

The background of the slide is a dark, atmospheric photograph of the Golden Gate Bridge in San Francisco, taken at dusk or dawn. The bridge's iconic towers and suspension cables are silhouetted against a deep blue sky. The water of the bay is visible in the foreground, reflecting the ambient light. The overall mood is professional and sophisticated.

How Artificial Intelligence (AI) can Enhance the Alpha of Consumer Loans Portfolio

Maggie Ng
May 2018

FinEX Asia

Founder and Chief Executive Officer

Maggie Ng

- 20 years Retail Banking Experience
- Most recently served as the Asia and EMEA Head of Unsecured Lending at Citibank N.A.
- Managed over USD20B portfolio size
- Chief Risk Officer for Citibank Hong Kong
- Co-Founded FinEx Asia in 2017
- HK/SG/TW footprint



Consumer Finance

More than an Alternative Asset Class

1. Why Banks CEOs Love Consumer Finance
2. Why Risk Managers Endorse Consumer Finance
3. How Digital Facilities General Access
 - US Marketplace Lending
 - AI – Enhanced Risk Management
 - Blockchain – Protect Data Securities
 - Mobile – Enable Transparency and 24/7 Real Time Monitoring
4. What are the New Roles for CFOs

Why Banks CEO Love it

Consumer Finance Business Model

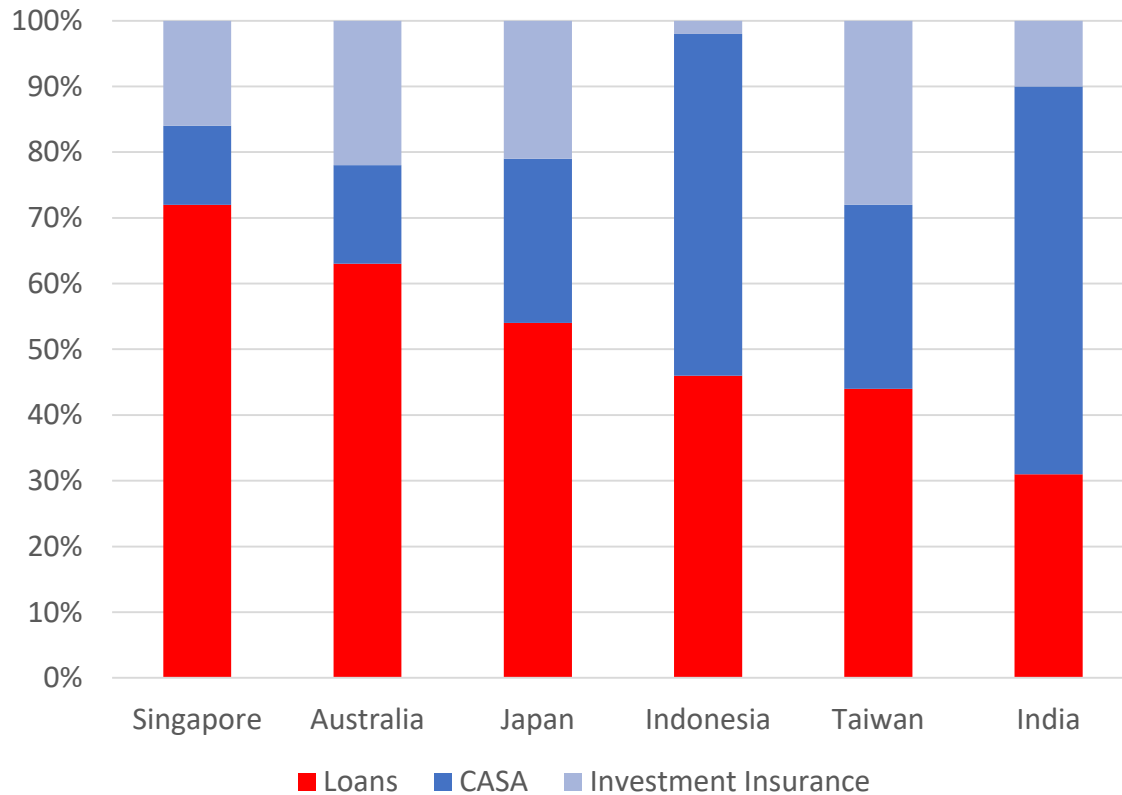
High margins on consumer assets accessible only to banks in the past



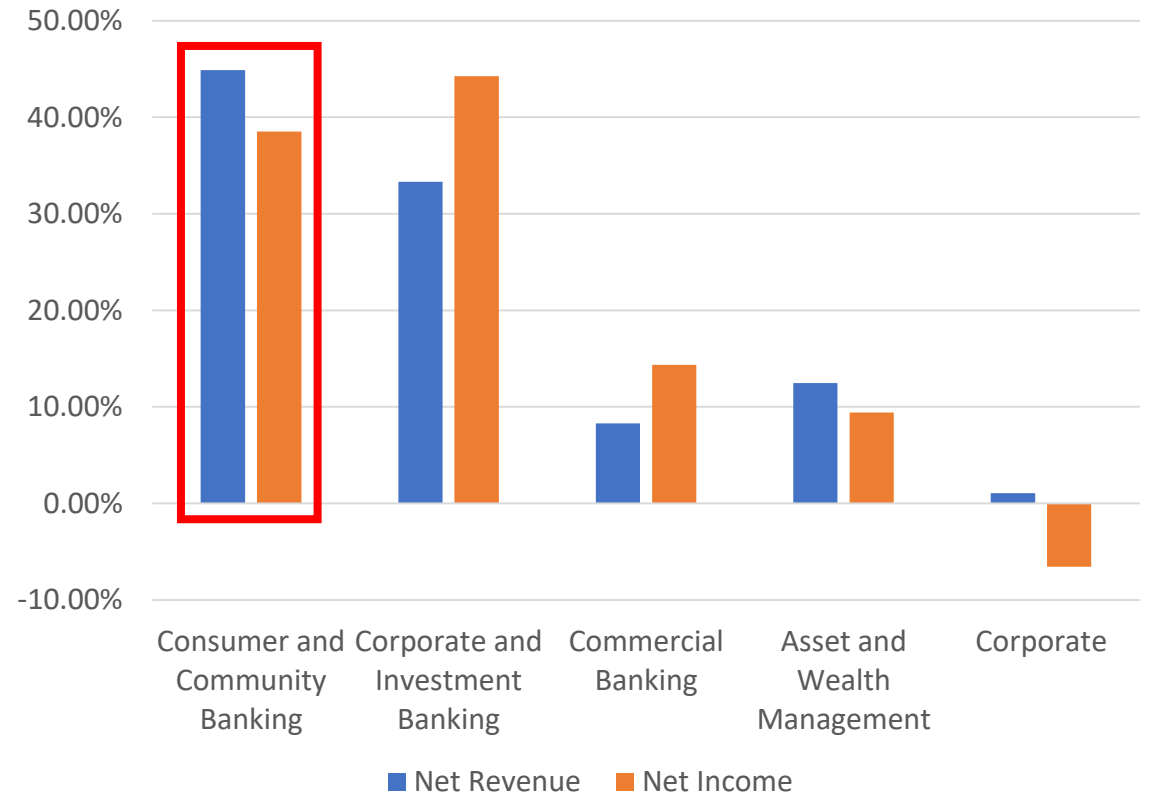
Why Banks Love It

Consumer lending is Banks' biggest margin business

Retail Banking Revenue Pool

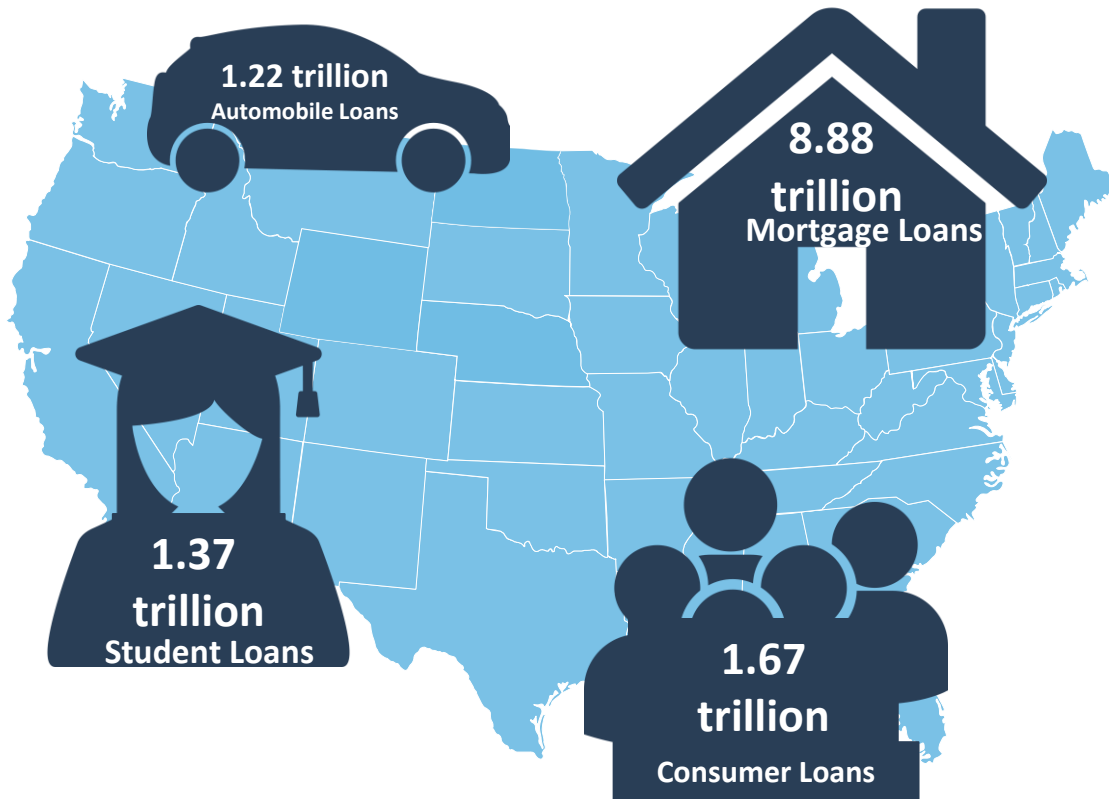


J.P. Morgan Revenue and Income Split

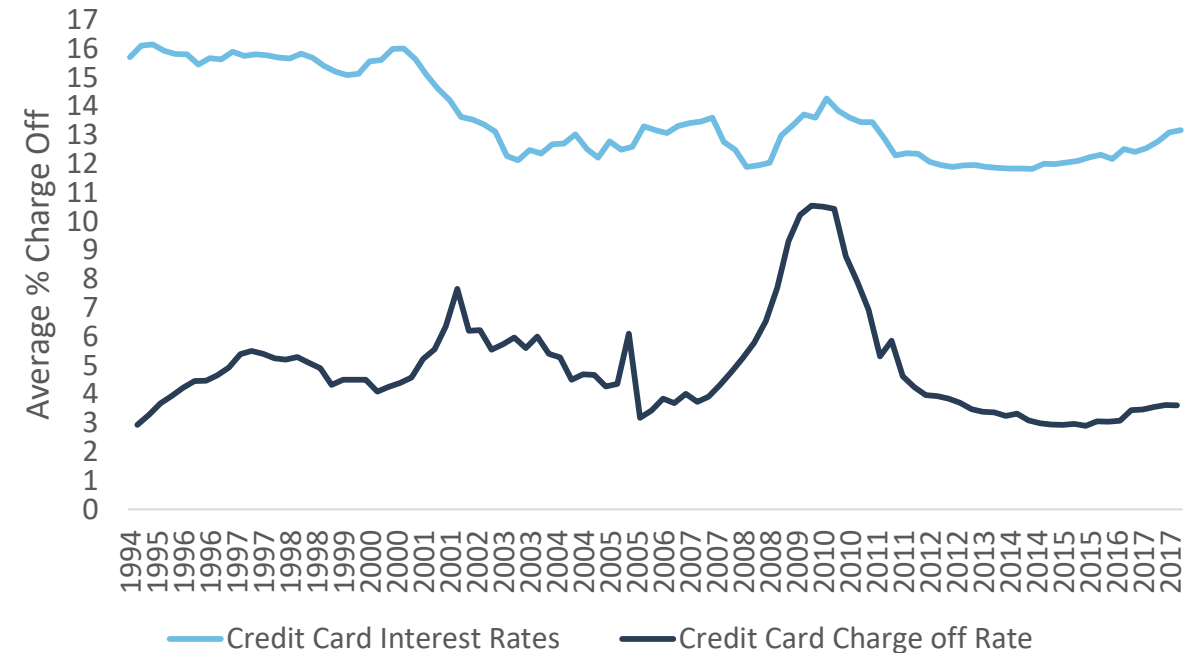


US Consumer Finance Market

20+ years of stable and positive returns



Charge off rates and interest rates on consumer debt

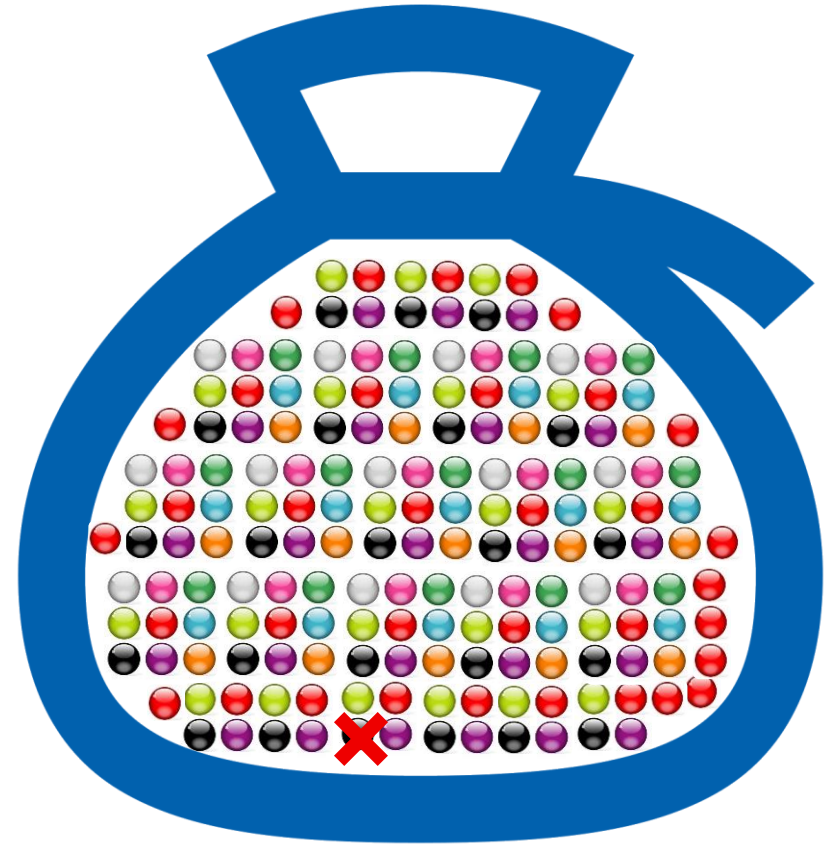
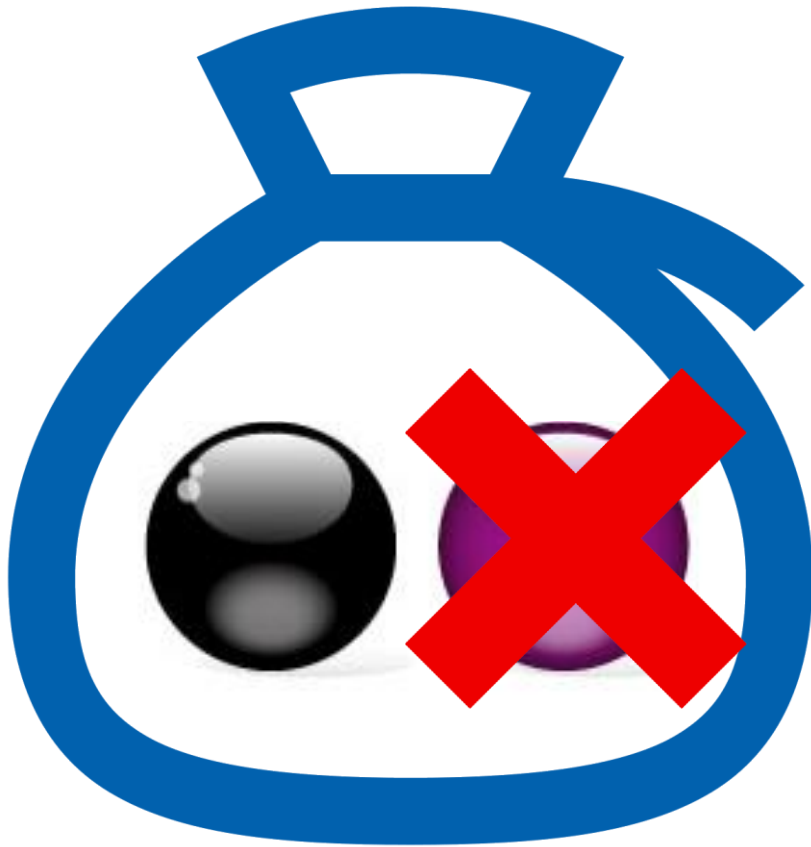


Source: Federal Reserve Bank of St. Louis/

Why Risk Managers Endorse it

Consumer Finance Key Characteristics

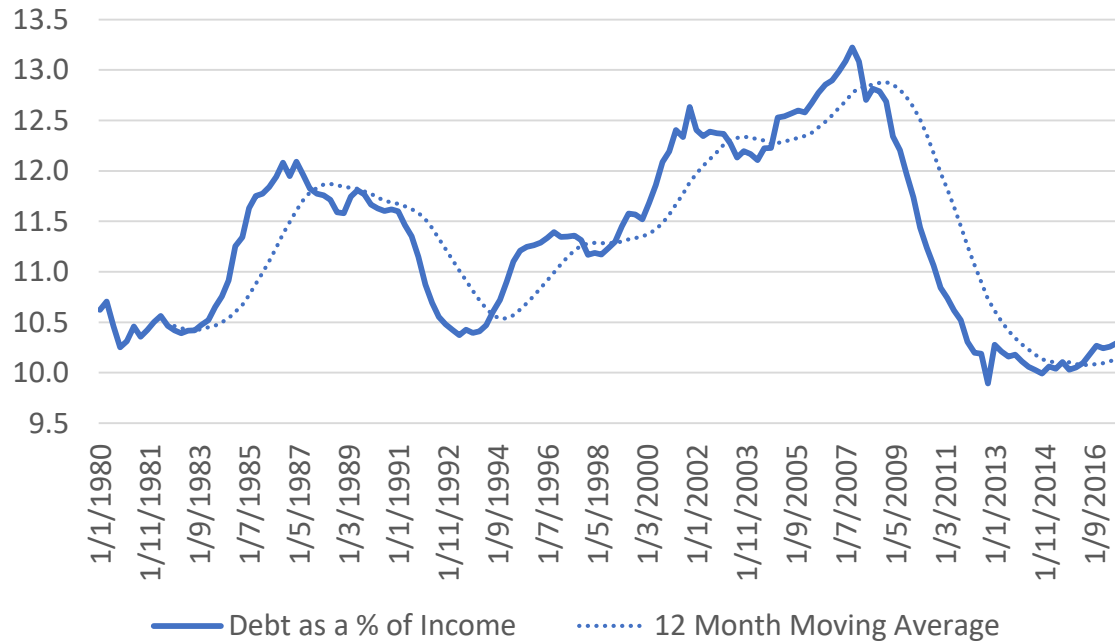
Highly diversified = Low severity



Leading Indicators

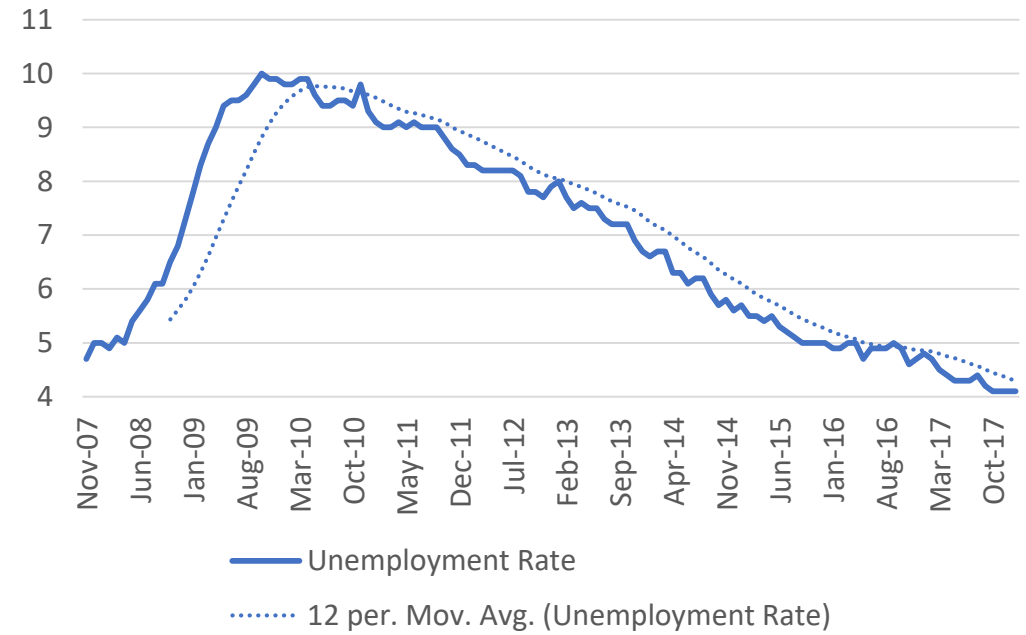
Macro Indicators – leading indicators

Debt as a % of Income



Debt as a portion of Income is low

Unemployment Rate

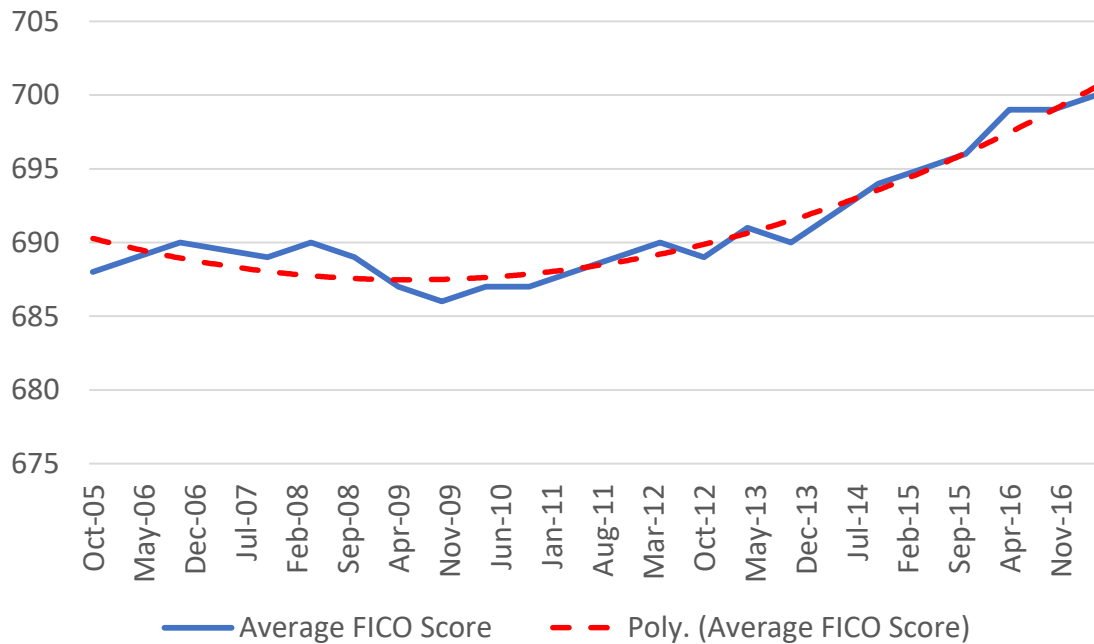


Unemployment is low

Lagging Performance

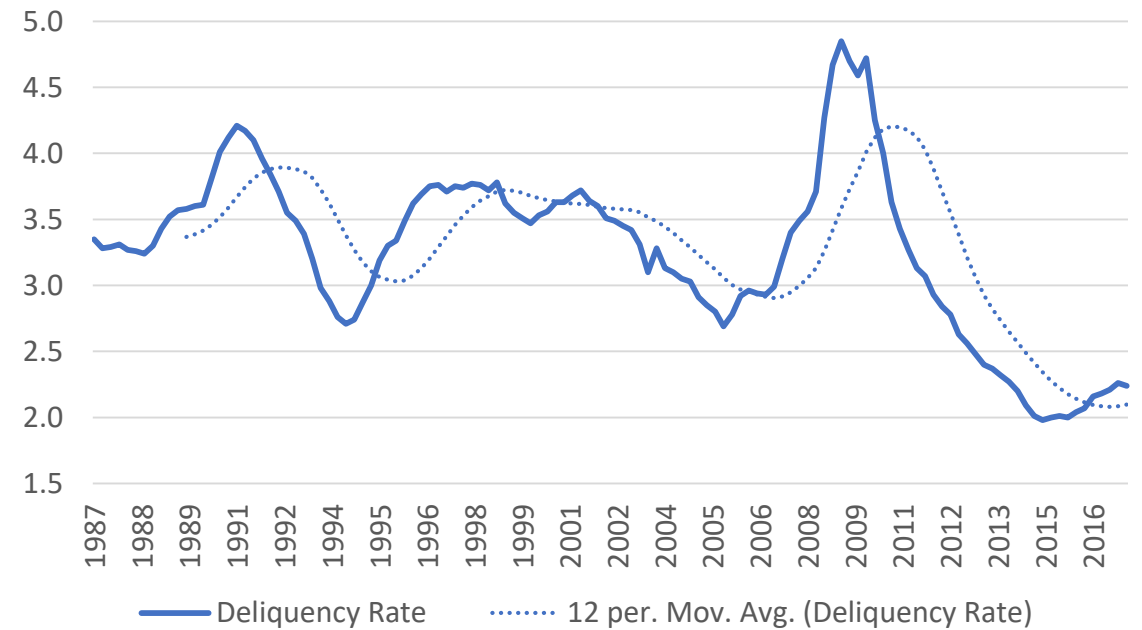
Macro Indicators are supportive

Average FICO Score



Average FICO Scores are rising

Delinquency Rate



Delinquency rate on debt is low

Lagging Indicators

Flow rate analysis

The flow rate matrix shows how the delinquency status of the pool has evolved from one period to another.

Principal Balance	Current	1-30	31-60	61-90	91-120	Charge off	Total
Month 1	\$2,532,000						\$2,532,000
Month 2	\$2,810,000	\$26,000					\$3,070,000
Month 3	\$2,607,000	\$93,000	\$23,000				\$2,723,000
Month 4	\$2,485,000	\$169,000	\$12,000	\$23,000			\$2,689,000
Month 5	-						
Month 6	-						
Month 7	-						
Month 8	-						

Projection figures

1.03% of current accounts in Month 1 become 1-29 days delinquent in Month 2

Flow rate	Current	1-30	31-60	61-90	91-120	Charge off	Total
Month1- Month 2	-	1.03%					
Month2- Month 3	-	3.31%	88.46%				
Month3- Month 4	-	6.48%	12.90%	100.00%			
Estimated Flow Rate		4.90%	50.68%	100.00%	100.00%	100.00%	

Lagging Indicators

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Month 5	-	\$122,000	\$85,000	\$12,000	\$23,000		
Month 6	-	-	\$61,000	\$85,000	\$12,000		
Month 7	-	-	-	\$61,000	\$85,000		
Month 8	-	-	-	-	\$61,000		

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US Federal Reserve Stress Test Scenarios

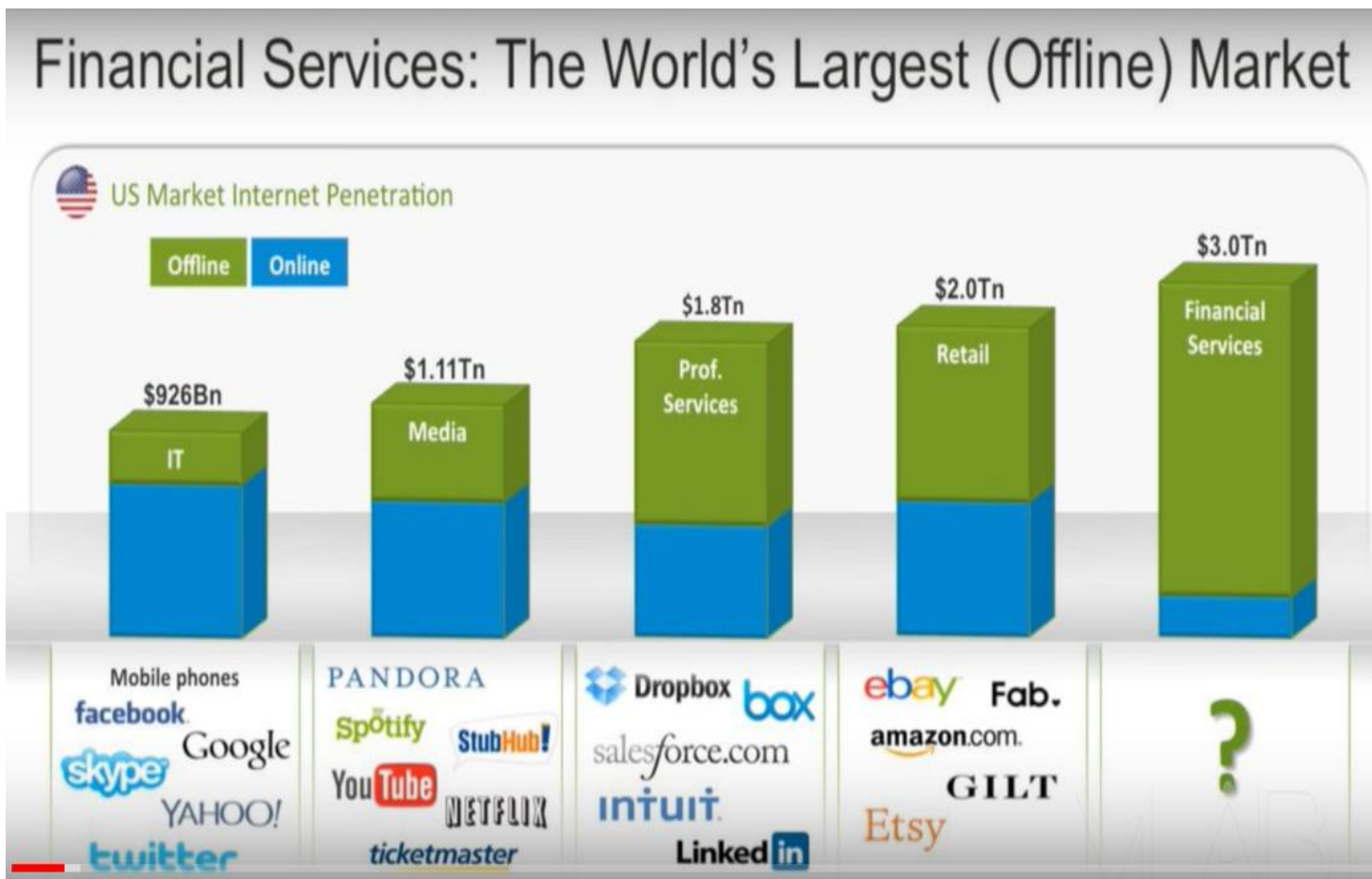
Stress test analysis

Scenario	Peak Unemployment rate	Estimated Annualized Bad rate		Probability	Return
		%	% increase		
Baseline (Based on 2017 Fed Reserve)	4.75%	7.5% p.a.			+8% p.a.
Adverse Economic Scenario (Based on 2017 Fed Reserve)	6.8%	12.14% p.a.	+61.88%	Once in 5 years	+ 4.76% p.a.
Global Financial Crisis Scenario (Based on 2008 official data)	9.3%	14.23% p.a.	+89.70%	Once in 30 years	+ 2.67% p.a.
Severely Adverse Economic Scenario (Based on 2017 Fed Reserve)	10%	17.95% p.a.	+139.39%	Never happened before	- 1.05% p.a.

Digital and Technology Transformation

Banking is the largest offline industry

... so far....

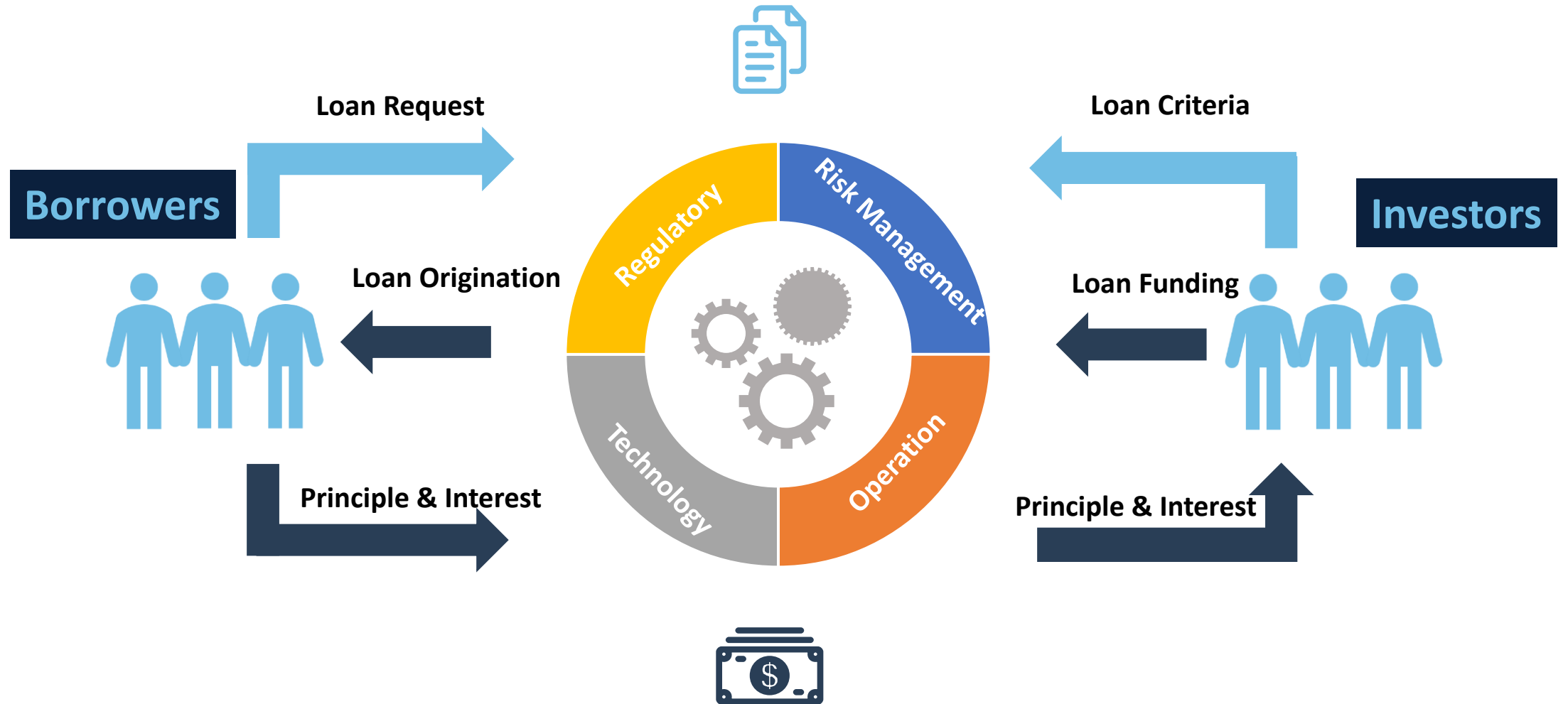


73%
of Banks expect
Fintech to disrupt
them in next 5 years

Reference: Fintech: Silicon Valley takes on Wall Street

The New Digital Era

Key stakeholders have **changed**



Investment Nuisance

Global fintech wealth management company



AI Risk Engine
Optimizes Returns



Blockchain security
Protects investor interest

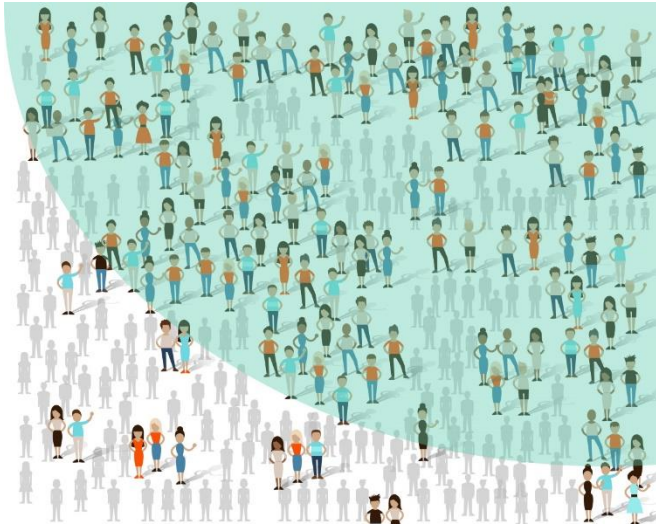


Mobile App
Enhanced Transparency

Artificial Intelligence Make Smart Investment Possible

Proprietary AI Model

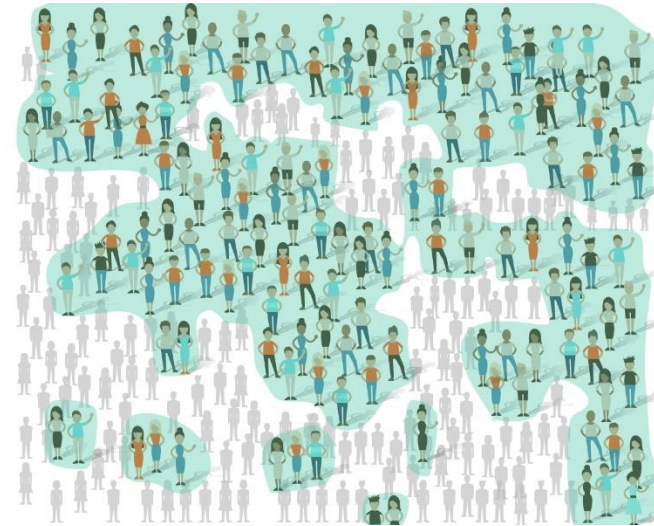
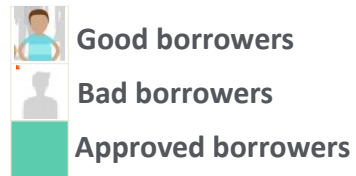
Traditional Analysis



Good borrowers get left out when using traditional models



AI Enhanced Analysis



AI Models identify good borrowers and include more of them.

AI models perform granular analysis using big data and complex computational engines

Artificial Intelligence Make Smart Investment Possible

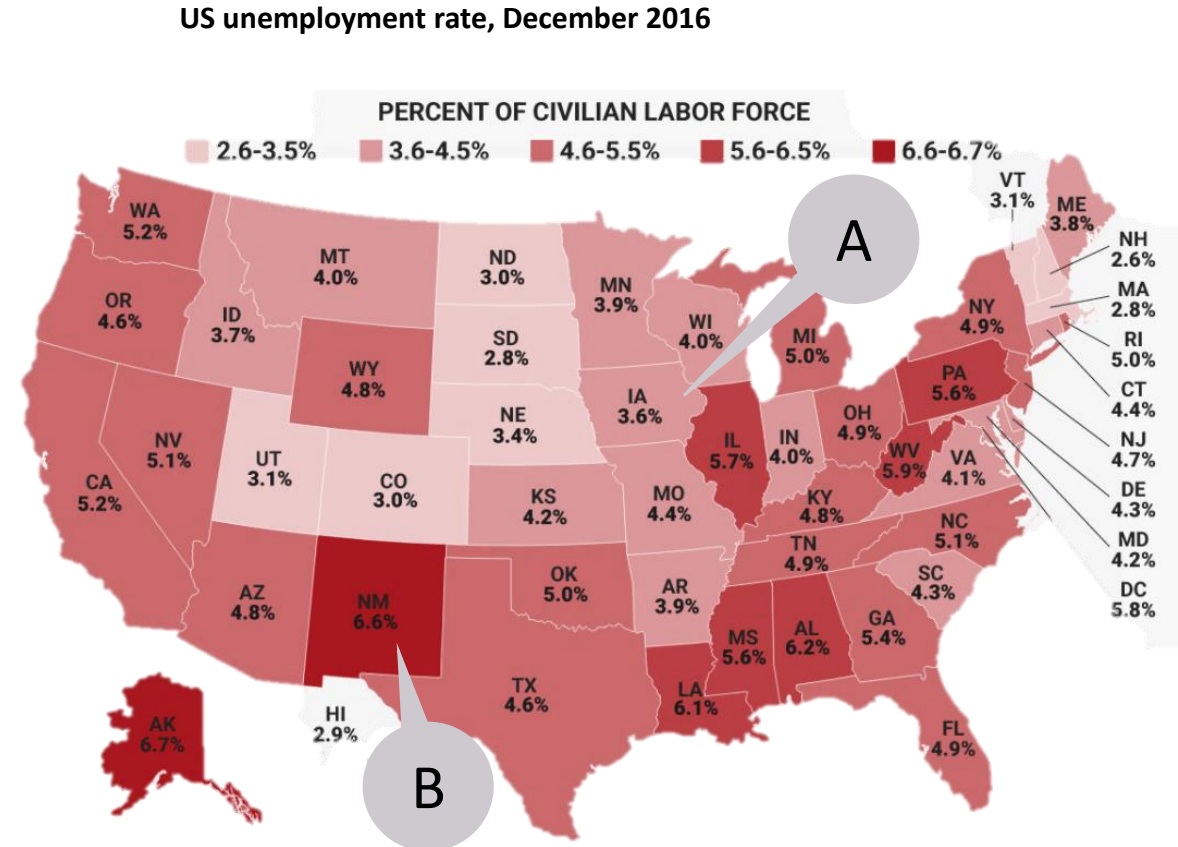
Technology enhances returns – Public data analysis

A

FICO	650
Loan Purpose	Credit card balance transfer
Occupation	Accountant
Income	\$ 75,000
Current Debt Ratio	30%
Home Ownership	Mortgage
State Iowa	

B

FICO	650
Loan Purpose	Credit card balance transfer
Occupation	Driver
Income	\$ 75,000
Current Debt Ratio	30%
Home Ownership	Mortgage
State New Mexico	



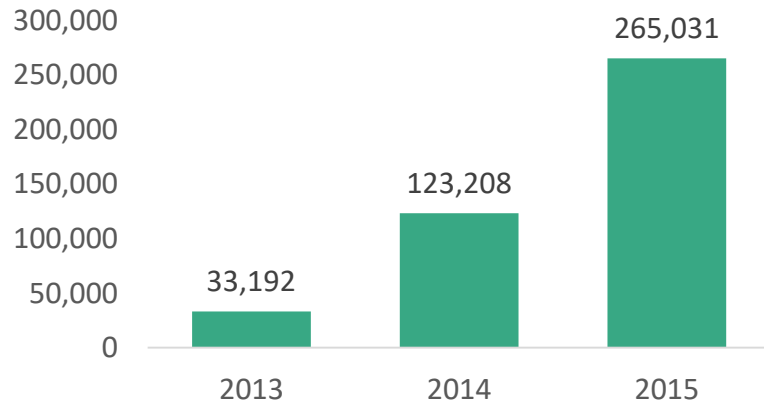
*Average unemployment rate: 4.8%

Source: Bureau of Labor Statistics

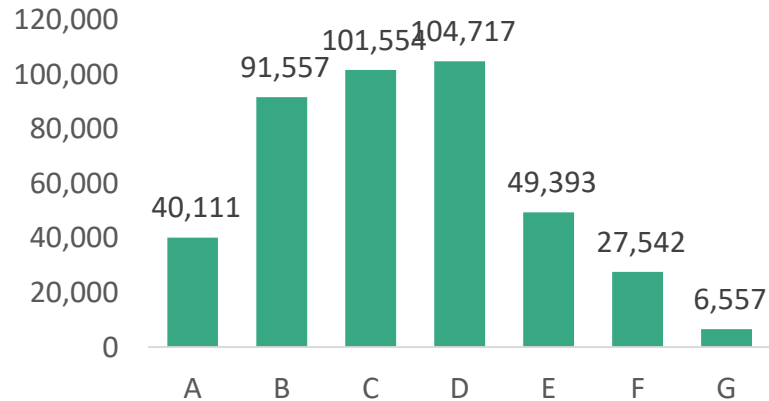
Artificial Intelligence Make Smart Investment Possible

Actual Validation

The No. of Consumer Loan (No. of Customer)

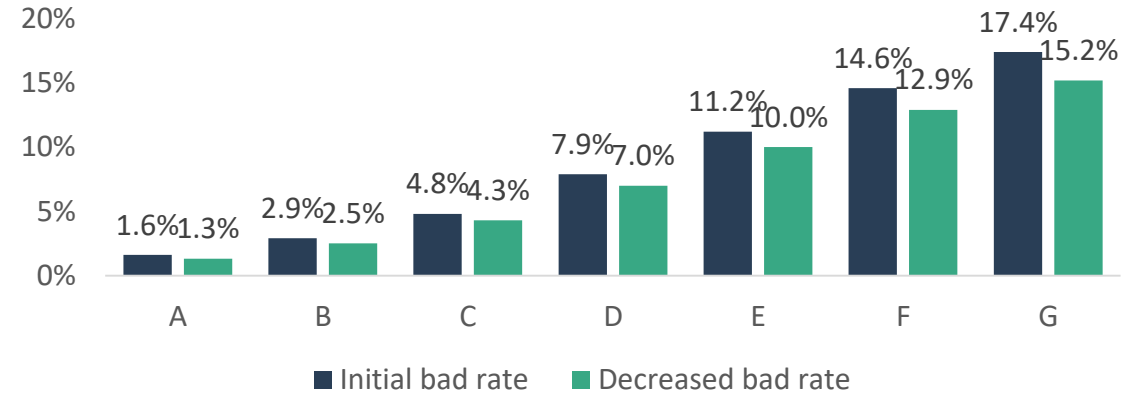


The Distribution of Consumer Loan (No. of Customer)

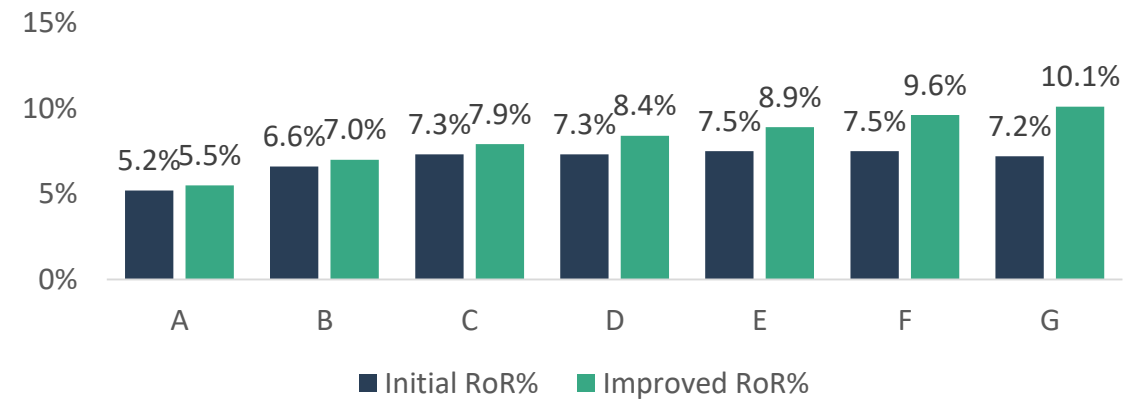


Source: Based on the data provided by US MPL platform

Decreased bad rate by bucket

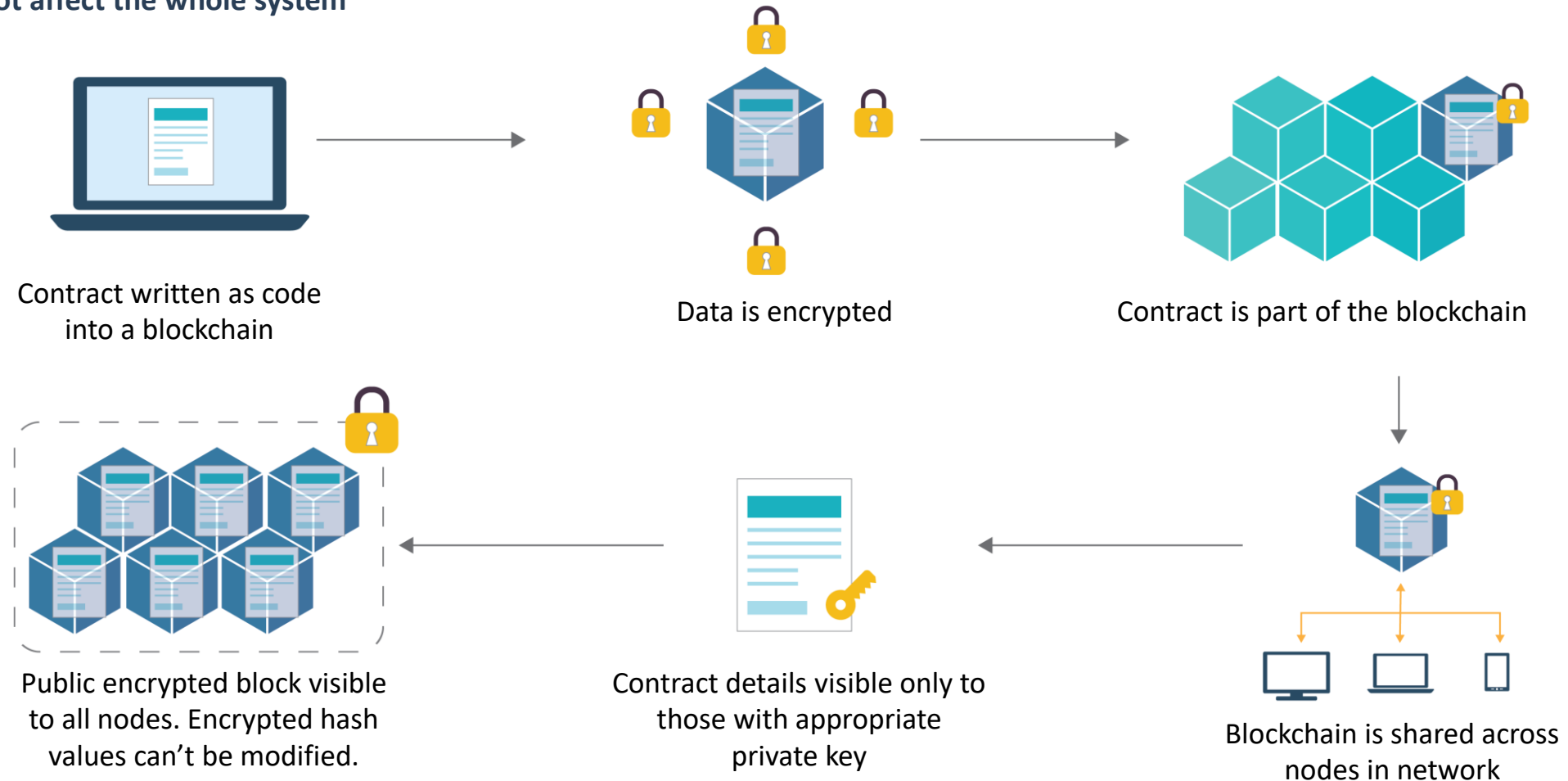


Improved RoR% by bucket



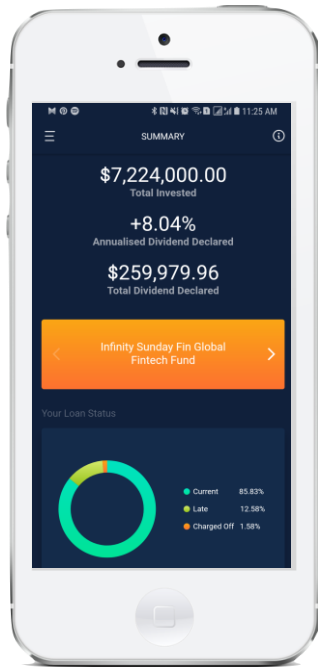
Blockchain Technology Enhances Securities

Information cannot be manipulated because transaction is recorded on the distributed ledgers of every member. A manipulated ledger would not affect the whole system

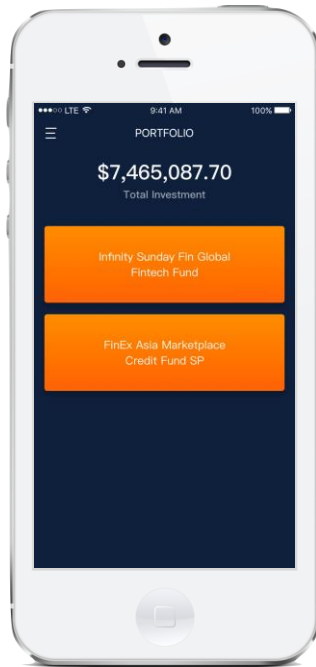


Control & Transparency

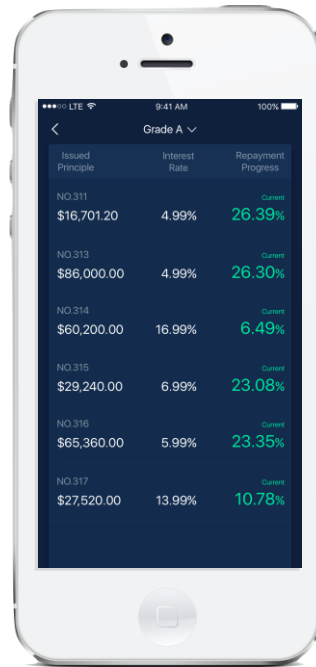
Use of Mobile connections is the norm



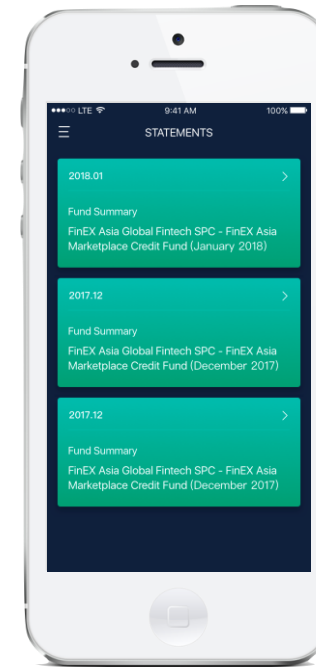
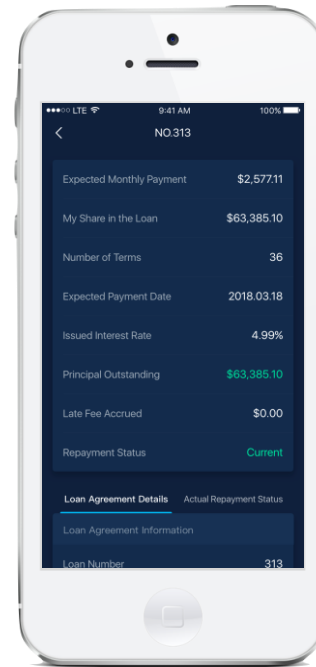
Investment Summary



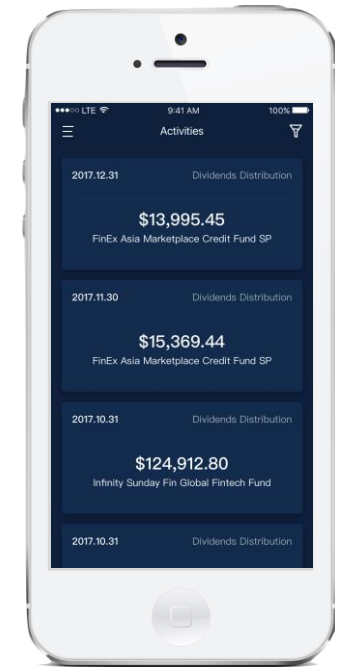
Access all investment easily



Detailed information of investment



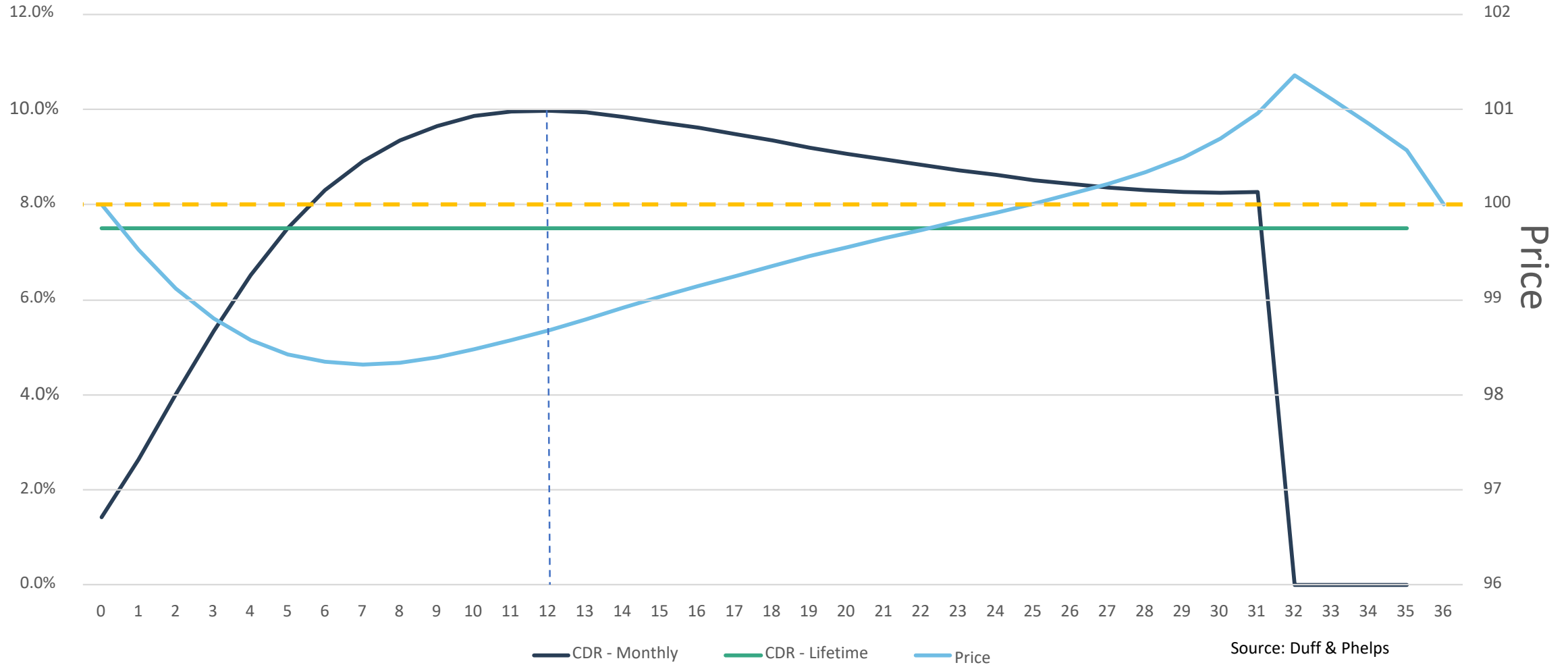
Ability to track income payments and statements



What's CFOs New Roles

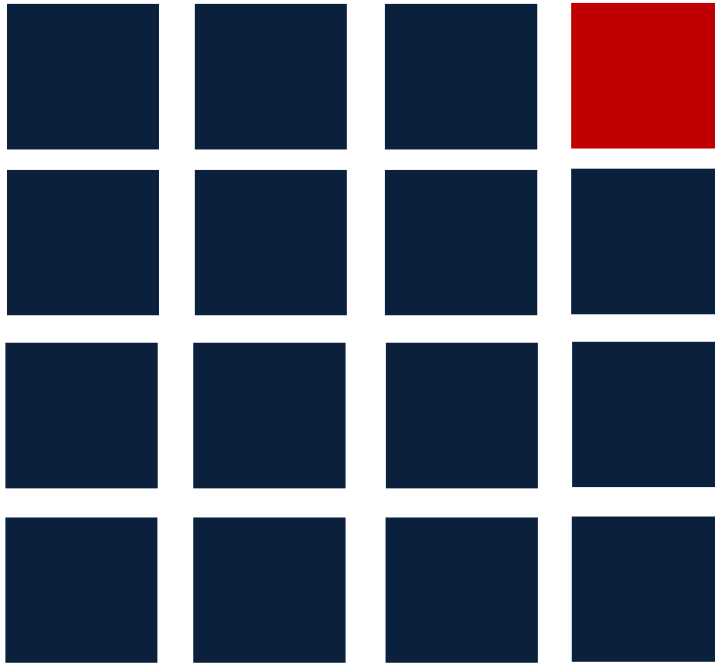
Portfolio Valuation Methodology

Typical loan valuation – 36 month loans



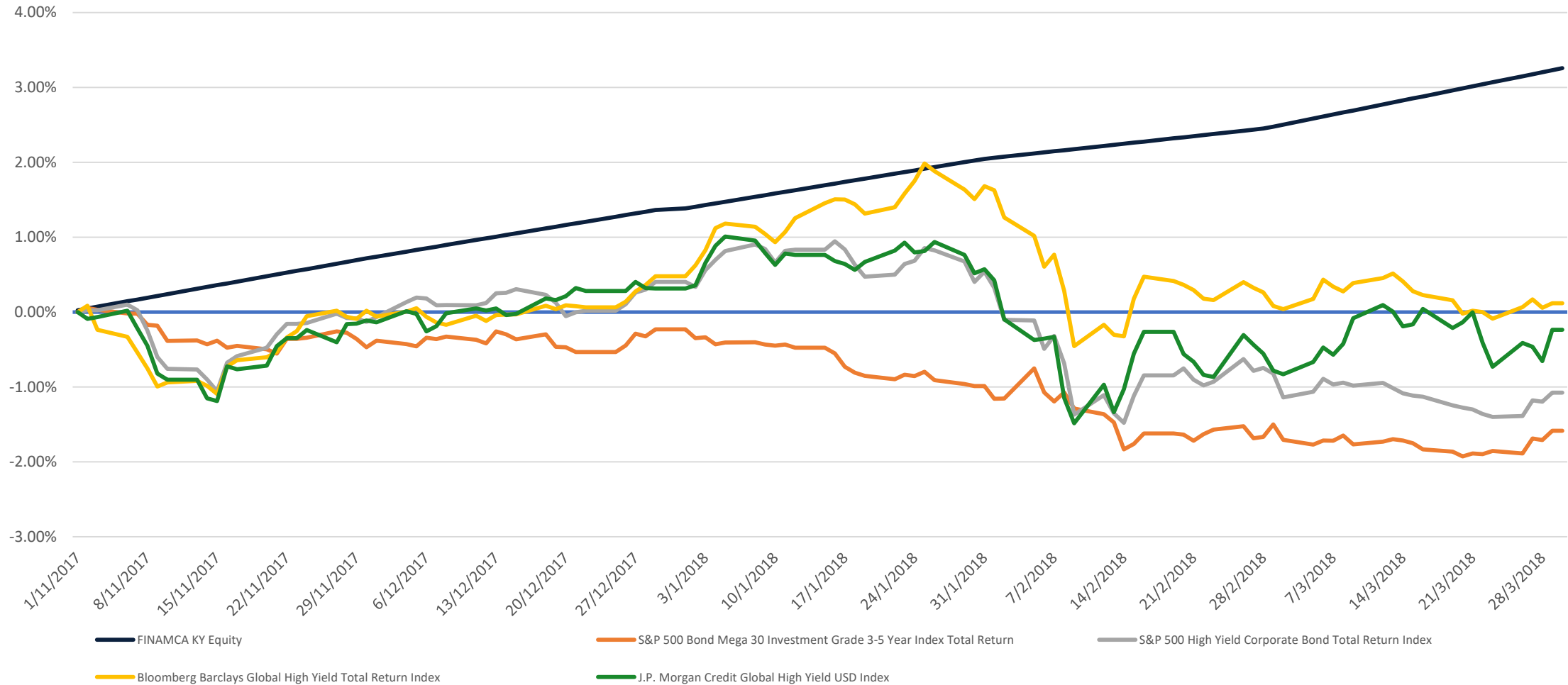
Source: Duff & Phelps

Provisions



Typical Consumer Finance Performance

Achievable. Sustainable. Growth.





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