International cartels : introduction to a classification tool based on organizational and interorganizational proximity

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Hypothesis

Cartels are by nature illegal

Context

- The persistence of cartels reflects the need to develop new efficient methods of detection, in order to both reduce their duration and deter their formation.
- Two main streams of research have tried using econometrical and machine learning models to predict behaviors and detect anomalies in markets that could be indicators of cartelization



Random forest

- We standardize our dataset and then separate between training (70% of data) and test (30% left) using Scikit-learn in Python
- In our case, random forests seems to be the most accurate model (Rodriguez, 2019). This model is
 preferred over a simple decision tree because it reduces the risks of overfitting.
- We achieve an accuracy of 75% with 215 trees



Discussion

- This research work gives us insight of the role of organizational proximity in the formation of cartels.
- The results, as well as the methodology used, are intended to be used by a competition authority to help in the decision-making of the allocation of resources of investigations.
- It may be relevant for future research, to find other indicators of cultural proximity, since Hofstede's cultural indicators may not capture completely the existing cultural bias in the formation of cartels.