Global cork demand: The competitive challenges facing Portuguese producers

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Global Cork Demand:
The Competitive Challenges Facing Portuguese Producers

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ABSTRACT

This paper profiles and examines the competitive landscape of the Portuguese cork industry through the lens of an individual producer, Jan Dalhuisen, a plantation owner and cork producer of over 20 years. His unique experience as a cork producer, summarized in the form of an article, is used as a reference point in identifying linkages in the competitive challenges he faces to those facing the domestic and global cork industry.

Foremost, domestic market conditions of the industry are examined, analyzing the evolution of the primary factor input of production: labour. Next, emerging trends in production of this unique market in Portugal are evaluated. The focus, in these two areas is to find determinants of domestic supply and demand conditions and ascertain how they are effecting the macro-economic environment. That is, what economic forces in the domestic cork industry are impacting the global competitiveness of individual producers?

Second, global supply and demand trends are assessed, specifically, changes in the landscape of the wine bottling industry, its historic use of traditional cork stoppers, and the emergence of substitutes. In respect to substitutes, global market data is examined to assess if their emergence has had significant impact on global pricing trends of natural cork.

Finally, the implications of all observations for manufacturers and producers in the Portuguese cork industry are stated. Individual and collaborative strategies for industry members to utilize are discussed, all with the clear objective to improve competitiveness for the Portuguese industry as a whole, as well as sustain profitability for small scale producers.

ARTICLE

Jan Dalhuisen & Small Scale Cork Production

Jan Dalhuisen, a highly regarded law professor at Kings College London, purchased land in Portugal in 1989. His intended use of the land was “primarily for leisure,” as the 20 hectare waterfront property is situated in Lower Alentejo, a region with wide appeal due to the Mediterranean climate and temperate ocean waters.[1] Like the vast majority of landscape in this region, various tree species thrive, none more abundantly than cork oak (Quercus Suber). In fact, the Alentejo Region accounts for 72% of all cork forest area in Portugal and 23% of the world stock (APCOR ANUARIO, 2009). Jan estimates that his property boasts “nearly 500 trees capable of yielding 700 arrobas” (1050kg) of raw cork on harvest years.[2] His first harvest was in 1994 and his second in 2003, and while Portuguese environmental law requires only 9 years between harvests, his next harvest is planned for 2013.

[1] Jan Dalhuisen, Law Professor, Universidade Catolica Portuguesa, Interviewed by the author with permission, November 13, 2007
[2] IBIB

Harvesting is a major endeavour requiring the careful removal of the exterior bark of the trees, a process called stripping, that must be undergone with precision and care to protect the tree and ensure future re-growth. In most cases, the stripping "is carried out during the most active phase of the cork's annual growth: from mid-May to the end of August." (www.realcork.org) Jan, along with a vast majority of other producers of similar size and resources, contract out this task to local family owned companies. This highly specialized labour is the primary factor input in production and, aside from the land, is the most expensive part of any cork operation.

Once the trees are stripped they are then piled on site in preparation for sale. Jan, to date, has exclusively sold his piled cork to the Amorim Group and insists that this is "the only option for small scale producers," adding that, "they have a virtual monopoly over the industry."[3] Whether that is in fact the case remains open to debate. It is, however, quite accurate for Jan to imply that the Amorim Group has a very strong foothold in the industry, as it purchases the largest share of all raw cork in Portugal. Jan's cork, once purchased by the Amorim Group conglomerate Corticeira Amorim (CA), is first shipped to their manufacturing facilities in northern Portugal and then manufactured into various finished products. The most common product, not surprisingly, is cork stoppers for wine, although other business units (BUs) in CA produce floor & wall coverings, composite cork, and insulation cork.

Jan's cork, self described as of "the highest quality," is used solely for the manufacture of natural cork stoppers.[4] His concerns, entering his third harvest year in 2013, are primarily related to what he sees as a "deflated domestic market, where individual producers can't compensate for falling prices."[5] Mainly, he contends that "high inelasticity of demand" for labour he employs is making it increasingly difficult for producers to stay profitable.[6] Furthermore, he has growing concerns about the negative impacts of the Amorim Group's influence on the piled cork prices in the domestic market. As a PhD. of law and practicing lawyer, he believes that the matter is significant enough to warrant an investigation by the European Council, which enforces Europe's competition laws in all jurisdictions.

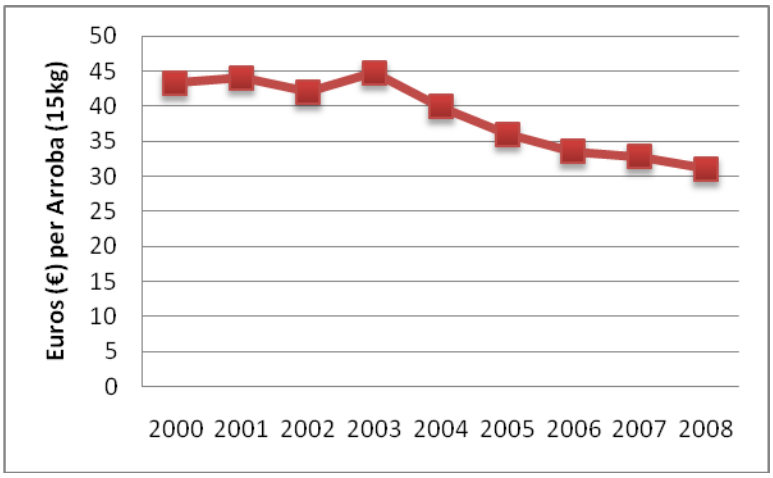
Although limited in scope, and in need of more rigorous examination, Jan's assumptions regarding labour conditions are logically sound. It is quite apparent, as well, that these concerns, as well as concerns of industry monopolization, are shared amongst many small scale cork producers. Overall, though, the greatest obstacle facing cork producers in staying competitive are global macro-economic changes affecting prices, which have dropped rapidly by 31% since 2003 highs (APCOR Annuario, 2009: 22). Are domestic micro and macro determinants root causes of the industry decline? Perhaps, but it is not without examination of the major macro-economic forces that drive the global consumer market for cork and cork products that one can verify this assertion. In fact, a closer look into the evolution of the wine industry in recent years tells a very different story; mainly, that cork is facing new competition in the form of substitutes for wine bottle stoppers and that these substitutes may well be the root cause of price deflation.

[3] IBIB
[4] IBIB
[5] Jan Dalhuisen, Law Professor, Universidade Catolica Portuguesa, Interviewed by the author with permission, November 13, 2007
[6] IBIB

INTRODUCTION

Almost 7 years after his last harvest, Jan Dalhuisen has noticed a marked change in the domestic conditions of cork production in Portugal. His primary concern, undoubtedly, is the potential profitability of his fast approaching third harvest, which will take place in 3 short years. Mainly, he cites the increases in labour costs as primary factors in profit erosion in the industry. In comparison, though, these erosion effects are insignificant when compared to the root cause of the Portuguese cork industries global competitiveness. The industry as a whole must contend with much more significant competitive threats: Substitutes. Their introduction and subsequent market growth is the primary reason for the fall in cork prices in the last 8 years. How much have prices dropped? Well, since Jan's last harvest, the average price of piled cork has plummeted from highs of 42.89€ per arroba to an astonishing low of 31.40€, seen in Figure 1 (APCOR Annuario, 2009: 22).

***Figure 1*: Selling Price of Piled Cork[7]**



This drop in prices can be attributed to the increasingly elastic demand, or price sensitivity, of wine producers, a result of low cost substitutes replacing their cork counterparts. Wine makers' secondary concerns are related to the widespread occurrence of cork taint, a phenomenon which was one of the main reasons the wine closure market welcomed synthetic and screw cap substitutes initially. Now, with economic uncertainty of one of Portugal's oldest industries increasing, industry leaders must collaborate to re-establish cork as the closure of choice for the wine market. First, they must enhance their products by developing lower cost alternatives to compete in the low cost segment. Second, they must work diligently to reduce the presence of cork taint in their products, thus, alleviating these quality concerns held by many potential customers. Finally, they must seek new strategies to promote their product; specifically, they must increase the environmentally sustainable profile of their industry, one of their strongest differentiating qualities.

1. DOMESTIC ECONOMIC DETERMINANTS OF PRICE

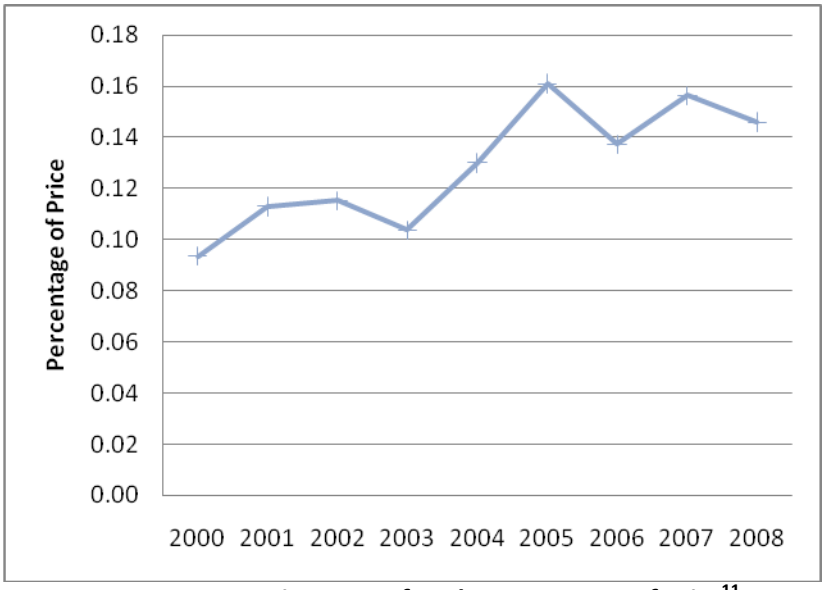
1.1 Labour Market

As mentioned, Jan's primary concern regarding profitability is in reference to labour costs, and what he contends are producers' highly inelastic demand for this extremely specialized factor input. Inelastic

[7] Figure 1: APCOR Annuario, Page 22, Chart 12: "Evolution of the Selling and Extraction Prices of Reproduction Cork"

demand, in this case, implies that a producer will not greatly alter the quantity of labour utilized as the price of that labour increases or decreases. This can be attributed to the extremely high labour intensity of production in the industry, where producers are unable to utilize other factor inputs when it comes to extracting raw cork in harvest years. Particularly, this inelasticity of demand has had considerable negative impacts on producers in the last 8 years, as extraction costs as a percent of prevailing prices have increased by 67%, shown in Figure 2. Resoundingly, cork producers who participated in the survey I conducted all agreed that rising labour costs greatly impacted their profitability.*8* In fact, they identified rising labour costs as the greatest domestic macro factor impacting profitability by a 70% majority.*9*

Figure 2: **Average Extraction Cost of Cork as a Percent of Price**[10]



Average Extraction Cost of Cork as a Percent of Price[11]

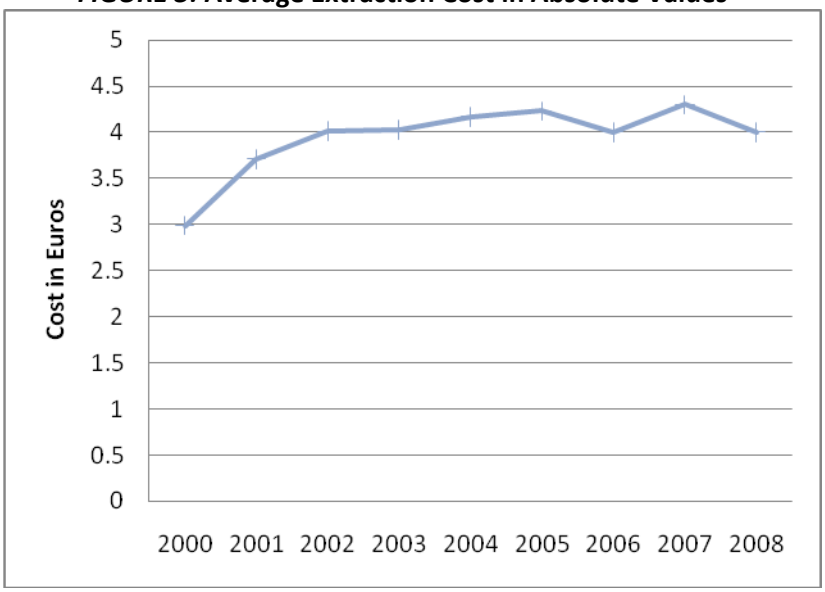
What, then, are possible explanations for labour costs to increase? One such explanation, as Jan points out, is that the labour market has become more organized in recent years and has, collectively, increased the cost of their services disproportionally to inflation. Compounding this is the fact that prices of piled cork, as stated, have been in decline over the past 8 years, which means producers were unable to pass on these costs to consumers by increasing prices. Thus, unit labour costs of production rose while unit revenues fell, resulting in profit erosion. What cannot be overlooked; however, are the underlying reasons for the labour force to organize and increase the cost of their services so significantly. Perhaps, the best explanation is the considerable changes in the macro-economic environment brought on by Portugal's adoption of the euro currency in 1999.

It was, precisely, at this time that Jan identified a gradual and sustained increase in labour costs. Evidently, the adoption of the euro increased the cost of living for all Portuguese citizens, including those working in the labour market of the cork industry. Unlike many industries, though, where demand is more elastic, labourers in the cork industry are able to exercise market power over prevailing labour costs, this, a result of high inelasticity of demand for their employment.

[8] APPENDIX A: "Cork Production Survey", Conducted By Daniel Mccombe
Administered To 10 Individual Portuguese Cork Producers with Land Sizes of 15-50 Hectares
[9] IBIB
[10] Figure 2: APCOR Annuario, Page 22, Chart 12: "Evolution of the Selling and Extraction Prices of Reproduction Cork"
[11] Figure 2: APCOR Annuario, Page 22, Chart 12: "Evolution of the Selling and Extraction Prices of Reproduction Cork"

What can be concluded about labour effects on competitiveness and global pricing? First, increased labour prices are having negative impacts on the economic bottom line of producers, eroding profits since Portugal's adoption of the euro. Second, the increase in labour costs is resultant of producers having inelastic demand for this highly specialized labour, which became more organized in recent years and collectively raised the cost of their services. These challenges, albeit difficult for producers to overcome, are comparably insignificant when comparing the impact of global price decline. When assessing the increasing extraction costs in absolute terms it is clear that their effects are not as drastic at second glance, seen in Figure 3, increasing by a combined 25% in the last 8 years (APCOR Annuario, 2009: 22). In fact, comparing profit erosion due to global price decline from 2000 to 2008 with labour cost increases in that same time span shows that prices have fallen 12 times more than extraction costs have risen (APCOR Annuario, 2009: 22). Clearly then, the greater obstacle facing producers in remaining competitive is declining prices for their piled cork, and given a closer look, the transformative effects of global price decline are quite apparent in the emerging production trends of the domestic industry.

***FIGURE 3:* Average Extraction Cost in Absolute Values[12]**



1.2 Cork Grades & Production Trends

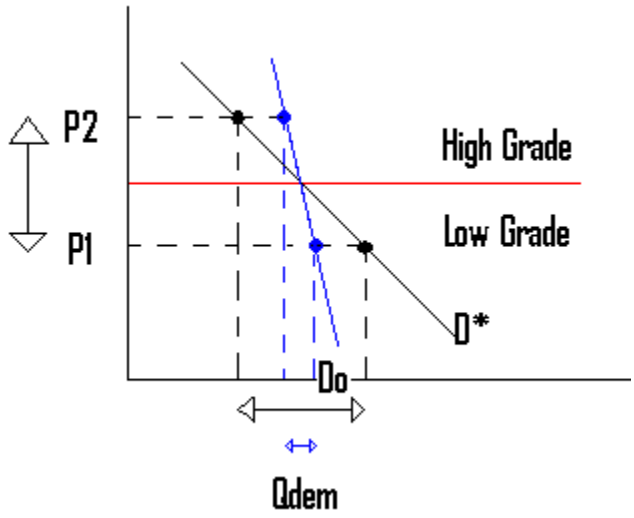
Production starts foremost with the fully re-grown bark mature trees in one of Portugal's forested regions such as Alentejo. Understandably, the characteristics and applications of cork vary from region to region based on subtle differences in climate and soil. For example, cork grown in soil with a high concentration of sand is less desirable for natural stopper production, thereby classifying the cork as low grade (Dalhuisen, 2009). Low grade cork, however, has many applications of its own such as flooring and insulation as well as the production of agglomerated cork stoppers, which are made of natural cork stopper by-products and other particles of cork. Naturally, the price of low grade piled cork is lower than its high grade counterpoint. As a result, land values have a significant variance in heterogeneous regions where different climate and soil produce cork with different physical properties.

Interestingly, recent decline in the price of piled cork has had unexpected effects on the relative use of each respective grade of cork. The cork manufacturing industry utilized lower grades of cork to produce agglomerated stoppers increasingly from 2000 to 2007 by 39% (APCOR Annuario, 2009: 27). On the other hand, utilization of high grade cork for the production of natural stoppers fell by 13% (APCOR

[12] Figure 3: APCOR Annuario, Page 22, Chart 12: "Evolution of the Selling and Extraction Prices of Reproduction Cork"

Annuario, 2009: 27). What does this indicate? Mainly, it shows a clear shift to production of lower cost cork stoppers, which are of the agglomerated variety. This shift is in direct response to increasing price elasticity of demand for natural wine stoppers illustrated in Figure 4. That is, wine companies are demanding relatively fewer quantities of high grade natural cork stoppers at high grade prices (P2). They are, conversely, opting to purchase relatively larger quantities of low grade agglomerated stoppers at lower grade prices (P1). This change in demand can be characterized by the shift in the linear demand curve from Do to D*. The next step, then, is to assess how the domestic industry is reacting to changing demand conditions, and to do this, I found it prudent to use the industry leading company as the focus of my analysis.

Figure 4: **Price Elasticity of Demand for Different Grades of Cork**



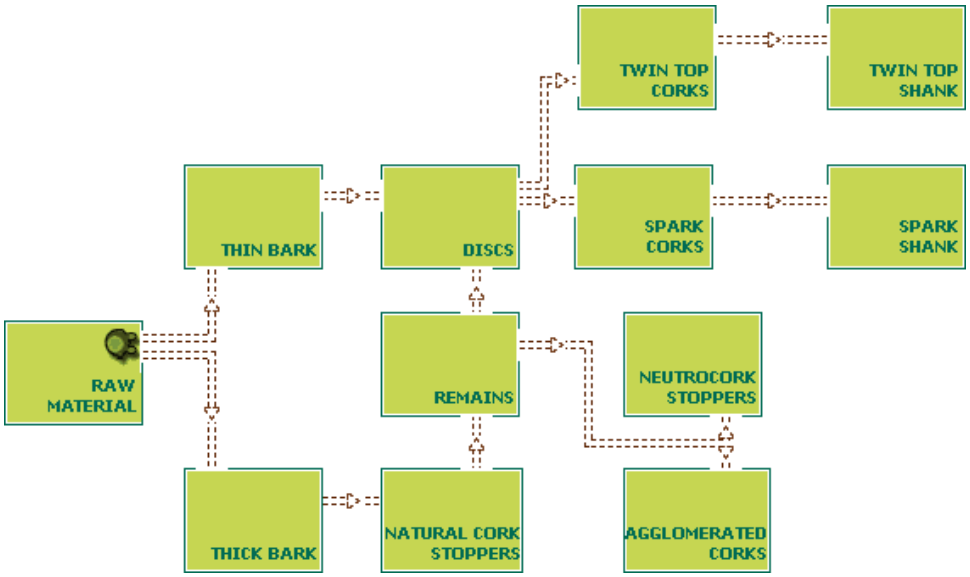
1.3 Corticeira Amorim: Scale Effects & Monopoly Concerns

The industry leader referred I refer to is the aforementioned Corticeira Amorim (CA), the world's largest cork producer of both natural and agglomerated cork stoppers. Active in all sectors of the cork market, their vertically integrated operations are most concentrated in Portugal. On an annual basis, they establish a provisioning strategy based on predicted supply levels in the domestic market. Their objective is to supply cork that best meets "the needs of each of its Business Units (BUs) in terms of quantity, quality and price (CA Annual Report, 2009: 30)." Combined, the business units generated an industry high €468 million in sales (CA Annual Report, 2009: 133). As expected, while sales in agglomerated varieties of stoppers such as champagne and Neutrocork® rose by 12% and 4.1% respectively, sales of "the BUs most important product – natural cork stoppers" fell by 7.7% (CA Annual Report, 2009: 31). These numbers support the assertion made previously that global demand conditions have changed, becoming more price sensitive. Despite this increasing price sensitivity, however, CA remains profitable by relying on its competitive advantages: scale economies and supply chain management.

Of course, that supply chain starts with raw materials, which leads us back to small scale producers like Jan Dalhuisen. Often, and in the case of Jan, small scale producers have only one option for whom to sell their product to: CA. The reason for this is because no other producers enjoy the same economies of scale as CA does. They are able to purchase relatively small quantities of piled cork (400-1000 Arrobas) in a profitable manner, when other smaller and less integrated companies often cannot. This stems from

the fact that CA has significant investments in state of the art manufacturing plants where a wide range of products are produced, putting to use all grades of cork as seen in Figure 5. Their 2008 balance sheet states that their asset values in property, plant and equipment totals €180 million (CA Annual Report, 2009: 130), and with large capital investments such as these, their fixed costs are proportionally higher than their competitors. The result is, however, lower variable costs of production, making purchases of smaller harvest quantities of cork like Jan's a profitable venture.

Figure 5: **Corticiera Amorim: Inputs and Outputs Process Map**[13]

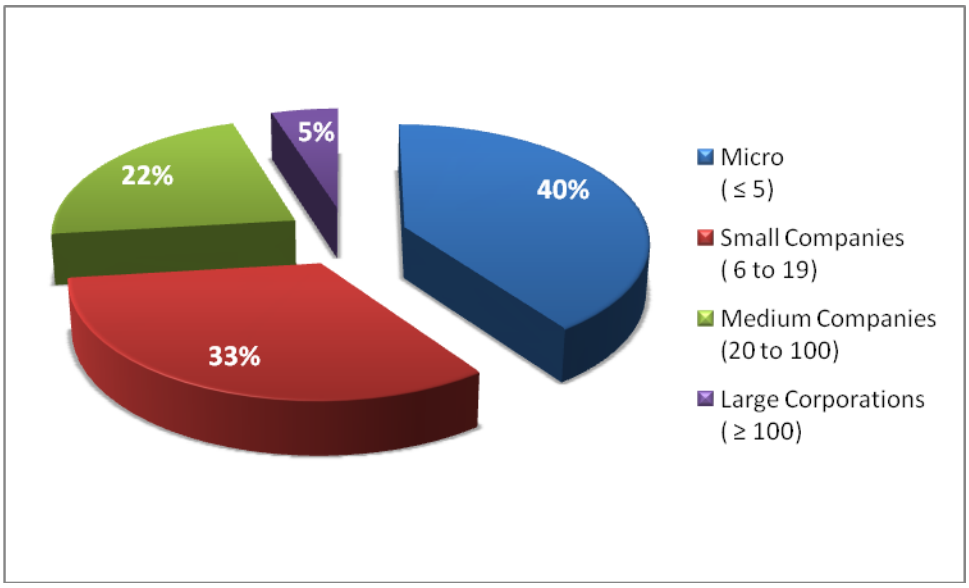


Just how profitable are these purchasing activities? Well, Jan and 30% of small scale producers that participated in previously introduced survey I conducted believe that CA is, in fact, profiting too much from their purchases.[14] When asked if they believed Corticeira Amorim is using their strong market presence to put downwards pressure on purchasing prices, three of ten producers answered yes.[15] Their contention is that it is becoming near impossible for producers to locate alternative buyers, this because the domestic market has seen an increasing rate of businesses exiting the industry while output remains near constant. The result, then, is CA gaining an increasingly large proportion of the industry pie.

The Portuguese Cork Association (APCOR) is representative of 85% of the domestic industry, totalling 250 companies, who "manufacture, commercialize, and export cork products" (APCOR Annuario, 2009: 6). Noteworthy is the distribution of these companies in terms of size, with micro sized operations of less than 6 employees being the most common at 40%, while large corporations of over 100 employees represent 5% of the industry (APCOR Annuario, 2009: 6). Impressively, CA has captured 25% of the global cork stopper output, and has shown consistent growth, making it by large majority, the biggest player in the Portuguese piled cork market. (APCOR Annuario, 2009: 6).

Figure 6: **APCOR 250 Member Companies by Size**[16]

[13] Figure 5: Inputs/Outputs, www.amorimcork.com
[14] APPENDIX A: "Cork Production Survey", Conducted By Daniel Mccombe
Administered To 10 Individual Portuguese Cork Producers with Land Sizes of 15-50 Hectares
[15] IBID
[16] Figure 6: APCOR Annuario, Page 8, Chart 2: "Number of Workers per Member Company"



Should this be cause of concern for individual producers weary of the negative effects of monopolized industries? At first glance, the answer may indeed be yes; however, evidence of the Amorim Company's collaboration and participation in a variety of industry wide initiatives leads to an alternative conclusion: their domestic market influence is borne out of changing global demand conditions, not anti-competitive behavior. In fact, their advocacy efforts for the promotion and use of natural cork is paramount to the long term sustainability of the industry and, hence, the profitability of individual producers. While most of these promotional activities are funded solely by CA, their benefits are public to the entire domestic market.

For example, CA is amongst the most active members of APCOR, with CEO António Amorim sitting as current President. APCOR's mission is to "promote and add value to cork, as a raw material of excellence," and among other initiatives, APCOR collectively works "to reinforce the competitiveness of [its] companies" (APCOR Annuario, 2009: 6). Aside from collaborative efforts, CA has individually established important research centers that have focused on defending the quality and applications of natural cork products in comparison to synthetics. Second, the Amorim Group has funded various research efforts establishing the green credentials of cork and cork products.

Why then has CA worked so diligently and invested so much into initiatives that will benefit the entire cork industry and not solely enhance its on economic bottom line? Clearly, it has identified the greatest external threat to long term profitability: competition in the form of synthetic substitutes for wine bottle closures. As César Gomes de Pina, marketing director of Alvaro Coelho & Irmaos, S.A., pointed out back in 2000 at the World Cork Congress held that year in Lisbon, "cork stoppers plugged most every medicine bottle until plastic caps replaced them 80 years ago" (Matusky, 2009, Wine Business Monthly). A similar shift in the wine bottling industry would undoubtedly be devastating for small scale producers like Jan.

2. EXTERNAL PRICE DETERMINANTS AND SUBSTITUTES

Now, almost ten years later, it is clear that Mr. Gomes de Pina was justified in his concerns of increasing competition from synthetic cork manufacturers. An article published in Forbes cites prominent industry member, Peter Weber, director of the Natural Cork Quality Council (an association of cork producing companies that supply about 75% of the U.S. market), who suggests that "synthetic corks appeared on the market in 1993" (Wilcox, 2002). The report also suggests that "synthetic corks cost considerably less than natural ones: about 7 cents each, as opposed to anywhere from 13 cents apiece for low-grade natural cork to 75 cents for high-grade" (Wilcox, 2002). These comparatively low costs of production are exactly what have led to the consistent expansion of synthetic corks in the global wine industry over the past two decades. In fact, an industry leader in synthetics, Nomacorc, has an annual production volume of nearly 2 billion units, "and they claim a 15% share of all bottled wines globally" (Goode, 2008). Their operations span all 6 inhabited continents, with a major presence in Europe and North America as illustrated in Figure 7. In total, according to Jamie Goode, wine writer and doctor of plant biology, the synthetic industry represents one third of the global wine closure market.

Figure 7: **Nomacorc Operations and Distribution Locations**[17]

Why has the market, at least in part, shifted toward the use of synthetics? First, with the introduction of these lower cost alternatives, many producers who differentiate on a low cost strategy have increasingly turned to synthetic closures. Mainly, the reason for this is because lower cost varieties of wine, which some contend make up nearly 85% of the global market, are usually consumed in the first 3 years after bottling (Goode, 2008). On one hand, wine companies are able to reduce costs on a per bottle basis and remain competitive in the low cost segment of the industry; on the other hand, they are ensuring that the wine itself is not affected by what is known as "cork taint," or TCA.

First identified in 1981, "cork taint is caused by aroma-intense compounds, present in the cork, transferring into the wine after bottling" (Sefton & Simpson, 2005). The presence of cork taint as a percentage of all bottled wine is a definitive point of contention between natural cork producers and

[17] Figure 7: "Leading the Way Around the World," http://www.nomacorc.com/partners.php

synthetic producers. In fact, according to wine writer Beagan Wilcox, "while producers place the percentage at as low as 2%, some California winemakers claim that as much as 20% of all wine bottles have cork taint." Ultimately, there remains much debate as to the extent taint spoils wine, which has spurred large investments in research from both synthetic and natural cork producers. Unsurprisingly, CA has made the largest investments of any natural cork producers to date, and it seems that these investments have yielded favorable results. With a better understanding of the causes and properties of cork taint, CA and other cork producers have increasingly utilized improved methods of raw material collection and enhanced their manufacturing processes. The result has been a marked reduction in the presence of cork taint, which was confirmed in a May/June edition of *Vineyard & Winery* magazine by Dr. Butzke, professor of enology at Indiana's Purdue University, who stated that "TCA was no longer a major issue from both a consumer and winemaker perspective" (Vineyard & Winery Management, 2009).

Does this mean that the synthetics market will no longer figure as a prominent competitor to natural cork? Unfortunately for producers like Jan, who all agreed that substitutes were negatively impacting the price of their piled cork, this appears not to be the case.[18] *Aside from TCA concerns, synthetics fill the previously unmet need of a low cost alternative for 85% of bottled wine. Furthermore, other substitutes have emerged as an even lower cost alternative, such as screw caps, which have captured more than 10% of the closure market (Goode, 2008). This trend towards low cost closures highlights an important change in global demand for wine closures. As indicated previously, demand has become more elastic, or price sensitive, with the presence of low cost substitutes serving as alternatives for wine producers to utilize. This alone, in the last two decades, has put the greatest downward pressure on the price of piled cork. As such, there are important implications on the cork industry in Portugal that must be taken into consideration in the strategic planning of the companies that make up the domestic industry.*

3. IMPLICATIONS AND COMMENTS

3.1 Consumer Focus

Foremost, the industry as a whole would be well served to investigate the preferences of consumers to a greater extent. One proponent of synthetics, business journalist and author George Taber, points out that prior to synthetics, cork producers in Portugal and Spain had "a very inefficient monopoly: They had no quality controls, it was a backyard industry and they had lousy consumer relations with their customers" (Taber, 2007). *Already, major markets have seen the widespread adoption of substitute closures. For example,* New Zealand and Australia are leaders in the utilization of screw caps, with usage at nearly 90% and 70% respectively (Goode, 2008). Britain, one of the largest wine consuming markets, on the other hand, has seen increasing acceptance of synthetic corks amongst consumers. In large part, this has been due to customer engagement efforts made by synthetic producers citing that their product can provide both a solution to cork taint while remaining the lowest cost solution for all bottling needs.

What, then, must cork manufacturing companies do to remain competitive and address customer needs? First, new and improved products need to be developed that combat the occurrence of cork taint. In this area, CA has developed a line of new natural cork stoppers that boast Aquamark® technology. According to their website, "the Aquamark® cork is extracted from natural resources before undergoing technically-rich processing to deliver a superior performance in fundamental attributes such as sealing capacity and wine preservation" (www.aquamark.com). Second, the domestic industry must address the changing global demand conditions by developing effective low cost alternatives that can

[18] APPENDIX A: "Cork Production Survey", Conducted By Daniel Mccombe
Administered To 10 Individual Portuguese Cork Producers with Land Sizes of 15-50 Hectares

compete with substitutes. Again, CA has been a leader in this regard, producing a new variety of cork closure known as Neutracork®. This product is made with thin natural cork disks on both the top and bottom of the stopper, while the interior portion of the closure is made of agglomerated cork. Thus, the costs of production are reduced, while the quality of the closure, in large part, is maintained. Clearly, the natural cork industry has a variety of manufacturing techniques, yet unexplored, that may prove vital to their long term presence as the closure of choice in the wine market. There remains, however, another important strategic advantage that will differentiate cork in the eyes of consumers: the environmentally sustainable profile of cork products.

3.2 Environmental Consideration

Cork forests, as mentioned, populate some 2.3 million hectares of the southern Mediterranean (APCOR Annuario, 2009: 19). With Portugal holding the largest stock of this native species (Quercus Suber), the domestic cork industry plays a significant role in the conservation and continued protection of this vital habitat. According to APCOR's annually published yearbook, the cork production cycle "contributes to the sustainability and preservation of an ecosystem, as well as to a better environment" (APCOR Annuario: 11). In terms of the forest's impact as a CO_2 retainer, the Portuguese forested area retains 4.8 million tons annually (APCOR Annuario, 2009: 14). Furthermore, in a life cycle study conducted by Price Waterhouse Coopers, it was found that, compared to natural cork stoppers, plastic stoppers release 10 times more CO_2, while aluminum screw caps release 26 times more than their cork counterparts (APCOR Annuario, 2009: 14). It may even be argued, because of the CO_2 retention properties of cork trees and the conservation role of the cork industry, that cork production has negative aggregate CO_2 emissions. The same P.W.C study indicates that the figure could be as large as -147 kilos of emissions per 1000 cork stoppers (APCOR Annuario, 2009: 15).

What does this mean for the competitiveness of the industry and individual producers like Jan? From an industry perspective, the ecologically friendly nature of their product can be a strategic advantage in terms of consumer appeal. Wine makers wishing to market themselves as an environmentally conscious producer are likely to opt for the use of natural cork over synthetics, given competitive pricing. More importantly, though, the environmentally sustainable nature of the industry may be used as leverage in establishing government subsidy programs. Currently, there is a subsidy program that partially funds the plantation of new trees. To date, however, these programs have proven "ineffective", especially for small scale producers like Jan, with only 2 out of 10 producers indicating that the programs have any impact on their incentives to plant new trees.[19] Improvements to these programs, whereby public investments are both feasible and effective, would have positive economic and environmental impacts domestically.

Nonetheless, collaborative efforts are being made by APCOR and individual companies like CA, which aim to enhance the effectiveness of conservation and recycling efforts. Currently, CA is partnering with the World Wildlife Foundation (WWF) to fund the "*provision of free technical guidance to forest producers" (www.amorim.com).* Second, they are establishing recycling programs such as ReCork America, which is "*focused on obtaining used and surplus corks from winery tasting rooms, bottling lines and quality assurance laboratories," all in an effort to redirect used corks into the production new products and not into landfills (www.recorkamerica.com). Programs such as these serve the industry foremost by enhancing competitiveness, allowing cork as an industry to promote itself as an eco-friendly option for wine makers. Whether these programs can be improved and expanded to increase their positive impacts is uncertain; however, in terms of differentiation, they serve the industry* well as it

[19] APPENDIX A: "Cork Production Survey", Conducted By Daniel Mccombe
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attempts to redefine itself against growing competition. To stay competitive, the Portuguese cork industry will need to enhance its existing strengths, take advantage of new opportunities, and guard itself against threats by eliminating, in large part, its weaknesses, all identified in Figure 8.

***Figure 8*: Domestic Industry SWOT Analysis for the Portuguese Cork Industry**

Strengths	Weaknesses
* Stable & sustainable supply chain * Collaboration in product promotion & industry development (APCOR)	* Increasing labour costs in production * Anti-competitiveness concerns
Opportunities	**Threats**
* Increasing consumer demand for products that are environmentally sustainable * Agglomerated and technical product R&D	* Substitutes (synthetic, twist caps) that compete on low cost platform * TCA (cork taint) and its proponents

CONCLUSION

To conclude, it is apparent that the global cork industry has transitioned into a new, highly competitive, era. The major players in the global wine closure market are of course natural cork producers, and in increasing scale, producers of synthetics and other substitute closures such as screw caps, which present competitive threats to the domestic industry. Indeed, internal weaknesses have led to domestic profitability concerns, which face individual small scale producers like Jan Dalhuisen. Predominantly, increased labour prices have eroded profits in the past 8 years; however, other competitive concerns such as domestic industry anti-competitive conditions may also be cause for apprehension amongst individual producers. More importantly, though, the downward trend in global cork prices is the result of industry wide failures to continually improve itself by enhancing product quality and cost effectiveness. Thus, these challenges must be tackled by the industry as a whole.

Already, leading manufacturing companies have begun to utilizing opportunities to transition both the image and applications of cork products. Mainly, product developments have been aimed at reducing the occurrence of cork taint as well as to develop lower cost varieties of technical closures that maintain quality standards the cork industry is known for. Coticeira Amorim, as the leading partner with a combined 250 member companies of the Portuguese Cork Association, must continue their collaborative rebranding efforts if the industry is to thrive and maintain its share of the wine closure market. Specifically, it should continually enhance its research efforts into product development and continue to promote and increase the green credentials of its products. In doing so, it can enhance its strengths by ensuring a stable domestic industry supply chain, ultimately, alleviating the growing pressures on individual small scale producers like Jan Dalhuisen and many others who for generations have relied on the cork industry for their livelihoods.

APPENDIX A

CORK PRODUCTION SURVEY, Conducted By Daniel Mccombe
Administered To 10 Individual Portuguese Cork Producers with Land Sizes of 15-50 Hectares

Survey Questions Part 1:

A	Have rising labour costs strongly impacted your profitability?
B	Do you believe Corticeira Amorim is using a form of monopoly to put downwards pressure on purchasing prices?
C	Is the fact that the piled cork market is private and not regulated preventing your operation from reaching its profit potential?
D	Has the growing uncertainty of cashflows changed your incentives to stay in the industry?
E	Does the current government subsidized program for planting new trees have significant impact on your incentives to plant new trees?
F	Have substitutes for cork stoppers such as synthetic cork and twist caps significantly effected the price of your cork?
G	Is global cork production in other countries impacting the price of your cork?

Table A1:

	Domestic Macro Factors			Domestic Micro Factors		Global Macro Factors	
	A	**B**	**C**	**D**	**E**	**F**	**G**
Alexandre de Azeredo Malheiro Tavares Festas	Y	Y	Y	Y	N	Y	N
Cláudio Ferreirinho Correia	Y	N	N	Y	N	Y	N
Francisco Fernando Leal Marques Augusto	Y	N	Y	Y	N	Y	N
Manuel Filipe Pereira Abrantes	Y	N	Y	Y	Y	Y	Y
Miguel de Pape Portocarrero de Almada e Ary	Y	N	N	Y	N	Y	Y
Rita Reis Costa de Sommer Carvalho	Y	Y	Y	Y	Y	Y	N
Ana Luísa Mendes Ventura	Y	N	N	Y	N	Y	N
André Filipe Cativo Oliveira	Y	N	Y	Y	N	Y	Y
Catarina Bebiano de Sousa e Holstein	Y	N	Y	Y	N	Y	N
Filipe Nunes da Silva Carvalhão	Y	Y	Y	Y	N	Y	N
	100%	30%	70%	100%	20%	100%	30%

Survey Questions Part 2:

A, B, & C	Rank the competitive impacts of **Labour** cost changes, **Monopolistic** industry characteristics,
	and non existence of **Regulation** on your profitability (1 = greatest impact)
F & G	Rank the competitive impacts of competition in the form of **substitutes** for cork stoppers to
	those presented by **foreign cork production** on your profitability (1 = greatest impact)

Table A2:

	Domestic Macro Factors				Global Macro Factors	
	A	**B**	**C**		**F**	**G**
Alexandre de Azeredo Malheiro Tavares Festas	2	1	3		1	2
Cláudio Ferreirinho Correia	1	3	2		1	2
Francisco Fernando Leal Marques Augusto	1	3	2		1	2
Manuel Filipe Pereira Abrantes	1	3	2		2	1
Miguel de Pape Portocarrero de Almada e Ary	1	2	3		1	2
Rita Reis Costa de Sommer Carvalho	2	1	3		1	2
Ana Luísa Mendes Ventura	1	3	2		1	2
André Filipe Cativo Oliveira	1	3	2		2	1
Catarina Bebiano de Sousa e Holstein	3	2	1		1	2
Filipe Nunes da Silva Carvalhão	1	3	2		1	2
1	70%	20%	10%	1	80%	20%
2	20%	20%	60%	2	20%	80%
3	10%	60%	30%			

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