View on Consumer Lending trends in Europe

TFI event – Fairness in Consumer Credit Markets

Jan Dodion

Lund, 09 May 2019
Topics for discussion today

1. Developments in Credit standards, terms and conditions, and net demand for loans in the Euro area
2. Regulatory changes impacting household financing: GDPR and PSD2
3. The availability of Credit Bureaus in Europe
4. ING Risk’s approach with regards to Lending to households: Alternative Data & Machine Learning
Developments in credit standards, terms and conditions, and net demand for loans in the Euro area
Housing loans: recent shift to tighter standards related to B/S constraints after long run of narrowing margins, higher reject rates, demand increase. Competition has big impact. Changes in credit standards applied to the approval of loans to households for house purchase, and contributing factors
Consumer credit: similar trends, but margins continue to narrow. Recent drop in change in demand, but increase is expected.

Changes in credit standards applied to the approval of consumer credit and other lending to households, and contributing factors

(Net percentages of banks reporting tightening credit standards and contributing factors)
GDPR and PSD2 are changing the European Consumer Lending Landscape

Data Ethics versus Innovation
The use of data: GDPR and Data Ethics

- The GDPR raised the expectations on what is expected from companies in order to protect the data of their customers and employees.

- It required companies to be more in control of data processes and more transparent about what data is processed and for what reason.

- The expectation is that companies will differentiate themselves more and more by their “data promise”: What are we doing with your data and more importantly what are we not doing with it?

- The fact that a bank has a utility function and holds what is perceived to be “sensitive personal data” must be taken into account in any data strategy.

- ING is a company with strong values and is recognized as such. Its philosophy and use of personal data must fit in with those values and this goes beyond compliance with the law.
PSD2 aims to improve innovation, reinforce customer protection and improve security of internet payments and account access within the EU.

**Account information Service Providers**

**Before**
- Customer
- Bank 1
- Bank 2
- Bank 3

**After**
- Customer
- AISP (Account information Service Provider)
- Bank 1
- Bank 2
- Bank 3

Use transaction data to analyze a user’s spending behavior or aggregate account information from different banks.

**Payment Initiation Service Providers**

**Before**
- Consumer
- Retailer (online)
- Bank Consumer
- Card Scheme
- Merchant Acquirer

**After**
- Consumer
- Retailer (online) (PISP)
- Bank Consumer

More secure payments, peer-to-peer transfers between friends, bill payments.
Credit Bureaus within Europe

A lot of diversity in European credit reporting space continues to exist, however with a trend to share more data

2017 Survey of ACCIS covering 32 members across 23 countries
There remains potential for a greater supply of alternative data such as utilities and telecommunications

| Category                                      | AT | BE | HR | CY | CZ | DK | FI | DE | EL | HU | IC | IT | PL | XK | RO | RU | RS | ES | SK | SW | CH | NL | UK |
|-----------------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Banks                                         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Credit unions                                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Debt collectors / debt purchasers             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Leasing                                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Credit card suppliers                         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Retail credit suppliers                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Health insurance                              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Other insurers                                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Energy                                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Water                                         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Telecommunication companies                   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Television suppliers                          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Internet providers                            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Mortgage providers                            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Home rental companies                         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Brokers/Intermediaries                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Courts                                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Government departments                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Crowd-funding platforms                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Payment services providers                    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Tax authorities                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Police                                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Central banks                                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Acquirers of credit portfolios                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Investors                                     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Others                                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

- Yes, organisations supply data to CRA
- No, organisations doesn't supply data to CRA
- In discussions
- Not answered
The depth of mainstream lending products is highest, however this varies significantly across the European Single Market.

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- **Yes, both positive and negative**
- **No, only negative**
- **NA**
More and more European countries are making sharing of data a legal requirement.
Cross border data sharing remains limited and has not shown any significant changes since 2012.

- Direct data sharing with financial institutions x-border:
  - Yes: 78%
  - No: 16%
  - NA: 6%

- Indirect data sharing among credit bureaus x-border:
  - Yes: 37%
  - No: 63%
ING approach to consumer lending

Data & Analytics as a driver for sustainable financing in line with consumer needs
Fit for purpose risk models are essential to create a competitive advantage for ING

Efficient and fast process
- Instant lending to non-ING customers
- Pre-approved loans for primary customers

Customer Targeting
- Propensity models
- Affordability models
- Default models

Customer onboarding
- Score card models
- Fraud models

Customer management
- PD, EAD and LGD
- Early warning
- Collections

Starts with the ‘right’ customer

Low risk costs
Application of new data sources, modelling methods and technologies crucial to develop better risk models

- Traditional credit risk relies on linear models but we live in a non-linear world;
- More data can be processed resulting in a more granular and inclusive description of customer behavior;
- From the ING experience, Machine learning models achieve a 10% increase in performance compared to traditional models.

**Data to develop better drivers**
- Transactional data
- Economic data
- Open data

**Modelling methods to optimize estimations**
- Shortage of data points
- Model approaches
- New models

**Technologies for better data calculation**
- Real time data

**For example:**
- Google adwords
- Google search
- Credit bureau
- IFRS 9 data
- Behaviour
- Other bank accounts

**For example:**
- Reject inference
- Champion challenger
- Machine Learning

**For example:**
- Real time processing of behaviour
Focus on TX models results in less bias and broader access to credit

• 3 Reasons to focus on transactional models

<table>
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<tr>
<th>PSD2</th>
<th>Power of combining Machine Learning with TX data</th>
<th>Existing customers Better pre-approved and portfolio management</th>
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<tbody>
<tr>
<td>Opportunity for new customers</td>
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<td>Better pre-approved and portfolio management</td>
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• High level flow for transactional data usage in lending

Get Data
- Get transactional data, both internal and external

Categorize Data
- Categorize transactional data for multiple purposes

Develop Models
- Develop credit decision models

• In addition to more traditional data sources:
  • Usage of other banking products (Credit Cards, Overdrafts…)
  • Repayment behavior of other loans where applicable
  • External information (Credit Bureau, Central Bureau of Statistics) data where applicable
  • Socio-demographic information about the customer
Use Case: Instant lending to non-ING customers

1. The customer applies for the loan online.
2. The customer provides credentials from his/her primary bank.
3. Consent for ING to use the data.
4. Request for data.
5. Third party API.
6. Transactions transferred to ING.
7. Credit decision based on the customer transactions.

Requirements:
- Automated process
- Accurate process
- Fast process
Use Case: Pre-approved loans for primary customers

Every customer in the database gets evaluated via a monthly batch process. The loan is preapproved and the customers can access the money quickly.