and Darley if they chose to leave

Arguments to each of these will be addressed in its own section below.

3. Barriers to Entry in the Breeding Business are Low

Barriers to entry and exit in an industry include startup costs, exit costs, and other obstacles that determine whether firms can easily enter or exit a market. The conclusion of the 2008 Australian Competition and Consumer Commission (ACCC) cited by Mr. Houston is that 'the barriers to entry into the national market for breeding thoroughbred horses appear to be relatively low.' Dr. Bennett agrees with this statement.

It is not clear what information is used to reach this assessment, but it is used to conclude that it will be easy for other farms to fill the void in stallions left by the departure of Darley and Coolmore.

In microeconomic analysis, the market structure within which a firm operates is characterized by the number and size of buyers and sellers, the degree of product differentiation, ease of entry and exit, and information available to market participants.

There are 12 stud farms in the Upper Hunter region. According to the Australian Stud Book, for the 2015/2016 breeding season, Coolmore and Darley accounted for 41.0% of mares covered in Australia (1,677 for Coolmore and 1,445 for Darley out of 7,513 total covers). When including the next four farms with the highest number of mares bred (Arrowfield with 1,128; Newgate with 1,077; Widden with 731; and Vinery with 687), these six farms represent over 90% of the mares covered in the Upper Hunter regions. These few farms stand stallions which are not homogeneous; there is a fair amount of differentiation in the stallions they stand as measured by stud fees and pedigree. According to these first two criteria, the breeding industry in the Upper Hunter region much more closely resembles an oligopoly market.

In oligopoly markets, there are often significant barriers to entry. I would argue that this is the case in the market for standing Thoroughbred stallions. Barriers to entry are high due to scarcity of legitimate stallion prospects (inherent to the nature of the industry), the capital investment needed to

secure one of these prospects (high startup costs), and the lack of substitutability among individual stallions (inherent to the nature of the industry). In addition, I address an opinion offered by Dr. Bennett that shuttle stallions can serve as substitutes for any resident stallions that leave the Upper Hunter region.

3.1 Scarcity of Prospects

Very few Thoroughbred colts ever stand at stud, and of those that do, very few remain in the breeding pipeline as viable commercial stallions after five years. While there are exceptions to the rule, to be a legitimate stallion prospect, a colt must have a strong pedigree and a successful racing record.

To illustrate the likelihood that a colt will even make it to the breeding shed (much less remain active after five years), take the 2000 North American foal crop as an example. In that year, there were 40,852 foals born whose genders were identified in the *American Produce Records* (available from Equibase Company, LLC). Of those foals, 20,148 were colts (49.3%). Among those colts, 113 (0.6%) appeared at least one year in the annual *Blood-Horse MarketWatch* stud fee issue. The *Blood-Horse MarketWatch* stud fee issue lists stud fees and racing statistics for stallions who stand for over $2,500. Of these colts, 51 (0.3% of the total colts born that year) remained in the breeding shed for five or more years (which is a minimum threshold identifying a successful sire) is significantly smaller. While the statistics presented above may vary from year to year, it is evident that stallion prospects are not readily available.

3.2 Capital investment required

While the odds of finding a successful sire are low, the potential payoffs can be high. For example, the great US sire Storm Cat ultimately stood for an advertised $500,000 per cover at his peak. Factoring in the number of mares bred annually and the number of years a stallion is active results in a highly profitable revenue stream.

Because of the upside of finding a successful top quality sire, unlikely as it may be, a significant capital investment is required to purchase the most sought-after sire prospects. While the terms of these transactions are generally not made public, Oppenheim (2015) approximates the industry method of valuing a prospective sire; the rule of thumb is that 300 times a stallion's entering stud fee is a conservative estimate of a prospective sire's earning potential.

Very careful consideration is given to selecting stallion prospects. These individuals must have the right combination of pedigree and performance to maximize their chances of attracting high quality mares and producing high quality progeny. In any given year, there are only a handful of individuals that fit this bill, which suggests that competition for these prospects is strong among the top stallion farms.

3.3 Lack of Substitutability

Houston's analysis suggests that Thoroughbred sires are substitutable, even at the highest quality levels. Substitute goods or services are defined as those than can be used for the same purpose. Typically, when the price of one good or service increases, demand for the substitute good or service will increase. This has not been studied empirically in the Thoroughbred industry, but a brief

look at the relationship between stud fees and number of mares bred (which is a proxy for demand) may tell a different story.

Demand for stallion services exhibits a striking pattern. As seen in the table below from the 2012/2013 breeding season, demand for stallion services (as measured by average number of mares bred) is highest for the services of a few stallions that are predominantly located in New South Wales. For example, in the top row of the table, there are three stallions whose services were in high enough demand to command fees of at least $100,000 per cover for the owners. The demand for the services of the stallions in second row of the table (again, all in New South Wales) enabled the owners to achieve fees of $50,000 - $99,999 per cover, and so on. Stallion services become less substitutable as quality increases if, for no other reason, due to the scarcity of that resource.

AUS Stallions, 2013			
Stud fee range	**Number of stallions**	**% of stallions in NSW**	**Avg. '13 mares bred**
$100,000+	3	100	156
$50,000 - $99,999	11	100	149
$25,000 - $49,999	16	81	142
$15,000 - $24,999	31	68	105
$10,000 - $14,999	31	32	82
$5,000 - $9,999	70	37	54
< $5,000	22	59	26

The table above suggests that Thoroughbred sires should actually be considered highly differentiated goods. Even within a stud fee range, individual stallions are highly heterogeneous and fill different niches in the market. Each sire has unique bloodlines, phenotypes and different producing proclivities. Some produce better sprinters or better distance runners, some produce precocious individuals and some produce late-bloomers, and some are more commercially attractive than others. There is a field of research on "nicking" which measures special affinities of stallions from one sire line with mares from other sire lines and, while certainly not a perfect predictor of performance, has made a significant impact on the development of the Thoroughbred breed. Therefore, while sires may be in the same stud fee range, they are not substitutable genetically.

For breeders, and even more so for commercial breeders (those that breed to sell), Thoroughbred sires are highly differentiated, and the choice of a sire can have a big impact on operation profits. One of the major determinants of yearling sales price (the most common sales market utilized by commercial breeders) is stud fee (see Plant and Stowe (2013) for an overview).

In addition, Thoroughbred sires are distinct enough that mare owners are willing to transport their mares (even overseas) to find the best match. For example, Bridlewood Farm purchased the sale topper at the Fasig-Tipton November Sale on November 7, 2016, in Lexington, KY. The mare is in foal to the current leading sire in the U.S., Tapit. Regarding her breeding plans for next year, General manager George Isaacs said, "We'll see what this Tapit looks like, the choices are kind of thin here in America, but we'll see where we go." (last accessed 11/8/2016 at http://www.bloodhorse.com/horse-racing/articles/217535/fasig-tipton-november-numbers-soar).

Moreover, at the Keeneland November Breeding Stock sale on November 8, 2016, in Lexington, KY, Sheikh Mohammed bin Rashid al Maktoum (owner of Darley) purchased the session topper for $3.5 million. Sheikh Mohammed's agent, John Ferguson said the mare would likely be sent to Europe to be bred even though a number of top stallions are available here in the U.S. (some of which are owned by Sheikh Mohammed himself). (last accessed 11/8/2016 at http://www.bloodhorse.com/horse-racing/articles/217540/ferguson-to-3-5-million-for-secret-gesture)

To conclude, when combining the heterogeneities of Thoroughbred sires with those of Thoroughbred broodmares, Thoroughbred sires may be seen as substitutes only in the sense that they are fertile stallions that can get a mare pregnant.

3.4 Shuttle stallions cannot fill the void for those having left the region

Bennett suggests that shuttle stallions could serve as substitutes for those that have left the region. I would argue that the pool of stallions that can shuttle is small. First, the highest quality stallions are typically not shuttled, so those flagship stallions that left could not be replaced. Second, for a stallion to be a viable candidate for shuttling, it must have the appropriate pedigree for the intended market, which differs across countries. A popular stallion in the U.S. may receive little interest in Australia because the two industries produce different types of racehorses. Finally, there are significant costs associated with shuttling a stallion, including transportation, insurance, and risks to the horse's health.

4. Customer perception of stud farms are inconsequential to farm profits

Houston argues this point by using the examples of Edinglassie, Darley Woodlands, and Darley Kelvinside. Darley Kelvinside stands top quality stallions but is not located near an open source mine. Edinglassie and Darley Woodlands both stand no stallions. Therefore, none of those three operations may be suitable comparisons for the effect of the Drayton South mine on farm profits at Coolmore Stud.

It would be reasonable to assume that to studs such as Coolmore and Darley, which stand a high proportion of top-quality stallions and largely serve commercial breeders, the perceptions of the

customer are of utmost importance. First, the clientele's experience on the farm may be one of the determinants of which farm to partner with. When they visit the farm, every detail matters. In addition, their customers are concerned not only with the quality of the sire they are breeding to, but the likelihood that their mares will get pregnant and remain pregnant, both of which can be affected by stress from blasting, among other things. For this segment of the market, their bottom line depends on the mares getting pregnant and having a foal to sell.

There are significant financial consequences to broodmare owners if they are not able to get their mares in foal. Not only must they continuing paying for routine care of the mare and the veterinary fees associated with breeding, they have no foal to sell to help recoup their expenses. A recent study examined the financial implications to breeders of losing a year of productivity. Bosh, et al (2009) analyze this issue by considering "foal drift," which is defined as the drift in foaling dates over time for a mare, with that drift ultimately resulting in a foaling date so late that the mare than can't be bred one year. The authors find that when examining a 7-year investment period, on average, live foals must be produced in all but one year to yield a positive financial return for the owner. In addition, profitability for breeders was highest among the mares of greatest financial value. This is exactly the clientele that Coolmore and Darley serve. If they even perceive that their returns are at risk, then the returns of Coolmore and Darley are at risk as well.

5. Stallions Follow Broodmares

Do broodmare farms (and hence broodmares) locate where the stallions reside, or do stallions locate where the broodmares reside? This is a critical issue, because if Coolmore and Darley relocate outside the Upper Hunter region with their stallions, will broodmares follow, or will demand for Coolmore and Darley's stallions decrease?

Mr. Houston's report implies that the stallions will follow the broodmares. To my knowledge, there is no research that supports one position or the other. As Mr. Houston points out on p. 11, because the Thoroughbred industry mandates live cover as the only form of acceptable mating, the stallion and the mare need to be in the same place at the same time for a successful breeding to occur. Consequently, there are certainly economies of scale to be taken advantage of to have stallions and broodmares in close geographical proximity, which in an established breeding cluster makes it difficult to untangle this question.

My experience with the industry suggests that the opposite of Mr. Houston's implied assumption is true. The examples provided in Section 3.3 support the notion that broodmares follow stallions. Broodmare owners will ship their mares worldwide to find the best possible match for them.

Another way to consider this question is to look at broodmare ownership among a stud farm's clientele. Consider as an example the geographic location of Coolmore Australia's clients presented in the table below. Just under 11% of their clients reside in the Upper Hunter region. Almost 40% of them reside in New South Wales outside of the Upper Hunter region. Among these, many are the same distance or closer to the Northern Victoria breeding cluster. These broodmare owners send their mares to farms located close to the stallions they want to breed their mares to.

Owner Location	# of Mares	% of Total
Hunter Valley	171	10.84
Australian Capital Territory	16	1.02
Western Australia	51	3.24
Victoria	196	12.44
Tasmania	13	0.82
South Australia	35	2.22
Queensland	180	11.42
Northern Territory	2	0.13
New South Wales	629	39.91
Overseas	283	17.96

Mr. Houston indicates that there is an upper limit to the number of mares that a stallion can cover. If we think about how this limitation factors into the original development of the breeding industry, it makes sense for the mares to be located near the stallions. For the stud farm, revenue is maximized by having the stallion cover as many mares as possible. If a stallion had to be transported to different areas where mares resided, it would cut down drastically on the number of mares he could cover and hence farm revenues. However, since broodmare owners typically have only a few mares (Houston reports on p. 11 that about 80% of the breeders own 3 mares or less), their costs and revenues are largely unaffected by their location.

Taken together, the more accurate model of the Thoroughbred breeding industry is that the broodmares follow the stallions, which is contrary to Mr. Houston's implied assumption – and which drastically affects the conclusion drawn from it.

One consequence of this model is that with the number of mares covered by stallions at these two stud farms, the new location must have or develop the capacity to accommodate the influx in broodmares. For the sake of this argument, I will assume that Coolmore and Darley re-locate to Victoria, where there is already an established breeding cluster and where Darley currently has a stud farm. Coolmare and Darley studs covered over 3,100 mares last year; assuming the number of covers remains constant, this represents the number of broodmares needing housing in the new location. Currently, these two entities have the capacity for about 725 mares, leaving roughly 2,400 which must be accommodated. This increase in capacity for broodmares can occur in a number of ways. First, Coolmore and Darley would invest in facilities in the new location to maintain their current clientele. Second, depending on the capacity at which they are currently operating, existing broodmare farms in the new location may be able to accommodate some of the influx immediately

or invest in expansion. Third, given the departure of a significant number of broodmares from the Upper Hunter region, broodmare farms operating in that area would conduct their own cost-benefit analysis to determine if it would be most profitable in the long run to move to the new location, to continue operating in the Upper Hunter region, or to exit the business. Finally, there would almost certainly be new investment in the new location to accommodate the remaining demand.

6. The equine critical industry cluster in the Upper Hunter Region would not be affected by the departure of Coolmore and Darley

Ultimately, based on many assumptions (which I have countered in the preceding sections), Houston expresses the opinion that the equine CIC would not be affected if Coolmore and Darley left with all of their stallions.

The equine CIC in the Upper Hunter region is an example of what Porter (1998) calls an economic cluster. An economic cluster is a geographic concentration of interconnected entities in a particular field. Garkovich, Brown, and Zimmerman (2008) conceptualize Kentucky's equine industry as an economic cluster according to the key characteristics set forth by Porter. It would be reasonable to assume that Central Kentucky and the Upper Hunter region share a number of similarities.

Industry experts familiar with the equine economic cluster in Central Kentucky believe that if a handful of the top stallion farms left the area (those standing the highest quality stallions), it would have a significant regional economic impact. The breeding sector of the equine industry is the most labor-intensive sector of the industry. The 2012 Kentucky Equine Survey found that when examined by sector (categorized into breeding, competition, racing, recreation, and other), the breeding sector was responsible for nearly 40% of the total jobs created by the industry (http://equine.ca.uky.edu/files/2012_equine_survey_report_final_4.pdf, p.17). These top farms likely represent more than a proportional share of revenues for local service providers, and it would be in the interest for some of those high-quality service providers (like veterinarians, farriers, and so on) to follow the farms.

Houston states on p. 16 that one of the reasons that the Upper Hunter region is an attractive place for breeding Thoroughbreds because "it has the best reputation of any Thoroughbred breeding area in the southern hemisphere." I would argue that the reputation comes not from the location, but from the reputation of the entities involved in it – no doubt led by global market participants like Coolmore and Darley. That reputation changes if those farms leave.

6.1 Research supporting the possible decline of an economic cluster

Although there has been little research on the decline of clusters, I will first illustrate the possibility of cluster decline with one equine example in Kentucky followed by research suggesting that clusters may not be as stable as expected.

6.1.1 The defection of Kentucky's Standardbred breeding industry

In the early 1980's Central Kentucky was a leader in the Standardbred breeding industry. In the mid-1980's, a few policy changes occurred which led to the slow decline of the industry in Kentucky. First, restrictions on artificial insemination laws (not allowed in the Thorougbred industry) were

relaxed, and the resulting effect was that the location of the broodmares was inconsequential. Second, and more important, New Jersey enhanced its breeders' incentive program with changes to its sire stakes program. This program offered higher purses for winning Standardbreds sired by registered New Jersey stallions, which in turn gave Standardbred stallion owners an incentive to locate their stallions and horse farms in New Jersey. As the stallions left Kentucky for New Jersey, the broodmares followed. The table below shows the decline in Kentucky's Standardbred stallion population and corresponding number of mares covered over time as a result of those regulatory and incentive program changes (data from T.C. Lane, Director of Registry and Membership Services, U.S. Trotting Association).

Year	# of Standardbred Stallions in KY	# of Mares Covered
1986	95	2,171
1995	42	1,083
2005	29	615
2015	15	38

6.1.2 Literature on cluster stability

While most of the research looks at the development and benefits of clusters, there is a small body of literature which suggests that it is possible for a cluster to weaken.

First, Ketels and Memedovic (2008) consider the idea that clusters have life cycles. The authors describe the following stages of a cluster life cycle:

- Emerging clusters – New clusters have few entities and activities, which limits the potential for cluster effects to develop.
- Growing clusters – As the cluster gets bigger, the potential for interaction grows exponentially. As this happens, clusters start to attract additional companies, individuals and capital from other locations.
- Mature clusters – Clusters reach a maximum capacity in which they face rising factor costs and may be tied to a certain technology or operating model which becomes obsolete.

The authors also recognize that historically, most industrial activities used to provide a product or service needed to be concentrated in one location. However, changes in technology and policy have weakened this requirement by allowing entities in different locations in to connect in real time, in global value chains, and in innovation networks (Ketels and Memedovic, 2008). So, the long-term continuation of a cluster is not always guaranteed due to its natural life cycle.

Second, that benefits available to clustered firms increase with the size of a cluster is mostly uncontroversial. However, research on biotechnology firms in the U.S. suggests that firms benefit

asymmetrically from cluster externalities (McCann and Folta, 2011). If this is the case, then it stands to reason that the departure of firms that benefit more from the cluster may have a more significant effect on the long-term viability of the cluster.

Third, government policies can affect the long-term stability of clusters. (Colloredo-Mansfeld and Antrosio, 2009; Meagher, 2007). While successful clusters typically improve the regional economy, wealth may accumulate asymmetrically. Again, depending on which entities leave, the resulting stability of a cluster may be compromised. In addition, competing governments may try to lure an industry to its area with incentive schemes, similar to the factors that led to the demise of Kentucky's Standardbred breeding industry. Recognizing that the Thoroughbred breeding industry in Victoria is not much smaller than in the Upper Hunter region, combined with the incentives they offer (and noting the Darley already has an operation in that area), it is not inconceivable that the equine CIC could transition over time to Victoria from the Upper Hunter region with the defection of a few of its major players.

Finally, and perhaps most relevant, in an article on the viability of agricultural economic clusters, Goetz (2004) says, "without on-going routine analysis, monitoring, and nurturing, clusters may cease to exist altogether, or they may relocate to other areas as relative competitive advantages change." The author points to the sugar beet industry cluster that had been in Utah for over 100 years but withdrew completely and consolidated in Idaho. He concludes with two key points: 1) "a region that currently enjoys clustering benefits has no guarantee that they will last forever,"; and 2) "the pressure on a region to continually improve the competitive position of its firms is unrelenting."

6.2 Coolmore and Darley as market leaders in the Upper Hunter region equine CIC

As established earlier, Coolmore and Darley hold a position of leadership in the Upper Hunter region's equine economic cluster. In addition to accounting for 41.0% of mares covered in the Upper Hunter region, they also stand a majority of the top quality sires in Australia. The 2014/2015 *Racing Australia Fact Book* lists the sires with the 10 highest stud fees for 2014/2015. When accounting for ties, there are 21 sires on the list. After including Coolmore's Fastnet Rock, whose stud fee is private but is likely above the highest published amount of $110,000 (it is listed as $200,000+ in Houston's report on p. 29), Coolmore and Darley account for nearly 60% of the top sires (13 out 22 sires). Of those 13, 12 stand at their stud farms in the Upper Hunter region, while one stands at Darley's existing stud farm in Victoria, Northwood Park.

On p. 27, Houston suggests that the Upper Hunter region is likely to be the most profitable one in which to stand stallions because it has the largest number of *broodmare owners* as well as *customers* that are willing to pay the highest stud fees. First, as illustrated in section 5, these statements are false because for Coolmore, and to the extent that the other major stud farms are similar, most broodmare owners do not reside in the Upper Hunter region. Under the assumption that broodmares follow stallions (and not vice versa, as suggested by Mr. Houston), and they certainly follow top-quality stallions, broodmare owners will move their broodmares to farms near the stallions they want to breed to, even if it requires transportation overseas.

More evidence against the statement that customers whose broodmares are located in the Upper Hunter region are willing to pay the highest stud fees is in Stowe (2013). In that paper, stud fees for U.S. sires do not depend on their location; rather, it depends racing performance of their progeny,

the commercial viability of a sire's progeny, and external economic factors. Therefore, stallions should command the same stud fee regardless of where they stand.

On p. 34, Houston suggests that if Coolmore and Darley did leave, new stud farms and stallions are likely to enter the equine CIC, and existing stud farms and stallions would expand their services. Bennett acknowledges that there may be a short run decrease in the number of mares bred, but eventually it will be compensated for by other entities, new or existing. I find these conclusions to be unlikely because, contrary to the statement on p. 35, I do not believe that the barriers to entry in the breeding business are low. For the reasons stated above, it would be difficult to fill the void created by the departure of the high quality stallions because just by the nature of the industry, those stallions are scarce. Adding additional lower-quality stallions would not have the same effect, because current stallions standing for lower stud fees don't fill their books. There is no reason to believe that there is a surplus of stallions waiting for farm space to open up, which seems to be what Houston is suggesting.

It is also important to keep in mind that if Coolmore and Darley relocate, they are not exiting the market; they will still be competing with other farms for the same stallion prospects. If Coolmore and Darley relocate with their stallions, the broodmares leave. If the broodmares leave, because the breeding industry is the most labor-intensive segment of the industry, many jobs leave with them.

One last comment relates to the discussion of Coolmore selling its property. On p. 35, Mr. Houston assumes that Coolmore would seek to maximize the revenue from the sale of its property. While this is certainly accurate, I disagree with the subsequent statement that Coolmore can maximize its revenue by selling the property as a Thoroughbred stud farm. In the real estate market, a seller does not typically choose its buyer; rather, the property is sold to the highest bidder, regardless of their intended use of the property (although zoning regulations and development restrictions may limit the pool of potential buyers). As a revenue maximizer, I would assume that the bigger concern to Coolmore would be the decline in land value due its close proximity to the proposed mine.

7. Conclusion

Based on my analysis of both Mr. Houston's and Dr. Bennett's reports, I disagree with the major conclusion that the Upper Hunter region equine CIC would be unaffected by the departure of Coolmore's and Darley's operations. There is no doubt that a move out of the region would be costly in the short run for Coolmore and Darley. However, given the clientele that they serve, the ability of their farms to operate profitably in the long run may be at risk if the Drayton South mine is allowed to proceed.

The Thoroughbred breeding industry in the Upper Hunter region presently constitutes what is known in the literature as an economic cluster, and it is referred to here as the equine critical industry cluster. It is difficult to forecast empirically what might happen to the equine CIC if Coolmore and Darley moved their operations out of the area; there is little academic research focusing on the decline of clusters. However, results from the research provided in this report suggest that it is plausible that the equine CIC in the Upper Hunter region could be significantly negatively impacted should Coolmore and Darley leave.

Coolmore and Darley together stand nearly 60% of the top stallions in Australia (defined as that stand for the highest 10 stud fees) and stand stallions that covered over 40% of total mares bred in the Upper Hunter region last year. Under the assumption that broodmares follow the stallions (which is contrary to the assumption of Mr. Houston and Dr. Bennett), the defection of these two market leaders could have a greater than proportional effect on the equine CIC because they serve the top end of the market. Thoroughbred breeding is a labor intensive industry, so the loss of those broodmares implies that the loss of a large number of jobs. Because they serve the top end of the market, it is reasonable to presume that these two operations account for a larger than proportional share for revenues to industry-related service providers such as veterinarians, farriers, hay and feed providers, marketing companies, and so on. It would be in the best interest to at least some of these service providers to move with Coolmore and Darley since much of their income depends on those farms.

Furthermore, it seems doubtful that alternative suppliers will be able to fill the void left by the departure of two global leaders in the industry like Coolmore and Darley. There may be some capacity for other stud farms to absorb a part the loss, but because of significant barriers to entry, it will be nearly impossible to mitigate the losses that would result from re-location of Coolmore and Darley out of the Upper Hunter region. Moreover, it would not be the case that Coolmore and Darley have exited the breeding business. Rather, that business would most likely be moving to another well-established breeding cluster in Victoria, and they would still be in competition with existing farms in the Upper Hunter region for broodmares and stallion prospects.

Through my analysis of the Houston and Bennett reports, I arrive at the opposite conclusion: should Coolmore and Darley decide to relocate their operations due to the Drayton South mine, the regional economy characterized by the Upper Hunter equine CIC could face a significant negative impact.

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