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**Financial Inclusion, Fintech, and RegTech**

by

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The views expressed are those of the author and do not necessarily reflect the views of UNCTAD.



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# Financial Inclusion, Fintech, and RegTech

## Session 3: Services policies and regulation for structural transformation

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## Main areas

- International initiatives for financial inclusion
- Fintech and financial inclusion
- RegTech





# Financial Inclusion

“Financial inclusion is measured in three dimensions:

- (i) access to financial services;
- (ii) usage of financial services; and
- (iii) the quality of the products and the service delivery.”

‘G20 financial inclusion indicators’  
from the G20 Financial Inclusion Plan (2014)



# Financial inclusion – international initiatives

- 2009 World Bank Joint Note: The Case for Financial Literacy in Developing Countries: Promoting Access to Finance by Empowering Consumers
- 2010 G20 Global Partnership for Financial Inclusion: main implementing mechanism supplemented by the Alliance for Financial Inclusion, the Consultative Group to Assist the Poor and the International Finance Corporation
- 2011 Alliance for Financial Inclusion of policy-makers and regulators from 90 developing countries (funded through the Gates Foundation)
- 2011 Maya Declaration: a shared commitment to ‘reach the world’s 2.5 billion unbanked’ and put in place national financial inclusion strategies in partnership with private sector
- 2012 Better than Cash Alliance: partnership of governments, companies, and international organizations that accelerates the transition from cash to digital payments in order to reduce poverty and drive inclusive growth (UN-based)

source: <http://www.tandfonline.com/doi/full/10.1080/13563467.2017.1259298>



# Financial inclusion – international initiatives

- 2014 World Bank realigns resources to support the Maya Declaration
- 2014 G20 Financial Inclusion Action Plan reviews progress of the plan from 2010.
- 2014, IMF's 2014 Financial Access Survey Helps to Map Global Financial Inclusion
- 2016, Basel Committee on Banking Supervision, *Guidance on the application of the Core Principles for Effective Banking Supervision to the regulation and supervision of institutions relevant to financial inclusion*
- 2016 G20 High-Level Principles for Digital Financial Inclusion
- 2017 G20 communiqué to “promote inclusiveness”



## The Maya Declaration on Financial Inclusion (2011)

The Maya Declaration is the first global commitment by policymakers from developing and emerging countries to unlock the economic and social potential of the poor through greater financial inclusion.

AFI'S Global Network represents 84% of the world's unbanked, with existing commitments under the Maya Declaration cover 54% of the unbanked.

### MAYA DECLARATION VALUES

The Declaration is underpinned by **three core values** that are not only essential in expanding financial inclusion, but also provide a new blueprint for international cooperation in development. These values are:

- > Self-determination
- > Peer-to-peer knowledge exchange
- > New forms of cooperation

*«We, the Members of the Alliance for Financial Inclusion, a network of central banks, supervisors and other financial regulatory authorities (...)*

*recognize the critical importance of financial inclusion to empowering and transforming the lives of all our people, especially the poor, its role in improving national and global financial stability and integrity and its essential contribution to strong and inclusive growth in developing and emerging market countries;*



## G20 High Level Principles for Digital Financial Inclusion (2016)

- PRINCIPLE 1: Promote a Digital Approach to Financial Inclusion
- PRINCIPLE 2: Balance Innovation and Risk to Achieve Digital Financial Inclusion
- PRINCIPLE 3: Provide an Enabling and Proportionate Legal and Regulatory Framework for Digital Financial Inclusion
- PRINCIPLE 4: Expand the Digital Financial Services Infrastructure Ecosystem
- PRINCIPLE 5: Establish Responsible Digital Financial Practices to Protect Consumers
- PRINCIPLE 6: Strengthen Digital and Financial Literacy and Awareness
- PRINCIPLE 7: Facilitate Customer Identification for Digital Financial Services
- PRINCIPLE 8: Track Digital Financial Inclusion Progress





*“We reiterate our determination to use all policy tools - monetary, fiscal and structural - individually and collectively to achieve our goal of strong, sustainable, balanced and inclusive growth, while enhancing economic and financial resilience. Monetary policy will continue to support economic activity and ensure price stability, consistent with central banks' mandate, but monetary policy alone cannot lead to balanced growth. Fiscal policy should be used flexibly and be growth-friendly, prioritise high-quality investment, and support reforms that would provide opportunities and promote inclusiveness, while ensuring debt as a share of GDP is on a sustainable path.”*

Communiqué, G20 Finance Ministers and Central Bank Governors  
18 March 2017, Baden Baden, Germany



*“We support the work of the Global Partnership for Financial Inclusion (GPII) to advance financial inclusion, especially of vulnerable groups, and Small and Medium-sized Enterprises’ (SMEs) participation in sustainable global value chains. We encourage an adequate coverage of opportunities and challenges of digital financial inclusion in the updated G20 Financial Inclusion Action Plan. We encourage G20 and non-G20 countries to take steps to implement the G20 High-Level Principles for Digital Financial Inclusion. We emphasise the importance of enhancing financial literacy and consumer protection given the sophistication of financial markets and increased access to financial products in a digital world and welcome related OECD/INFE work. We welcome the progress made on the implementation of the G20 Action Plan on SME Financing and commit to further significant progress in improving the environment for SME Financing while continuing to encourage non-G20 countries to join this effort.”*

Communiqué, G20 Finance Ministers and Central Bank Governors  
18 March 2017, Baden Baden, Germany



# Fintech and financial inclusion

SOCIAL ENTERPRISE

## Fintech Companies Could Give Billions of People More Banking Options

by Jake Kendall

JANUARY 20, 2017



Brian Ferdinand [Follow](#)

Brian Ferdinand is a financial consultant and entrepreneur with over 15 years of experience in advanced tra...  
Oct 22, 2015 · 3 min read

## How Fintech Helps Transform Developing Countries

## Fintechs could take 30% of Mexican banking market

Start-ups are providing financial services for the previously unbanked

Note 34 | March 2017

## How Fintech is Reaching the Poor in Africa and Asia: A Start-Up Perspective



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PRIVATE SECTOR DEVELOPMENT

Can 'fintech' innovations impact financial inclusion in developing countries?

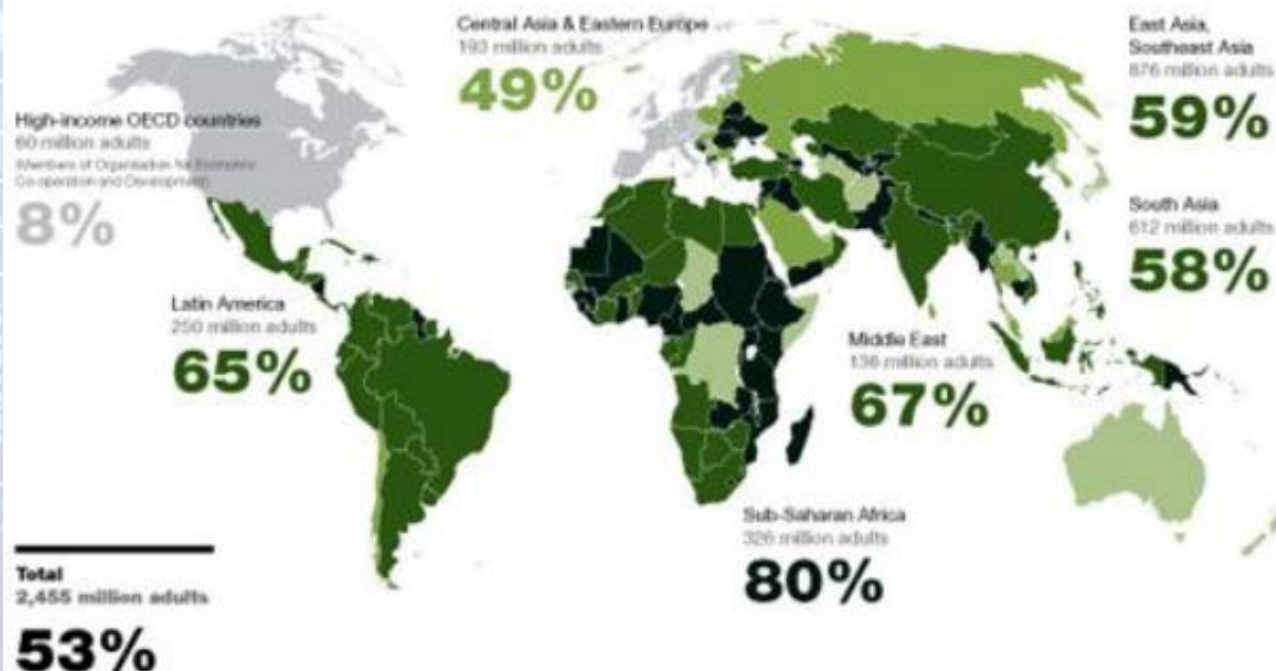
SUBMITTED BY MARGARET MILLER ON WED, 04/12/2017



Percentage of total adult population who do not use formal or semiformal financial services

0-25% 26-50% 51-75% 76-100%

Estimated based on available regional statistics



Source: <https://medium.com/@brianferdinand/how-fintech-helps-transform-developing-countries-5122a3acacaf>

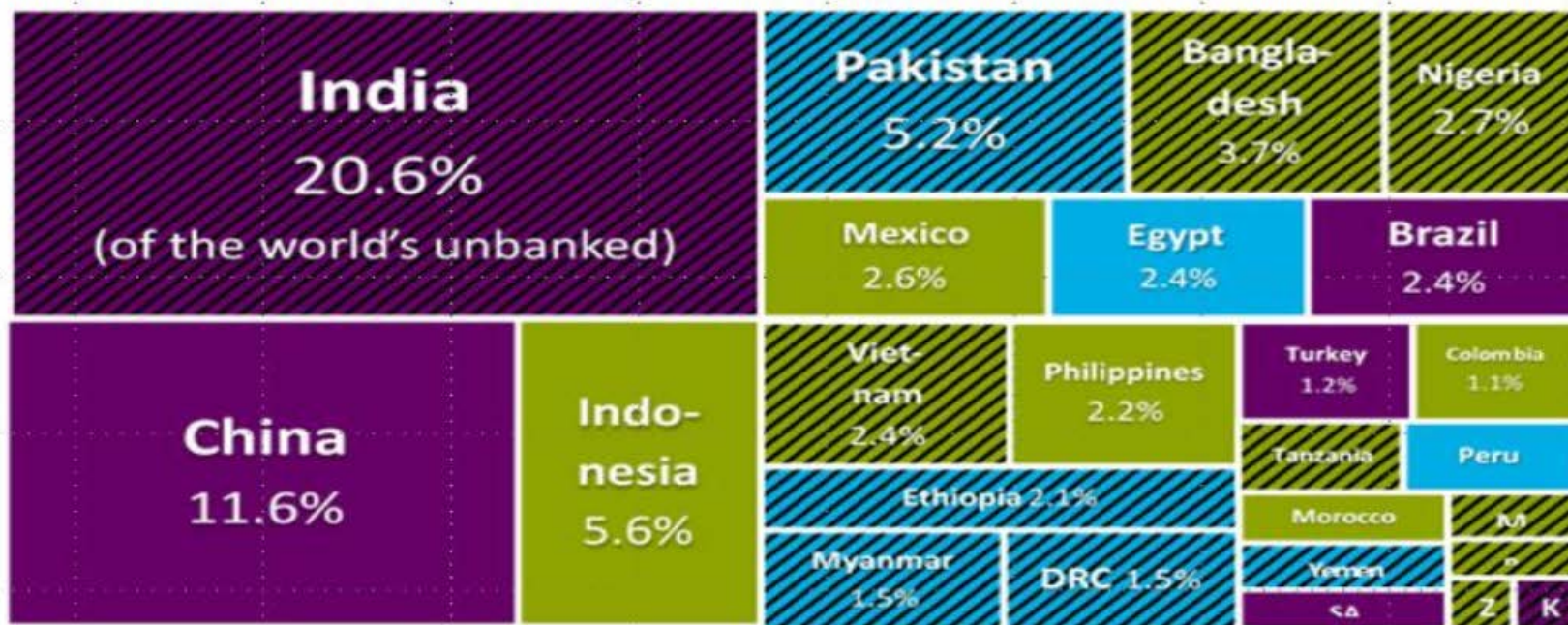
## Fintech for the unbanked

The world's 2.5 billion "unbanked" and 200 million small businesses without financial services exist mainly in Africa, Latin America, Asia, and the Middle East. Of unbanked individuals, 1 billion have mobile phones, meaning for many, financial mobility could be right around the corner.



# Fintech and financial inclusion

Figure 1: Some 73 Percent of the World's Unbanked Reside in 25 Countries, Predominantly in Asia. Access is Low in Africa.



IDA countries: % Access: 0% - 25% 26% - 50% 51% - 100% M: Mozambique 0.4%; K: Kenya 0.3%; Z: Zambia 0.2%; R: Rwanda 0.2%

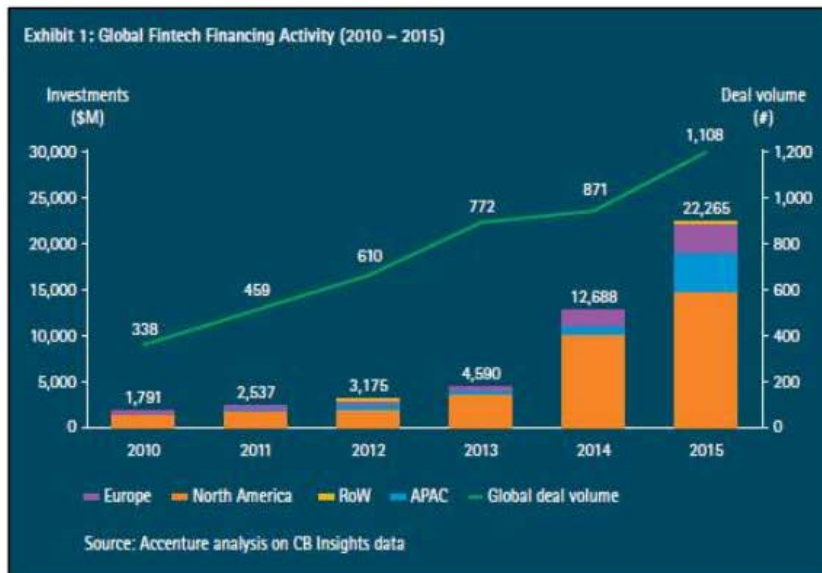
Shaded Countries = IDA International Development Association (poorest countries). Sources: Global Findex 2014, IMF Financial Access Survey 2012.

JUL AUG SEP OCT NOV DEC

# FinTech enabling Financial Inclusion

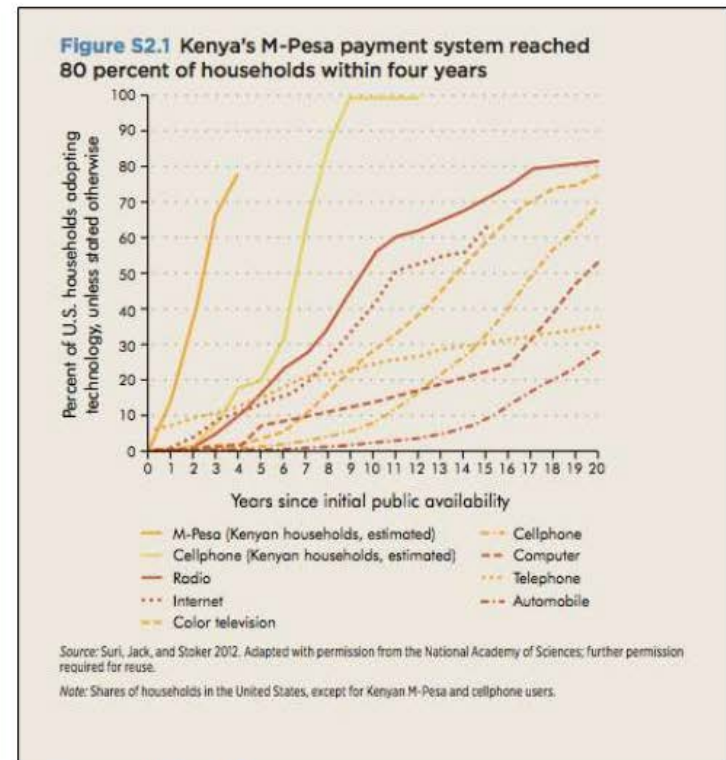
Digital technologies have spread rapidly in much of the world, yet, there is potential to boost digital dividends.

Global investments in Fintech ventures grew by 75% reaching \$22.3bn in 2015 (\$12.7bn in 2014)



Source: Accenture

M-Pesa reached 80% of households in Kenya within 4 years



Source: WDR 2016





# Fintech & financial inclusion

- Role of e-finance in enhancing financial inclusion in financial services for individuals and small businesses, especially in developing countries – making financial services available to those who would normally not have access
- Fintech expands availability of information on financial services, such as investment advice and online and mobile banking services and products
- Opportunity for them to seize new previously financially underserved markets
- All you need is access to the internet and a smartphone
- Spread of mobile technology, smartphones and mobile network coverage
- More (and cheaper) options for individuals but also small and medium enterprises, for example with peer-to-peer lending, borrowing funds without going through a financial intermediary ‘direct finance’



# Fintech & financial inclusion

General challenges in developing countries – “Common barriers to financial access in developing countries”:

- Geographic distance and lack of infrastructure: setting up branches in rural communities
- For communities that rely on agriculture – the weather can dictate when they can repay loans (increase risk)
- Low competition between financial institutions – high costs of opening a bank account

Source: [https://www.capco.com/insights/capco-institute/~/\\_media/Capco/uploads/articlefiles/file\\_0\\_1479208912.pdf](https://www.capco.com/insights/capco-institute/~/_media/Capco/uploads/articlefiles/file_0_1479208912.pdf)

- Institutional quality: adherence to the rule of law, stability, investor protection, strength of contract enforcement, quality of property rights

Source: Levchenko, A. A., 2004, “Institutional quality and international trade,” no. 04/231, International Monetary Fund, December FRT division





# Fintech & financial inclusion

Each economy is unique and presents its own separate challenges

- Philippines: mobile money payments, high demand for international transfer of funds **CONTRAST WITH** South Africa: customers have “little incentive to replace their existing methods of accessing funds.”
- Source: [https://www.capco.com/insights/capco-institute/~media/Capco/uploads/articlefiles/file\\_0\\_1479208912.pdf](https://www.capco.com/insights/capco-institute/~media/Capco/uploads/articlefiles/file_0_1479208912.pdf), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2478482](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2478482)
- Mexico: “Mexican banks have a reputation for poor customer service” and “are very inefficient” – 158 Fintech companies operating in Mexico want to jump in and take over with payments and lending through smartphones - “Fintech could take 30% of the Mexican banking market”
- Source: Financial Times, 21 June 2017 <https://www.ft.com/content/5e092fb8-3bb9-11e7-ac89-b01cc67cfeec?mhq5j=e2>
- Bangladesh: “BKash Limited, a subsidiary of BRAC Bank Limited was launched in 2011 to provide mobile financial services, including payments and money transfers, to both the unbanked and banked populations. Upon registration, each user receives a mobile wallet that serves as a bank account.”
- Source: <https://www.ifc.org/wps/wcm/connect/f745fd31-a9aa-4736-b0ba-4ac2956f96dc/EmCompass+Note+34+DFS+and+FinTech+Mar+28+FINAL.pdf?MOD=AJPERES>



# Fintech & financial inclusion: peer-to-peer lending

- Financial technology facilitates bringing together lenders and borrowers: small businesses and start-ups with investors
- In Europe, over a dozen 'peer-to-peer' lending platforms have been established for small and medium businesses and entrepreneurs to obtain credit: Zopa, Funding Circle
- They are not banks – no leverage, no deposits → not regulated as banks

## Pros and Cons:

- + No channelling of investment money through traditional bank
- + Investors and business borrowers can identify each other and agree their own terms
- + Provide alternative sources of credit for many small businesses and start-ups – who may have difficulty obtaining credit from traditional banks because of stricter regulation
- Credit-worthiness and other information about each other more difficult to ascertain
- Bigger risk of default (BUT might not be systemic because borrowed amounts limited)
- Number of borrowers growing + competition → incentive for some platforms to become too big too quickly
- Might not be as capable as banks to manage risks → need for careful regulation



# Fintech & the developing world

- Example of a Fintech initiative: the Digital Financial Services Innovation Lab
- Slogan: Delivering innovative financial technology solutions to the developing world.
- Website: <http://www.dfslab.net/>
- Description:

*“Encouraged by the dramatic increase in the number of people with mobile phones in the developing world, new Fintech players are attempting to disrupt the existing financial order in these markets: the money lenders and informal remittance services that often have been the only option for much of the population.*

*Our initiative, the Digital Financial Services Lab, is trying to be a catalyst for this transformation. To that end, it is working with entrepreneurs to introduce innovative solutions to the developing world.”*

Source: <https://hbr.org/2017/01/fintech-companies-could-give-billions-of-people-more-banking-options>



# Fintech & Risk

- Digital data makes the market more efficient
- **But** also introduces new risks (both in developed and developing countries):
  - Issues of data storage (Cloud)
  - Digital currencies/Fintech could help pay for crime easier
  - New actors, new mechanisms → even less institutional security
  - Issues of confidentiality
  - Hacking and cyber security
  - Compliance
  - Allegations that platforms are misrepresenting the risk
  - Governments play a critical role in enabling the conditions for Fintech to expand (corruption, slow regulatory response)



# Fintech & Risk

- *“One FinTech innovator has engineered a new method for capturing and sifting data to spot fraud and monitor trading activity — a formula it had originally designed for medical cancer screening.”*
  - [Source: https://www.strategyand.pwc.com/trends/2016-financial-services-trends](https://www.strategyand.pwc.com/trends/2016-financial-services-trends)
- Fintech and green finance
- Regulatory risks – limited remedies available
- Are the regulators misrepresenting the risk? → see RegTech



# RegTech

## Defining RegTech:

- A set of companies and solutions that link **innovative** technology and **regulation**
- To address **regulatory requirements** across industries, including **financial services**.
- Every business area where regulation and compliance has an impact is a candidate to explore RegTech solutions



# RegTech: Small Banks

“One important point for me is how we help all the small organisations who will find it hard to meet the new requirements from regulators and that could lead to the creation of even larger banks and asset managers, which is what I fear as it would make them even more too-big-to-fail.”

Source: *Financial Times*: 'Market grows for "regtech", or AI for regulation', October 14<sup>th</sup> 2016



## Tools and techniques for RegTech

- 'Big data' applications and techniques
- Data mining and advanced analytics tools
- Visualisation tools
- Biometrics and social media analysis
- Real-time and system embedded compliance/risk evaluation tools
- Software integration tools
- Predictive coding
- Open platforms and networks

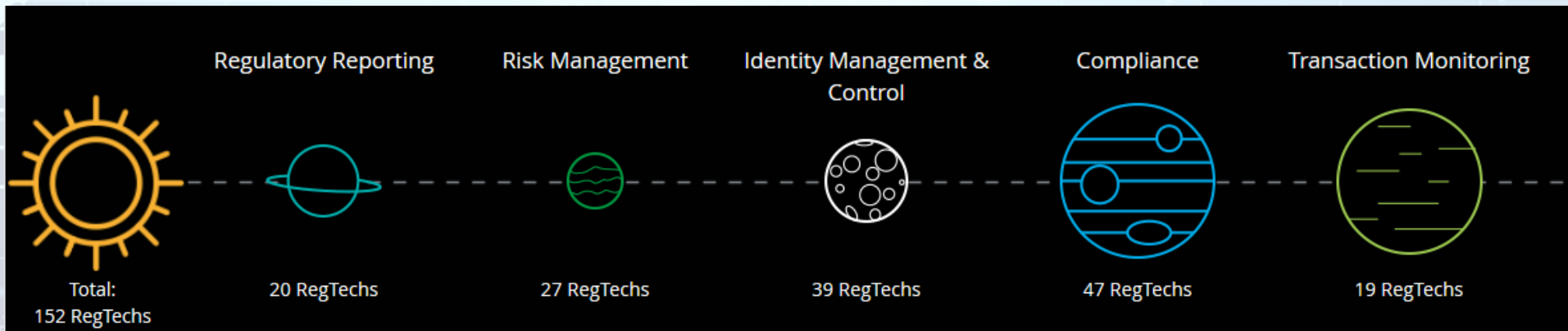
(BBVA Research, Digital Economy Outlook, February 2016)





# Applications of RegTech

Deloitte's 'RegTech Universe':



Source: Deloitte RegTech Universe

<https://www2.deloitte.com/lu/en/pages/technology/articles/regtech-universe.html>



# Applications of RegTech: Examples

## 1. Risk data aggregation

Gathering and aggregation of high quality structured data

## 2. Modeling scenario analysis and forecasting

Citigroup using AI system from Stanford University spinout Ayasdi to help it pass the US Federal Reserve's stress test

## 3. Monitoring payments transactions

## 4. Identification of clients and legal persons

## 5. Monitoring a financial institution's internal culture and behavior

Learning personality of traders  
Flagging up suspicious trading

## 6. Trading in financial markets

margins calculations, choice of trading venue and central counterparties, impact assessments

## 7. Identifying new regulations

Source: Institute of International Finance: 'Regtech in Financial Services: Technology Solutions for Compliance and Reporting', March 2016



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## Regulators

Regulators are keen to encourage RegTech

UK's Financial Conduct Authority:

### RegTech

Facilitating collaboration, knowledge sharing and conversations around new technologies that support better regulation.

More about RegTech >

### Engagement

Encouraging FinTech innovation within firms based in the UK and internationally.

More about Innovate engagement >

“We are committed to fostering innovation and technology – including RegTech – to promote effective competition in the interests of consumers.”

“We don't want compliance to be a barrier to entry,”

Source: FCA: 'FCA Innovate': <https://www.fca.org.uk/firms/fca-innovate>,  
<https://www.fca.org.uk/firms/innovate-innovation-hub/regtech>



## RegTech & Confidentiality

- **Shared utilities** providing services to multiple organizations
  - challenges and risks
    - Confidentiality
    - Security
    - Maintenance
    - Reliability
    - Data quality
- **Cryptographic and security technologies**
  - Maintaining individual privacy in statistical data releases
  - Data Storage Cell Level Security
    - Enables only relevant and specific information to be available to individuals
  - Based on access authorization



## RegTech & Confidentiality

- **Blockchain Technologies**

- Transparent by design

- Transactions are documented on distribution ledger
- Permanent record
- Potential mechanism to give regulators direct, instant, and full transparency of information
- ‘Smart contracts’ as option to reduce counterparty risk

- **Challenges:**

- confidentiality for customers
- Data sharing and access by third parties



## RegTech & Confidentiality

### Implementation of regulation:

- Automatization of the implementation regulatory changes (AI, machine learning)
- Using 'bots' for routine compliance tasks
- Use of 'smart contracts' as substitute for complex regulatory processes ('smart laws?')
- Automation of data reporting to regulator through the use of blockchain technologies



## RegTech & Confidentiality

### Challenges:

- Standardization of technology for implementation
- Legal barriers for the use of data across national borders
- Balance between protecting privacy and security, and effective data use.
- Specificity and confidentiality of data in the context of blockchain
- Stability of a technological regulatory system



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Financial inclusion has become an important objective of international policy and financial regulation. Fintech and RegTech can be used to support financial inclusion but also pose challenges

Thank you

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Changes in the activity of the active and passive market is

Distribution of the securities market key players