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From Data to Knowledge : The Journey

MyStats 2017

Parallel Session : Session 1

Micro Data Usage Enhancement in Bank of Thailand

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Outline

Introduction : Why Micro data ?

The Bank of Thailand's initiative on micro data utilization

Micro data use cases

Challenges for further micro data usage enhancement

Introduction: Why Micro data is important ?

1. Data
The Four V's of Big Data

- Volume
- Veracity
- Variety
- Velocity

2. Environment "VUCA"

- Volatility
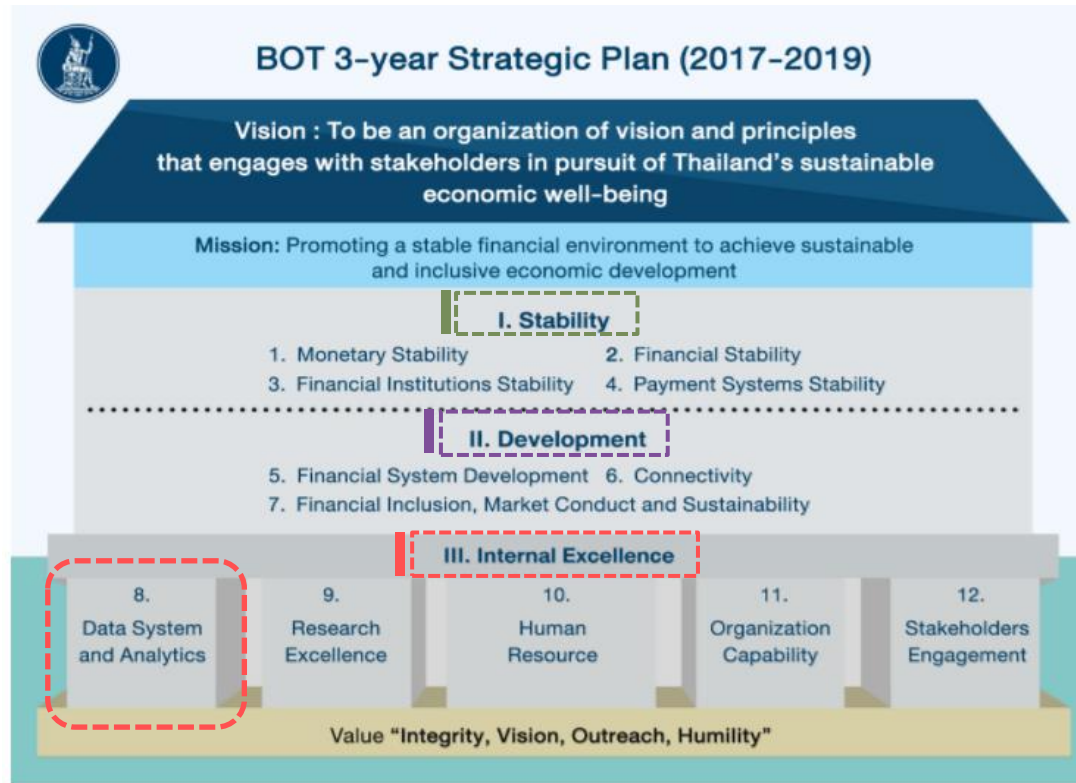- Uncertainty
- Complexity
- Ambiguity

3. Technology "SMAC"

- Social
- Mobile
- Analytics
- Cloud

Data become one of valuable assets of the organization.

The Bank of Thailand's initiative on micro data utilization

The BoT's 3-Year Strategic Plan (2017-2019)

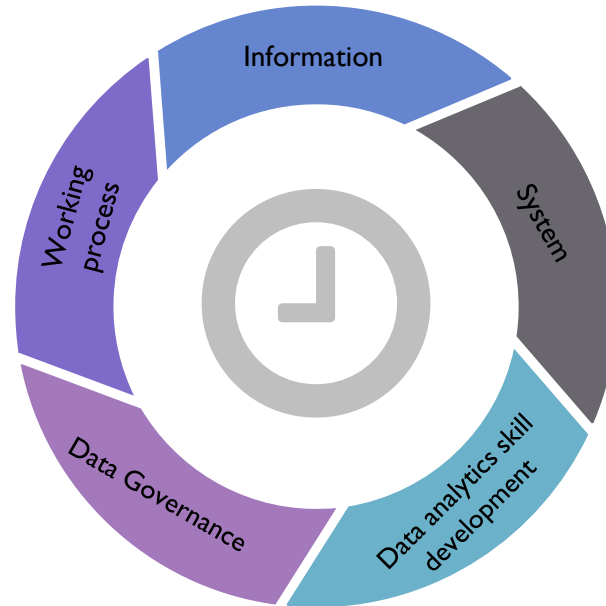# The Bank of Thailand's initiative on micro data utilization. (cont.)

Information
- new micro data acquisition
- data content standardization

Working process
- data acquisition
- data storage
- data usage

Data Governance
- an important function
- align with privacy data protection law

System
- warehouse / data lake
- tools
- platforms

Data analytics skill development
- data analytics unit
- data analytics training

Micro data use case: Electricity usage data

How to monitor condominium market by using electricity usage data ?

Data

- Data source : Metropolitan Electricity Authority (MEA)*
- Monthly basis
- Transaction by meter, totally **3.5 million meters** in BKK, Nontaburi, Samut Prakan provinces
- 2,711 condominium buildings
- Using relationship between master-meter and sub-meter of each condominium building

Methodology

$$\text{Occupancy rate} = \frac{\text{no. of rooms which 3−month average of electricity use above threshold**}}{\text{total rooms}}$$
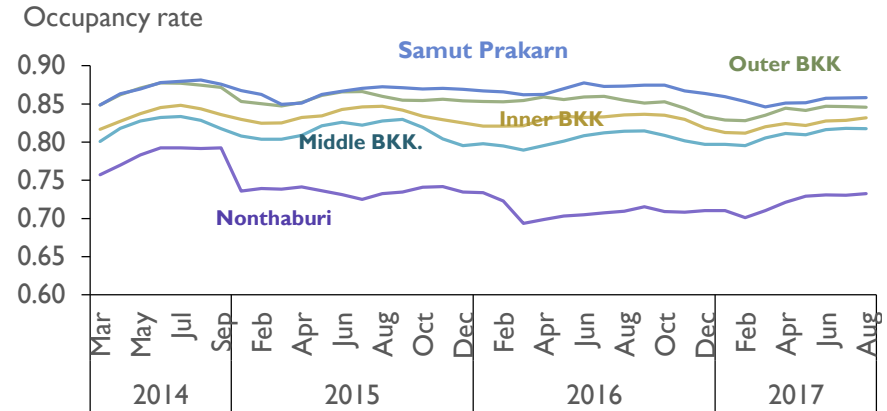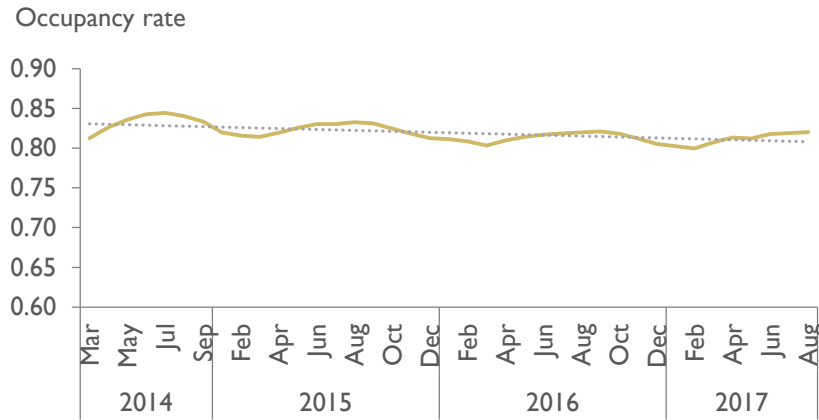
* The Thai state enterprise, which is responsible for providing power supply in Bangkok, Nonthaburi and Samut Prakan provinces.
** Threshold is 20 kWh, based on minimum electricity usage for living 4 days a month.

Micro data use case: Electricity usage data (Cont.)

The result shows that most condominium rooms are occupied
for real living rather than speculation.

Condominium's occupancy rates in metropolitan areas*

Note: * Including Bangkok, Nonthaburi and Samut Prakan provinces.

Source: Metropolitan Electricity Authority, calculated by BOT.
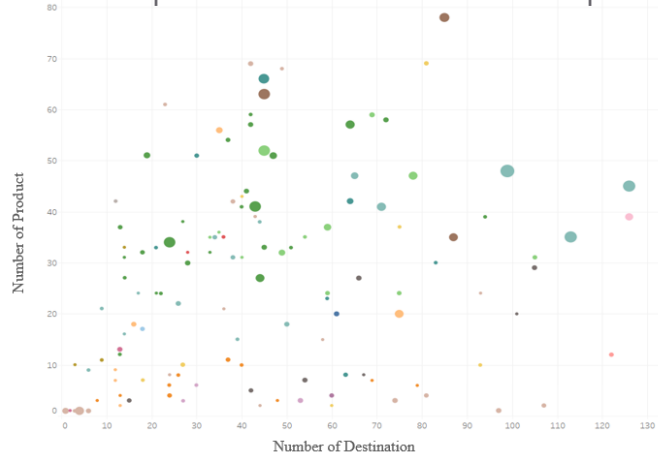
Micro data use case: Export invoice data

What does export invoice data tell?

Data
- Data source from The Customs Department
- 128 top exporters out of 37,837 (cumulative sum of exports covered 50% of the total values in 2016)
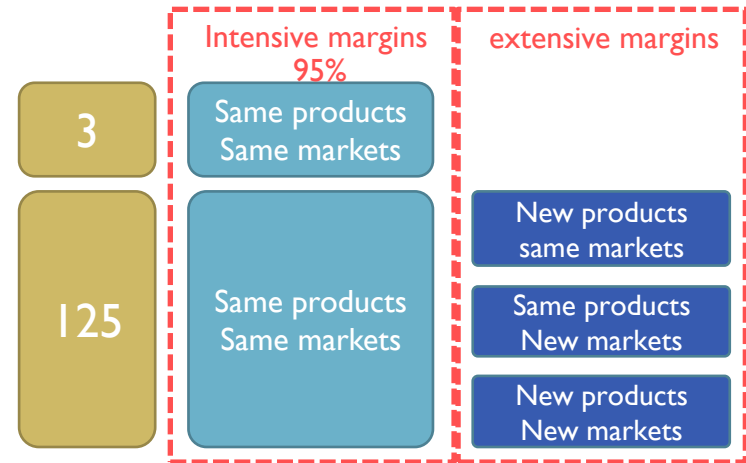
Finding 1: Most of the top exporters are risk diversifier

Market and product diversification of the 128 exporters

Note: Each point is each exporter and size of circle shows size of exports

Finding 2: The 95% of the growth of export value in 2016 arose from intensive margins

Intensive margins 95%	extensive margins
3 — Same products Same markets	
125 — Same products Same markets	New products same markets / Same products New markets / New products New markets

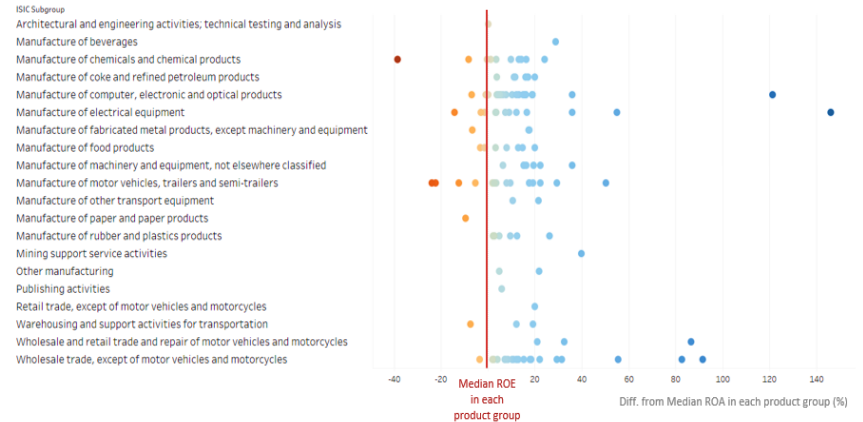Source: The Customs Department and calculated by BOT

Micro data use cases: Export invoice data (Cont.)

Finding 3: Most of 128-exporter have higher profitability than others in the same product group

ROA of 128 exporters compare with median ROA in the same product group

ROE of 128 exporters compare with median ROE in the same product group

Source: The Customs Department and calculated by BOT

However, the growth and sustainability of export sector depend not only on the market&product diversification and profitability, but also depend on global demand, product innovation and production efficiency.

Challenges for further micro data usage enhancement

Technical skill for data analytics and business analysis skill

Data quality: rapid micro data validation methodology

Data governance: awareness of privacy data

Cooperation across government agencies and data providers

Thank you

Q&A