

Digital Financial Services and Financial Stability – Perspective from Indonesia

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Bali, Indonesia

Presented by:

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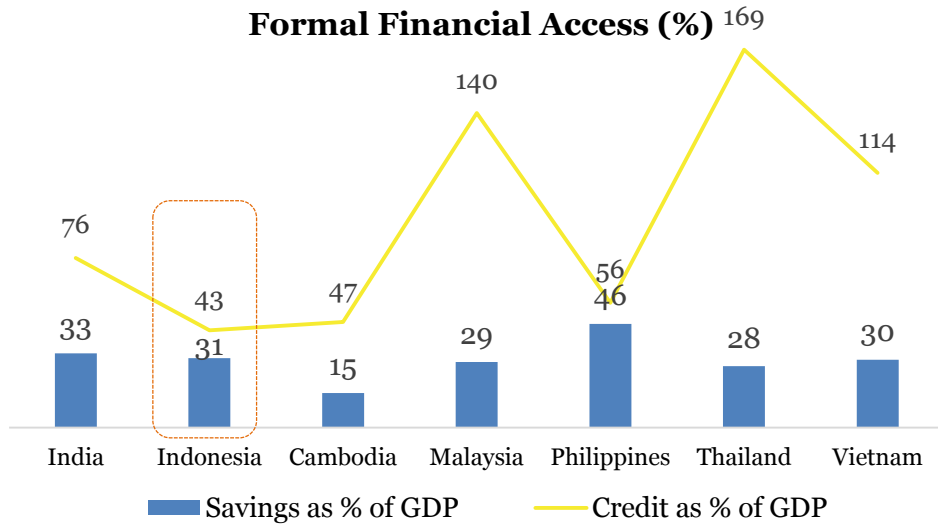
Presentation Outline

1. Financial Inclusion & Digital Financial Services in Indonesia
2. Digital Financial Services and Financial Stability - Benefits
 - a. Elimination of Financial Exclusion Risks
 - b. Diversification of Asset Base
 - c. Crisis Resilience
3. Digital Financial Services and Financial Stability - Risks
 - a. Cyber Risk
 - b. Money Laundering & Terrorism Financing Risk
 - c. Customer Protection Risk
4. DFS Regulatory Framework & Compatibility with Financial Stability

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Financial Inclusion in Indonesia

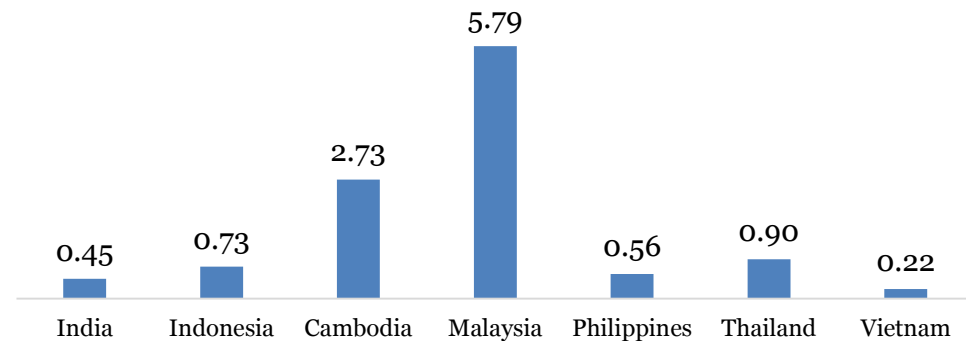
Formal Financial Access (%)



Access to formal financial institutions remains elusive to many Indonesians.

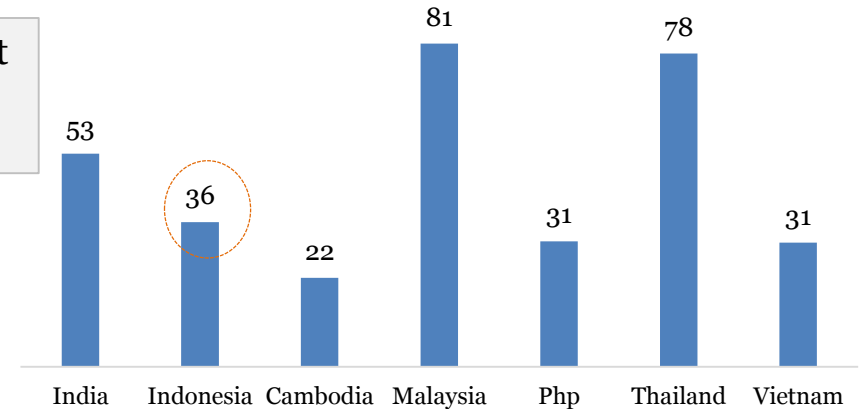
Both savings and credit by formal financial sector is insufficient due to limited branch coverage, complex processes and conventional credit assessment systems

Using Mobile to Pay Bills (%)



Payments market is still very nascent even though the mobile network coverage is close to 90%.

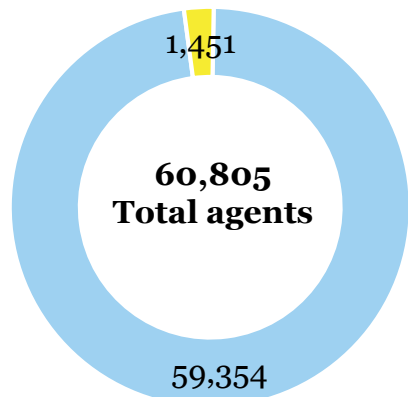
Ownership of Account (%)



Only 36% have an account with a formal financial institution

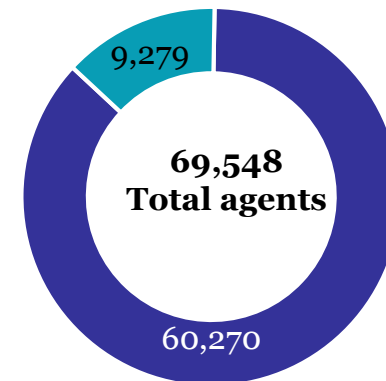
Digital Financial Services in Indonesia

**Branchless Banking Agents
December 2015**



■ Individual Agents ■ Legal Entities Agents

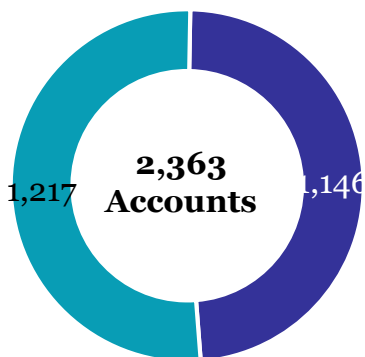
**E-Money Agents
December 2015**



■ Individual Agents
■ Business Agents (retailers, cooperatives)

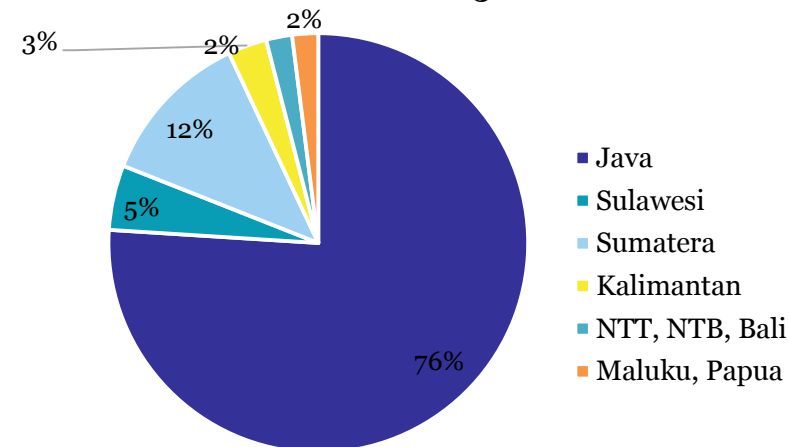
DFS in Indonesia is at a nascent stage, but growing very fast.

**Number of Accounts
December 2015**



■ Laku Pandai Accounts: 1,146
■ E-Money Accounts: 1,217

**Regions Covered by Laku Pandai Agents
December 2015**

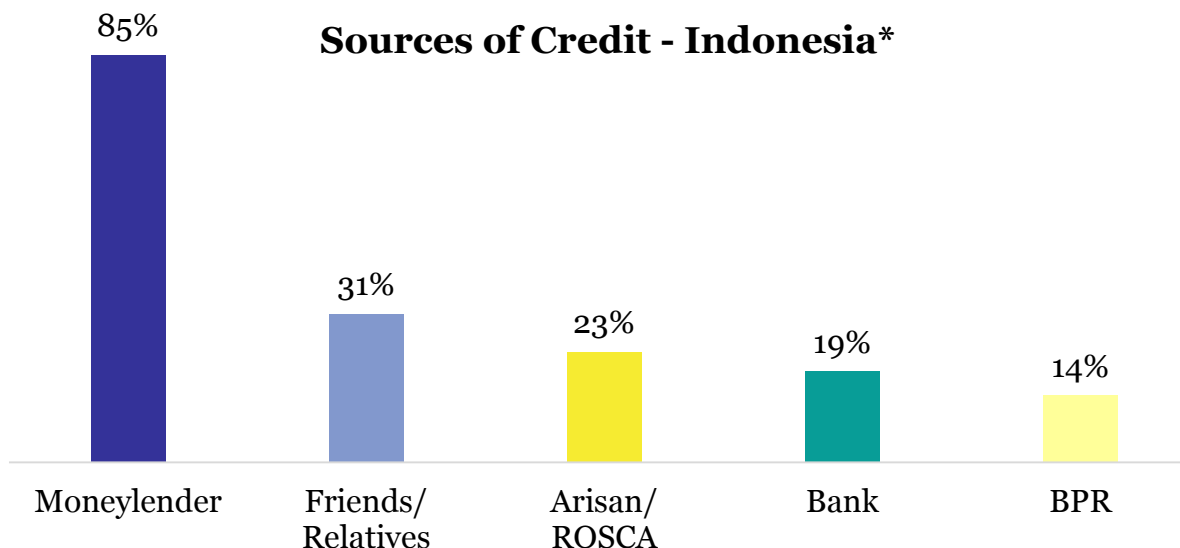


■ Java
■ Sulawesi
■ Sumatera
■ Kalimantan
■ NTT, NTB, Bali
■ Maluku, Papua

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Elimination of Financial Exclusion Risks

- Financial exclusion in itself contributes to the risk of financial instability.
- A recent study conducted by *MicroSave* in West Java, Indonesia highlighted that 85% of the respondents avail loan from money lenders.



Digital Financial Service (DFS) contributes to financial stability by enabling formal financial access to the financially excluded sections of the society.

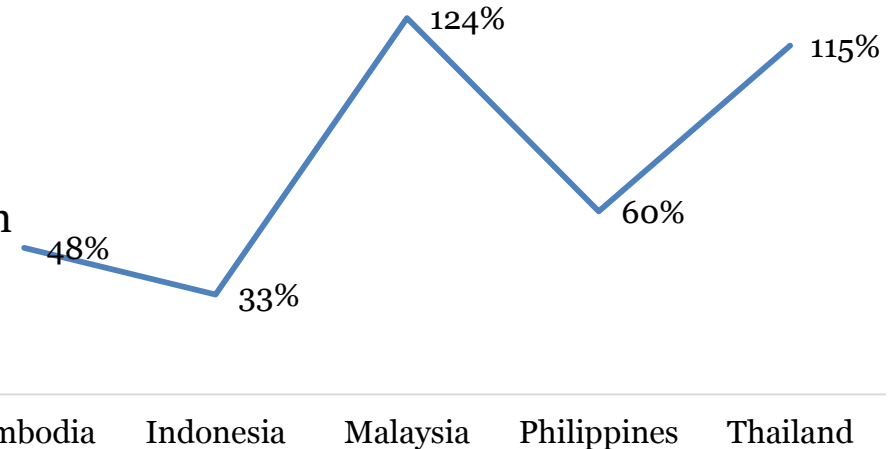
Diversification of Asset Base

By enabling diversification of financial assets/liabilities digital financial services contributes to financial stability

■ **Savings:**

- DFS can enable providers to target new unserved/underserved segments/geographies.
- More than **2.5 to 3 million DFS accounts** in Indonesia providing huge scope for deposit mobilisation.

Deposit to GDP Ratio (2014)



■ **Credit:** increased share of lending to micro, small and medium enterprises (MSMEs) aids financial stability

- Indonesia has a staggering **57 million MSMEs that employ 97% of the work force** and contribute to **60% of the GDP** – Yet micro loans comprise only **4% of the banking sector** loans
- Many DFS/Fintech providers in Indonesia are already focusing on this segment

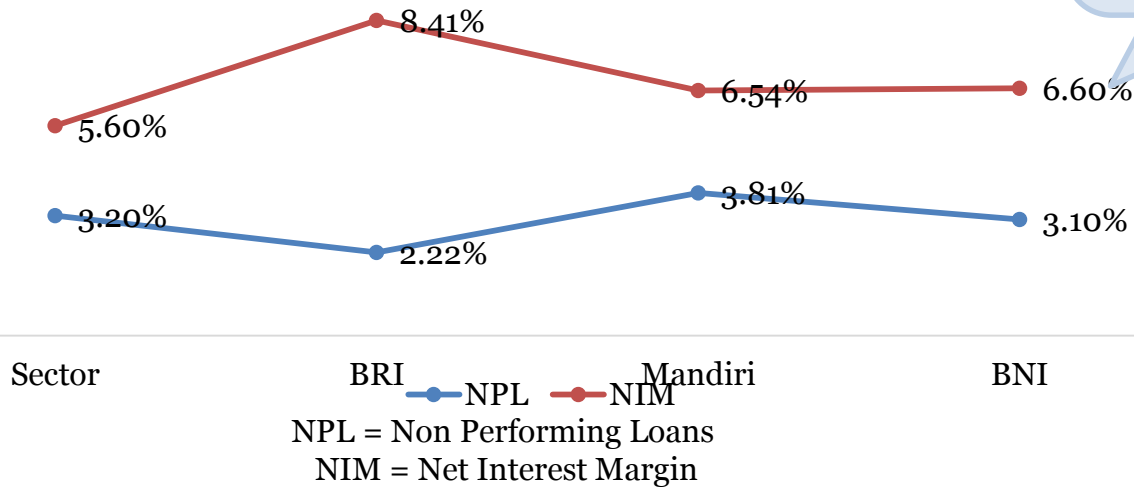
Source: Financial Stability and Financial Inclusion, ADBI Working Paper Series,

ADB Asia MSME finance monitor (2014), KPMG

Crisis Resilience

- Institutions with strong domestic financial assets/liabilities have been able to withstand shocks.
- Bank BRI – good example of a bank that weathered the Asian currency crisis.
- Snapshot of Bank BRI:
 - 63% of banking sector loans for MSMEs are from BRI
 - 80% market share of DFS agents

NPL & NIM of Top 3 Banks in Indonesia (Sep, 2016)



A good example showcasing that focus on the micro segment can be safe as well as profitable!

Digital financial services enables providers to acquire domestic financial assets, thus contributing to financial stability

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Cyber Risk – Malware Attacks

If affected, core infrastructure such as retail payment systems, electronic fund transfer systems, core banking systems, electronic money platforms etc., can lead to systemic concerns.

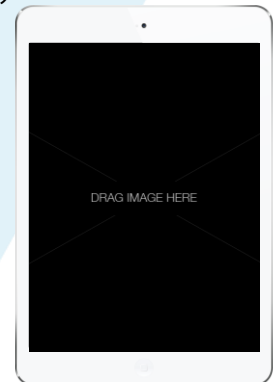
- **Malware Attacks** focusing on smartphones are already taking place and expected to go up.

Indonesia is going “mobile-first” with 64.1 million out of a total of 88.1 million users accessing internet through mobile.

- Attacks can steal personal data, sensitive financial data and conduct malicious transactions - possibly eroding credibility and threatening financial stability.

Analysis of DFS Applications in the Developing World

- Researchers from [University of Florida](#) performed security analysis of 46 mobile based applications from around the world including Indonesia, Brazil, India, Philippines.
- They analysed registration, login and transaction procedures.
- Pervasive vulnerabilities uncovered:
 - Botched certification validation
 - Do-it-yourself cryptography
 - Information leakages



Cyber Risk – Spearfishing

- Spearfishing: Involves detailed planning and execution lasts for months resulting in **unauthorized transfers, reprogramming ATMs** etc.

Identify system administrators,

Infect critical computer systems

Study the security systems,

Identify vulnerabilities

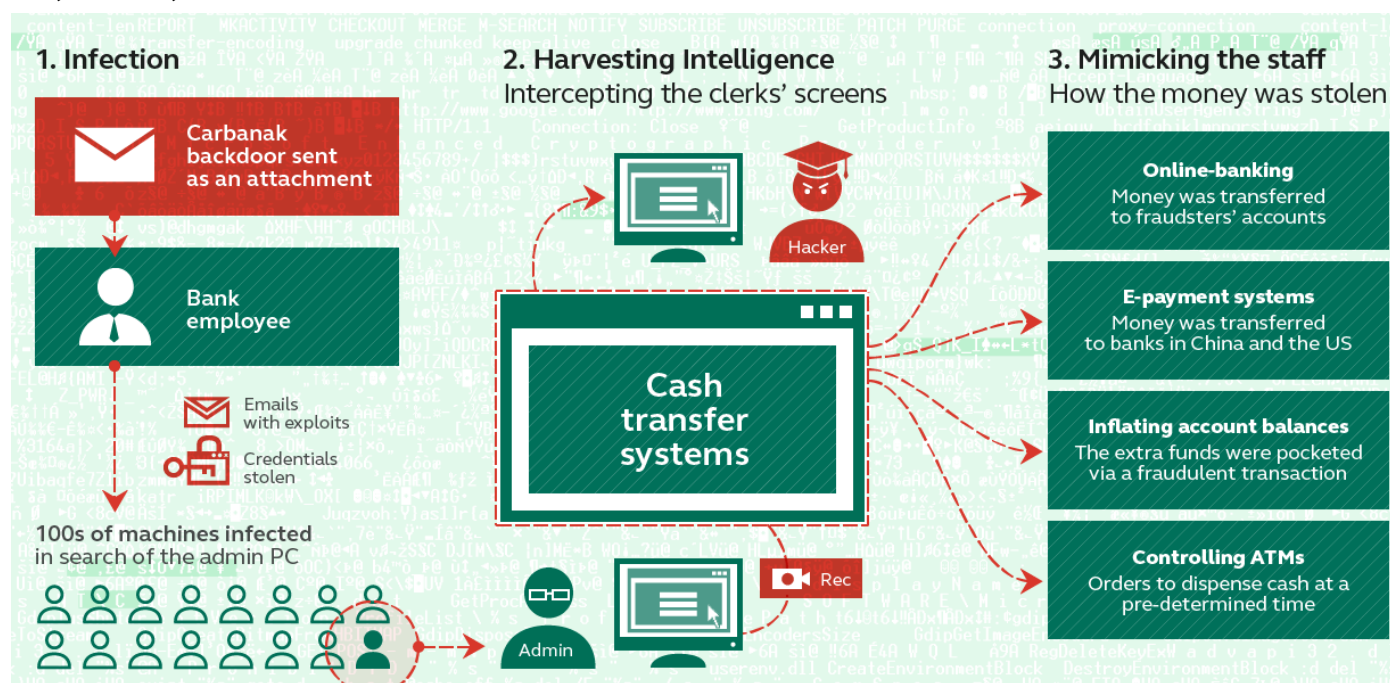
Execute attack

Bangladesh Bank Heist

- USD 81 mn stolen and a potential USD 951 mn averted.
- Malware installed in Jan, 2016; Attack executed in Feb, '16.

Carbanak Campaign

- Financial damage of up to USD one billion
- 100 banks, largely in Russia, US, Germany etc, targeted and more than 50% of them suffered losses.



Money Laundering & Terrorist Financing Risk

DFS enables remote, third-party assisted financial transactions making it susceptible to fraud or misuse.

- Hence such services need to be subject to KYC and due diligence requirements in order to avoid unintended consequences such as money laundering and terrorist financing.
- **Mitigation:** Unique ID enables identification and verification **digitally** through a centralised database. 80-85% of Indonesians already have unique ID called e-KTP. Leverage ID infrastructure to facilitate financial transactions.

Aadhaar – India's Unique ID

- Issued by Unique Identification Authority of India (UIDAI) and provides robust and reusable ID
- More than a **billion Indians** already have Aadhaar number which is being used as KYC for opening bank accounts, payments, conditional cash disbursements etc.,
- For example, Axis Bank along with *Suvidha* Infoserve on-boards customers through e-KYC. The whole process is fool proof, seamless, fast and paperless.



Customer Protection Risk

Customer protection, especially from the perspective of **over indebtedness and transparency**, is an essential requirement for political and financial stability.

- Rapid proliferation of digital credit especially among unserved and underserved segments makes them vulnerable.

Financial Awareness: >80% of women and >75% of men have insufficient financial literacy

DFS Awareness: Only 8% of the population were aware about a mobile money provider

Digital Credit in Kenya

- Twenty digital credit offerings already in the market
- Concerns related to higher interest rate (APR ranging between 20%-600%), multiple borrowing, aggressive marketing and poor disclosure norms customer protection are already emerging.



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DFS Regulatory Framework & Compatibility with Financial Stability

- **Yes – They are compatible!!**
- **Key policy developments enabling digital financial inclusion:**
 - Relaxed e-money regulations
 - Revised National Financial Inclusion Strategy
 - Digitisation of G2P payments programmes
 - New fintech initiatives such as BI's Fintech Office and OJK plans to set up Fintech Innovation Hub.



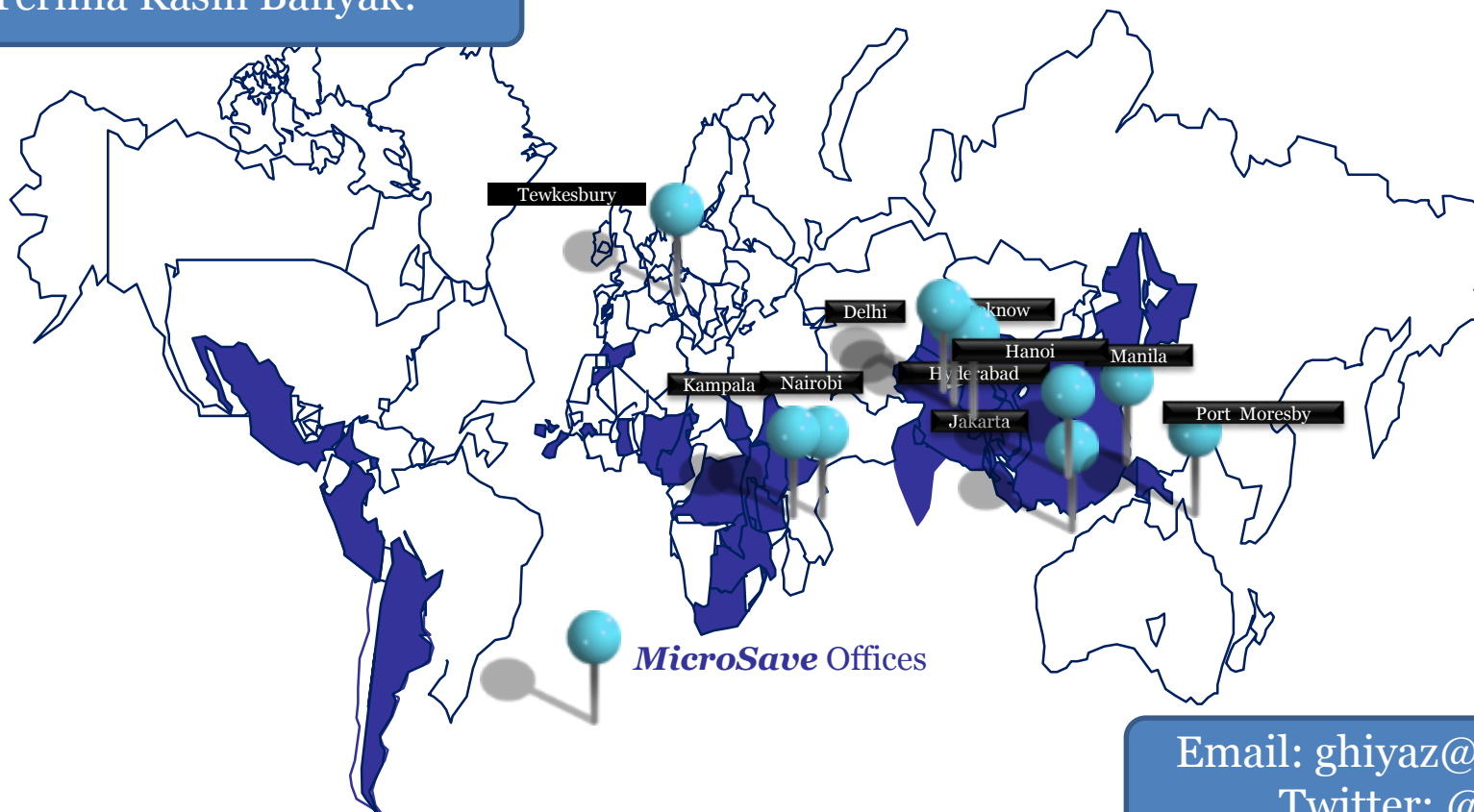
Idea for wider participation and acceleration of financial inclusion without compromising financial stability objective



Allow Non-banks to Partner with Individual Agents Under a Regulatory Sandbox

- BI's Fintech Office can supervise this initiative through a sandbox approach
 - Allow non-banks to partner with a sample of individual agents in a specific geography
 - Closely monitor the operations in terms of - agent management and oversight, management of operational risks etc.
 - Based on pilot observations, take an evidence based policy decision

Terima Kasih Banyak!



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