

Financing Singapore's SMEs & Crowdfunding Development in Singapore

**Singapore Economic Policy Forum 2019
24 Oct 2019**

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Why do we care?

SMEs

- SMEs have difficulty accessing finance (due to information asymmetries and collateral shortage).
- After the GFC in 2008, banks became cautious of lending more to SMEs

Crowdfunding

- Rapid adoption of new digital technologies in the financial services sector (financial technology, or fintech)
- Has helped SMEs overcome some barriers to access credit (OECD, 2018).

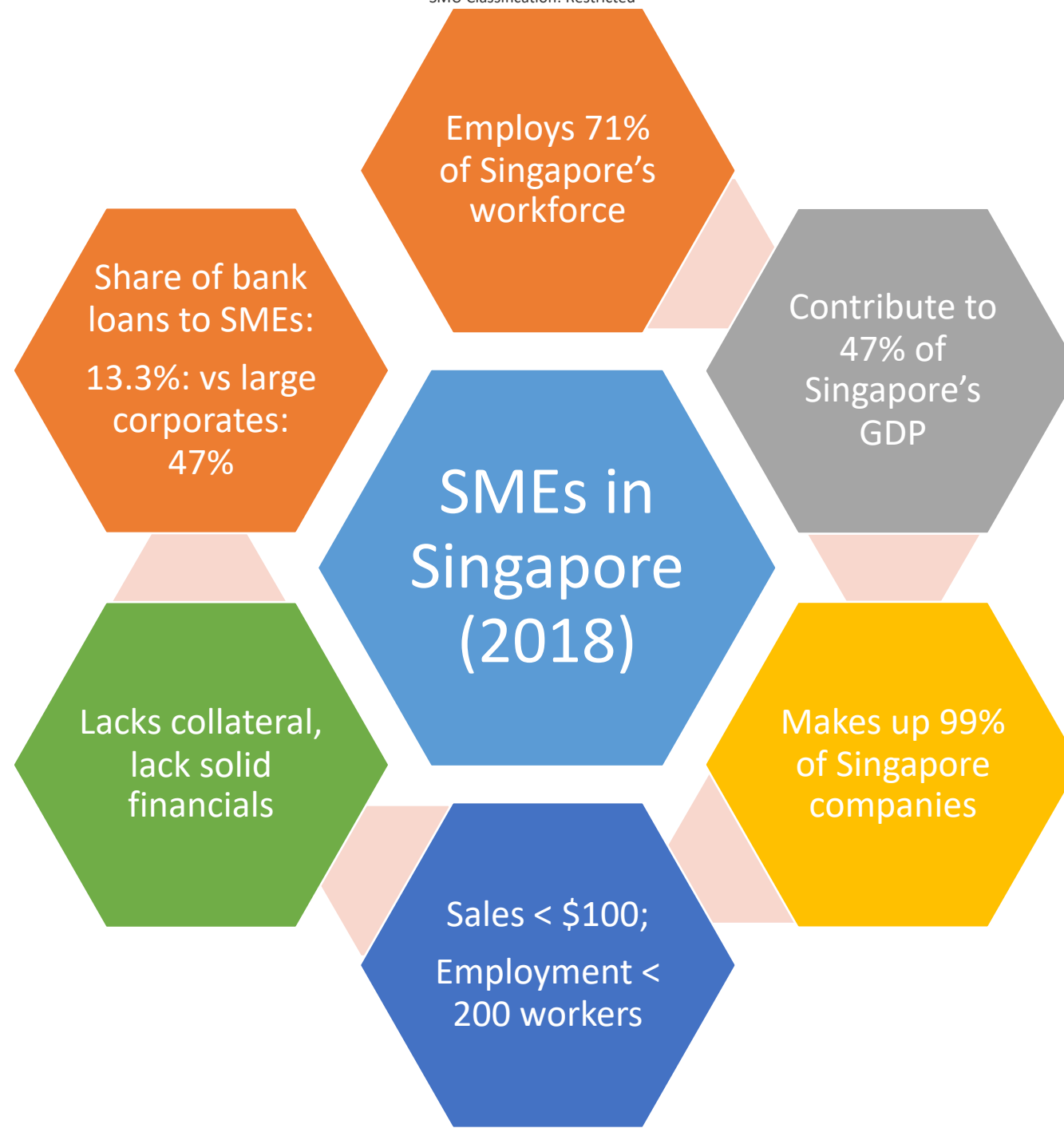
Research Objective: To investigate whether crowdfunding can address SME funding gap and improve SMEs cashflow.

> 50% formal
Small-Medium Sized Enterprise
(SME)

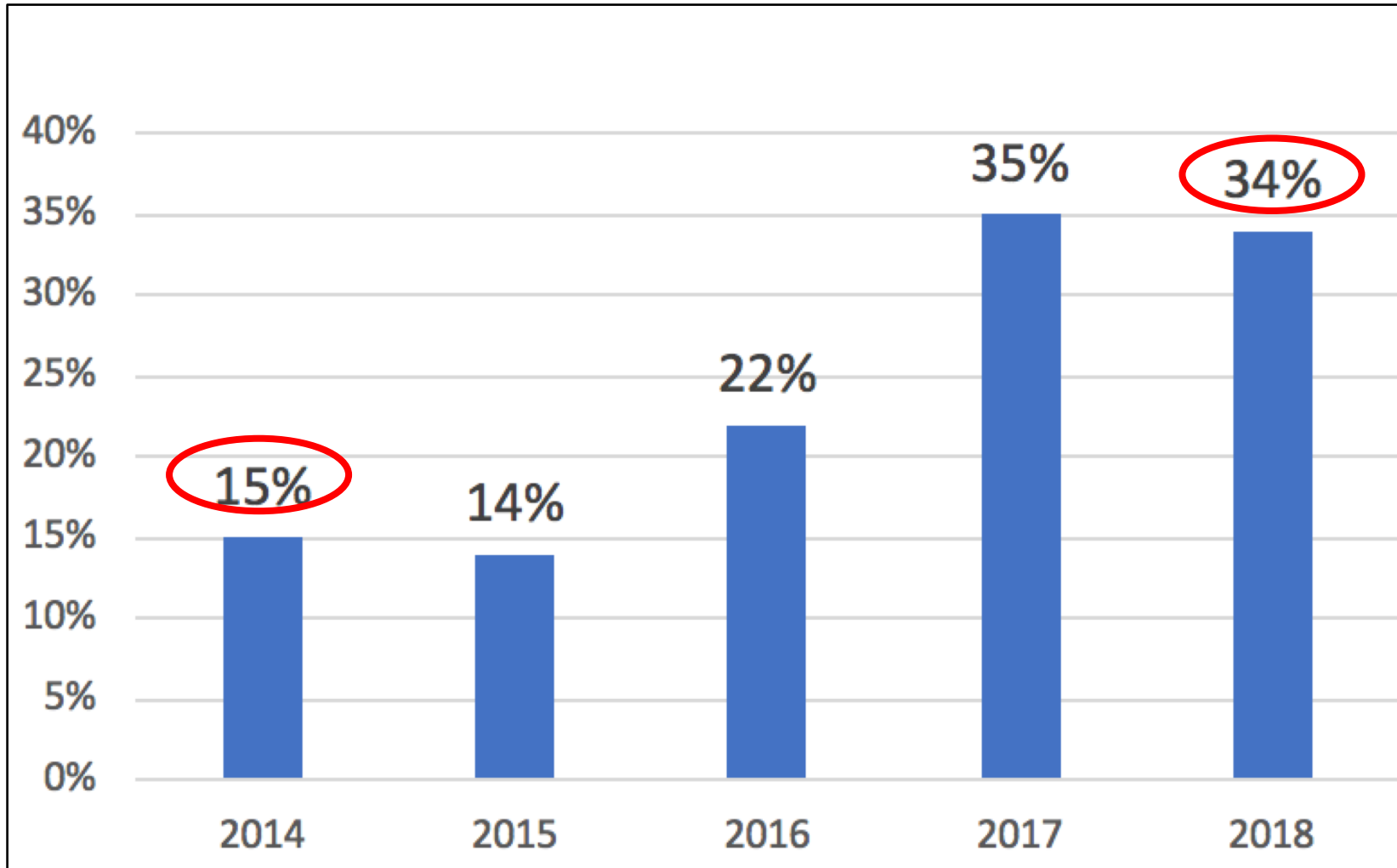
Needs
funding

Provides
funding

Crowdfunding

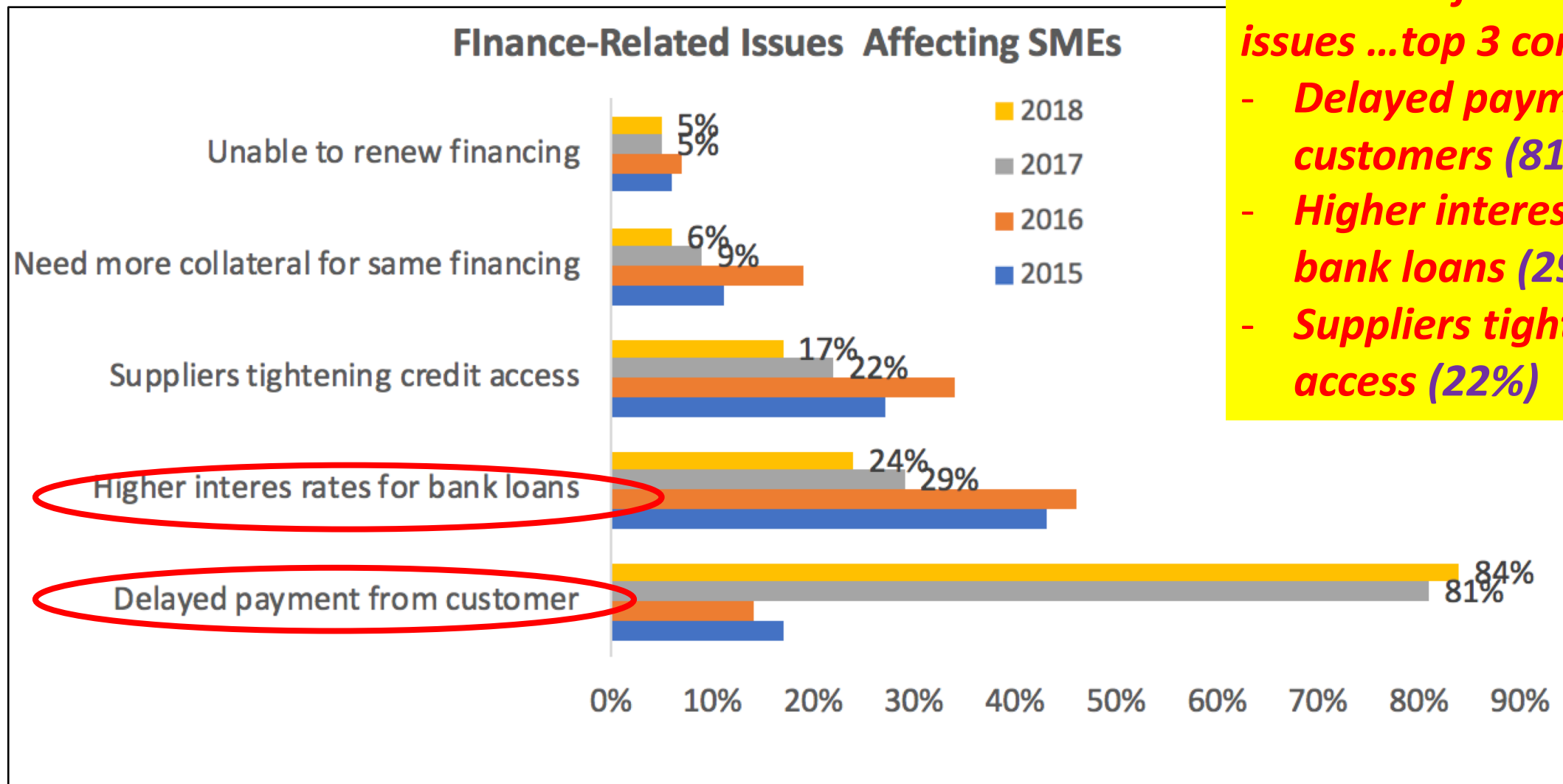


SMEs with finance-related issues 2014-2018



The percentage of SMEs with finance-related issues in 2018 has more than doubled since 2014 (*15% to 34%*)

Source: Experian

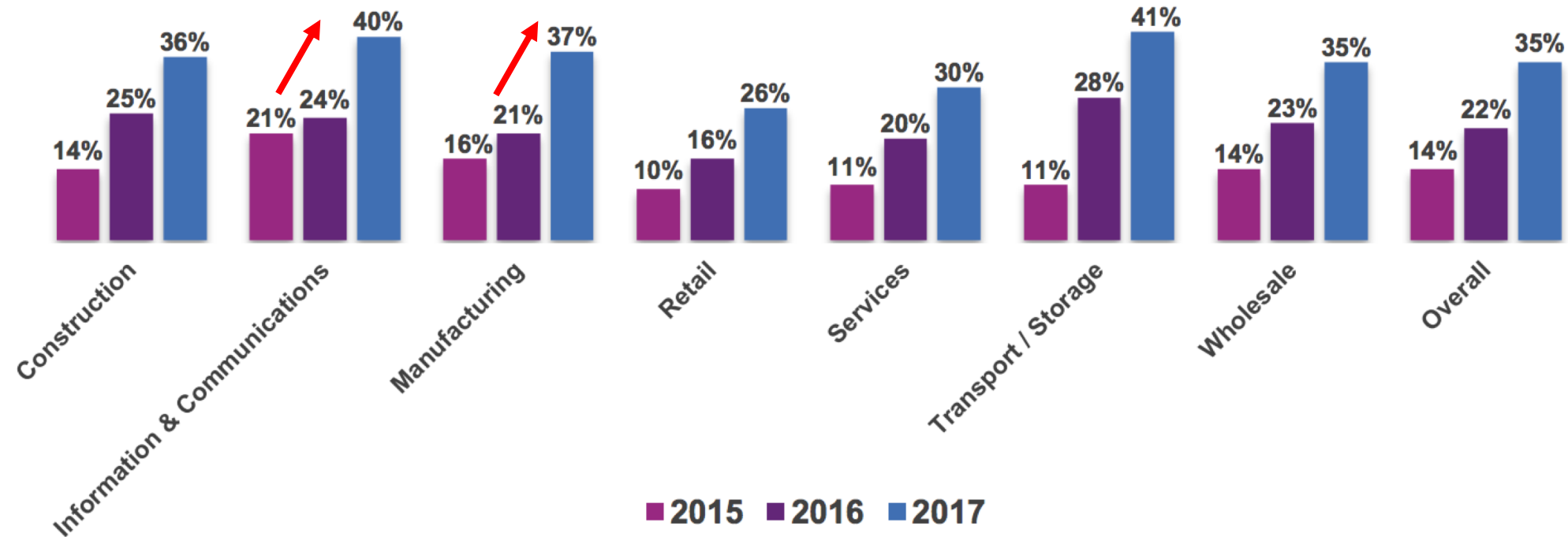


2017: Among the 35% of SMEs with finance-related issues ...top 3 concerns are

- **Delayed payments from customers (81%)**
- **Higher interest rates for bank loans (29%)**
- **Suppliers tightening credit access (22%)**

Chart 7: Companies Facing Finance-related Issues by Business Sector
2014-2017

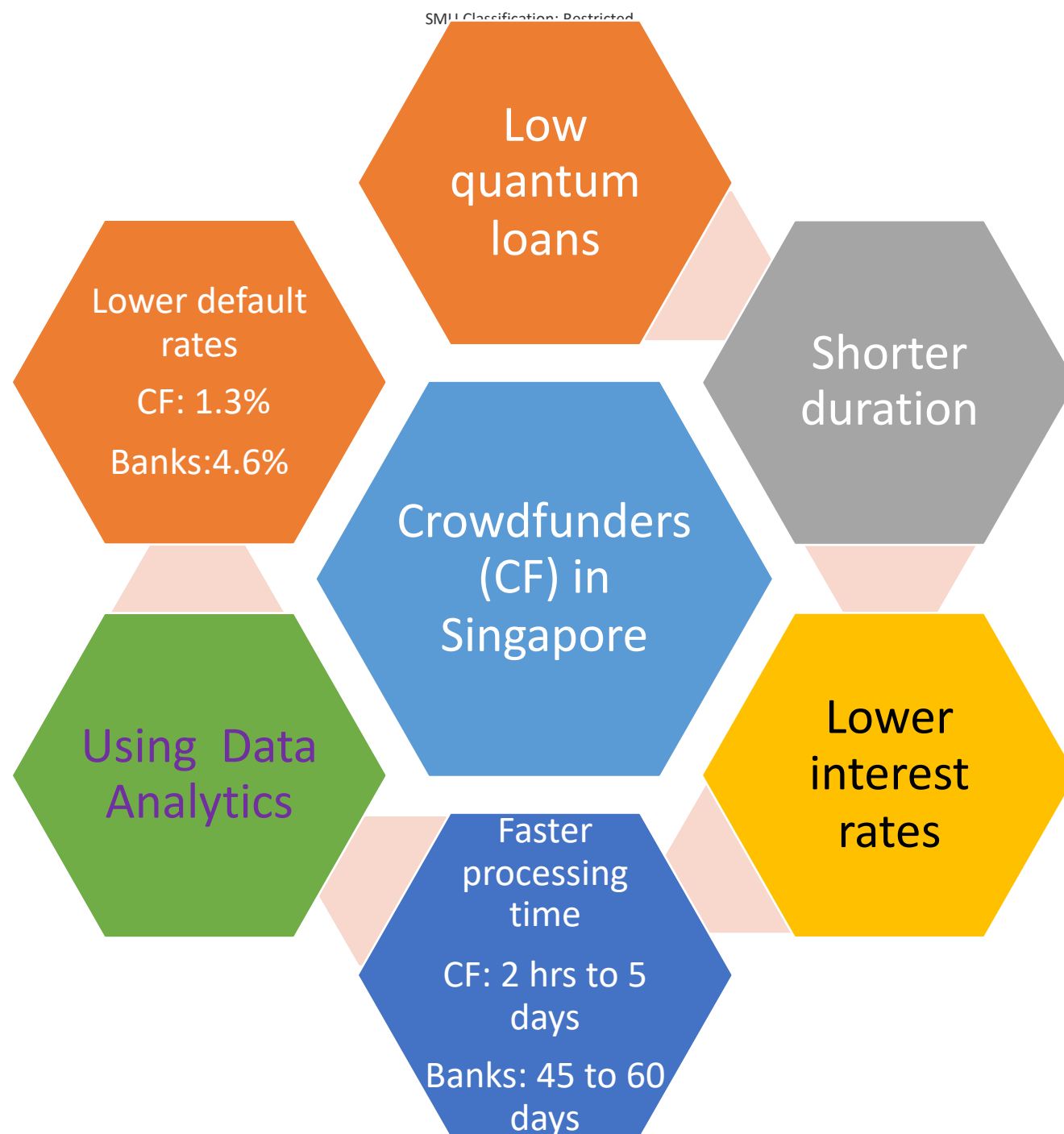
2017: 35% of SMEs have finance-related issues (13% jump in the last 12 months)



The proportion of SMEs with finance-related issues increased across all sectors, notably in

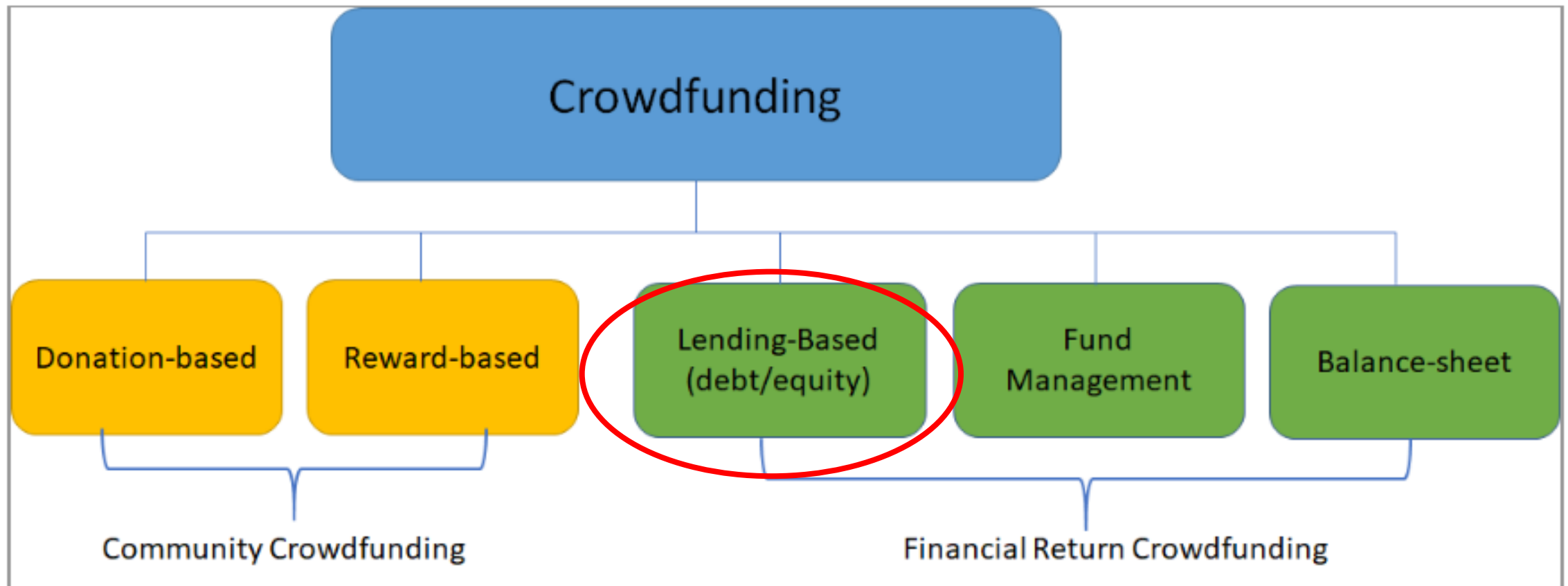
- Infor & Comm (**up 16%**) and
- Manufacturing (**up 16%**)

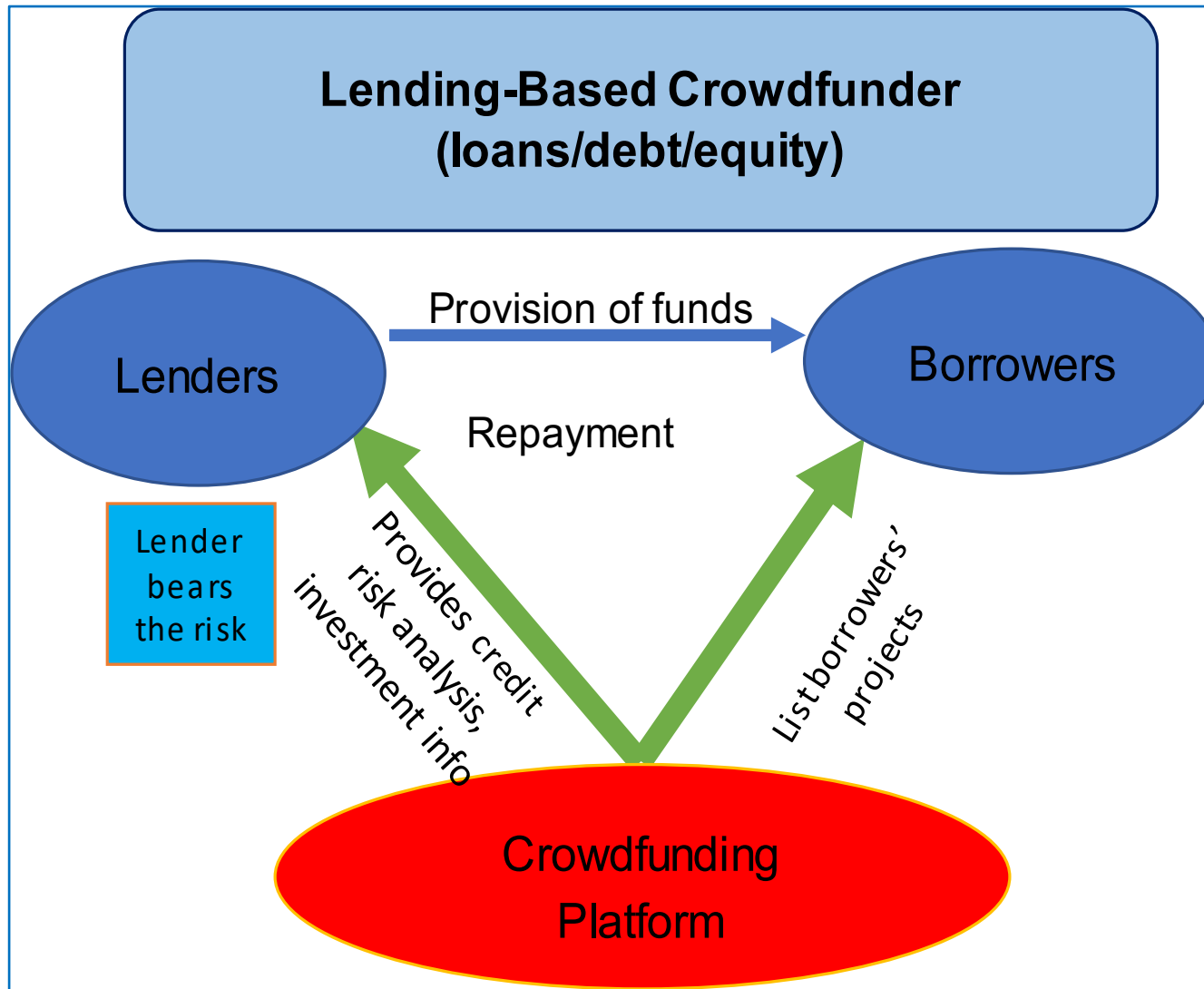
Source: Experian



Crowdfunding Business Models

Figure 1: Types of Crowdfunding Business Model





The crowdfunder matches the lender and the borrower.

The crowdfunder does not bear the risks of the borrower as it is not involved in the loan contract .

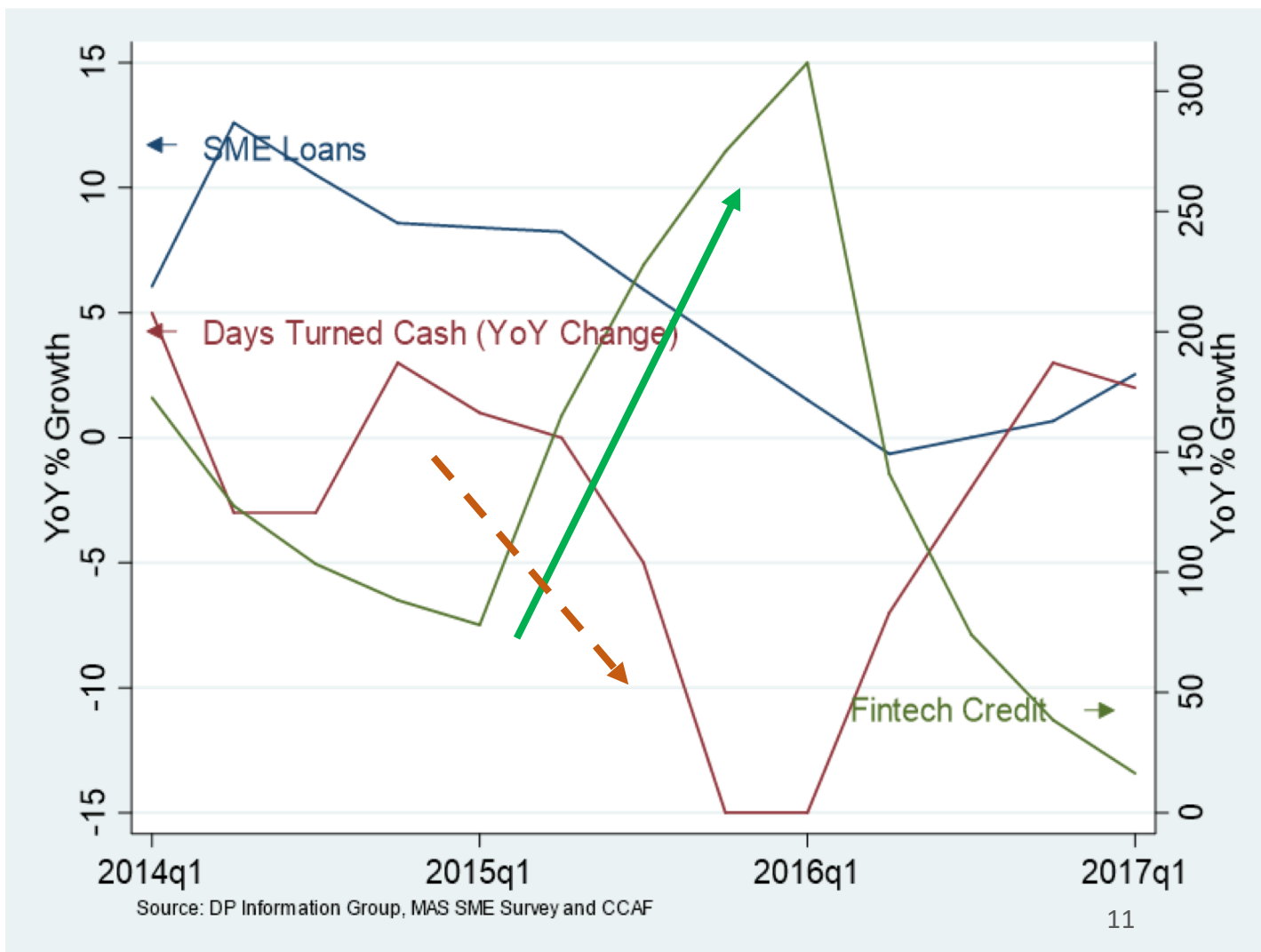
Funds and the loan repayments are segregated from the platform's own account.

The crowdfunder earns its revenue from fees levied on the transacting parties (loan origination and servicing ongoing loan repayments)

Research Objective: To investigate whether crowdfunding can address Singapore's SME funding gap and improve SMEs cashflow.

Empirical Observation:

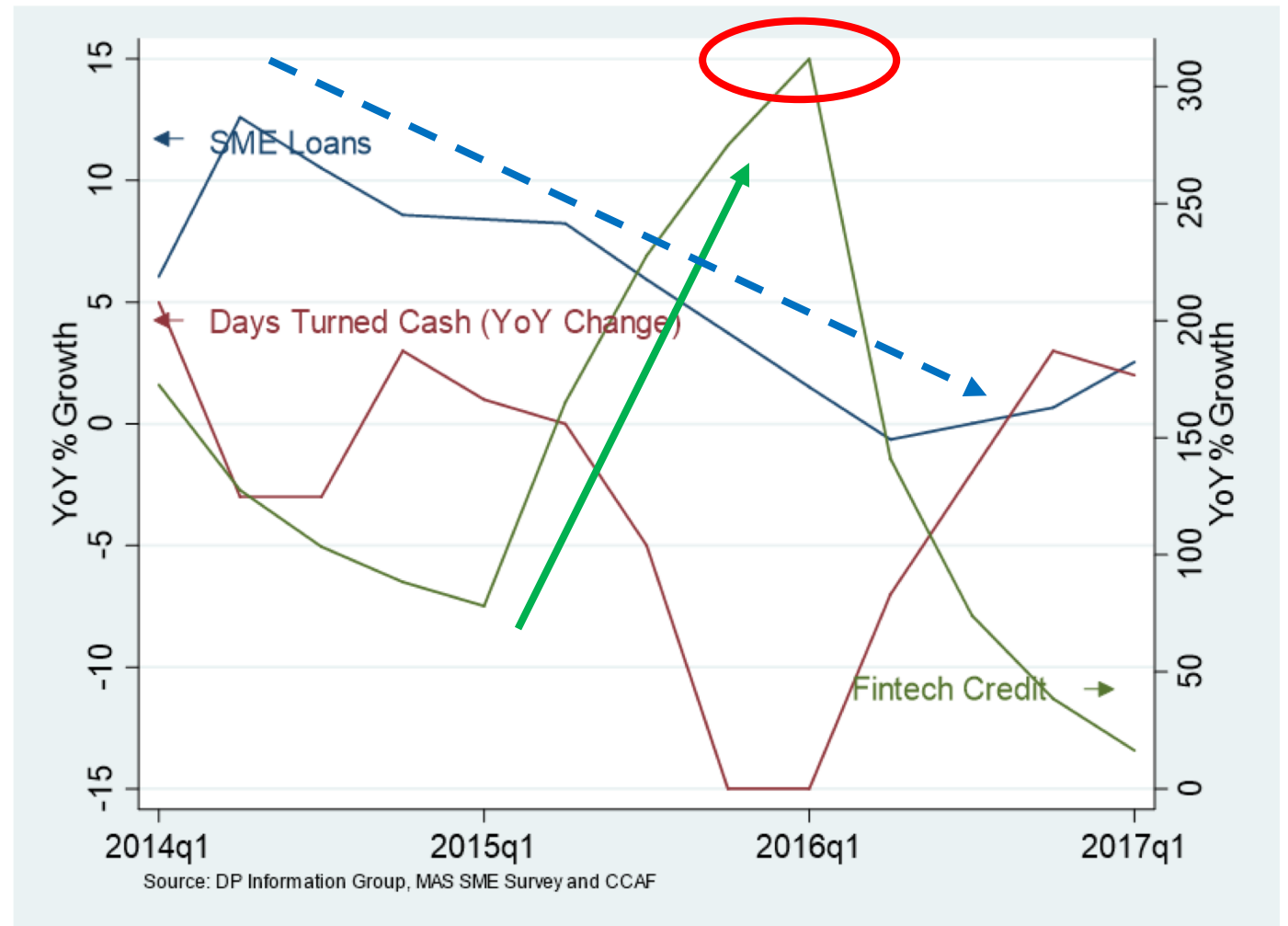
Rise in crowdfunding coincided with the fall in Days Turned Cash (*debt is paid faster*)



Empirical Observation:

Bank lending to SMEs has fallen

but crowdfunding to SMEs surged by 300%



Research Question #1:

BEFORE Crowdfunding

SMEs have cashflow
problem

AFTER Crowdfunding

Has SMEs' cashflow
problem been alleviated?

Our Model:

$$\Delta DTC_t = \alpha + \beta_1 \text{Access to Financing Expectations}_t (\text{yoy}) + \beta_2 \text{crowd_funding}_t (\text{yoy}) + \beta_3 \text{GDP} (\text{yoy}) + u_t$$

Crowdfunding has improved SME's timeliness to pay debt

| VARIABLES | OLS |
|---|-------------------------|
| Access to Financing Expectations Y-o-Y Growth | -0.320* (0.154) |
| Crowdfunding Growth Y-o-Y Growth | -0.0660*** (0.00525) |
| GDP Y-o-Y Growth | 1.179* (0.603) |
| Constant | -0.551 (2.194) |
| Observations | 15 |
| R-squared | 0.863 |
| Robust | Yes |
| RMSE | 2.855 |
| Dependent Variable | |

(i) Improved expectations of financing has reduced time to pay debt

(ii) When there is higher GDP growth, SMEs use excess cash to stretch out payment for expansion or investment

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Research Question #2:

We found that crowdfunding is important for SME development ..

So, what drives crowdfunding volume around the world?

**Do
policies
matter?**

Singapore's Crowdfunding Industry

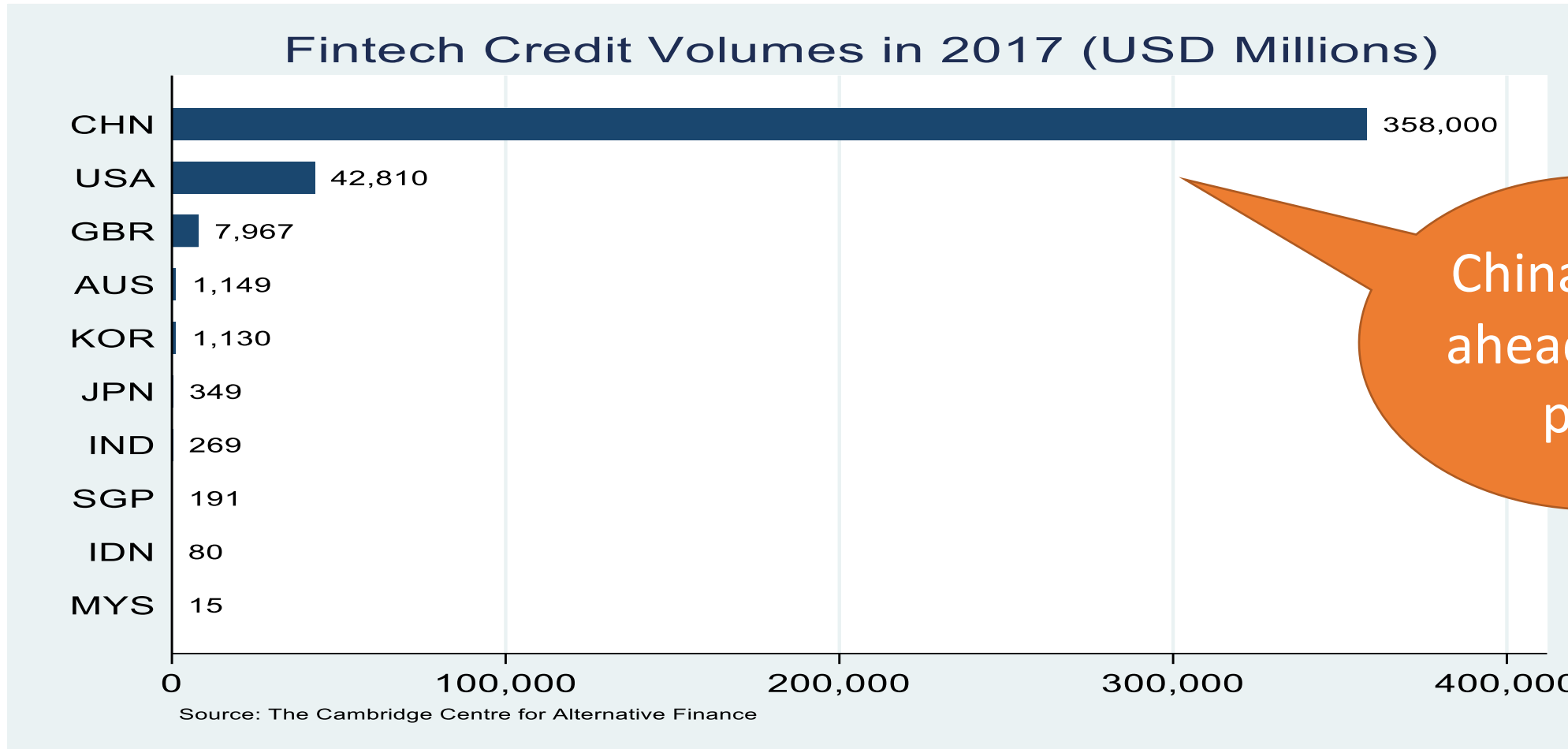
Small but
growing rapidly

19-20 platforms (2018)
Mainly in business lending
(newest entry: Estonia-based Funderbeam)

In just 4 years, Singapore
grew to be the largest
fintech hub in SEA (2019)

Placed 8th in the world, by
volume and per capita

Singapore ranks 8th by Crowdfunding Volume (and 8th also by Crowdfunding per Capita)



Drivers of Crowdfunding Volume

Panel data analysis using *Fixed Effects estimator*

n=9 Countries: Australia, India, Indonesia, Japan, Korea, Malaysia, UK, US and Singapore

Time period, t: 2013 to 2017

Variations of the model

$$\ln_FC_{it} = \alpha + \beta_1 \ln_GDP_{it} + \beta_2 \ln_GDP_{it}^2 + \beta_3 \ln VA_{it} + \beta_4 \ln DB + \beta_5 \ln ICRG \\ + \beta_6 \ln FA_{it} + \beta_7 \ln FD_{it} + d_1 C_{1i} + d_2 C_{2i} + \dots + d_{n-1} C_{n-1,i} + \varepsilon_{it}$$

See next slide for regression output

| VARIABLES | (1) DB | (2) ICRG |
|--|-------------------------|----------------------|
| GDP per Capita | 40.84** (19.12) | 27.11** (11.47) |
| Square of GDP per Capita | -2.246** (0.913) | -1.579*** (0.540) |
| Availability of Venture Capital | 9.166*** (1.026) | 9.661*** (1.105) |
| Doing Business Index | 6.754 (6.750) | |
| ICRG Composite Risk Rating | | 10.04 (9.832) |
| Business Sophistication | | |
| Financial Institutions Access | -18.62*** (7.173) | -7.521** (3.608) |
| Financial Institutions Depth | 22.23*** (5.377) | 18.47*** (4.607) |
| AUS | 16.66*** (5.622) | 8.903** (3.582) |
| IND | 15.31 (10.15) | 9.409 (5.724) |
| IDN | 36.93*** (11.07) | 25.67*** (6.858) |
| JPN | 16.06** (6.683) | 6.730* (3.834) |
| KOR | 11.46** (5.110) | 5.410 (3.485) |
| MYS | -11.66** (5.365) | -10.82** (4.243) |
| GBR | 12.09** (5.420) | 5.529 (3.839) |
| USA | 19.60*** (6.189) | 10.57*** (3.757) |
| Constant | -234.8** (112.6) | -169.6** (76.07) |
| Observations | 41 | 45 |
| R-squared | 0.945 | 0.936 |
| Number of Countries | 9 | 9 |
| Robust | Yes | Yes |
| RMSE | 0.888 | 0.978 |
| Dependent Variable | Crowdfunding per capita | |
| Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 | | |

Our results: The rapid development of Singapore's crowdfunding industry can be significantly attributed to:

*Higher
GDP Per capita

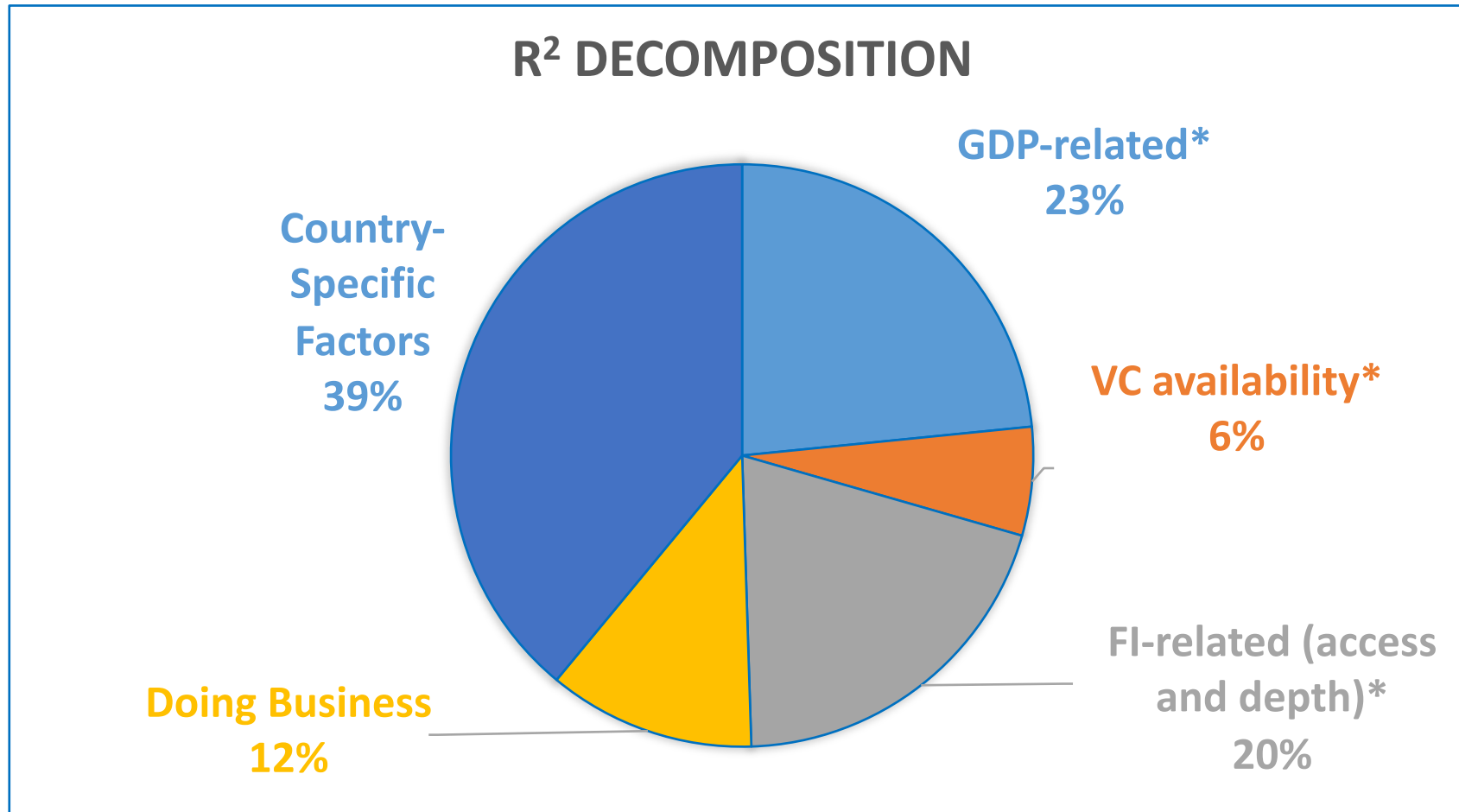
*Greater
availability of
venture capital

*Higher level of financial
development
(FI-access and FI-depth)

Greater ease of
doing business

*** *Statistically significant***

R² Decomposition



| VARIABLES | Doing Business Index | | ICRG Composite Risk Rating | |
|---------------------------------|---------------------------|----------------------|----------------------------|----------------------|
| | Individual R ² | Group R ² | Individual R ² | Group R ² |
| GDP per Capita | 11.3328 | 23.4103 | 11.7103 | 24.1434 |
| Square of GDP per Capita | 12.0774 | | 12.4331 | |
| Availability of Venture Capital | | 6.0248 | | 6.2625 |
| Doing Business Index | | 11.5223 | | |
| ICRG Composite Risk Rating | | | | 10.4545 |
| Financial Institutions Access | 10.5329 | 20.0499 | 10.4121 | 21.0214 |
| Financial Institutions Depth | 9.5170 | | 10.6093 | |
| IND | 6.0872 | 38.9928 | 6.9443 | 38.1182 |

*** Statistically significant**

Policy Implications

Policies do matter to the development of crowdfunding

- providing a conducive environment to do business
- fostering financial sector development

Research Question #3:

How are regulators in Singapore responding to crowdfunding development?

**Do
policies
matter?**

MAS seeks to balance between



MAS adopts a proportionate approach to regulating crowdfunding



- by applying risk-appropriate regulations
- to the specific activities that are conducted, be it lending to corporations or individuals.

Research Question #4:

How are banks in Singapore responding to crowdfunding development?

More changes ahead
MAS will issue 5 digital
bank licenses in 2020

Becoming fully
digitized (e.g.
DBS)

Partnering
with fintech
(e.g. UOB +
Ourcrowd)

**Singapore
banks
response:**

Building
digital banks
overseas (e.g.
DBS' Digibank
in India)

OCBC 's
Roboinvest

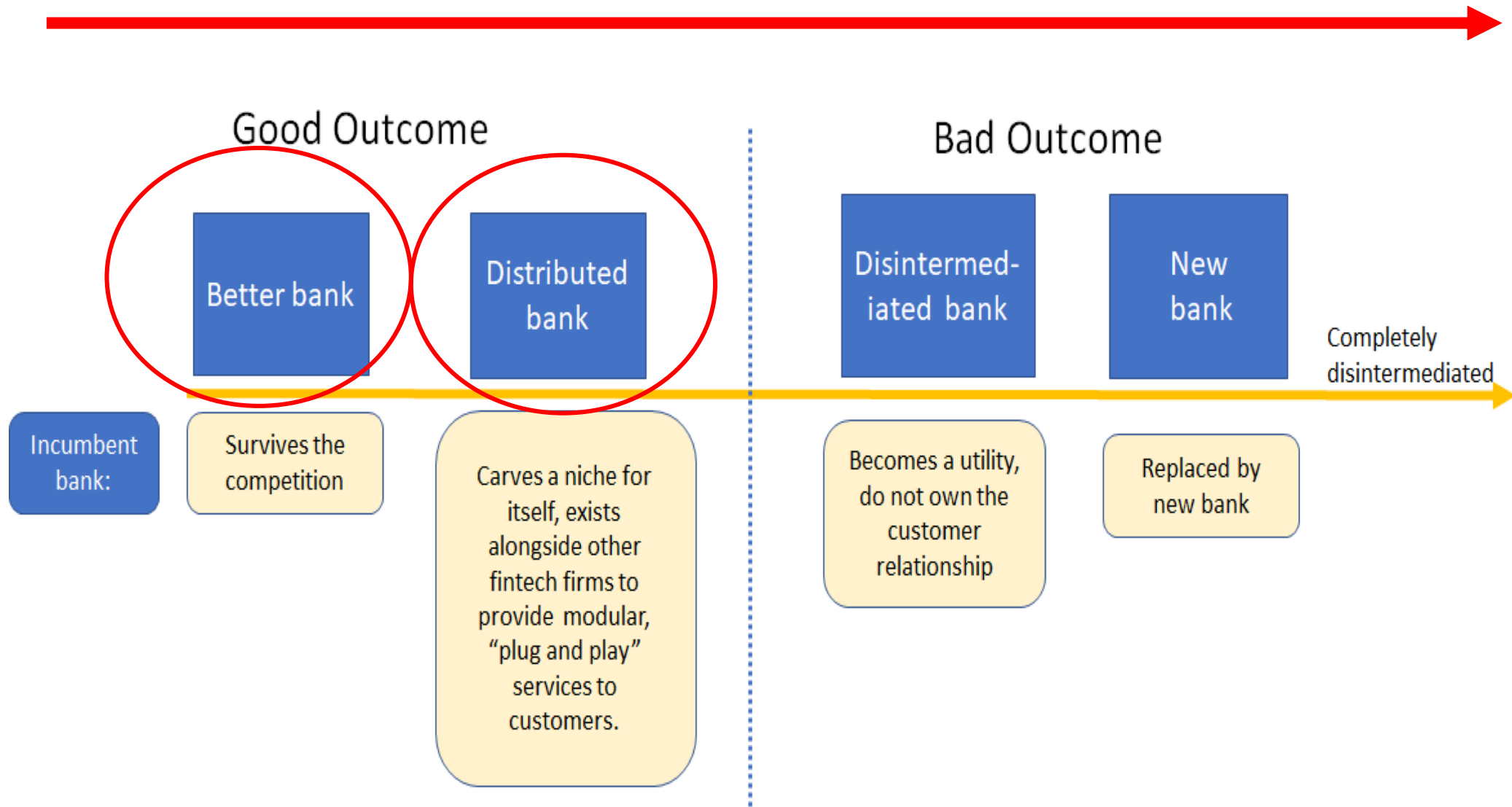
But high barriers of entry,
foresee more alliance along
the way

Expect to see greater
competition in
lending as more
players enter the
market

**No
disintermediation**

**Would banks
disappear?**

**Full
disintermediation**



World bank: "Fintech is making inroads globally but has not yet reached disruptive critical mass."

Conclusion

Research Objective: To analyse the effects of crowdfunding in Singapore, on SMEs, regulators and banks

1. Has crowdfunding alleviated Singapore's SMEs' cashflow problem

2. What drives crowdfunding volume around the world?

3. How are regulators in Singapore responding to crowdfunding development?

4. How are banks in Singapore responding to crowdfunding development?

Future Research

- The factors that drives crowdfunding /fintech activities are *multi-dimensional and complex*
- *Sector-level data for firms* to study the crowdfunding effect on SME cashflow (*instead of national average data*)
- *Macro-level data* to study whether higher *penetration rate of crowdfunding* in countries has a positive impact on *GDP growth*.

Thank you for your feedback!

Yoke Wang, Thitipat & Swee Liang