

# **Scoring salary backed loans within the Italian SME market**

Martin Jackson & Christabel Cruz  
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# Project Scope

- JMAC team approached to study the feasibility of applying credit scoring to Cessione del Quinto “Small Business” product
- Scope: to analyse the power of applicant and director level credit bureau data for an independent player in Italy

# Cessione del Quinto - Overview

- A consumer loan product “secured” against the applicant’s employment
- Loan insured by 3rd party against death and/or loss of employment of borrower
- Repayments deducted directly from the borrower’s monthly pay
- Instalment amount limited to 20% (a quinto) of customer’s net monthly payment
- Additional lender security against loss of employment granted against employee savings fund (TFR)

# Product History

To 2006

- Product offered almost exclusively to state employees or employees of large organisations

2007

- Italian government agrees to eligibility for pension holders
- Tightened usury limits put pressure on unsecured products
- And of course... The Credit Crunch

Result

- CQS product scope widens across private sector (inc. SME)

# Small Business Product Results

- Very high PD

Industry figures suggest typically 35% of loans are subject to insurance claims as a result of loss of employment within the first 36 months of the contract

- High credit losses incurred by insurers

Average loan terms of 84 months have led to predictions of claim levels of circa 55-60% at contract maturity

Access to employee savings funds and loan amortisation helping limit final losses, but nonetheless not sustainable

- High levels of non-intention to pay

Small Business product is more subject to higher losses than other employer profiles, due to fraud and non-intention to pay

# Underwriting Practices

Insurer's Credit Risk Assessment:

- Existing Credit Performance

Not available – the CQS loan proposed will typically be the first and only such application for Small Businesses

- Employer Commercial Credit Reports

Contain very little information for Small Businesses

Information available is not always of a high quality

- Application Form (Employee) Data is limited to Date of Birth, Place of Birth and Residence

No access to Applicant Bureau Data due to Privacy Constraint

Lender's Risk Assessment limited to ID Verification and Fraud Prevention

# Analysis Sample Design

- Industry Credit Bureau Services

Industry score from market leader fails to discriminate

Limited coded characteristics available in retrospective test

Competitor data coverage growing in recent years

- Retrospective Bureau Extract

Performed using roll-back applied to batch extracts

Applied to competitor service - limited payment profile of market leader

Sample window chosen to maximise availability of historical bureau data

- Good/Bad Definition

Insurance claim resulting from redundancy as default

Additional categorisation of non-intention to pay analysed

# Characteristic Analysis Employer Share Capital

	Accepts	% Accepts	Known Good	% Known Good	Known Bad	% Known Bad	Known Bad Rate	No Pay	%No Pay	No Pay Rate	WOE	IV
<b>Not Traced</b>	189	19.3%	150	19.3%	37	19.7%	19.6%	2	13.3%	1.1%	-0.0190	0.0001
<b>Less than 5000 euro</b>	79	8.1%	60	7.7%	17	9.0%	21.5%	2	13.3%	2.5%	-0.1578	0.0021
<b>5001-10000 euro</b>	90	9.2%	69	8.9%	20	10.6%	22.2%	1	6.7%	1.1%	-0.1808	0.0032
<b>10001-25000 euro</b>	241	24.6%	180	23.2%	53	28.2%	22.0%	8	53.3%	3.3%	-0.1961	0.0098
<b>25001-100000 euro</b>	238	24.3%	189	24.3%	47	25.0%	19.7%	2	13.3%	0.8%	-0.0276	0.0002
<b>100001+ euro</b>	143	14.6%	129	16.6%	14	7.4%	9.8%	0	0.0%	0.0%	0.8012	0.0733
	<b>980</b>		<b>777</b>		<b>188</b>		19.2%	<b>15</b>		1.5%		<b>0.0887</b>

- Lower PD for companies with 100K+ share capital – however, representing only 15% of pool.
- Overall, little discrimination in employer share capital.
- No logical pattern in incidence of non-intention to pay
- The accept/reject analysis performed also indicated the probability of acceptance to be flat across these attributes

# Characteristic Analysis

## Employer Time in Business

	Accepts	% Accepts	Known Good	% Known Good	Known Bad	% Known Bad	Known Bad Rate	No Pay	%No Pay	No Pay Rate	WOE	IV
<b>Not Traced</b>	5	0.5%	4	0.5%	1	0.5%	20.0%	0	0.0%	0.0%	-0.0385	0.0000
<b>Less than 61 Months</b>	128	13.1%	95	12.2%	30	16.0%	23.4%	3	20.0%	2.3%	-0.2662	0.0099
<b>61-120 Months</b>	190	19.4%	137	17.6%	50	26.6%	26.3%	3	20.0%	1.6%	-0.4113	0.0369
<b>121-240 Months</b>	308	31.4%	243	31.3%	58	30.9%	18.8%	7	46.7%	2.3%	0.0135	0.0001
<b>241+ Months</b>	349	35.6%	298	38.4%	49	26.1%	14.0%	2	13.3%	0.6%	0.3864	0.0475
	<b>980</b>		<b>777</b>		<b>188</b>		19.2%	<b>15</b>		1.5%		<b>0.0944</b>

- Again, little discrimination at employer level
- No logical pattern in incidence of non-intention to pay
- The accept/reject analysis performed also indicated the probability of acceptance to be flat across these attributes

# Characteristic Analysis

## Impaired vs Non-Impaired Employees

	Accepts	% Accepts	Known Good	% Known Good	Known Bad	% Known Bad	Known Bad Rate	No Pay	%No Pay	No Pay Rate	WOE	IV
No Bureau	285	29.1%	212	27.3%	65	34.6%	22.8%	8	53.3%	2.8%	-0.23683	0.01727
Clean Bureau	322	32.9%	279	35.9%	40	21.3%	12.4%	3	20.0%	0.9%	0.52325	0.07655
Impaired *	373	38.1%	286	36.8%	83	44.1%	22.3%	4	26.7%	1.1%	-0.18182	0.01335
<b>TOTAL</b>	<b>980</b>		<b>777</b>		<b>188</b>		<b>19.2%</b>	<b>15</b>		<b>1.5%</b>		<b>0.10716</b>

- Discrimination of positive bureau data (in green)  
 PD (truncated at 12 months) of applicants with clean credit history 33% lower than that of pool. However, only 33% of accepted population falls into this category.

- Applicants with derogatory and/or blacklist data (in red)  
 PD of such applicants almost double that of customers with clean credit history

NB: Impaired customers classified as those present on industry blacklist or those with worst ever status 3+ or current status 2 on credit bureau.

- Applicants with no credit history  
 PD in line with impaired applicants - likelihood of not intending to pay double that of the pool

# Conclusions

- Correlation analysis suggests limited interactions across employer and employee data
- Analysis suggests applicant bureau data is a stronger predictor of loss of employment than corporate indicators available at employer level
- Non-intention to pay correlated with no bureau trace
- A scoring solution combining applicant and employer information is proposed
- Solution to price overall risk of Small Business lending more effectively

## Next Steps

- JMAC awaiting confirmation of new privacy laws recently applied in Italy
- Preliminary analysis to be applied across other employer profiles (medium to large private employers and partial-state employers)
- Team to act as intermediary between lenders, credit bureaux and insurers to produce industry pricing solutions