



# Scoring and Flagging ML Risks in Real Estate

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May 9, 2019

Canada



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## Two Step Methodology

1. Estimate Money Laundering (ML) risk scores based on a set of 13 indicators
2. Add context and validate from secondary sources and flag as appropriate

## ML Risk Scores Indicators List

- 13 Indicators evaluated out of more than 25 identified
  - Based on Unger et al. (2010) and FINTRAC (2016).
  - Limited data availability
- JLR Inc. (recently acquired by Equifax) provided Property Characteristics Data (PCD).
- All Residential Real Estate Transactions from Québec since 2000 (1.6 million)

## ML Risk Scores Indicators List

### Property Characteristics

1. The property is traded multiple times
2. The property in question is traded at least twice within 1 year

### Transaction Financing

1. The mortgage is provided by a natural person
2. The mortgage provider is from abroad
3. No Mortgage: property is purchased in cash

## ML Risk Scores Indicators List

### Transaction Details

1. The purchase price is considerably higher / lower compared to average price in the neighborhood in the same year
2. The purchase price is significantly higher / lower compared to assessed or (hedonic) estimated value, whichever is higher
3. The purchase price is significantly higher / lower compared to previous price
4. The buyer provided incomplete address in transaction record

## ML Risk Scores Indicators List

### Buyer / Seller Characteristics

1. The buyer is from abroad
2. The buyer is a corporation
3. The buyer owns large number of property
4. The average value of the properties owned by the buyer is significantly high

# Measurement and Aggregation

- Each transaction gets a score for each indicator
  - Seven indicators are Yes / No (i.e., 1 or 0 numerically).
  - Six indicators are continuous (probabilistic, between 0 and 1).
- All the indicators are then summed for each transaction
- 13 indicators – Highest possible score is 13.



## Descriptive Statistics

- Number of buyers: 1,612,630
- Average ML Score (MLS): 2.71
- Standard Deviation: 0.84
- Minimum Observed Score: 0.086
- Maximum Observed Score: 8.54

(Source JLR and CMHC own calculations)

## Distribution of MLS

- Most cases are concentrated around the mean (2.71).
- Very Few Observations above 6.



## Distribution of MLS

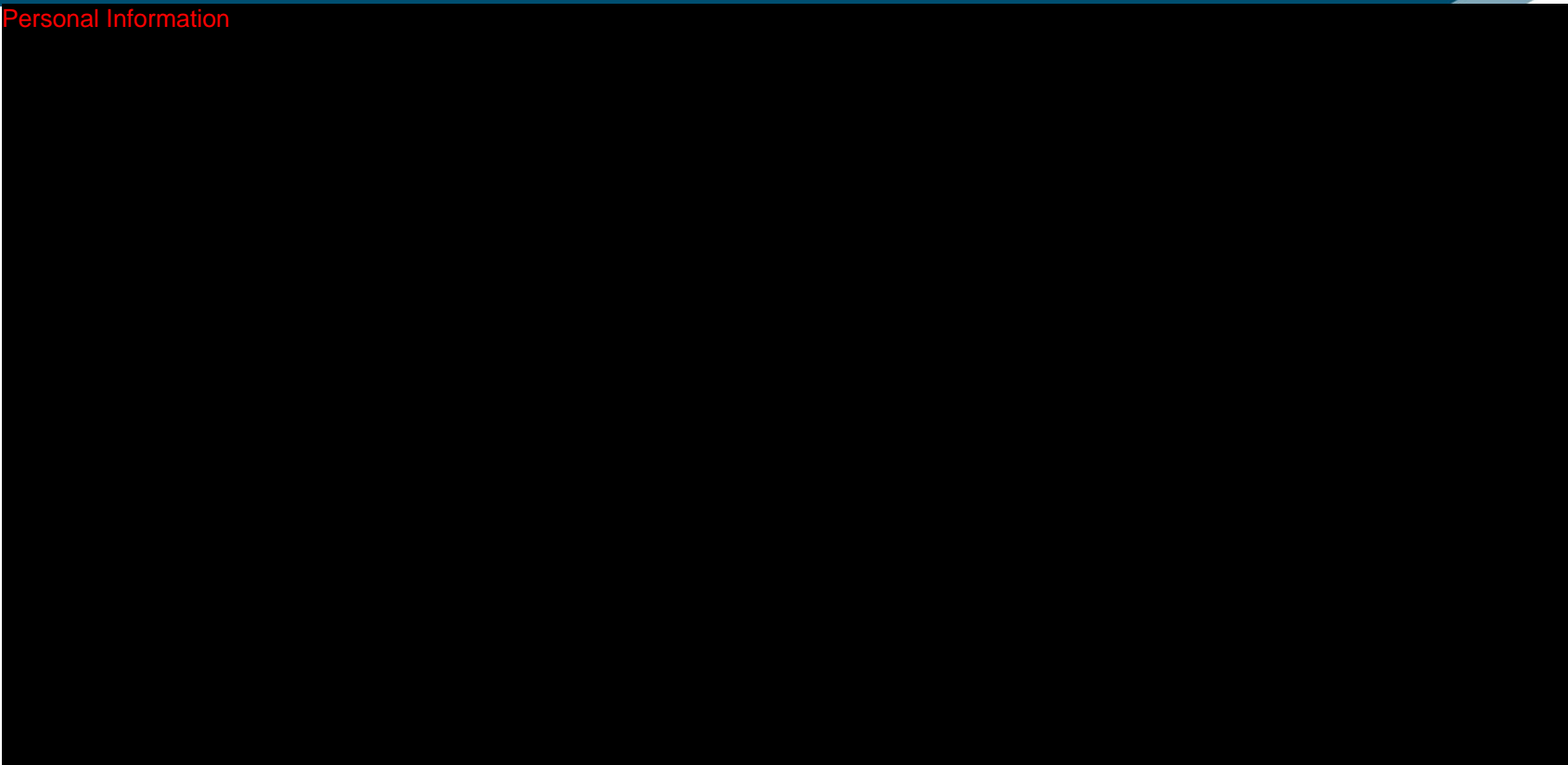
ML Score	Frequency	Percent	Cumulat.	
0	11,797	0.7	0.7	Lower Risk Transactions
1	305,724	19.0	19.7	
2	760,376	47.2	66.8	
3	418,339	25.9	92.8	
4	98,448	6.1	98.9	Uncertain
5	15,798	1.0	99.9	
6	1,980	0.1	99.99	Higher Risk Transactions
7	160	0.01	100	
8	8	0	100	

## Step 2: Validation from secondary Sources

- Dow Jones PEP database for sanction / criminal information
- Bureau van Dijk (Moody's) / Dun and Bradstreet database for Ultimate Beneficial Ownership
- Federal and Provincial corporate registries
- Canadian Legal Information Institute (CANLII) database
- Build evidence on cases with elevated ML risk

# Case 1

Personal Information



CANADA MORTGAGE AND HOUSING CORPORATION



## Case 2 (Company B)

Personal Information



## Case 2 continued (Company B)

Personal Information



# Case 3

Personal Information





## Summing Up

- 2 step methodology
  1. Estimate ML risk scores based on set indicators
  2. Validation from secondary sources
- 72% buyers can be considered to be safe
- Use of secondary sources help further validate risky buyers