



Data modelling as a targeting tool for trade-based money laundering activity (TBML)

Danielle Marsh
Australian Border Force

Scope

- Introduction
- Scale of the problem
- Red flags
- Other Models
- Linear regression Model
- Study
- Future
- Questions

Introduction

- I AM NOT A DATA SCIENTIST (I wish I was that cool!)
- What is TBML?
- Goal was to determine if a linear regression model could be used as a targeting tool to identify potential TBML activity.
- Models are tailored to the financial sector and not necessarily fit for purpose for Customs.
- Due to TBML's complexity there is not just one answer that solves the question.

Scale



Red Flags

“it takes a network to catch a network”

General McChrystal

- Mismatch in goods traded
- Low profit margins
- Business address is residential
- Round figures on declared values/weights
- Unnecessary complexity
- Documentation
- Transaction activity
- Lack of online presence
- 3rd party payments
- Cash deposits
- Circular payments
- Payment vs trade mismatch
- Complex use of finance
- Transactions show a lack of normal business activity
- Complex ownership structure



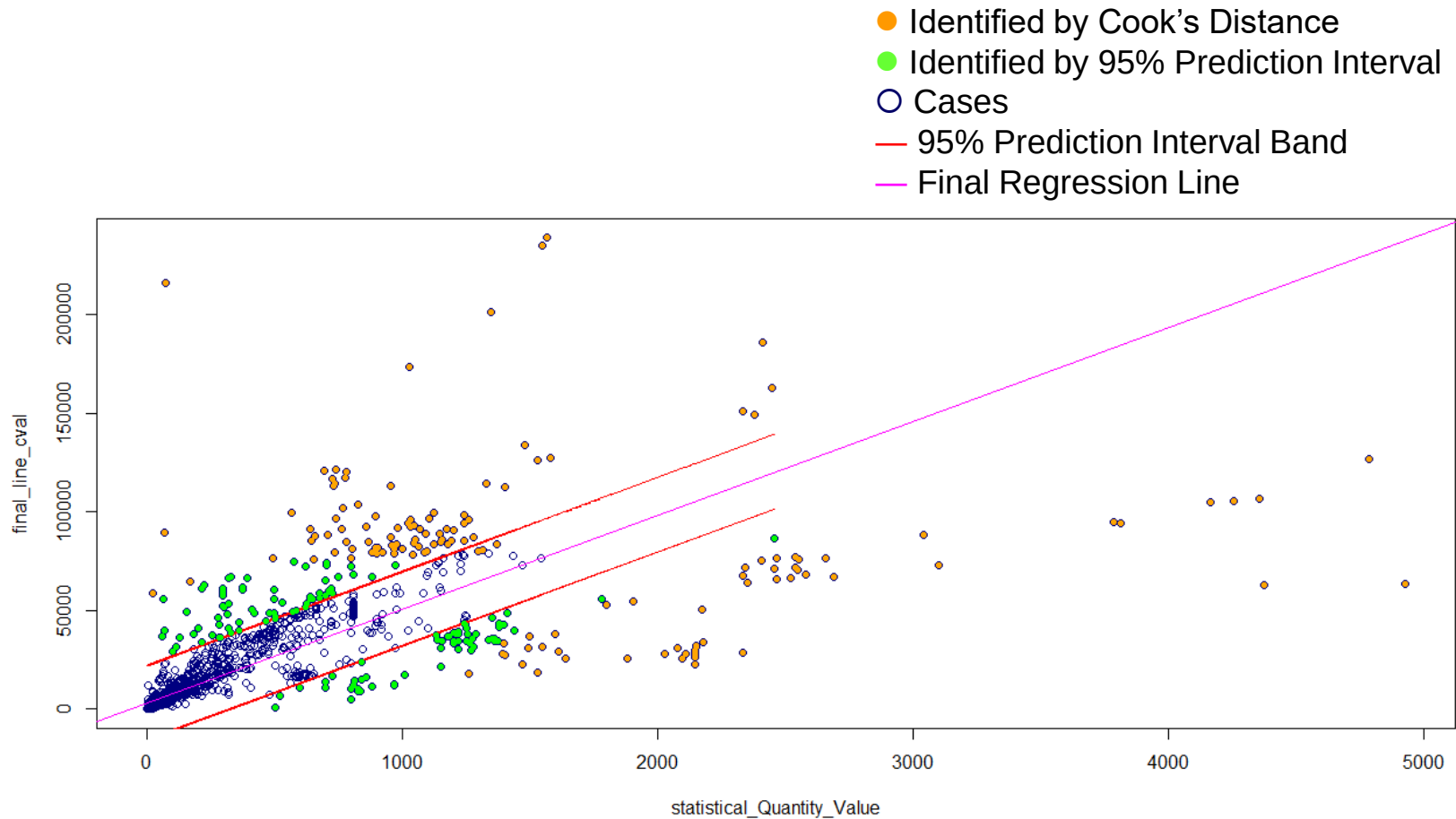
Other Models

- Walker Gravity Model
- Unit Price Analysis
- Data Analysis and Research for Trade Transparency System (DARTTS)
- Numerically Integrated Profiling System (NIPS)

Linear Regression Model

- The model compares declared values to quantity units and delivers a tool that identifies where final line customs values or quantity values are anomalous and significantly deviate from their expected value.
- The model applies a simple linear regression and flags those as having a value outside the defined range.
- A visual tool is used to identify those that are outside the regression and these are then referred for further investigation.
- A subject matter expert (SME) then investigates for accuracy and any false positives.

Linear Model



Its use as a targeting tool for TBML

- Sought to assess the effectiveness of a linear regression model to identify targets that are likely to display Trade-Based Money Laundering (TBML) risk indicators.
- Utilises trade data from the Australian Border Force (ABF), which is Australia's Customs service, within the model to target under-declared imports, by identifying the outliers from the model.
- Over 4 weeks, the model identified approximately 175,000 targets, equating to about 7 % of the total full import declarations lodged with the ABF. 160 import declarations of the identified targets were assessed.

Statistics

- 33% of consignees were linked to adverse intelligence holdings.
- 23% of consignees were the subject of Suspicious Matter Reports (SMR).
- 17% of import lines were found to have an obscured unit quantity declared due to varying units of measurement or a lack of reported quantity as per the tariff class.
- 11% of import lines were subject to data integrity issues arising from human error in unit quantities, which did not align to the unit quantity as stated in ABF's tariff class.
- 3% of import lines were subject to data integrity issues arising from human error in value amounts entered.

The result?

- While no TBML activity was detected from the selected sample targets, a linear regression model targeting undervaluation of imports has proven to be effective in identifying anomalous imports, linked to human error and misreporting.
- In isolation, a linear regression model is insufficient to identify instances of TBML activity, and should be applied in conjunction with secondary data models and other behavioural indicators, which may increase the efficiency and quality of targets identified with TBML risk indicators.

Future

PPP

Machine Learning and AI

Data transparency

Data access

Data sharing



Conclusion

- Not one model will solve the puzzle
- Need for manual confirmation
- Multiple sources of data
- Collaboration is key



Questions



Thanks

