PREDICTING REGULATORY APPROVAL OF MERGERS AND ACQUISITIONS

Project MVP

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August 17, 2021

Opportunity

An initial proposal outlined the potential for the client to more effectively provide legal advice to its own clients that are seeking to make purchases of companies that concern the European Union. This was motivated by the costly nature of ill-conceived transactions and the secondary negative impact it could have on acquiring companies. The biggest obstacle of any merger is regulatory dis-approval which is typically due to *concerns over maintaining a competitive market place.* Further research has shown that the consequences of regulatory dis-approval of proposed mergers can result in the acquirer paying to the target "reverse break-up" fees as high as 10% of the value the transaction. One of the highest on record was AT&T's failed take-over T-mobile, resulting in a $6 billion reverse break-up fee.

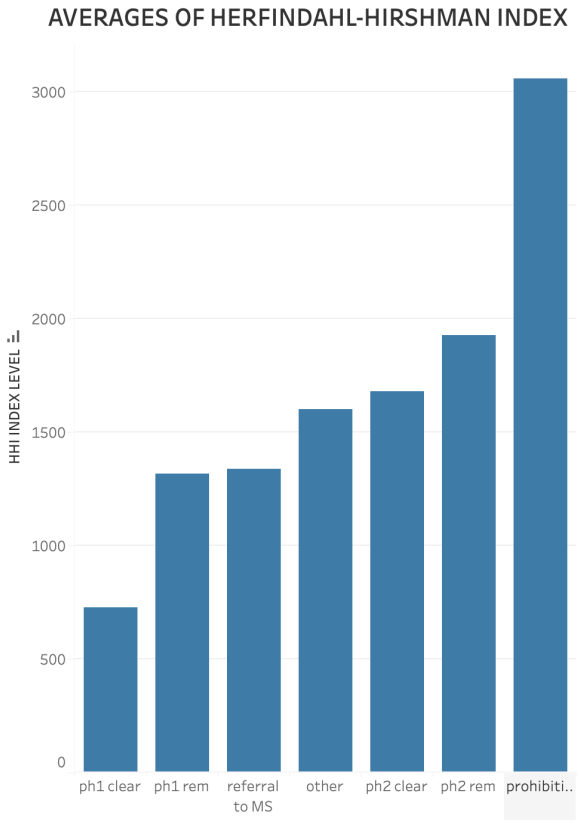
Solution

A classification algorithm was recommended to aid the client firm in predicting a binary outcome of m&a related regulatory decisions, namely approval or dis-approval. Further research has revealed that the set of outcomes is not limited to these 2 modes. The table below outlines all possible regulatory decision scenarios.

European Competitive Commission's Regulatory utcomes	
I	Phase-1 Clearance
II	Phase-1 Remedy
III	Phase-1 Withdrawl by Applicants
IV	Phase-2 Clearance
V	Phase-2 Remedy
VI	Phase-2 Withdrawl by Applicants
VII	Merger Prohibited
VIII	Referral Back to Member State

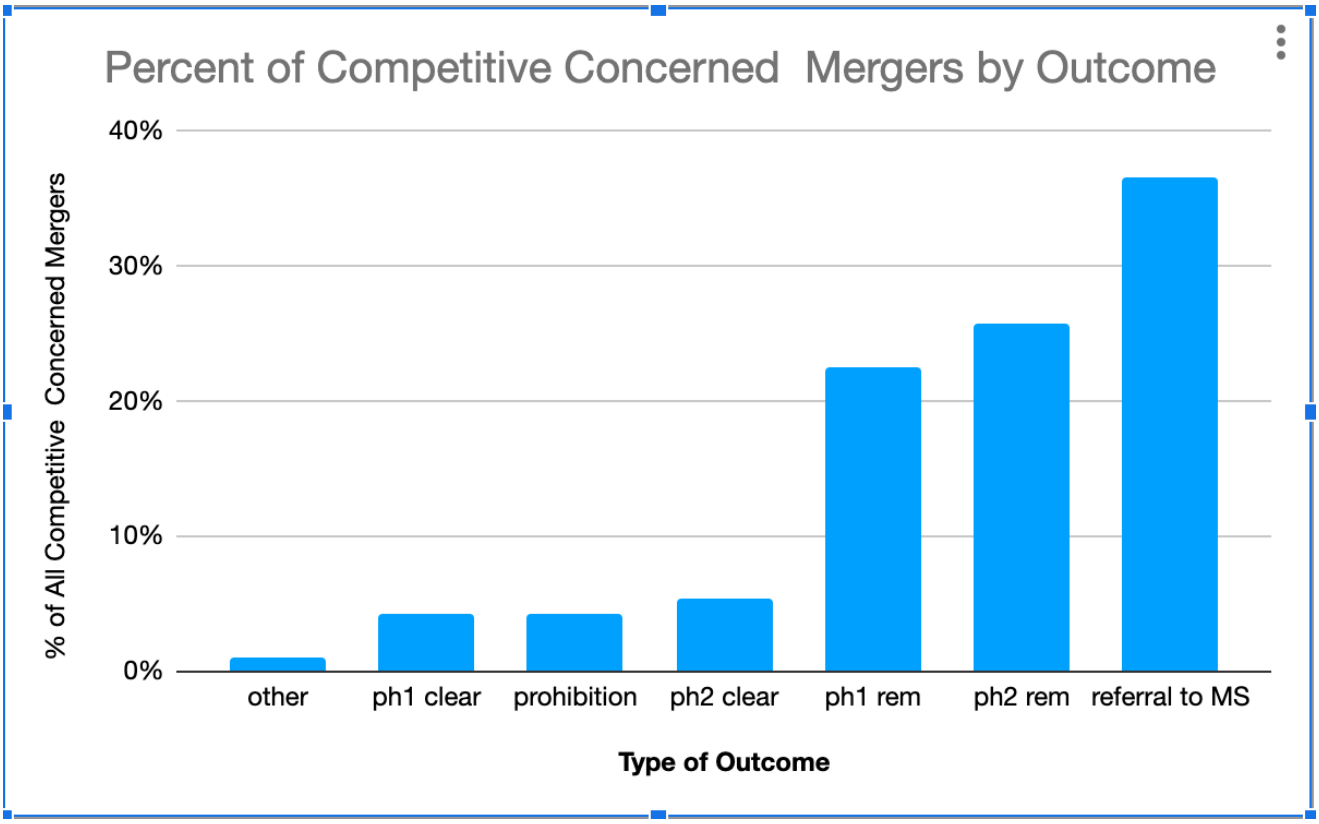
Due to the multi-classification nature of these outcomes, a multi-stage, multi-model approach is now recommended. The first model would be the originally proposed logistic regression model that would predict the broader categories of approval or dis-approval. Additionally, a further series of logistic regressions can be done at each decision stage of the process. This kind of detailed predictive analysis could aid in identifying factors that correlate with outcomes at each stage of the process as well changes to the coefficients of these factors. This type of granular analysis could aid in expediting any proposed merger transaction by maximizing the potential of approval in an early phase.

As maintaining a competitive landscape is the primary goal of regulators, a focus has been placed on various features that attempt to quantify this objective. The first being the Herfindahl-Hirschman Index which is a common measure of market concentration. The index is scaled from 0 to 10000, with levels above 2500 representing high market concentration and thus low competition. The bar chart below depicts the average HHI of companies in our dataset at each level of outcome.



The chart clearly shows that positive decisions made in the initial phases have, on average, lower HHI index levels. Also, the average HHI levels of mergers that are prohibited are above 2500, the minimum threshold for a market to be considered concentrated.

Another more direct measure is a feature known as *concern*. This is dummy variable with 1 representing that regulators are in fact concerned with competition, and 0 representing a lack of concern. The bar graph below depicts the percentage of all concerned mergers associated with each type of outcome. Notice that most of the mergers where there are competitive concerns are either referred back to the member state or require remedies.



Business Impact/Success Metrics

The effectiveness of this model could simply be measured by the percentage of clients that have a positive outcome. Of course this could be measured at every phase of the process i.e. percentage of clients that receive a phase I clearance, phase 1 clearance with remedies or phase 2 clearance etc. A successful model, however, could also have the adverse effect of decreasing revenue as a shorter application process would result in less fees billed to the client. This could be offset, however, by attracting newer clients that recognize the success of the model. Also, a successful merger could encourage the client to give the firm more business in other disciplinary areas that the firm specializes in. In this case total revenue per client would be a better measure of success. Ideally the aim would be to see a 30% increase in our positive outcome ratios mentioned earlier. At this level we would be able to balance the risk of lower revenues due to earlier outcomes with rewards of additional client business.

FURTHER ANALYSIS

More competitive-related and non-competitive-related features will be added to the model and evaluated at each level of the decision process. Special attention will be given to how coefficients of these features change at each level. These features include; the type of industry, the number of competitors in the relevant industry, the complexity of the industry, the total market share of combined entities, countries of acquirer and target, and the span of the combined geographic markets,