

TWIN PEAKS: AN ANALYSIS OF THE AUSTRALIAN ARCHITECTURE

1

I ABSTRACT

This article provides an analysis of the Australian ‘Twin Peaks’ model of financial system regulation. It does so by examining the theoretical underpinnings of Twin Peaks, and investigates the crucial question of the jurisdictional location of the prudential regulator. This includes a description of how Twin Peaks functions and its strengths and weaknesses. The article argues that while Twin Peaks is the best solution to the problem of regulating for financial system stability and consumer protection, it is

¹ This research was undertaken in major part thanks to the generosity of financial support from the Centre for International Finance and Regulation (CIFR) in Sydney, Australia. That support, and support in numerous other forms from CIFR, is hereby acknowledged with gratitude. Helpful comments and suggestions from Dr Michael Taylor, the father of Twin Peaks, Professor Jeffrey Carmichael, Foundation Chair of the Australian Prudential Regulation Authority, Professor David Llewellyn, Chair of the Banking Stakeholder Group of the European Banking Authority, and Dr Patrick McConnell are acknowledged with great appreciation, as is the guidance and friendship of Mr Andrew Godwin.

nonetheless imperfect to the task, and susceptible to failures.

II INTRODUCTION

This article presents a theoretical analysis of the ‘Twin Peaks’ model of financial system regulation², with particular reference to the Australian version³ and an analysis of the crucial question of the jurisdictional location of the prudential regulator.

The purported benefits of this research are two-fold: first, in the aftermath of the global financial crisis (hereinafter ‘GFC’), any model of financial system regulation that has the potential to create a greater degree of financial system stability is worth investigating.⁴ Secondly, an understanding of the strengths and

² Originally proposed by Taylor in Michael W. Taylor, *“Twin Peaks”: A regulatory structure for the new century*, no. 20, Centre for the Study of Financial Innovation, December, 1995.

³ For a discussion of the alternative models of financial system regulation, such as the UK’s Financial Services Authority, see: Andrew D. Schmulow, “The four methods of financial system regulation: An international comparative survey”, *Journal of Banking and Finance Law and Practice*, Vol. 26, no. 3 (November, 2015).

⁴ For more on the benefits of financial system stability, see: David T. Llewellyn, “Institutional Structure of Financial Regulation and Supervision: The Basic Issues”, Paper presented at the World Bank seminar *Aligning Supervisory Structures with Country Needs*, Washington, DC, series editor: The World Bank, 6th and 7th June 2006, p 5.

weaknesses of the Twin Peaks model may be of benefit to academics and policy-makers alike.

While Twin Peaks is imperfect to the task of regulating to prevent financial crises or consumer abuse, of the four models currently in use internationally, ‘Twin Peaks’ is widely regarded⁵ as the best suited to this task.

This model has now been held up as the most effective model to address the flaws in unregulated or thinly regulated markets where the most problematic issues arose in the GFC.⁶

The Australia version of Twin Peaks serves as the touch-stone for this research, because Australia was first to adopt Twin Peaks, has the longest experience in operating this model, has recently subjected the model to a rigorous independent review (the Financial System Inquiry⁷), and in other countries where Twin Peaks has

⁵ See for example: John C. Coffee, Jr. & Hillary A. Sale, “Redesigning the SEC: Does the Treasury have a better idea?”, *Virginia Law Review*, Vol. 95 (June, 2009), p 774; Alex Holevas, “Twin Peaks: The envy of the world”, ‘News’, *Wealth Professional*, 22 February, 2012. See also John Manley, “Dutch regulator says “Twin Peaks” supervision best”, ‘Financial Regulatory Forum’, *Reuters*, US ed., 9 October, 2009. For IMF analysis of the model’s strengths see: International Monetary Fund, *Financial Sector Supervision: The Twin Peaks Model - Technical Note*, in ‘Financial Sector Assessment Program Update - Kingdom of The Netherlands-Netherlands, IMF Country Report’, no. 11/208, International Monetary Fund (IMF), June/July, 2011, p 12ff.

⁶ Financial Markets Authority (FMA), “Presentation by Sean Hughes to the New Zealand Capital Markets Forum”, ‘News, Speeches’, 17 March, 2011.

⁷ Financial System Inquiry, *Financial System Inquiry Final Report*, Commonwealth Government of Australia, November, 2014.

been adopted, it is the Australian model which has been emulated. The latest example of the adoption of the Australian model (save for the jurisdictional location of the regulator), is the Republic of South Africa⁸.

As a regulatory structure, it is the envy of many in other countries, and more recent regulatory architecture reforms in other countries are often based on what is described as the Australian ‘Twin Peaks’ approach⁹

Moreover, Australia, and in particular its regulatory regime, fared better than most other countries during the GFC.¹⁰ But how much of that success can be attributed to

⁸ Republic of South Africa National Treasury, *A safer financial sector to serve South Africa better*, in ‘National Treasury Policy Document’, National Treasury, Republic of South Africa, 23 February, 2011; Financial Regulatory Reform Steering Committee, *Implementing a twin peaks model of financial regulation in South Africa*, Financial Services Board, 1 February, 2013; Republic of South Africa National Treasury, “Implementing Twin Peaks Regulation in South Africa”, *Media Statement*, (1 February, 2013), (accessed: 19 December, 2014), published electronically; A. J. Godwin & A.D. Schmulow, “The Financial Sector Regulation Bill In South Africa: Lessons From Australia”, *South African Law Journal* (forthcoming, 2015); *Financial Sector Regulation Bill*, 11 December, 2013, (Republic of South Africa).

⁹ Alex Erskine, *Regulating the Australian Financial System*, in ‘Funding Australia’s Future’, Australian Centre for Financial Studies, July, 2014, p 43.

¹⁰ Jennifer G. Hill, *Why Did Australia Fare So Well in the Global Financial Crisis?*, in ‘The Regulatory Aftermath of The Global Financial Crisis, in Sydney Law School Research Paper’, no. 12/35, 20 May, 2012, p 16 ff.

Twin Peaks¹¹, and how much to a combination of good luck and good fiscal policy, remains unclear.

A quick analysis of APRA's media releases shows that of the 160 press statements since the beginning of 2008, only 16 relate to regulatory censure, or in regulator-speak "enforceable undertakings"¹².

To underscore this point it is of note that the Netherlands employed Twin Peaks prior to the GFC and, as this article will discuss in greater detail below, the Netherlands fared poorly.

Consequently a clear and balanced account of the strengths and weaknesses inherent in Twin Peaks, it is hoped, will facilitate debate on, and understanding of, the capabilities of this model.

The article commences with a description of Twin Peaks, followed by an examination of the deficiencies thereof. A decision to adopt Twin Peaks requires a decision as to whether or not to locate the prudential peak within the Central Bank (NCB), and an analysis of this aspect follows. Finally, the article presents concluding observations.

¹¹ Cf. Australian banks were poorly regulated: Pat McConnell, "Debunking the myth of our 'well-regulated' banks", 'Business & Economy', *The Conversation*, 13 September, 2012 6.38am AEST.

¹² Ibid.

III WHAT IS TWIN PEAKS?

(a) A definition

A Twin Peaks regulatory model comprises two peak regulators: one, the objective of which is enforcement of prudential regulation; and a second, the objective of which is market conduct and consumer protection.¹³ In Australia these are the Australian Prudential Regulation Authority (APRA), and the Australian Securities and Investments Commission (ASIC) respectively. The title is somewhat of a misnomer, in that the National Central Bank (NCB), which in Australia is the Reserve Bank of Australia (RBA), has responsibilities as the Lender of Last Resort (LLR)¹⁴, and overall responsibility for financial system stability.¹⁵ Consequently it may be more correct to call the Australian model a Triple Peak system.

¹³ Working Group on Financial Supervision, *The Structure of Financial Supervision. Approaches and Challenges in a Global Marketplace*, in 'Special Report', Group of Thirty, Consultative Group on International Economic and Monetary Affairs, Inc., 2008, p 24. For a complete analysis of the four approaches to financial regulation, see also: David T. Llewellyn, op cit; Andrew D. Schmulow, *Journal of Banking and Finance Law and Practice*, op cit. For a more complete exposition of what is involved with financial system regulation, and conduct of business and consumer protection, see: David T. Llewellyn, op cit, p 6.

¹⁴ Glenn Stevens, "*Liquidity and the Lender of Last Resort*", in *Speeches*, published by Reserve Bank of Australia, 15 April 2008, accessed: 24 September, 2015.

¹⁵ Reserve Bank of Australia, "*Role of the Reserve Bank in Maintaining Financial Stability*", in *Financial Stability*, published by Reserve Bank of Australia, 2001-2015, accessed: 24 September, 2015.

It should be noted that the overall objective of prudential regulation is to prevent fragility among individual financial entities. Consequently it may be argued that both the prudential regulator and the central bank are concerned with financial system stability¹⁶; the regulator at the micro-level, the central bank at the macro-level. This has implications for the location of the regulator □ within the central bank or without □ to which this article will return.

(b) Adoption

Twin peaks was introduced in Australia in 1998 in response to the recommendations of the Wallis Inquiry.¹⁷ The original proposal was not Australian, however. It was first suggested by an Englishman, Michael Taylor, in 1995¹⁸,

¹⁶ In Working Group on Financial Supervision, 2008, p 24, the concepts ‘prudential regulator’ and ‘system-stability regulator’ is conflated to ‘safety and soundness supervision’.

¹⁷ The Report recommended the establishment of a Corporations and Financial Services Commission (CFSC), later ASIC, (Stan Wallis, Bill Beerworth, Professor Jeffrey Carmichael, Professor Ian Harper & Linda Nicholls, *Financial System Inquiry*, The Treasury, 31 March, 1997, p 235), and the creation of the Australian Prudential Regulation Commission (APRC), later APRA (ibid, p 298).

¹⁸ Michael W. Taylor, December, 1995, and subsequently: Michael W. Taylor, *Peak Practice: How to reform the UK’s regulatory system*, no. 23, Centre for the Study of Financial Innovation, October, 1996; Michael W. Taylor, ‘*Twin Peaks’ Revisited... a second chance for regulatory reform*, no. 89, Centre for the Study of Financial Innovation, September, 2009; Michael W. Taylor, “The Road from “Twin Peaks” - and the Way Back”, *Connecticut Insurance Law Journal*, Vol. 16, no. 1 (2009-2010); Michael Taylor, “Welcome to Twin Peaks”, *Central Banking Journal*,

principally as a reaction to the ‘blurring of the boundaries’ phenomenon¹⁹ in the financial services sector in the UK²⁰. Addressing the blurring of the functions between different kinds of financial entities was the progenitor for Twin Peaks. Since addressing that issue, however, its purposes have evolved, with the prudential authority, at least,

Electronic Article (17 August, 2010); Michael W. Taylor, “Regulatory reform after the financial crisis - Twin Peaks Revisited”, Oxford, UK, in ‘Law and Finance Senior Practitioner Lectures’, Wednesday 16 February 2011; Michael Taylor, “Regulatory reform after the financial crisis. *Twin Peaks* revisited”, Chap. 1, in *Institutional Structure of Financial Regulation: Theories and International Experiences* edited by Robin Hui Huang & Dirk Schoenmaker, in ‘Part I, Fundamental theories’, series editor: Routledge Research in Finance and Banking Law, 1st ed., 2014.

¹⁹ Henriëtte Prast & Iman van Lelyveld, *New Architectures in the Regulation and Supervision of Financial Markets and Institutions: The Netherlands*, in ‘DNB Working Paper’, no. 021/2004, De Nederlandsche Bank, 21 December, 2004, p 6/12ff/25; Eric J. Pan, “Structural Reform of Financial Regulation”, *Transnational Law & Contemporary Problems*, Vol. 19, no. 3 (Winter, 2011), p 830; Clive Briaultt, “The rationale for a single national financial services regulator”, *Financial Services Authority Occasional Paper*, no. 2 (1999), p 6/12/13/26; Heidi Mandanis Schooner & Michael Taylor, “United Kingdom and United States Responses to the Regulatory Challenges of Modern Financial Markets”, *Texas International Law Journal*, Vol. 38, no. 2 (Spring, 2003), p 320ff.

²⁰ For more on this see: Michael W. Taylor, “*Twin Peaks*”: *A regulatory structure for the new century*, December, 1995, p 1; Graeme Thompson, “Regulatory Policy Issues in Australia”, Paper presented at the The Future of the Financial System, Sydney, NSW, edited by Malcom Edey, series editor: Reserve Bank of Australia Economic Group, in ‘RBA Annual Conference’, Vol. 1996, 8-9 July 1996, p 5/46; Richard K. Abrams & Michael W. Taylor, *Issues in the Unification of Financial Sector Supervision*, in ‘IMF Working Paper’, no. WP/00/213, International Monetary Fund, December, 2000, p 10/11/26; Michael Taylor, “Welcome to Twin Peaks”, *Central Banking Journal*, op cit; Working Group on Financial Supervision, 2008, p 7/13/19.

having come to assume an overall safety and soundness role²¹.

Since its introduction in Australia, the model has been adopted in a number of other countries. These include the Netherlands,²² New Zealand²³ and the United Kingdom²⁴. South Africa²⁵ is in the process of adopting this

²¹ Working Group on Financial Supervision, 2008, p 24.

²² A.D Schmulow, *Approaches to Financial System Regulation: An International Comparative Survey*, in ‘The Centre For International Finance and Regulation (CIFR) Research Working Paper Series’, no. 053/2015 / Project No. E018, The Centre For International Finance and Regulation (CIFR), January, 2015, p 33ff; Henriëtte Prast & Iman van Lelyveld, 21 December, 2004, p 2/14/15.

²³ See the remarks of the Chief Executive of New Zealand’s Financial Markets Authority: Sean Hughes, “*Financial Markets Authority - a new era in regulation - Webinar package*”, series edited by New Zealand Law Society, in *Continuing Legal Education*, published by New Zealand Law Society, 25 November, 2011, accessed: 23 November, 2015.

²⁴ See Financial Conduct Authority, “*About us*”, series edited by Financial Conduct Authority, published by Financial Conduct Authority, 2014, accessed: 25 September, 2014 and Prudential Regulation Authority, “*About the Prudential Regulation Authority*”, series edited by Bank of England, in *Prudential Regulation Authority*, published by Bank of England, 2014, accessed: 25 September, 2014.

²⁵ National Treasury, Republic of South Africa, *Financial Sector Regulation Bill, Comments Received on the First Draft Bill Published by National Treasury for Comments in December 2013 (Comment Period from 13 December 2013 - 07 March 2014)*, in ‘Documents for Public Comments - 2nd Draft Financial Sector Regulation Bill’, Vol. 1, National Treasury, Republic of South Africa, December, 2014; A.J. Godwin & A.D Schmulow, *The Financial Sector Regulation Bill In South Africa: Lessons From Australia*, in ‘The Centre For International Finance and Regulation (CIFR) Research Working Paper Series’, no. 052/2015 / Project No. E018, The Centre For International Finance and Regulation (CIFR), January, 2015.

method of financial regulation. France²⁶ and Germany²⁷ use elements of it.

(c) How it functions

The essence of Twin Peaks is a regulatory model which ascribes equal importance to, and equal but separate jurisdictional authority over, two core functions: one, prudential regulation and two, market conduct and consumer protection.²⁸ Crucially, the model eschews the concept of a lead regulator²⁹: each agency must single-mindedly fulfil its own remit.³⁰

This ideal - separate but equal regulators - each with its own bailiwick, has much to commend it. After all, it is easy enough to understand the importance of the first peak □ the prudential regulator - as a defence against financial system instability leading to crises. In the

²⁶ A.D Schmulow, *Approaches to Financial System Regulation: An International Comparative Survey*, *ibid* no. 053/2015 / Project No. E018, p 10ff, C. Goodhart, P. Hartmann, D.T. Llewellyn, L. Rojas-Suarez & S. Weisbrod, “The institutional structure of financial regulation”, Chap. 8, in *Financial Regulation: Why, How and Where Now?*, in ‘Business & Economics’, 2013, p 185ff.

²⁷ A.D Schmulow, January, 2015, p 14ff. C. Goodhart, P. Hartmann, D.T. Llewellyn, L. Rojas-Suarez & S. Weisbrod, *op cit*, p 185ff.

²⁸ David T. Llewellyn, *op cit*, p 27.

²⁹ For a description of a ‘Lead Regulator’ model, see: C. Goodhart, P. Hartmann, D.T. Llewellyn, L. Rojas-Suarez & S. Weisbrod, *op cit*, p 164; Gregg D. Killoren, “Comparative Analysis of Non-U.S. Bank Regulatory Reform and Banking Structure”, *Law & Business*, edited by CCH Incorporated, in ‘Banking & Finance’, 2009, p 9.

³⁰ Gregg D. Killoren, *op cit*, p 10, David T. Llewellyn, *op cit*, p 27.

aftermath of the GFC, however, there is left little doubt that for financial system stability the market conduct objective is equally important; it was market misconduct and consumer abuse that gave rise to the subprime disaster, and then metastasized into a worldwide series of financial crises.

*...morphed the subprime crisis into a virulent global financial crisis.*³¹

And on the connection between the subprime crisis and the GFC:

have identified many billions of dollars of fraudulent loans originated by Countrywide^[32] that were sold fraudulently to Fannie and Freddie through false representations and warranties. ...

³¹ Frederic S. Mishkin, *Over the Cliff: From the Subprime to the Global Financial Crisis*, in 'NBER Working Paper Series', no. 16609, National Bureau of Economic Research, December, 2010, p 4; Steve Denning, "Lest We Forget: Why We Had A Financial Crisis", *Forbes*, (22 November, 2011), published electronically.

³² 'In 2006 Countrywide financed 20% of all mortgages in the United States, at a value of about 3.5% of United States GDP, a proportion greater than any other single mortgage lender.' Ray Martin, "Bank of America's great mortgage giveaway", series edited by CBS Money Watch, in *CBS News*, published by CBS Interactive Inc.. 9 May, 2012, 10:32 am, accessed: 26 September, 2015. Bank of America purchased the ailing sub-prime lender Countrywide in January 2008, for US\$ 2.5 billion, in a deal that subsequently incurred losses for Bank of America in excess of US\$ 50 billion. Rick Rothacker, "The deal that cost Bank of America \$50 billion – and counting", 'News, Business, Banking', *The Charlotte Observer*, 16 August, 2014. Bank of America covered those losses with a US\$ 45 billion dollar, taxpayer-funded, bail-out from the Troubled Asset Relief Program (TARP). Pro Publica, *Bailout Recipients*, in 'Bailout Tracker, Tracking Every Dollar and Every Recipient', Pro Publica, 24 September, 2015.

97% of the Countrywide loans reviewed by Ambac ... had false reps and warranties. Countrywide also engaged in widespread foreclosure fraud. ... examined by a truly independent body has found widespread fraud □ in loan origination, loan sales, appraisals, and foreclosures. ... one financially sophisticated entity after another found widespread fraud by Countrywide in the entire gamut of its operations, the administration, the industry ... Countrywide made hundreds of thousands of fraudulent loans ... It fraudulently foreclosed on large numbers of loans. It victimized hundreds of thousands of people and hundreds of financial institutions, causing hundreds of billions of dollars of losses. It has defrauded more people, at a greater cost, than any entity in history ... The financial media treats Bank of America as if it were a legitimate bank rather than a “vector” spreading the mortgage fraud epidemic throughout much of the Western world.³³

³³ L. Randall Wray, “Setting the Record Straight One More Time: BofA’s Rebecca Mairone Fined \$1Million; BofA Must Pay \$1.3Billion”, *New Economic Perspectives*, (2 August, 2014), (accessed: 26 June, 2015), published electronically. See also: Edward Wyatt, “Promises Made, Then Broken, By Firms in S.E.C. Fraud Cases”, ‘Business Day’, *New York Times*, New York ed. 8 November, 2011. For a full list of firms fined for financial malpractice and fraud related to the GFC, see:

While the Australian model provides a high degree of statutory independence for the system stability regulator,³⁴ APRA, it is to a degree answerable to the Treasurer,³⁵ and both APRA³⁶ and ASIC³⁷ to the Federal Parliament by way of submission of Annual Reports. This comports with what Taylor envisaged for the model with either Ministerial or Parliamentary oversight.³⁸

Where the first peak □ APRA □ is responsible for the safety and soundness of banks, the second peak □ ASIC □ is responsible for market conduct and consumer protection. It was argued such a system would be more likely to resolve fragmentation, provide clarity of ambit, be more cost-effective due to rulebook simplification, and improve accountability - more likely, but not assuredly - as the recent failings of ASIC in Australia have demonstrated.³⁹ If the consumer protection and market

U.S. Securities and Exchange Commission, *SEC Enforcement Actions. Addressing Misconduct That Led To or Arose From the Financial Crisis*, U.S. Securities and Exchange Commission, 26 May, 2015.

³⁴ S 11, *Australian Prudential Regulation Authority Act (Cth)*, No. 50 of 1998, (Australia).

³⁵ S 12, *ibid*, p. 4/5.

³⁶ S 59, *ibid*.

³⁷ S 136, *Australian Securities and Investments Commission Act (Cth)*, No. 51 of 2001, (Australia).

³⁸ Michael W. Taylor, “*Twin Peaks*”: *A regulatory structure for the new century*, December, 1995, p. 11.

³⁹ Adele Ferguson, “Hearing into ASIC’s failure to investigate CBA’s Financial Wisdom”, ‘Business Day’, *The Sydney Morning Herald* 3 June, 2014; Adele Ferguson & Deb Masters, “Banking Bad”, in Four Corners, *Audiovisual Material*,

conduct regulator do prove effective, then advantages accrue to consumers for a ‘ “one-stop shop” ’⁴⁰ for complaints against a regulated firm.

In terms of inter-agency co-operation and co-ordination, the Australian model addresses this through various memoranda of understanding.⁴¹

Whereas the legislative framework for regulatory co-ordination is high-level and outcomes-focused, it does not, however, provide detailed provisions as to the nature of co-ordination or how it should be achieved.⁴² Instead, s 10A of the *APRA Act*⁴³ provides in general terms as follows:

(1) The Parliament intends that APRA should, in performing and exercising its functions and powers, have regard to the desirability of APRA coordinating with other financial sector supervisory agencies, and with other agencies specified in regulations for the purposes of this subsection. (2) This section does not override any restrictions that would otherwise apply to

Documentary, 5 May, 2014; Jane Lee, Cameron Houston & Chris Vedelago, “CBA customers lose homes amid huge fraud claim”, ‘Victoria’, *The Age* 29 May, 2014.

⁴⁰ Michael W. Taylor, “*Twin Peaks*”: *A regulatory structure for the new century*, December, 1995, p. 11.

⁴¹ Anonymous, *Memorandum of Understanding*, The Reserve Bank of Australia and The Australian Prudential Regulation Authority, 12 October, 1998.

⁴² A. J. Godwin & A.D. Schmulow, *South African Law Journal*, op cit., p 9 of the article.

⁴³ *Australian Prudential Regulation Authority Act (Cth)*, No. 50 of 1998.

APRA or confer any powers on APRA that it would not otherwise have.

The RBA has asserted that cultivating a culture of co-ordination, under which the main focus is on regulatory performance, rather than regulatory structure, is crucially important. The Assistant Governor (Financial) of the RBA has attributed the efficacy of co-ordination between the regulators in Australia to a culture -

‘where we regard cooperation with the other agencies as an important part of our job, and there is a strong expectation from the public and the government that we will continue to do so... Key aspects [of coordination] include an effective flow of information across staff in the market operations and macroeconomic departments of a central bank and those working in the areas of financial stability and bank supervision. Regular meetings among these groups to focus on risks and vulnerabilities and to highlight warning signs can be very valuable. A culture of coordination among these areas is very important in a crisis because, in many instances, a stress situation is first evident in liquidity strains visible to the central bank, and

*the first responses may be calls on central bank liquidity.*⁴⁴

The success Australia achieved in addressing the challenges arising out of the Global Financial Crisis, and the 2010 Sovereign Debt Crisis, has been attributed to this flexible approach to inter-agency co-operation.⁴⁵ Indeed, in interviews conducted with the regulators in Australia it was evident that over-prescription, or formalisation, would have stifled this flexibility.⁴⁶

⁴⁴ Malcom Edey, “Macroprudential Supervision and the Role of Central Banks”, Paper presented at the Regional Policy Forum on Financial Stability and Macroprudential Supervision Hosted by the Financial Stability Institute and the China Banking Regulatory Commission, Beijing, PRC, in ‘Speeches’, 28 September 2012.

⁴⁵ There are other, credible arguments to be made that the supervisory regime in Australia was incidental to Australia’s success during the GFC. Australian banks were, on the whole, ‘vanilla’. That is to say they were not heavily exposed to mortgage backed securities or collateralised debt obligations. One senior executive at ANZ Bank claimed this was as much foresight as luck: they had identified problems in trading markets and chose not to participate. Stephen Bell & Andrew Hindmoor, *Masters of the Universe, Slaves of the Market*, in ‘Business & Economics, Banks & Banking’, 2015, p 270-273. Australian banks also enjoyed a strong deposit base, they were not reliant upon wholesale funding, had a strong domestic lending portfolio, and were restricted in their own mortgage lending activities. Julia Black, “Regulatory Styles and Supervisory Strategies”, Chap. 8, in *The Oxford Handbook of Financial Regulation*, edited by Niamh Moloney, Eilís Ferran & Jennifer Payne, August, 2015, p 47, fn 129.

⁴⁶ A. J. Godwin & A.D. Schmulow, *South African Law Journal*, op cit., p 12 of the article.

To facilitate this co-operation, Australia has established the Council of Financial Regulators (CFR),⁴⁷ the purpose of which is to oversee inter-agency co-operation.

The CFR is the coordinating body for Australia's main financial regulatory agencies. Its membership comprises APRA, ASIC, the RBA and the Treasury. ... It is a non-statutory interagency body, and has no regulatory functions separate from those of its four members. ... CFR meetings are chaired by the Reserve Bank Governor, with secretariat support provided by the RBA. They are typically held four times per year but can occur more frequently... As stated in the CFR Charter, the meetings provide a forum for:

- identifying important issues and trends in the financial system, including those that may impinge upon overall financial stability;*
- ... appropriate coordination arrangements for responding to actual or potential instances of financial instability, and helping to resolve any issues where members' responsibilities overlap; ...*

⁴⁷ The Council of Financial Regulators, “*The Council of Financial Regulators*”, series edited by The Council of Financial Regulators, published by Reserve Bank of Australia, 2001-2014, accessed: 14 July, 2014.

Much of the input into CFR meetings is undertaken by interagency working groups, which has the additional benefit of promoting productive working relationships and an appreciation of cross-agency issues at the staff level.

The CFR has worked well since its establishment and, during the crisis in particular, it has proven to be an effective means of coordinating responses to potential threats to financial stability...

According to the Reserve Bank of Australia, the experience since its establishment, and especially during the crisis, has highlighted the benefits of the existing non-statutory basis of the CFR.⁴⁸ Furthermore, levels of co-operation and co-ordination between the peaks and the NCB have traditionally been strong⁴⁹.

(d) Separate but equal

The separation of the consumer protection function from the prudential regulation function is the cornerstone and,

⁴⁸ Reserve Bank of Australia, *Submission to the Financial System Inquiry*, Reserve Bank of Australia, March, 2014, p 66.

⁴⁹ Ian Beckett, "Financial regulation in Australia since the GFC", *JASSA, The Finsia Journal of Applied Finance*, no. 3 (2012), p 20.

supposedly, one of the principal advantages of a Twin Peaks system.⁵⁰

In theory, protection of retail consumers would not be subordinated in order not to leave banks distressed.⁵¹ Indeed, in theory, guarding consumers might in fact positively affect the safety and soundness considerations that underpin prudential regulation, by *nipping in the bud* malpractices that, while initially only detrimental to consumers, ultimately become systemic risks.⁵² The example of market misconduct giving rise to the GFC is, in this regard, instructive:

*Neither predatory lending nor the selling of mortgages on false pretences caused the crisis. But they surely made it worse, both by helping to inflate the housing bubble and by creating a pool of assets guaranteed to turn into toxic waste once the bubble burst.*⁵³

⁵⁰ Stan Wallis, Bill Beerworth, Professor Jeffrey Carmichael, Professor Ian Harper & Linda Nicholls, 31 March, 1997, in ‘Overview, Introduction’, p 29ff; Michael W. Taylor, “*Twin Peaks*”: *A regulatory structure for the new century*, December, 1995, p 1; Michael W. Taylor, “Regulatory reform after the financial crisis - Twin Peaks Revisited”, op cit, p 5ff; David T. Llewellyn, op cit, p 16/27.

⁵¹ David T. Llewellyn, op cit, p 28.

⁵² See further: *ibid*, § 2, p 10.

⁵³ Paul Krugman, “Looters in Loafers”, ‘Opinion’, *New York Times*, New York ed. 19 April, 2010. See also: Debra Cassens Weiss, “SEC Accuses Goldman Sachs of Selling Mortgage Investment Designed to Fail”, *ABA Journal, Law News Now, Securities Law*, (9:58 am, 16 April, 2010), (accessed: 25 June, 2014), published electronically. Goldman Sachs was fined US\$ 3.15 billion by the Federal Housing

Whether in practice the objective of equality between consumer protection and system stability is achieved, is debatable. Because the consequences of a failure by the prudential regulator □ system instability □ are more serious than the failure of the market conduct regulator □ consumer abuse □ some would argue that the former will always take precedence. Historically there is evidence of this not only in the United States,⁵⁴ but in the United Kingdom⁵⁵ and Australia as well.⁵⁶

Finance Agency for misstating the quality of investments sold to Fannie Mae and Freddie Mac. The 15th bank to settle such claims. Benjamin Snyder, “*Goldman Sachs in \$3.15 billion settlement with federal regulators*”, series edited by Fortune, in *Finance*, published by Time, Inc., 22 August, 2014, 7:50 pm EDT, accessed: 26 September, 2015. At least one Goldman Sachs trader, Fabrice Tourre, has been held financially liable – not imprisoned however - for creating financial products specifically designed, to fail, which he then bet against. Aaron Smith & James O’Toole, “*‘Fabulous Fab’ held liable in Goldman fraud case*”, series edited by CNN Money, in *News*, published by Cable News Network, 1 August, 2013, 6:21 pm ET, accessed: 26 September, 2015.

⁵⁴ For the need to address past regulatory failures, see: Daniel K. Tarullo, “Good Compliance, Not Mere Compliance”, Paper presented at the Federal Reserve Bank of New York Conference, “Reforming Culture and Behavior in the Financial Services Industry”, New York, NY, series editor: Federal Reserve Bank of New York, 20 October 2014, p 9/10; Lawrence G. Baxter, “Capture Nuances in Financial Regulation”, *Wake Forest Law Review*, Vol. 47, no. 3 (Fall, 2012), p 547.

⁵⁵ For proposals to address this phenomenon, see: HM Treasury, Bank of England & Financial Conduct Authority, *How fair and effective are the fixed income, foreign exchange and commodities markets? Consultation document*, Bank of England, October, 2014, p 4/21/22/48. The outcome of this review was not yet available at time of writing.

⁵⁶ See: IV WEAKNESSES AS COMPARED TO OTHER MODELS (c) Australia’s Twin Peaks failures: ASIC and the financial advice scandals.

(e) Advantages

Operating optimally a Twin Peaks model will give equal priority to safety and soundness considerations, through a separate bank prudential regulator, as it will market conduct and consumer protection, through a separate consumer protection and market conduct regulator. In theory then, Twin Peaks aims to safeguard consumers as vigorously as it does the soundness of individual banks.

To this end there is evidence that Twin Peaks is better suited to performing these functions than any of the other systems of financial system regulation currently employed elsewhere in the world.⁵⁷ It is potentially more cost effective⁵⁸, and makes a more optimal use of specialist staff⁵⁹. As a model, it is also more likely to give expression

⁵⁷ Erlend W. Nier, Jacek Osiński, Luis I. Jácome & Pamela Madrid, *Institutional Models for Macroprudential Policy*, in 'IMF Staff Discussion Note', no. SDN/11/18, International Monetary Fund, 1 November, 2011, p 15/16. See also: De Nederlandsche Bank, "*IMF publishes its report on financial sector and supervision in the Netherlands*", in *News*, published by De Nederlandsche Bank, 22 June, 2011, accessed: 9 January, 2015; Michael Taylor, "Regulatory reform after the financial crisis. *Twin Peaks* revisited", op cit; Dirk Schoemaker & Jeroen Kremers, "Financial stability and proper business conduct. Can supervisory structures help to achieve these objectives?", Chap. 2, ibid; Professor Jeffrey Carmichael, "Implementing Twin Peaks. Lessons from Australia", Chap. 5, ibid in 'Part II, International experiences'; Brooke Masters, "Focus on G20 vow to raise financial standards", 'Front Page', *The Financial Times*, Morning ed. 15 October, 2009 03:00 am; John Manley, op cit; Eric J. Pan, *Transnational Law & Contemporary Problems*, op cit, p 822, Michael W. Taylor, *Peak Practice: How to reform the UK's regulatory system*, October, 1996, p 7.

⁵⁸ David T. Llewellyn, op cit, p 12/19.

⁵⁹ Ibid, p 19.

to the goal of regulatory competitive neutrality, through the avoidance of the inconsistencies, contradictions and opportunities for arbitrage that come from multiple regulators⁶⁰ - a condition which Taylor described as an 'alphabet soup' of regulators⁶¹, when it existed in the UK, prior to the establishment of the mega-regulator, the Financial Services Authority (FSA).

Twin peaks achieves all this through better regulatory focus through clearer objectives⁶², independence between the two peaks⁶³, one-stop shopping for aggrieved consumers seeking relief⁶⁴, an avoidance of conflicts and inconsistencies in regulation as a result of regulators too many, or internal failures, magnified by having regulators too few (as with the FSA⁶⁵), greater jurisdictional certainty through clearer mandates, an

⁶⁰ Ibid, p 19.

⁶¹ Michael W. Taylor, "*Twin Peaks*": *A regulatory structure for the new century*, December, 1995, p 7.

⁶² David T. Llewellyn, op cit, p 12.

⁶³ Jeremy Rudin, "Opening remarks to the Senate Standing Committee on Banking, Trade and Commerce, by Superintendent Jeremy Rudin", Ottawa, in 'Speeches and Presentations', 5 November 2014.

⁶⁴ Michael W. Taylor, "*Twin Peaks*": *A regulatory structure for the new century*, December, 1995, p 11.

⁶⁵ For the findings of the Inquiry into the failures of the FSA after the GFC, see: House of Lords, House of Commons, '*An accident waiting to happen*': *The failure of HBOS*, in '5: A failure of regulation', Vol. I, Parliament of the United Kingdom, 5 April, 2013, §§ 83/84/85, p 28; Financial Services Authority, *The failure of the Royal Bank of Scotland*, in 'Financial Services Authority Board Report', Financial Services Authority, December, 2011, § 30, p 28.

avoidance of issues falling between the gaps⁶⁶ because of too many regulators, potentially greater capacity for foreseeing and avoiding crises thanks to a more coherent and efficient regulatory architecture, an avoidance of turf-wars⁶⁷, greater certainty for the regulatees - a corollary to increased opportunity for regulatory arbitrage - and closer alignment with the Basel Core Principles and the G20⁶⁸. Finally, the successful performance of Twin Peaks during the GFC in Australia⁶⁹ warrants attention.

In times of distress, Twin Peaks can, in theory, maintain overall safety and soundness of banks, including in the face of one or more bank failures⁷⁰, provided the failed banks are not of systemic importance.⁷¹

However, Australia has witnessed regulatory failures and instances of financial distress under its Twin Peaks

⁶⁶ Professor Jeffrey Carmichael, “Australia’s Approach to Regulatory Reform”, Chap. 3, Making the Structural Decision, in *Aligning Financial Supervisory Structures with Country Needs*, edited by Jeffrey Carmichael, Alexander Fleming & David T. Llewellyn, in ‘WBI Learning Resource Series’, series editor: World Bank Institute, 2004, p 110.

⁶⁷ Ibid, p 110.

⁶⁸ Brooke Masters, op cit.

⁶⁹ John F. Laker, “APRA: The Global Financial Crisis And Beyond”, Paper presented at the The Australian British Chamber of Commerce, Melbourne, 26 November 2009, pp 1/5.

⁷⁰ Financial System Inquiry, November, 2014, pp 12/24.

⁷¹ Jeremy Cooper, “The integration of financial regulatory authorities—the Australian experience”, Paper presented at the Comissão de Valores Mobiliários (Securities and Exchange Commission of Brazil), 30th Anniversary Conference ‘Assessing the Present, Conceiving the Future’, Rio de Janeiro, Brazil, 4-5 September 2006, p 5.

regime. The extent to which these failures reflect upon the overall reliability of the Twin Peaks architecture is discussed below, and include its potential to be overwhelmed by the failure of a systemically important bank precipitating financial contagion; the potential to be blindsided by circumstances that pose an unforeseeable threat⁷² to the safety and soundness goals of the prudential regulator; and regulatory forbearance as with ASIC and the financial advice scandals in Australia. Put differently, Twin Peaks' is not infallible.

IV WEAKNESSES AS COMPARED TO OTHER MODELS

While Twin Peaks is an exercise in regulatory design, it is nonetheless a design for a purpose □ keeping the financial system safe and sound, and protecting consumers. Where this regulatory design has no answer to particular types of threats to its goals, those deserve to be investigated. Similarly, a failure to combat foreseeable threats also deserve investigation.

Consequently this article will analyse the vulnerability of the model to bank runs; the limitations of

⁷² See for example: Abayomi A. Alawode & Mohammed Al Sadek, *What is Financial Stability?*, in 'Financial Stability Paper Series', no. 1, Central Bank of Bahrain, March, 2008, p 14.

the model as noted by the HIH Royal Commission⁷³; the failures of the Australian Securities and Investments Commission; and Twin Peaks' failure in the Netherlands during the GFC, as outlined above.

(a) Bank runs & contagion

Banks are unlike other entities in one crucial respect: a failure in one bank can cause the failure of a different, unrelated bank, even one that is profitable and solvent.

More than anything else, it is the systemic risk phenomenon associated with banking and financial institutions that makes them different from gas stations and furniture stores. It is this factor — more than any other — that constitutes the fundamental rationale for the safety net arrangements that have evolved in this and other countries.⁷⁴

This widely investigated phenomenon, 'contagion', and efforts to prevent it occurring, or at least mitigate its effects, are a core concern of the regulatory models, Twin Peaks or otherwise.

Contagion is a term used to describe the spillover [sic] ... effects of shocks from one or

⁷³ The HIH Royal Commission, *Report of the HIH Royal Commission*, The HIH Royal Commission, 16 April, 2003.

⁷⁴ E. Gerald Corrigan, "The Banking-Commerce Controversy Revisited", *Federal Reserve Bank of New York Quarterly Review*, Vol. 16, no. 1 (1991), p 3.

*more firms to others. It is widely considered to be both more likely to occur in banking than in other industries and to be more serious when it does occur. Bank (depository institution) contagion is of particular concern if adverse shocks, such as the failure or near-failure of one or more banks, are transmitted in domino fashion not only to other banks and the banking system as a whole, but beyond to the entire financial system and the macro economy. The risk of widespread failure contagion is often referred to as systemic risk.*⁷⁵

Typically, contagion originates with a bank run; that is to say, a situation in which a large number of bank customers attempt to withdraw their funds at once, and bank reserves are inadequate.⁷⁶

Depositor panic in a failing bank can spread to depositors of other institutions. The resulting large-scale withdrawals from banks that are third parties to the original, failing bank can cause rapid insolvency in even

⁷⁵ George G. Kaufman, "Bank contagion: A review of the theory and evidence", *Journal of Financial Services Research*, Vol. 8, no. 2 (April, 1994), p 123.

⁷⁶ For a detailed discussion of bank runs, see: Charles W. Calomiris & Gary Gorton, *The Origins of Banking Panics: Models, Facts, and Bank Regulation*, paper presented at the Rodney L. White Center for Financial Research, The Wharton School, November 1990, p 222/223; Ted Temzelides, "Are Bank Runs Contagious?", *Federal Reserve Bank of Philadelphia Business Review* (November/December, 1997), p 3/10ff.

profitable, well-capitalised and solvent banks. The cascading withdrawals-cum-insolvencies can become a full-blown financial crisis.⁷⁷

This susceptibility to contagion is an unavoidable consequence of how banks make money: they engage in maturity mismatching □ that is to say, they borrow money short-term from demand depositors and from other banks, and lend it longer-term, to homebuyers and the like.

*It is the fundamental mismatch between bank demand-deposit liabilities ... and the illiquid, risky, and opaque loans collateralizing (sic) those insured deposits that gives rise to the current ... problem.*⁷⁸

⁷⁷ For more, see: Governor Daniel K. Tarullo, “Rethinking the Aims of Prudential Regulation”, Paper presented at the Federal Reserve Bank of Chicago Bank Structure Conference, Chicago, Illinois, series editor: Board of Governors of the Federal Reserve System, in ‘Speeches’, 8 May 2014, p 8.

⁷⁸ R. C. Merton & Z. Bodie, *Deposit insurance reform: a functional approach*, paper presented at the Carnegie-Rochester Conference on Public Policy, Vol. 38, 1993, p 5. Maturity mismatching was a significant contributor to the collapse of the Indonesian banking system during the Asian Crisis. P. Srinivas & D. Sitorus, “The Role of State Owned Banks in Indonesia”, Paper presented at the Brookings/IMF/World Bank conference on “The Role of State-Owned Financial Institutions: Policy and Practice” being held during April 26-27, 2004, Washington, DC, series editor: The World Bank, 2003, p 17; A. Crockett, “International Financial Arrangements: Architecture and Plumbing”, Paper presented at the Third David Finch Lecture, University of Melbourne, 12 November 1999.

Secondly, banks engage in a transformative function⁷⁹: they transform opaque and illiquid assets into transparent and liquid liabilities. The effect of which, however, is that banks cannot liquidate assets fast enough in the face of widespread demand-depositor withdrawals. The ensuing fire sale of assets will invariably further damage a bank's balance sheet.⁸⁰

Consequently, while the argument can be made, and strongly, that Twin Peaks is the optimal model for financial system regulation, it is not a model that guarantees everlasting bank solvency, even with best-practice regulations aimed at maintaining bank solvency, which in turn are adequately enforced. Nor does it claim to be able to prevent the collapse of individual banks, particularly in light of the unique vagaries and phenomena that affect them. Taylor acknowledges this⁸¹, as do the Australian authorities (as the next section, dealing with HIH, will demonstrate). While there are steps in place to manage the exit of a bank from the financial system, through such

⁷⁹ For more on the transformation function, see: Douglas W. Diamond & Philip H. Dybvig, "Bank Runs, Deposit Insurance, and Liquidity", *Journal of Political Economy*, Vol. 91, no. 3 (June, 1983), p 402.

⁸⁰ For more on asset stripping by banks in times of distress, see: R. C. Merton & Z. Bodie, op cit, p 14/15.

⁸¹ Michael W. Taylor, "Twin Peaks": *A regulatory structure for the new century*, December, 1995, p 10.

methods as ‘living wills’⁸², Twin Peaks nonetheless does not have an answer when the collapse of one bank leads to widespread depositor panic and widespread financial firm distress, and this is an inadequacy in the architecture itself. While it is true that Twin Peaks is not alone in this shortcoming, the fact that it is susceptible to being overwhelmed by a crisis⁸³ should be recognised as a limitation in its design.

The interconnectedness of financial institutions can also result in the failure of one player quickly affecting others. This applies particularly in the banking sector, and can occur either because other institutions are directly or indirectly exposed to a failed bank or because of a loss of confidence amongst banks in each other’s ability to meet future obligations when they fall due, thus triggering a liquidity freeze as evidenced at the start of the GFC. Moreover, the public may lose trust in the banking system and a bank run may ensue. Although the Reserve Bank’s role of lender of last resort means that it has an effective response to any bank runs, these

⁸² Elizabeth Fry, “Too big to bail: Aussie banks need a living will”, ‘Banking’, *Asia-Pacific Banking & Finance* Monday 4 May, 2015.

⁸³ Twin Peaks is a micro-prudential regulator. For more on a macro-prudential regulator, see *A current proposal in Australia, aimed at addressing past failures* on page 37ff.

*situations can easily spill over to the real economy; for example, in the form of a credit crunch. A key objective of prudential regulation and supervision is to reduce these risks.*⁸⁴

Supporters of Twin Peaks counter that this shortcoming - depositor panic precipitating contagion, which then leads to a financial crisis □ is one faced by all systems of financial regulation, and this is true. Supporters also counter that Twin Peaks is merely an architectural design, not a panacea, and this too is true. But true as those statements may be, they are little comfort to those individuals who are disadvantaged or displaced by financial crises. Moreover the architecture is an exercise in the pursuit of an ultimate goal: financial system stability. Consequently, and irrespective of whether Twin Peaks is not alone in this failing, and irrespective of what the brief to the original architects may have been, more recent experience indicates that there is a possibility of a Twin Peaks regime being overwhelmed by contagion, and this is a flaw that must continue to receive close attention.

⁸⁴ Toby Fiennes & Cavan O'Connor-Close, "The evolution of prudential supervision in New Zealand", *Reserve Bank of New Zealand: Bulletin*, Vol. 75, no. 1 (March, 2012), p 6.

(b) Australia's Twin Peaks failures: the collapse of HIH

When HIH insurance collapsed on the 15th of March 2001, it was the second largest insurance company in Australia. This made HIH's collapse one of the biggest in Australian corporate history,⁸⁵ and heralded the adoption of a new, risk-based approach to financial regulation, modelled on that of the Canadian regulator, the Office of the Superintendent of Financial Institutions.⁸⁶ HIH was a regulated entity under the jurisdiction of the system stability regulator APRA, at the time of its collapse.

After HIH's collapse, the Royal Commission constituted to investigate the incident found as follows:

*The system gave APRA the ability to detect the early warning signs that a company might fail. APRA's failure to pick up the many signs that HIH was heading towards statutory and commercial insolvency highlighted a number of systemic weaknesses in its administration of the regulatory system.*⁸⁷

APRA's regulation of the HIH group was inadequate ... there was a systemic failure in

⁸⁵ Rob Curtis, "Solvency as a Focal Point of Prudential Regulation: Supervisory Lessons and Challenges", Chap. 6, in *The Future of Insurance Regulation and Supervision: A Global Perspective*, edited by Patrick M. Liedtke & Jan Monkiewicz, 2011, p 93.

⁸⁶ Julia Black, op cit, p 262.

⁸⁷ The HIH Royal Commission, 16 April, 2003, § 24.1.2.

*APRA to escalate the issues they identified to an appropriate level. Throughout 2000 and 2001 APRA missed every opportunity to act upon the warning signs that HIH was heading towards statutory and commercial insolvency.*⁸⁸

Two implications emanate from this: the first is that weaknesses in the enforcement of the model (as was the case with the supervision of HIH) can bring the model undone. Several issues arise as a result. One such issue is that there are no guarantees that problems to do with how well the regulator functions will be discovered through reviews and inquiries. The possibility remains that problems of enforcement, or lack thereof, will only be discovered through failure or distress, as happened with HIH. This presents the possibility that the system stability regulator can be blind-sided by its own internal management failings. Other obstacles to satisfactory and consistent enforcement relate to the adequate resourcing of the regulator⁸⁹, the creation of the appropriate culture within the regulator⁹⁰, and the degree to which parliament is captured by the financial industry.⁹¹

⁸⁸ Ibid, § 24.1.13.

⁸⁹ A. Campbell & R. Lastra, "Revisiting the Lender of Last Resort", *Banking and Finance Law Review*, Vol. 24, no. 3 (June, 2009).

⁹⁰ APRA acknowledged that its 'light-touch' culture was responsible for its failures with HIH. John Garnaut, "Watchdog licks its wounds after commission mauling", 'Business', *The Sydney Morning Herald* 16 January, 2003. Failures in the UK

The second implication from the HIH Royal Commission finding is that in Australia - the leading proponent of Twin Peaks - it is accepted that the model will have to tolerate, from time to time at least, individual bank failure. That position persists to this day.⁹²

APRA does not pursue a zero failure objective. APRA cannot eliminate completely the risk that a regulated entity might fail and it recognises that any attempt to do so would impose unnecessary burden on regulated entities and harden the arteries of the financial system. ... Government's Statement of Expectations of APRA that "...prudential regulation cannot and should not seek to guarantee a zero failure rate of prudentially regulated institutions or provide

during the GFC were similarly attributed to the inadequacies of the light touch. Jill Treanor, "Farewell to the FSA – and the bleak legacy of the light-touch regulator", 'Business', *The Guardian/The Observer* 24 March, 2013.

⁹¹ See: Stephen Long, "APRA: Government accused of politicising bank watchdog over super fund briefing to crossbench senators", in *News*, published by Australian Broadcasting Corporation, 28 October 2015, 8:11pm, accessed: 22 November, 2015; Stephen Long, "Why banks want a default superannuation free-for-all", series edited by The Drum, in *Opinion*, The Drum Home ed., published by Australian Broadcasting Corporation, 28 October 2015, 12:03pm, accessed: 22 November, 2015. For the extent of this problem in the United States, see: Arthur E. Wilmarth Jr., "Turning a Blind Eye: Why Washington Keeps Giving In to Wall Street", *University of Cincinnati Law Review*, Vol. 81, no. 4/4 (2013).

⁹² Australian Prudential Regulation Authority, *Supporting Materials for Assessment Against the Basel Core Principles*, in 'IMF Financial Sector Assessment Program — Australia', Australian Prudential Regulation Authority, 2006, p 7.

*absolute protection for market participants
(including consumers).⁹³*

In light of the interconnectedness of financial entities, and in particular banks, the question arises whether it is realistic to assume that the financial system can indeed tolerate the failure of a single bank? Or whether the failure of even a single, small bank could endanger the financial system, and therefore necessitate that a failing bank be rescued by the taxpayer? If, in reality, a modern financial system is to be regarded as so interconnected that it cannot, in fact, tolerate a bank failure, then this presents a limitation of the capacity of the Twin Peaks model (and every other model for that matter): it cannot foresee all the circumstances in which a bank may fail, yet it cannot tolerate such a failure.

*... clearly demonstrate that small institutions can
pose their own challenges to stability...⁹⁴*

⁹³ Australian Prudential Regulation Authority, *Probability and Impact Rating System*, Australian Prudential Regulation Authority, June, 2012, p 7. See also: Julia Black, “Managing Regulatory Risks and Defining the Parameters of Blame: A Focus on the Australian Prudential Regulation Authority”, *Law & Policy*, Vol. 28, no. 1 (January, 2006), p 8; Charles Littrell, “*The APRA approach to insurance supervision*”, series edited by Australian Prudential Regulation Authority, in *Speeches*, published by Australian Prudential Regulation Authority, 16 May, 2003, accessed: 2 August, 2015, p 1; Financial System Inquiry, November, 2014, pp 4/11/24/36; The Treasury Australian Government, The Treasury Commonwealth Government of Australia, “*Statement of Expectations for the Australian Prudential Regulation Authority*”, 1-8, <http://www.apra.gov.au/AboutAPRA/documents/Statement-of-Expectations-from-Treasurer-20-Feb-07.pdf>, p 2.

*risk-based regulation may nonetheless be neither as “rational” nor as consistent in substance as its form suggests.*⁹⁵

*... however, to the individual who has just suffered financial loss because of the failure of a small bank... unlikely to share APRA’s view that APRA was perfectly justified ... Targeted regulation is inevitably going to conflict with public demands for universal protection.*⁹⁶

The collapse of HIH is therefore closely related to the first flaw, that of bank contagion. But despite bank contagion being a threat to the ultimate goal of Twin Peaks □ financial system stability □ and one for which Twin Peaks does not have an answer, even worse is that the threat of an individual firm’s insolvency □ as with HIH □ which could in turn precipitate contagion, can potentially be missed by the regulator, despite the warning signs.

⁹⁴ Financial Stability Board, *Increasing the Intensity and Effectiveness of SIFI Supervision*, in ‘Progress Report to the G20 Ministers and Governors’, Financial Stability Board, 1 November, 2012, p 2.

⁹⁵ Julia Black, “Managing Regulatory Risks and Defining the Parameters of Blame: A Focus on the Australian Prudential Regulation Authority”, *Law & Policy*, op cit, p 23.

⁹⁶ *Ibid*, p 24.

*(c) Australia's Twin Peaks failures: ASIC and the financial advice scandals*⁹⁷

The Australian regulatory model has not always fared well in respect of combatting market misconduct, or the protection of consumers, as the financial advice scandals at the Commonwealth Bank (CBA) and Macquarie Bank have demonstrated.⁹⁸ ASIC's inadequate performance and undue delays in addressing these malpractices at CBA and Macquarie were criticised by an inquiry led by the Upper House of Australia's Federal Parliament.⁹⁹ Considering the international fashionability of 'Twin Peaks', and in particular the influence of the Australian model, the failures and shortcomings of ASIC – one half of the two peaks – has been a significant and sobering outcome.

⁹⁷ Elements of this section appeared in substantial part in a previous article, published as a working paper by the Centre for International Finance and Regulation: A.D Schmulow, January, 2015, p 46ff.

⁹⁸ Adele Ferguson, op cit; Jane Lee, Cameron Houston & Chris Vedelago, op cit; Adele Ferguson & Deb Masters, op cit; Adele Ferguson & Ben Butler, "Commonwealth Bank facing royal commission call after Senate financial planning inquiry", 'Banking and Finance', *The Sydney Morning Herald*, Business Day ed. 26 June, 2014. For more on the cultural drivers underscoring changes in the ethics of banking, see: Ross Buckley, "Australia's banking culture: What has gone wrong?", 'Comment', *The Canberra Times*, 16 June, 2015, 16 June, 2015.

⁹⁹ Senator Mark Bishop (Chair), Senator David Bushby (Deputy Chair), Senator Sam Dastyari, Senator Louise Pratt, Senator John Williams, Senator Nick Xenophon, Senator David Fawcett & Senator Peter Whish-Wilson, *Performance of the Australian Securities and Investments Commission*, Parliament of Australia, The Senate, June, 2014.

In respect of this failure some may argue that the financial advice scandal has no bearing on Twin Peaks which is, after all, an exercise in regulatory architecture. I would argue that that assertion misses the point: the design purports, in the case of the market conduct peak, to be better equipped to protect consumers. Consequently, if that peak has failed to take steps to protect consumers, in what is a major national scandal requiring, as some assert, a Royal Commission to investigate, then one must question whether the architecture has failed to address something key? After all, a regulatory failure such as this one is not unforeseeable.

ASIC's failures are all the more glaring, considering the financial advice scandal affects thousands of consumers. Despite this, and despite repeated tranches of documentary evidence provided to ASIC by several whistle-blowers, which included evidence of document forgery and fraud, ASIC failed to investigate CBA for in excess of 18 months, and was not remedied before a significant amount of press exposure¹⁰⁰, and scrutiny from the Federal Senate¹⁰¹.

¹⁰⁰ See for example: Adele Ferguson, op cit; Adele Ferguson & Deb Masters, op cit; Adele Ferguson & Ben Butler, op cit; Jane Lee, Cameron Houston & Chris Vedelago, op cit.

¹⁰¹ Senator Mark Bishop (Chair), Senator David Bushby (Deputy Chair), Senator Sam Dastyari, Senator Louise Pratt, Senator John Williams, Senator Nick Xenophon, Senator David Fawcett & Senator Peter Whish-Wilson, June, 2014.

What the architecture needs to incorporate, therefore, are methods either to incentivise the market conduct regulator to act (by allowing, for example, ASIC to keep a portion of whatever damages flow from successful enforcement activities), or failing which, to compel the market conduct regulator to investigate and prosecute (through the establishment of a board of oversight, such as that contemplated by the Financial System Inquiry¹⁰²).

As Bhati points out¹⁰³, consumer requirements of trust are especially high in the provision of financial services. Consequently it is argued that ASIC, by exercising its powers to license¹⁰⁴, set standards for¹⁰⁵, and apply enforcement regimes, both criminal¹⁰⁶ and civil¹⁰⁷ against

¹⁰² Financial System Inquiry, November, 2014, ‘Regulator Accountability, Recommendation no. 27’, p 239. See further (e) *A current proposal in Australia, aimed at addressing past failures*, p 29, below.

¹⁰³ Shyam Bhati, “An Analysis of the Financial Services Regulations of Australia”, *International Review of Business Research Papers*, Vol. 4, no. 2 (March, 2008), p 20.

¹⁰⁴ Schedule 1 (Financial Services and Markets), Chapter 7 (Financial services and markets), Part 7.6 (Licensing of providers of financial services), especially Division 2 (Requirement to be licensed or authorized), s 911A-D, *Financial Services Reform Act (Cth)*, No. 122 of 2001, (enacted: 27 September), (Australia).

¹⁰⁵ Schedule 1 (Financial Services and Markets), Chapter 7 (Financial services and markets), Part 7.6 (Licensing of providers of financial services), especially Division 3 (Obligations of financial services licensees), s 912A-F, *ibid*.

¹⁰⁶ Schedule 1 (Financial Services and Markets), Chapter 7 (Financial services and markets), Part 7.7 (Financial services disclosure), Division 7 (Enforcement), Subdivision A (Offences), s 952A-M, *ibid*.

financial service providers, consumers are encouraged to assume regulated providers act appropriately. When a firm acts improperly, and ASIC fails to act, then consumer confidence in financial services is eroded¹⁰⁸, which in turn is inimical to the goal of creating thriving, healthy markets.

Furthermore, it is questionable whether the strategy employed by ASIC, which relies heavily on self-regulation¹⁰⁹ and industry codes of conduct¹¹⁰, is appropriate or trustworthy; especially in light of recent experiences with CBA and others.

(d) The Netherlands¹¹¹

The Kingdom of the Netherlands was second to adopt a ‘Twin Peaks’ model in 2002¹¹², retaining prudential

¹⁰⁷ Schedule 1 (Financial Services and Markets), Chapter 7 (Financial services and markets), Part 7.7 (Financial services disclosure), Division 7 (Enforcement), Subdivision B (Civil liability), s 953A-C, *ibid*.

¹⁰⁸ David T. Llewellyn, *op cit*, p 41.

¹⁰⁹ See for example Schedule 1 (Financial Services and Markets), Chapter 7 (Financial services and markets), Part 7.7 (Financial services disclosure), Division 3 (Regulation of market licensees), Subdivision A (Licensee’s obligations), s 792A (General obligations), (c), *Financial Services Reform Act (Cth)*, No. 122 of 2001. See also Standards Australia, “*The Australian Standard on Compliance Programs*”, AS 3806-2006, published by Standards Australia, Sydney, NSW, 9 March, 2006.

¹¹⁰ Shyam Bhati, *International Review of Business Research Papers*, *op cit*, p 20.

¹¹¹ Elements of this section appeared in a previous article, published as a working paper by the Centre for International Finance and Regulation: A.D Schmulow, January, 2015, p 33ff.

¹¹² International Monetary Fund, *Kingdom of the Netherlands-Netherlands: Publication of Financial Sector Assessment Program Documentation—Technical Note on Financial Sector Supervision: The Twin Peaks Model*, in ‘Financial Sector

supervision within De Nederlandsche Bank NV¹¹³ ('The Dutch Bank' (DNB)). This is similar to the arrangement in the UK, but distinct from Australia, where the prudential regulator (APRA) is separate from the NCB.

The Dutch copied the Australian approach, particularly as it applied to supervisory strategy - PAIRS and SOARS - both of which the Dutch regulator, the DNB, adopted.¹¹⁴

While the Netherlands managed to stave-off the worst of the GFC, success for the Dutch authorities in an economy with such an important financial sector was not achieved without 'drastic'¹¹⁵ government intervention.¹¹⁶

Total foreign claims of Dutch banks amounted to over 300% of GDP. The Dutch financial system therefore depended heavily on external developments. Only the Belgian and Irish

Assessment Program Update, IMF Country Report No. 11/208', International Monetary Fund, July, 2011, Table 1, p 6. See also: Henriëtte Prast & Iman van Lelyveld, 21 December, 2004.

¹¹³ De Nederlandsche Bank, *DNB Supervisory Strategy 2010 - 2014*, in 'Supra-institutional perspective, strategy and culture', De Nederlandsche Bank, April, 2010, p 21; Eddy Wymeersch, "The Structure of Financial Supervision in Europe: About Single Financial Supervisors, Twin Peaks and Multiple Financial Supervisors", *European Business Organization Law Review (EBOR)*, Vol. 8, no. 2 (June, 2007), p 16.

¹¹⁴ Julia Black, "Regulatory Styles and Supervisory Strategies", op cit, p 262.

¹¹⁵ De Nederlandsche Bank, *Annual Report 2009*, De Nederlandsche Bank NV, 24 March, 2010, p 37, and Chart, p 45.

¹¹⁶ See further: Julia Black, "Regulatory Styles and Supervisory Strategies", op cit, p 47, fn 128.

*banking sectors were in a similar position. The European average was less than half the Dutch figure at 135% of GDP. ... exposure of Dutch banks to the United States also was the highest in Europe, at 66% of GDP. ... whereas the average of European banks had kept limited exposure of less than 30% of GDP. By contrast, the exposure of Dutch banks to hard-hit Eastern European countries was at 11% of GDP just above the European average of 8% of GDP.*¹¹⁷

Intervention during the crisis took the form of measures to stimulate employment through construction and housing (€ 6 billion); capital injections for banks and insurers (€ 20 billion); state guarantees for banks (€ 200 billion); a guarantee on all deposits up to €100,000¹¹⁸; the nationalisation of the Fortis/ABN AMRO (€ 16.8 billion) and ING banking groups (€ 10 billion), comprising 85 per cent of the Dutch banking sector,¹¹⁹ the SNS REAAL

¹¹⁷ Maarten Masselink & Paul van den Noord, “The Global Financial Crisis and its effects on the Netherlands”, *ECFIN (Economic analysis from the European Commission’s Directorate-General for Economic and Financial Affairs) Country Focus*, Vol. 6, no. 10 (4 December, 2009), p 3.

¹¹⁸ Ministry of Finance, Government of the Netherlands, “*The Netherlands and the credit crisis*”, series edited by Ministry of General Affairs, in *Financial Policy*, published by Ministry of General Affairs, undated, accessed: 11 January, 2015.

¹¹⁹ Martin Van Oyen, “Ringfencing Or Splitting Banks: A Case Study On The Netherlands”, *The Columbia Journal of European Law Online*, Vol. 19, no. 1 (Summer 2012), p 6.

insurance and banking group (€ 3.7 billion)¹²⁰; and a reform of the financial system and the capital levels that had been enforced to date. Thereafter the Dutch government was compelled to drastically reduce spending in order to reduce its deficit.¹²¹

In the aftermath of the crisis, the conclusions reached about the performance of the Dutch regulators were less than positive:

*Both in the run-up to and during the credit crisis, supervisory instruments fell short in several areas. These deficiencies emerged in both the scope and the substance of supervision. The trend towards lighter supervision, reflecting developments within the financial sector as well as changed social attitudes, has gone too far.*¹²²

This finding supports the conclusions reached in the analysis of the performance of the UK regulatory authorities during the GFC, namely that regulatory architecture alone is not a panacea against financial crisis. Doubtless regulatory architecture is part of the solution, but no more so than the capacity of the regulator to

¹²⁰ Thomas Escritt & Anthony Deutsch, “Netherlands nationalizes SNS Reaal at cost of \$5 billion”, *Reuters*, US ed. Friday, 1 February, 2013, 6:30 am.

¹²¹ Ministry of Finance, Government of the Netherlands, op cit.

¹²² De Nederlandsche Bank, *DNB Supervisory Strategy 2010 - 2014 and Themes 2010*, De Nederlandsche Bank, April, 2010, p 5.

foresee, at times, the unforeseeable,¹²³ and regulate accordingly, and the willingness of the regulator to enforce its regulations. So while the Dutch experience does not support the argument that Twin Peaks is the optimal model, nor does its failure in the Netherlands detract from the argument that while Twin Peaks is not a complete solution, for other reasons as outlined above, it is better than the alternatives. Put differently, while Twin Peaks did not save the Netherlands, had one of the other three models of financial system regulation been used, under the same circumstances, and with the same regulatory culture, then in all likelihood the Dutch would have fared worse.

(e) A current proposal in Australia, aimed at addressing past failures

In its Final Report, the Australian Financial System Inquiry has recommended that in the future Australia establish a

¹²³ See for example: Mary Douglas & Aaron Wildavsky, *Risk and Culture: An Essay on the Selection of Technological and Environmental Dangers*, revised ed., 1983, p 1, where the authors state: ‘Can we know the risks we face, now or in the future? No, we cannot; but yes, we must act as if we do.’ See also the response of Lord Stevenson and Andy Hornby to the independent report into the FSA’s enforcement failures surrounding the collapse of HBOS (Andrew Green QC, *Report into the FSA’s enforcement actions following the failure of HBOS*, Prudential Regulation Authority, Bank of England & Financial Conduct Authority, November, 2015), in which they defended their roles in, and inability to prevent the collapse of, HBOS, as follows: ‘[the Report] downplays the unforeseen and unforeseeable effect of the financial crisis on HBOS’. Jim Armitage & Nick Goodway, ‘HBOS collapse back in spotlight’, ‘Business’, *Independent Newspapers*, 20 November, 2015 at 9:12pm.

Financial Regulator Assessment Board (FRAB), the purpose of which would be to provide advice annually to the Government on how financial regulators had implemented their mandates, and ‘ provide clearer guidance to regulators in Statements of Expectation and increase the use of performance indicators for regulator performance.’

124

In addition to evaluating the performance of the regulators in respect of enforcement, the FRAB’s role would be to act as a Devil’s Advocate, while testing methodologies, questioning conclusions, and challenging prevailing orthodoxies of thought and belief in its ongoing assessment of the performance of the two peaks.

In behavioural economics, such “concurrency” across a group is called groupthink. ... Groupthink ... is unhealthy because, not only do people start to think alike, it is only a short step to believing people who are singing a different tune should be excluded and thrown out of the chorus. Dissent can be destructive, but the role of the Devil’s Advocate is well-understood to be

¹²⁴ Financial System Inquiry, November, 2014, Recommendation 27, ‘Regulator accountability’, in Chapter 5, ‘Regulatory system’, p 239 ff. See also: Andrew Schmulow, “Time for Abbott Government and ASIC to get serious about Australian banksters”, ‘Business’, *Independent Australia*, 10 August, 2015; Pat McConnell, “War on banking’s rotten culture must include regulators”, ‘Business & Economy’, *The Conversation*, 4 June, 2015 2.14pm AEST.

*valuable, drawing out important questions people would rather not answer. ... [the FRAB would comprise of] knowledgeable experts, crucially not tied to regulators, with a diverse membership that would “act as a safeguard against the FRAB being unduly influenced by the views of one particular group or industry sector”.*¹²⁵

Crucially, this proposal aims to introduce an arms length between those conducting the assessment □ the FRAB - and those being assessed. Apart from insulating the assessors - the FRAB - from a tendency towards the kinds of concurrence¹²⁶ that exists within the regulators, such distance will also, it is argued, be more likely to tease out instances of where the regulators have, or may become, suborned by the entities which they regulate, or by other powerful vested industry interests. If nothing more, a FRAB would constitute a double redundancy, a fail-safe, the aim

¹²⁵ Pat McConnell, “War on banking’s rotten culture must include regulators”, op cit. See further: Julie May, “Regulatory board to beef up watchdog accountability”, ‘News / Financial Planning’, *Financial Observer, Daily News for Financial Services Professionals*, 10 December, 2014; Marion Williams, “APRA and ASIC need cultural shift”, ‘Banking’, *Asia-Pacific Banking and Finance*, 9 March, 2015; Andrew Schmulow, “To clean up the financial system we need to watch the watchers”, ‘Business & Economy’, *The Conversation*, 4 March, 2015 2.11 pm AEDT; Ruth Williams, “Merit in oversight board for ASIC, but only if it’s got teeth”, ‘Business Day’, *The Sydney Morning Herald*, 28 January, 2015.

¹²⁶ This comports with anecdotal observations made by the author at APRA during the period October to December 2013.

of which would be to pick-up the problems that the regulators may have overlooked.

In addition, a FRAB could be expected to have a positive impact upon the corporate culture of the two peak regulators. Llewellyn points out that corporate culture within a regulator determines the extent to which it holds itself accountable, the way it exercises its discretion (which in turn affects its efficacy and its credibility, authority and public standing, and its ability to be a role model to regulatees for their own standards of corporate governance), the extent to which regulators continue to earn the public's trust and grow in esteem, the ease by which the regulator can be captured or subjected to undue political influence, the appropriate use of its own, considerable resources, and its ability to acquire and maintain international credibility.¹²⁷

This proposal has precedent in the UK which has established a Financial Policy Committee (FPC), the remit of which is to look for the roots of the next crisis.¹²⁸ Its role is to identify, monitor and take action to remove or reduce systemic risks. It has a secondary objective, which is to support the economic policy of the Government.¹²⁹

¹²⁷ David T. Llewellyn, op cit, p 41.

¹²⁸ Jill Treanor, op cit.

¹²⁹ Financial Policy Committee, "*Financial Policy Committee*", series edited by Bank of England, in *Financial Stability*, published by Bank of England, 2014, accessed: 26 September, 2014.

While the FPC is not identical to the proposed FRAB □ the latter is intended to be a regulator’s regulator and the former a macro-prudential regulator □ there are some similarities, particularly as regards the FPC’s binding authority over the system stability and market conduct regulators in the UK¹³⁰.

V VARIATIONS IN THE MODEL

It should be noted that Twin Peaks is a work in progress. Among the countries that now use this model - Australia, New Zealand, the Netherlands and the United Kingdom - differences exist. One key difference between the Australian model and those of the other countries listed is to be found in the jurisdictional location of the system stability regulator.

(a) Monopolistic versus Non-monopolistic Location of the Bank Regulator¹³¹

While in Australia the prudential regulator is an entity separate from the National Central Bank (NCB) □ the Reserve Bank of Australia (RBA) - such non-monopolist arrangements are not universal. That is to say, there are

¹³⁰ Anonymous, “*Definition of Financial Policy Committee FPC*”, in *The Financial Times*, published by The Financial Times Limited, accessed: 18 November, 2015.

¹³¹ The term ‘monopolist’ is a term of art defined by David T. Llewellyn, op cit at p 8ff.

instances where the regulator is part of the NCB (monopolist regimes), and others where the regulator is separate (non-monopolist regimes).¹³²

There is no definitive answer as to which regime is preferable, but the available evidence favours a non-monopolist approach. The advantages and disadvantages of each are as follows:

(i) The monopolist approach

The monopolist approach has a number of advantages. Chief among these are the synergies and efficiencies enjoyed by locating the regulator within the NCB.¹³³ The converse of which, is that in a bifurcated system there will, of necessity, be a degree of overlap between the information gathering activities of the NCB and the prudential regulator.¹³⁴ As the NCB will always collect information about individual banks, purely by virtue of its role in the conduct of monetary policy,¹³⁵ an argument can be made that the most efficient arrangement is to build on this, and locate the prudential authority within the NCB.

Indeed some argue¹³⁶ that when a financial system is under strain, it is infeasible for the entity that regulates the

¹³² Ibid, p 28.

¹³³ Ibid, p 30.

¹³⁴ Ibid, p 30.

¹³⁵ Ibid, p 30.

¹³⁶ Ibid, p 30.

entire system to be separate from the entity that regulates each financial firm, and this has been the view of De Nederlandsche Bank.

Further, in jurisdictions lacking a strong tradition of independent regulatory agencies, advantages may be gained by locating the regulator within an NCB, provided the NCB has a strong tradition of independence¹³⁷. The Republic of South Africa serves as a good example. South Africa is the most recent adopter of Twin Peaks, and the South African Reserve Bank (SARB) will house the new Prudential Authority (PA). The SARB's independence is enshrined in the South African Constitution.

*'The South African Reserve Bank, in pursuit of its primary object, must perform its functions independently and without fear, favour or prejudice, but there must be regular consultation between the Bank and the Cabinet member responsible for national financial matters.'*¹³⁸

However, as Nevin asserts:

'So essentially, the SARB and the finance ministry-controlled national treasury are the

¹³⁷ See further: *ibid*, § 9, p 11.

¹³⁸ Chapter 13, s 224(2), *Constitution of the Republic of South Africa*, No. 108 of 1996, (enacted: 1996), (Republic of South Africa). For an analysis of the degree of independence enjoyed by the SARB see: D. Schmulow & L. Greyling, "Monetary Policy in the New South Africa: Economic and Political Constraints", *South African Journal of Economics*, Vol. 64, no. 3 (September, 1996), p 176.

monetary authority in South Africa, although the Constitution expressly enshrines the SARB's independence ... The apparent contradiction - being independent on the one hand and having joint authority over monetary matters with the finance ministry on the other - tends to cause confusion amongst South Africans and seemingly friction between the SARB and the government.'

139

This position has precedent, because it is not infrequently the case that the NCB enjoys a measure of statutory, if not constitutional independence.¹⁴⁰ This independence and reputational status are easier to extend to a prudential authority located within the NCB, than without. But, of course, the converse is also true: a failure by the prudential authority located within an NCB will damage the reputation of the NCB¹⁴¹. Moreover, the mere presence of the prudential authority within the NCB will contaminate the purity of the monetary stability objectives

¹³⁹ Tom Nevin, "How independent is the South-African Reserve Bank?", *African Business*, no. 332 (June, 2007), p 32.

¹⁴⁰ David T. Llewellyn, *op cit*, p 31.

¹⁴¹ See the remarks made by SARB Governor, Dr Chris Stals, quoted in C. Goodhart, P. Hartmann, D.T. Llewellyn, L. Rojas-Suarez & S. Weisbrod, *op cit*, p 170/1. See also Stals' solution through enactment of separate legislation for the PA and the SARB, *ibid*, p 171.

of the NCB, by introducing bank safety and soundness considerations.¹⁴²

Conversely the NCB may be able to gain valuable insights into the state of the economy by conducting the activities of the Prudential Authority (PA).¹⁴³ Heller¹⁴⁴ and Di Noia *et al*¹⁴⁵ state that an ability to influence bank policy through regulatory pressure may add to the efficacy of monetary policy.¹⁴⁶ They argue that due to the interrelationship between the activities of the NCB and the PA, co-ordination is a necessary prerequisite.¹⁴⁷ Management of the payments system to contain systemic

¹⁴² David T. Llewellyn, op cit, p 31.

¹⁴³ Carmine Di Noia & Giorgio Di Giorgio, “Should banking supervision and monetary policy tasks be given to different agencies?”, *International Finance*, Vol. 2, no. 3 (November, 1999), p 367. The authors cite a study into the US economy in which confidential supervisory information on bank ratings allowed the Federal Reserve to make more accurate predictions on macro-economic variables such as rates of inflation and unemployment. Ibid, p 367.

¹⁴⁴ H. Robert Heller, “Prudential supervision and monetary policy”, Chap. 11, in *International Financial Policy: Essays in Honour of Jacques J. Polak*, September, 1991, p 272.

¹⁴⁵ Carmine Di Noia & Giorgio Di Giorgio, *International Finance*, op cit, p 367.

¹⁴⁶ See also: Vasso P. Ioannidou, “Monetary Policy And Bank Supervision”, Paper presented at the Federal Reserve Bank of Chicago Conference on Bank Structure and Competition, *Federal Reserve Bank of Chicago Conference on Bank Structure and Competition Proceedings*, Chicago, IL, series editor: Federal Reserve Bank of Chicago, in ‘Federal Reserve Bank of Chicago Conference on Bank Structure and Competition Proceedings’, May 2002, p 2.

¹⁴⁷ Carmine Di Noia & Giorgio Di Giorgio, *International Finance*, op cit, p 367.

risk may also require access, control and monitoring of the participants in the system.¹⁴⁸

Doubtless this assertion - the necessity of co-ordination - is correct. However, it is not correct to argue that co-ordination, of necessity, precludes two separate entities, as analysis of the Australian model demonstrates¹⁴⁹.

According to Haubrich, the information advantages derived from a monopolistic approach are ‘particularly needed in times of financial crisis, when only direct supervision can deliver the essential information on time.’

¹⁵⁰ Similarly, a central bank supervising the banking system may be better placed to know whether a bank seeking assistance from the NCB as lender of last resort is insolvent, or simply illiquid.¹⁵¹ However, as Goodhart *et al*¹⁵² argue, ‘the revealed preference of monetary authorities has been to rescue banks running into difficulties, so long as there

¹⁴⁸ Ibid, p 368, citing Charles Goodhart & Dirk Schoenmaker, “Institutional separation between supervisory and monetary agencies”, *Giornale degli economisti e annali di economia*, Vol. 51, no. 9/12 (October-December, 1992), p 370.

¹⁴⁹ For more on inter-agency co-ordination, see: A.D Schmulow, January, 2015, p 45 ff.

¹⁵⁰ Joseph G. Haubrich, “Combining bank supervision and monetary policy”, *Economic Commentary* (November, 1996), p 4.

¹⁵¹ Carmine Di Noia & Giorgio Di Giorgio, *International Finance*, op cit, p 368. See also: Vasso P. Ioannidou, “Does monetary policy affect the central bank’s role in bank supervision?”, *Journal of Financial Intermediation*, Vol. 14, no. 1 (January, 2005), p 61.

¹⁵² Charles Goodhart & Dirk Schoenmaker, “Should the Functions of Monetary Policy and Banking Supervision Be Separated?”, *Oxford Economic Papers*, Vol. 47, no. 4 (October, 1995), p 549.

appeared to be any risk of a systemic knock-on effect'¹⁵³ and that, consequently, the argument in favour of an NCB being better placed to know whether a bank seeking credit merits assistance, does not hold. Additionally Haubrich's argument does not of necessity exclude a non-monopolist approach. Close co-ordination, as currently exists in Australia¹⁵⁴, between the NCB and the PA, with clearly defined processes, may provide the necessary mechanisms for systemic stability.¹⁵⁵

¹⁵³ Vasso P. Ioannidou, "Does monetary policy affect the central bank's role in bank supervision?", *Journal of Financial Intermediation*, op cit, p 61.

¹⁵⁴ Anonymous, *Memorandum of Understanding*, 12 October, 1998; The Council of Financial Regulators, op cit: 'In the CFR, members share information, discuss regulatory issues and, if the need arises, coordinate responses to potential threats to financial stability. The CFR also advises Government on the adequacy of Australia's financial regulatory arrangements'; and The Council of Financial Regulators, *Memorandum of Understanding on Financial Distress Management between the Members of the Council of Financial Regulators*, The Reserve Bank of Australia, The Australian Prudential Regulation Authority, The Australian Securities and Investments Commission and The Treasury of the Commonwealth of Australia, 18 September, 2008.

¹⁵⁵ Contra, see Vasso P. Ioannidou, "Does monetary policy affect the central bank's role in bank supervision?", *Journal of Financial Intermediation*, op cit, p 61, fn 3: 'This argument assumes that it is not possible for a third party, responsible for bank supervision, to transfer information effectively to the [Lender of Last Resort]. This assumption is clearly debatable. However, it seems more plausible during periods of financial instability, since the speed and the degree with which the condition of an institution deteriorates is significantly higher during periods of financial instability. Moreover, it is in "bad" times that institutions are more likely to "cook" their books and hide their true condition. Hence, under these circumstances direct supervision could help deliver the essential information on time.'

Moreover, a separation between the PA and the NCB may serve to insulate the NCB from the reputational harm¹⁵⁶ associated with the failure of a regulated institution, as was the case with the collapse of the Australian insurer, HIH.¹⁵⁷

(ii) The non-monopolist approach

In selecting to separate the PA from the NCB, and thereby adopt a non-monopolist approach, the Wallis Commission¹⁵⁸ set forth its main reasons as entailing the avoidance of the inefficiencies that arise when combining deposit taking, insurance and superannuation regulation, carried out by a 'central bank whose primary operational relationships are with banks alone and whose operational skills and culture have long been focused on banking'; and further that that separation would clarify that there are no guarantees of solvency for any financial institution, or its promises; and that separation would enable both the RBA (NCB) and the APRC (now APRA □ the PA) to focus on their primary objectives, while clarifying lines of accountability¹⁵⁹.

¹⁵⁶ Carmine Di Noia & Giorgio Di Giorgio, *International Finance*, op cit, p 369.

¹⁵⁷ See: The HIH Royal Commission, 16 April, 2003.

¹⁵⁸ Stan Wallis, Bill Beerworth, Professor Jeffrey Carmichael, Professor Ian Harper & Linda Nicholls, 31 March, 1997.

¹⁵⁹ Ibid, p 21.

*We argue that conducting supervision through two separate agencies (one for macro- [NCB] and one for micro-prudential [PA] supervision) could introduce the necessary checks and balances in the supervisory process that could potentially strengthen governance.*¹⁶⁰

While empirical evidence in support of a non-monopolist approach remains scant, one survey¹⁶¹ finds that inflation is ‘considerably higher and more volatile’ in countries where the PA is located within the NCB.¹⁶² In addition, a non-monopolist regulatory approach can be said to comport more closely with the Core Principles of Basel III - in particular Principle 2¹⁶³ - and is often synonymous with a more competitive financial system.¹⁶⁴

¹⁶⁰ Donato Masciandaro, Rosaria Vega Pansini & Marc Quintyn, *The Economic Crisis: Did Financial Supervision Matter?*, in ‘IMF Working Paper’, no. WP/11/261, International Monetary Fund, November, 2011, p 5. See also an earlier study: Donato Masciandaro, Marc Quintyn & Michael Taylor, *Financial Supervisory Independence and Accountability – Exploring the Determinants*, *ibid* no. WP/08/147, June, 2008, p 23.

¹⁶¹ Carmine Di Noia & Giorgio Di Giorgio, *International Finance*, *op cit*.

¹⁶² *Ibid*, pp 361, 372. According to their research, anywhere from 50 per cent to 100 per cent higher. *Ibid*, p 370. See also David T. Llewellyn, *op cit*, p 29. Contra, see: Vasso P. Ioannidou, “Monetary Policy And Bank Supervision”, *op cit*, p 1.

¹⁶³ Principle 2 states ‘– *Independence*, accountability, resourcing and legal protection for supervisors: The supervisor possesses *operational independence*, transparent processes, sound governance, budgetary processes that do not undermine *autonomy* and adequate resources, and is accountable for the discharge of its duties and use of its resources. The legal framework for banking supervision includes legal protection for the supervisor.’ (Emphasis added). Basel Committee on Banking Supervision, *Core Principles for Effective Banking Supervision*, Bank for

Di Noia *et al*¹⁶⁵ find evidence of this in higher lending-borrowing spreads in countries with a PA integrated into the NCB, as well as the other indicators of bank profitability and efficiency, both of which are lower in countries with an integrated, monopolist NCB-PA structure. For example, staff costs are on average 50 per cent higher, and bank reserves as much as 300 per cent higher, in monopolist jurisdictions. Crucially, such a major difference in reserves between monopolist and non-monopolist countries is ascribed to the difference in the way in which the compulsory reserve requirement is employed between the two. In the former this requirement is used both as a monetary policy tool and a form of depositor protection.¹⁶⁶ Furthermore, countries with monopolist regimes are typified by higher non-bank deposits, and less intensive use of the interbank market.¹⁶⁷

*Banking sectors in 'monopolist' countries are more protected and somehow less developed and efficient than those in 'non-monopolist' countries.*¹⁶⁸

International Settlements, September, 2012, § 41, p 10. See also David T. Llewellyn, *op cit*, p 41.

¹⁶⁴ Carmine Di Noia & Giorgio Di Giorgio, *International Finance*, *op cit*, p 373.

¹⁶⁵ *Ibid*, p 373/4.

¹⁶⁶ *Ibid*, p 375.

¹⁶⁷ *Ibid*, p 376.

¹⁶⁸ *Ibid*, p 376.

There are, in addition, conflicts of interest¹⁶⁹ that ought to be considered when locating the PA. The NCB's focus is primarily a macro-prudential one, whereas the PA's focus is chiefly micro-prudential. Consequently, as lender of last resort, the NCB may find itself under pressure to assist regulated institutions when the PA is located within the NCB. It is argued that such conflicts of interest are best avoided.

For example, a typical conflict that may arise is that the NCB is concerned with the stability of the banking system, primarily for the effect that that instability may have on the payments system, its capacity to transmit monetary policy signals, and the costs associated with its lender of last resort function in a crisis.¹⁷⁰ Conversely, the PA's primary concern is monetary stability, for the effect it has on interest rates and possibly exchange rates¹⁷¹ and, in turn, the effect those factors have on bank profitability and, by implication, bank soundness.

Within this more usual context, the conflict of interest may arise between the monetary authorities, who wish for higher rates (e.g. to maintain an exchange rate peg, to bear down on inflation, or to reduce the pace of monetary

¹⁶⁹ See also: *ibid*, p 368.

¹⁷⁰ *Ibid*, p 367.

¹⁷¹ *Ibid*, p 367.

*growth), and the regulatory authorities who are frightened about the adverse effects such higher rates may have upon the bad debts, profitability, capital adequacy and solvency of the banking system.*¹⁷²

The corollary to this is when the monetary authority displays a preference for lower interest rates: if, in such an environment, bank profitability is typically low, or bank balance sheet structures are vulnerable to lower interest rates, then a further lowering of interest rates may contribute to greater bank vulnerability, and may be opposed by the PA. This potentially creates an irreconcilable tension between the PA and the NCB. Conversely, excessive focus on the PA's concerns in the setting of monetary policy may worsen bank fragility in the long run.¹⁷³

The sign on the estimated coefficient of monetary policy indicates that when the Fed tightens monetary policy, it becomes less strict in bank supervision (i.e., an increase in interest rates or a decrease in reserves is associated with a lower probability of intervention). One possible explanation is that the Fed tends to be less strict

¹⁷² Charles Goodhart & Dirk Schoenmaker, "Institutional separation between supervisory and monetary agencies", *Giornale degli economisti e annali di economia*, op cit, p 361.

¹⁷³ H. Robert Heller, op cit, p 273.

*on bank supervision in order to compensate banks for the extra pressure it puts on them when it tightens monetary policy. The Fed might be interested in compensating troubled banks either because it is concerned about possible adverse effects from bank failures on its reputation or because it is concerned about possible knock-on effects. After all, the Fed is responsible for maintaining the stability of the financial system and it is responsible for the supervision of some of the biggest banks in the United States.*¹⁷⁴

A further instance for potential conflicts of interest between the NCB and the PA include the expectation that the NCB will be influenced by stability considerations, when determining monetary policy,¹⁷⁵ and those stability considerations may override the enforcement considerations of the PA. This is especially so in respect of sanctions imposed by the PA, for malfeasance. If those sanctions were to occur simultaneous with a crisis, the NCB may be expected to persuade the PA to forebear.

¹⁷⁴ Vasso P. Ioannidou, “Does monetary policy affect the central bank’s role in bank supervision?”, *Journal of Financial Intermediation*, op cit, p 60.

¹⁷⁵ Carmine Di Noia & Giorgio Di Giorgio, *International Finance*, op cit, p 369.

Lastly, Di Noia *et al*¹⁷⁶ assert that conflicts may arise between macro (monetary) and micro (regulatory) policy, in that monetary policy tends to be anti-cyclical, whereas regulatory policy tends to be pro-cyclical.¹⁷⁷ Di Noia *et al*¹⁷⁸ cite an example where, during an economic slowdown, a bank's non-performing loans may increase, precipitating higher loan-loss provisioning rules, and pressure from the regulator to increase the quality of the bank's loan portfolio, by ceasing to extend funds to higher risk borrowers. As Tuya *et al*¹⁷⁹ point out, this leads to a restriction in credit at precisely the time when monetary policy should be expansionary.¹⁸⁰

VI CONCLUSION

¹⁷⁶ Ibid, p 369.

¹⁷⁷ Charles Goodhart & Dirk Schoenmaker, "Institutional separation between supervisory and monetary agencies", *Giornale degli economisti e annali di economia*, op cit, p 362.

¹⁷⁸ Carmine Di Noia & Giorgio Di Giorgio, *International Finance*, op cit, p 369.

¹⁷⁹ José Tuya & Lorena Zamalloa, "Issues on Placing Banking Supervision in the Central Bank", Chap. 26, in *Frameworks for Monetary Stability: Policy Issues and Country Experiences. Papers presented at the sixth seminar on central banking, Washington, D.C., March 1-10, 1994*, edited by Tomás J.T. Baliño & Carlo Cottarelli, series editor: the International Monetary Fund, December, 1994, p 670.

¹⁸⁰ For more on the correlation between an expansionary monetary policy and a monopolist regulatory structure, see: David T. Llewellyn, op cit, p 29; H. Robert Heller, op cit, p 272.

The wisdom of the objectives-based architecture [has] been borne out to a considerable extent by the Australian experience. “This model avoids the conflict of objectives faced by regulators under virtually every other architecture. Where an agency faces multiple objectives there is a danger … that one will, for whatever reason, dominate the other in terms of visibility with senior management and/or allocation of resources (as appears to have been the case with Northern Rock in the UK).”¹⁸¹

The Twin Peaks regime has principally six advantages. First, by assigning each regulatory agency a single objective, there is maximum regulatory focus.

Second, there are significant potential synergies in bringing together all regulators of a particular market. APRA, for example, was able to bring together best practices from banking and insurance regulation to create a stronger framework for both. APRA was also one of the first agencies to apply a broad risk-based supervisory approach to all prudentially regulated sectors of the financial system. Similarly, Australia was one of the first

¹⁸¹ Alex Erskine, July, 2014, p 43, citing Professor Jeffrey Carmichael, “Regulation by Objective – The Australian Approach to Regulation: Statement to the US Senate Committee on State Homeland Security and Governmental Affairs”, Washington, DC, in ‘Statement to the US Senate Committee on State Homeland Security and Governmental Affairs’, 21 May 2009, p 6.

countries in the world to introduce a single licensing regime for market participants, by bringing all markets under ASIC's purview.

Third, bringing all prudentially regulated entities under one roof is conducive to eliminating regulatory arbitrage.¹⁸² Prior to the creation of APRA there were at least three different types of institutions able to issue demand deposits in Australia. These were regulated by nine different agencies. Following its creation, APRA introduced a fully harmonised regime for all deposit-taking institutions. These are now regulated as "Authorised Deposit-taking Institutions" (ADIs) under a single licensing regime. This coherence over deposit taking was important in retarding the growth of a significant shadow-banking sector in Australia.

Fourth, bringing all prudentially regulated institutions under one roof should facilitate a more consistent and effective approach to regulating financial conglomerates. APRA has been at the forefront of international efforts to develop a framework for consolidated supervision of conglomerates.

Fifth, allocating a single objective to each regulator minimises the overlap between agencies and the inevitable turf wars that accompany such overlaps. There are always grey areas in practice, however neat the principles might

¹⁸² Cf David T. Llewellyn, *op cit*, p 22.

appear in theory. The greatest potential overlaps are between prudential regulation and systemic stability regulation on the one hand (to the extent that prudential soundness provides one of the key foundation stones for systemic stability), and between prudential and conduct regulation on the other (to the extent that they each involve regulation of different aspects of the same institutions). Notwithstanding the potential for overlap, these have tended to diminish rather than amplify with time and experience. In part this is a consequence of the clear lines of responsibility in each situation. And, in part, it is a consequence of the determination by the key parties to co-operate in the interests of the system as a whole.

Sixth, the allocation of a single objective to each agency should minimise cultural clashes. As a general rule, conduct agencies are dominated by lawyers. Prudential agencies, in contrast, are typically dominated by accountants, economists, and finance experts. When these two groups are combined in the same agency there can be a clash of cultures as one seeks to dominate the other.¹⁸³

A fairly typical phenomenon of financial regulation is that in most countries the regulatory system was designed in response to a financial system which, thanks

¹⁸³ Professor Jeffrey Carmichael, “Regulation by Objective – The Australian Approach to Regulation: Statement to the US Senate Committee on State Homeland Security and Governmental Affairs”, op cit, p 6/7.

to innovation, no longer exists.¹⁸⁴ Consequently, financial innovation also requires regulatory system reform. On balance, Twin Peaks is the regulatory paradigm most well-suited to respond to these innovations. It is to be expected, therefore, that an increasing number of countries will, over time, adopt this system. Twin Peaks is not, however an irrevocable guarantee of financial system stability.

*New structures do not guarantee better regulation. More appropriate structures may help but, fundamentally, better regulation comes from stronger laws, better-trained staff and better enforcement. Any country that thinks that tinkering with the structure of agencies will, by itself, fix past shortcomings is doomed to relive its past crises.*¹⁸⁵

... institutional structure does not in itself guarantee effective regulation and supervision, and it would be hazardous to assume that changing the structure of regulatory institutions is itself a panacea. What institutional structure does is establish the framework in which to optimise a regulatory regime. In effect,

¹⁸⁴ David T. Llewellyn, op cit, p 9.

¹⁸⁵ Professor Jeffrey Carmichael, "Australia's Approach to Regulatory Reform", op cit, p 95/6.

*institutional structure provides the architecture of regulation and supervision.*¹⁸⁶

To this must be added a regulatory culture that enshrines, as Das *et al*¹⁸⁷ assert, independence, accountability, transparency, and integrity. If the contention contained in this paper is correct, that regulators, and particularly prudential regulators, are required to foresee the unforeseeable, then in addition there should be a culture that rewards regulators that display those characteristics of independence, accountability, transparency and integrity, while inculcating a culture of curiosity and robust self-criticism.

With apologies to Sir Winston Churchill¹⁸⁸, Twin Peaks is not the end. It is not even the beginning of the end. It is merely the end of the beginning.

¹⁸⁶ David T. Llewellyn, *op cit*, p 42.

¹⁸⁷ Udaibir C. Das & Marc Quintyn, *Crisis Prevention and Crisis Management: The Role of Regulatory Governance*, in 'IMF Working Paper', no. WP/02/163, International Monetary Fund, September, 2002, p 48.

¹⁸⁸ Churchill's address to The Lord Mayor's Luncheon, Mansion House, 10 November, 1942. The original quote reads: "Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning. Henceforth Hitler's Nazis will meet equally well armed, and perhaps better armed troops. Hence forth they will have to face in many theatres of war that superiority in the air which they have so often used without mercy against others, of which they boasted all round the world, and which they intended to use as an instrument for convincing all other peoples that all resistance to them was hopeless....". The Churchill Society, "*The Lord Mayor's Luncheon, Mansion House, "The End of the Beginning", November 10, 1942*", published by The Churchill Society, Undated, accessed: 8 October, 2015.

VII REFERENCES

- Abrams, Richard K. & Michael W. Taylor, *Issues in the Unification of Financial Sector Supervision*, series edited by David S. Hoelscher, in 'IMF Working Paper', no. WP/00/213, Monetary and Exchange Affairs Department, International Monetary Fund, published by International Monetary Fund, Washington, DC, December 2000, pp 1-32, <http://www.imf.org/external/pubs/ft/wp/2000/wp00213.pdf>.
- Alawode, Abayomi A. & Mohammed Al Sadek, *What is Financial Stability?*, series edited by Central Bank of Bahrain, in 'Financial Stability Paper Series', no. 1, Financial Stability Directorate, Central Bank of Bahrain, published by Central Bank of Bahrain, Bahrain, UAE, March 2008, pp 1-26, [http://www.cbb.gov.bh/assets/FSP/What is Financial Stability.pdf](http://www.cbb.gov.bh/assets/FSP/What%20is%20Financial%20Stability.pdf).
- Australian Prudential Regulation Authority Act (Cth)*, No. 50 of 1998, (Australia)
- Australian Securities and Investments Commission Act (Cth)*, No. 51 of 2001, (Australia)
- Constitution of the Republic of South Africa*, No. 108 of 1996, (enacted: 1996), (Republic of South Africa)
- Anonymous, "Definition of Financial Policy Committee FPC", in *The Financial Times*, published by The Financial Times Limited, London, UK, accessed: 18 November 2015, <http://lexicon.ft.com/Term?term=Financial-Policy-Committee--FPC>.
- Financial Sector Regulation Bill*, 11 December, 2013, (Republic of South Africa)
- Financial Services Reform Act (Cth)*, No. 122 of 2001, (enacted: 27 September), (Australia)
- Anonymous, *Memorandum of Understanding*, The Reserve Bank of Australia and The Australian Prudential Regulation Authority, published by The Australian

Prudential Regulation Authority, Sydney, NSW, 12 October 1998, pp 1-3, <http://www.apra.gov.au/MediaReleases/Documents/Memorandum-of-Understanding-Reserve-Bank-of-Australia-and-APRA.PDF>.

Armitage, Jim & Nick Goodway, “HBOS collapse back in spotlight”, ‘Business’, *Independent Newspapers*, published by Independent Media Pty Ltd, Cape Town, RSA, 20 November, 2015 at 9:12pm, <http://beta.iol.co.za/business/international/hbos-collapse-back-in-spotlight-1948511>.

Australian Government, The Treasury, The Treasury Commonwealth Government of Australia, “*Statement of Expectations for the Australian Prudential Regulation Authority*”, 1-8, <http://www.apra.gov.au/AboutAPRA/documents/Statement-of-Expectations-from-Treasurer-20-Feb-07.pdf>.

Australian Prudential Regulation Authority, *Probability and Impact Rating System*, series edited by Australian Prudential Regulation Authority, Australian Prudential Regulation Authority, published by Australian Prudential Regulation Authority, Sydney, NSW, June 2012, pp 1-26, <http://www.apra.gov.au/CrossIndustry/Documents/PAIRS-062012-External-version.pdf>.

Australian Prudential Regulation Authority, *Supporting Materials for Assessment Against the Basel Core Principles*, in ‘*IMF Financial Sector Assessment Program □ Australia*’, Australian Prudential Regulation Authority, published by Australian Prudential Regulation Authority, Sydney, NSW, 2006, pp 1-126, <http://www.apra.gov.au/aboutapra/documents/imf-adi-financial-sector-assessment-program.pdf>.

Basel Committee on Banking Supervision, *Core Principles for Effective Banking Supervision*, Basel Committee on Banking Supervision, Bank for International Settlements, published by Bank for International

- Settlements, Basel, Switzerland, September 2012, pp 1-79, <http://www.bis.org/publ/bcbs230.pdf>.
- Baxter, Lawrence G., “Capture Nuances in Financial Regulation”, *Wake Forest Law Review*, Vol. 47, no. 3, Fall, 2012, pp: 537, http://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=5266&context=faculty_scholarship.
- Beckett, Ian, “Financial regulation in Australia since the GFC”, *JASSA, The Finsia Journal of Applied Finance*, no. 3, 2012, pp: 20-24, 0313-5934, <http://search.informit.com.au.ezp01.library.qut.edu.au/documentSummary;dn=840895601650657;res=IELAPA>.
- Bell, Stephen & Andrew Hindmoor, *Masters of the Universe, Slaves of the Market*, in ‘Business & Economics, Banks & Banking’, published by Harvard University Press, Cambridge, MASS, 2015, 400 pages, pp 1-400, 978-0-674-74388-5, <https://books.google.com.au/books?id=U6PLBgAAQBAJ>.
- Bhati, Shyam, “An Analysis of the Financial Services Regulations of Australia”, *International Review of Business Research Papers*, Vol. 4, no. 2, March, 2008, pp: 13-25, <http://www.irbrp.com/static/documents/March/2008/1423375714.pdf>.
- Black, Julia, “Managing Regulatory Risks and Defining the Parameters of Blame: A Focus on the Australian Prudential Regulation Authority”, *Law & Policy*, Vol. 28, no. 1, January, 2006, pp: 1-30, http://www.heinonline.org.ezp.lib.unimelb.edu.au/HOL/Page?handle=hein.journals/modlr71&div=6&collection=journals&set_as_cursor=1&men_tab=srchresults&terms=Black,Julia&type=matchall.
- Black, Julia, “Regulatory Styles and Supervisory Strategies”, Part III. Delivering Outcomes and Regulatory Techniques, Chap. 8, in *The Oxford Handbook of Financial Regulation*, edited by Niamh Moloney, Eilís Ferran & Jennifer Payne, published by Oxford University Press, Oxford, UK, August, 2015, pp 217-

253, 978-0-19-968720-6,
<http://ukcatalogue.oup.com/product/9780199687206.do>.

Briault, Clive, “The rationale for a single national financial services regulator”, *Financial Services Authority Occasional Paper*, no. 2, 1999.

Buckley, Ross, “Australia’s banking culture: What has gone wrong?”, ‘Comment’, *The Canberra Times*, published by Fairfax Media, Ltd, Canberra, ACT, 16 June, 2015, 16 June, 2015,
<http://www.canberratimes.com.au/comment/australias-banking-culture-what-has-gone-wrong-20150616-ghp4ct.html>.

Calomiris, Charles W. & Gary Gorton, *The Origins of Banking Panics: Models, Facts, and Bank Regulation*, paper presented at the Rodney L. White Center for Financial Research, The Wharton School, published by University of Pennsylvania, Philadelphia, PA, November 1990, pp 104,
<http://finance.wharton.upenn.edu/~rlwctr/papers/9011.PDF>.

Campbell, A. & R. Lastra, “Revisiting the Lender of Last Resort”, *Banking and Finance Law Review*, Vol. 24, no. 3, June, 2009, pp: 453-497.

Carmichael, Professor Jeffrey, “Australia’s Approach to Regulatory Reform”, Chap. 3, Making the Structural Decision, in *Aligning Financial Supervisory Structures with Country Needs*, edited by Jeffrey Carmichael, Alexander Fleming & David T. Llewellyn, in ‘WBI Learning Resource Series’, series editor: World Bank Institute, published by The International Bank for Reconstruction and Development/The World Bank, Washington, DC, 2004, pp 93-113, 0-8213-6002-7,
<http://elibrary.worldbank.org.ezp.lib.unimelb.edu.au/doi/pdf/10.1596/0-8213-6002-7>.

Carmichael, Professor Jeffrey, “Implementing Twin Peaks. Lessons from Australia”, Chap. 5, in *Institutional Structure of Financial Regulation: Theories and International Experiences* 1st ed., edited by Robin

Hui Huang & Dirk Schoenmaker, in 'Part II, International experiences', series editor: Routledge Research in Finance and Banking Law, published by Routledge Oxford, 2014, pp 1-280, 978-0415726870, [http://reader.eblib.com.au.ezp.lib.unimelb.edu.au/\(S\(3po0djfcpcig4a0teuad2cfh\)\)/PrintProcess.aspx?p=122&m=2&c=122,123,124,125,126,127](http://reader.eblib.com.au.ezp.lib.unimelb.edu.au/(S(3po0djfcpcig4a0teuad2cfh))/PrintProcess.aspx?p=122&m=2&c=122,123,124,125,126,127).

Carmichael, Professor Jeffrey, "Regulation by Objective \square The Australian Approach to Regulation: Statement to the US Senate Committee on State Homeland Security and Governmental Affairs", Washington, DC, in 'Statement to the US Senate Committee on State Homeland Security and Governmental Affairs', published by Senate of the United States of America, 21 May, 2009, pp 1-8.

Coffee, John C., Jr. & Hillary A. Sale, "Redesigning the SEC: Does the Treasury have a better idea?", *Virginia Law Review*, Vol. 95, June, 2009, pp: 707-785, <http://www.heinonline.org.ezp.lib.unimelb.edu.au/HOL/Page?handle=hein.journals/valr95&id=715&collection=journals&index=journals/valr>.

Cooper, Jeremy, "The integration of financial regulatory authorities \square the Australian experience", Paper presented at the Comissão de Valores Mobiliários (Securities and Exchange Commission of Brazil), 30th Anniversary Conference 'Assessing the Present, Conceiving the Future', Rio de Janeiro, Brazil, published by Australian Securities & Investment Commission, 4-5 September, 2006, pp 1-14, <http://download.asic.gov.au/media/1339352/integration-financial-regulatory-authorities.pdf>.

Corrigan, E. Gerald, "The Banking-Commerce Controversy Revisited", *Federal Reserve Bank of New York Quarterly Review*, Vol. 16, no. 1, 1991, 0147-6580, http://pd3rz7eg6w.search.serialssolutions.com/?ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF-8&rft_id=info:sid/summon.serialssolutions.com&rft_val_fmt=info:ofi/fmt:mtx:journal&rft.genre=article&rft.atitle=The+Banking-

[Commerce+Controversy+Revisited&rft.jtitle=Federal+Reserve+Bank+of+New+York+Quarterly+Review&rft.au=Corrigan%2C+E.+Gerald&rft.date=1991-01-01&rft.pub=Federal+Reserve+Bank+of+New+York&rft.issn=0147-6580&rft.volume=16&rft.issue=1&rft.spage=1&rft.externalDocID=904956.](http://www.federalreserve.gov/newsevents/record/20090101a)

- Crockett, A., “ *International Financial Arrangements: Architecture and Plumbing*”, Paper presented at the Third David Finch Lecture, University of Melbourne, 12 November, 1999, pp 16, <http://www.bis.org/speeches/sp991115.htm>.
- Curtis, Rob, “Solvency as a Focal Point of Prudential Regulation: Supervisory Lessons and Challenges”, Chap. 6, in *The Future of Insurance Regulation and Supervision: A Global Perspective*, edited by Patrick M. Liedtke & Jan Monkiewicz, published by Palgrave Macmillan, New York, NY, 2011, pp 87-108, [https://books.google.com.au/books?id=bbZeAQAQBAJ&lpg=PA93&ots=Egl_UnYdKg&dq=This makes HIH one of the biggest collapses in Australian corporate history.&pg=PA93 - v=onepage&q&f=true](https://books.google.com.au/books?id=bbZeAQAQBAJ&lpg=PA93&ots=Egl_UnYdKg&dq=This+makes+HIH+one+of+the+biggest+collapses+in+Australian+corporate+history.&pg=PA93-v=onepage&q&f=true).
- Das, Udaibir C. & Marc Quintyn, *Crisis Prevention and Crisis Management: The Role of Regulatory Governance*, series edited by International Monetary Fund, in ‘*IMF Working Paper*’, no. WP/02/163, Monetary and Exchange Affairs Department, International Monetary Fund, published by International Monetary Fund, Washington, DC, September 2002, pp 1-67, <https://www.imf.org/external/pubs/ft/wp/2002/wp02163.pdf>.
- De Nederlandsche Bank, *Annual Report 2009*, 600 ed., series edited by De Nederlandsche Bank NV, De Nederlandsche Bank NV, published by De Nederlandsche Bank NV, Amsterdam, NL, 24 March 2010, pp 1-203, [http://www.dnb.nl/en/binaries/DNB Annual Report 2009_tcm47-234201.pdf](http://www.dnb.nl/en/binaries/DNB+Annual+Report+2009_tcm47-234201.pdf).

- De Nederlandsche Bank, *DNB Supervisory Strategy 2010 - 2014*, series edited by De Nederlandsche Bank, in ‘*Supra-institutional perspective, strategy and culture*’, De Nederlandsche Bank, published by De Nederlandsche Bank, Amsterdam, NL, April 2010, pp 1-27, [http://www.dnb.nl/en/binaries/DNB Supervisory Strategy 2010-2014_tcm47-238092.pdf](http://www.dnb.nl/en/binaries/DNB_Supervisory_Strategy_2010-2014_tcm47-238092.pdf).
- De Nederlandsche Bank, *DNB Supervisory Strategy 2010 - 2014 and Themes 2010*, series edited by De Nederlandsche Bank, De Nederlandsche Bank, published by De Nederlandsche Bank, Amsterdam, NL, April 2010, pp 1-38, [http://www.dnb.nl/en/binaries/DNB Supervisory Strategy 2010 - 2014 and Themes 2010_tcm47-230507.pdf](http://www.dnb.nl/en/binaries/DNB_Supervisory_Strategy_2010_-_2014_and_Themes_2010_tcm47-230507.pdf).
- De Nederlandsche Bank, “*IMF publishes its report on financial sector and supervision in the Netherlands*”, in *News*, published by De Nederlandsche Bank, Amsterdam, NL, 22 June, 2011, accessed: 9 January 2015, <http://www.dnb.nl/en/news/news-and-archive/nieuws-2011/dnb254424.jsp>.
- Denning, Steve, “Lest We Forget: Why We Had A Financial Crisis”, *Forbes*, (22 November, 2011), published electronically by Forbes.com LLC, Jersey City, NJ, <http://www.forbes.com/sites/stevedenning/2011/11/22/5086/>.
- Di Noia, Carmine & Giorgio Di Giorgio, “Should banking supervision and monetary policy tasks be given to different agencies?”, *International Finance*, Vol. 2, no. 3, November, 1999, pp: 361-378, 1468-2362, <https://web-b-ebsohost-com.ezp.lib.unimelb.edu.au/ehost/detail?vid=3&sid=341ea424-bf13-40af-b0a8-4c3fb0b91028%40sessionmgr115&hid=120&bdata=JnNpdGU9ZWwhvc3QtbGl2ZQ%3d%3d>.
- Diamond, Douglas W. & Philip H. Dybvig, “Bank Runs, Deposit Insurance, and Liquidity”, *Journal of Political Economy*, Vol. 91, no. 3, June, 1983, pp: 401-419, <http://0->

www.jstor.org.library.vu.edu.au/stable/pdfplus/1837095.pdf?acceptTC=true.

Douglas, Mary & Aaron Wildavsky, *Risk and Culture: An Essay on the Selection of Technological and Environmental Dangers*, revised ed., published by University of California Press, Oakland, CA, 1983, 224 pages, pp 1-232, 9780520907393, <http://site.ebrary.com/lib/unimelb/reader.action?docID=10676258>.

Edey, Malcom, “*Macroprudential Supervision and the Role of Central Banks*”, Paper presented at the Regional Policy Forum on Financial Stability and Macroprudential Supervision Hosted by the Financial Stability Institute and the China Banking Regulatory Commission, Beijing, PRC, in ‘Speeches’, published by The Reserve Bank of Australia, Sydney, NSW, 28 September, 2012, sponsored by the Financial Stability Institute and the China Banking Regulatory Commission, <http://www.rba.gov.au/speeches/2012/sp-ag-280912.html>.

Erskine, Alex, *Regulating the Australian Financial System*, in ‘*Funding Australia’s Future*’, Australian Centre for Financial Studies, published by Australian Centre for Financial Studies, Melbourne, Vic, July 2014, pp 1-54, http://fundingaustraliasfuture.com/sites/fundingaustraliasfuture.com/files/papers/Regulating_the_Australian_Financial_System.pdf.

Escritt, Thomas & Anthony Deutsch, “Netherlands nationalizes SNS Reaal at cost of \$5 billion”, *Reuters*, US ed., published by Thomson Reuters, Hague/Amsterdam, Friday, 1 February, 2013, 6:30 am, <http://www.reuters.com/article/2013/02/01/us-dutchfinance-cenbank-idUSBRE9100G920130201>.

Ferguson, Adele, “Hearing into ASIC’s failure to investigate CBA’s Financial Wisdom”, ‘Business Day’, *The Sydney Morning Herald*, published by Fairfax Media, Sydney, NSW, 3 June, 2014, <http://www.smh.com.au/business/hearing-into->

[asics-failure-to-investigate-cbas-financial-wisdom-20140602-39ept.html](http://www.smh.com.au/business/banking-and-finance/commonwealth-bank-facing-royal-commission-call-after-senate-financial-planning-inquiry-20140602-39ept.html).

Ferguson, Adele & Ben Butler, “Commonwealth Bank facing royal commission call after Senate financial planning inquiry”, ‘Banking and Finance’, *The Sydney Morning Herald*, Business Day ed., published by Fairfax Media, Sydney, NSW, 26 June, 2014, <http://www.smh.com.au/business/banking-and-finance/commonwealth-bank-facing-royal-commission-call-after-senate-financial-planning-inquiry-20140625-3asy6.html>.

Ferguson, Adele & Deb Masters, “Banking Bad”, in Four Corners, *Audiovisual Material*, Documentary, Four Corners/Fairfax Publishing, Australian Broadcasting Corporation, Sydney, NSW, 5 May, 2014, <http://www.abc.net.au/4corners/stories/2014/05/05/3995954.htm>

Fiennes, Toby & Cavan O’Connor-Close, “The evolution of prudential supervision in New Zealand”, *Reserve Bank of New Zealand: Bulletin*, Vol. 75, no. 1, March, 2012, pp: 1-13, http://www.rbnz.govt.nz/research_and_publications/reserve_bank_bulletin/2012/2012mar75_1fiennesOconnorClose.pdf.

Financial Conduct Authority, “About us”, series edited by Financial Conduct Authority, published by Financial Conduct Authority, London, 2014, accessed: 25 September 2014, <http://www.fca.org.uk>.

Financial Markets Authority (FMA), “Presentation by Sean Hughes to the New Zealand Capital Markets Forum”, ‘News, Speeches’, published by Financial Markets Authority, New Zealand Government, Auckland, NZ, 17 March, 2011, <http://www.fma.govt.nz/news/speeches/presentation-by-sean-hughes-to-the-new-zealand-capital-markets-forum/>.

Financial Policy Committee, “*Financial Policy Committee*”, series edited by Bank of England, in *Financial Stability*, published by Bank of England, London, 2014, accessed: 26 September 2014,

<http://www.bankofengland.co.uk/financialstability/pages/fpc/default.aspx>.

Financial Regulatory Reform Steering Committee, *Implementing a twin peaks model of financial regulation in South Africa*, series edited by the Financial Services Board, in *Twin Peaks*, Financial Services Board, published by the Financial Regulatory Reform Steering Committee, Pretoria, RSA, 1 February 2013, pp 1-77, [http://www.fsb.co.za/Departments/twinpeaks/Documents/Twin Peaks 01 Feb 2013 Final.pdf](http://www.fsb.co.za/Departments/twinpeaks/Documents/Twin%20Peaks%2001%20Feb%202013%20Final.pdf).

Financial Services Authority, *The failure of the Royal Bank of Scotland*, in 'Financial Services Authority Board Report', Financial Services Authority, published by Financial Services Authority, London, December 2011, pp 1-450, <http://www.fsa.gov.uk/pubs/other/rbs.pdf>.

Financial Stability Board, *Increasing the Intensity and Effectiveness of SIFI Supervision*, series edited by FSB Supervisory Intensity and Effectiveness group (SIE), in 'Progress Report to the G20 Ministers and Governors', FSB Supervisory Intensity and Effectiveness group (SIE), Financial Stability Board, published by Financial Stability Board, Basel, CH, 1 November 2012, pp 1-32, http://www.financialstabilityboard.org/wp-content/uploads/r_121031ab.pdf.

Financial System Inquiry, *Financial System Inquiry Final Report*, series edited by The Treasury of the Australian Government, The Treasury, Commonwealth Government of Australia, published by The Australian Government, the Treasury, Canberra, ACT, November 2014, pp 1-320, http://fsi.gov.au/files/2014/11/FSI_Final_Report.pdf.

Fry, Elizabeth, "Too big to bail: Aussie banks need a living will", 'Banking', *Asia-Pacific Banking & Finance*, published by Australian Financial Publications, Sydney, NSW, Monday 4 May, 2015.

Garnaut, John, "Watchdog licks its wounds after commission mauling", 'Business', *The Sydney*

Morning Herald, published by Fairfax Media, Sydney, NSW, 16 January, 2003, <http://www.smh.com.au/articles/2003/01/15/1042520673643.html>.

Godwin, A. J. & A.D. Schmulow, “The Financial Sector Regulation Bill In South Africa: Lessons From Australia”, *South African Law Journal*, forthcoming, 2015.

Godwin, A.J. & A.D Schmulow, *The Financial Sector Regulation Bill In South Africa: Lessons From Australia*, series edited by The Centre For International Finance and Regulation (CIFR), in ‘*The Centre For International Finance and Regulation (CIFR) Research Working Paper Series*’, no. 052/2015 / Project No. E018, The Centre For International Finance and Regulation (CIFR), published by The Centre For International Finance and Regulation, Sydney, NSW, January 2015, pp 1-22, [http://www.cifr.edu.au/assets/document/WP052-2015 Godwin E018 The Financial Sector Regulation Bill.pdf](http://www.cifr.edu.au/assets/document/WP052-2015%20Godwin%20E018%20The%20Financial%20Sector%20Regulation%20Bill.pdf).

Goodhart, C., P. Hartmann, D.T. Llewellyn, L. Rojas-Suarez & S. Weisbrod, “The institutional structure of financial regulation”, Chap. 8, in *Financial Regulation: Why, How and Where Now?*, in ‘Business & Economics’, published by Taylor & Francis, Hoboken, NY, 2013, pp 142-189, 9781135116316, <https://books.google.com.au/books?id=x1QKM0gVZ9MC>.

Goodhart, Charles & Dirk Schoenmaker, “Institutional separation between supervisory and monetary agencies”, *Giornale degli economisti e annali di economia*, Vol. 51, no. 9/12, October-December, 1992, pp: 353-439, 0017-0097, <http://www.jstor.org/stable/23247860>.

Goodhart, Charles & Dirk Schoenmaker, “Should the Functions of Monetary Policy and Banking Supervision Be Separated?”, *Oxford Economic Papers*, Vol. 47, no. 4, October, 1995, pp: 539-560, 0030-7653, <http://www.jstor.org/stable/2663543>.

- Green QC, Andrew, *Report into the FSA's enforcement actions following the failure of HBOS*, Prudential Regulation Authority, Bank of England & Financial Conduct Authority, published by Bank of England, London, UK, November 2015, pp 1-94, <http://www.bankofengland.co.uk/pra/Documents/publications/reports/agreenreport.pdf>.
- Haubrich, Joseph G., "Combining bank supervision and monetary policy", *Economic Commentary*, November, 1996, pp: 1-6, 0428-1276, <http://www.clevelandfed.org/research/commentary/1996/1196.htm>.
- Heller, H. Robert, "Prudential supervision and monetary policy", Chap. 11, in *International Financial Policy: Essays in Honour of Jacques J. Polak*, published by the International Monetary Fund, Washington, DC, September, 1991, pp 269-281.
- Hill, Jennifer G., *Why Did Australia Fare So Well in the Global Financial Crisis?*, 2012 ed., series edited by E. Ferran, N. Moloney, J. G. Hill & Coffee, Jr., J. C., in 'The Regulatory Aftermath of The Global Financial Crisis, in Sydney Law School Research Paper', no. 12/35, published by Cambridge University Press (Book), University of Sydney Law School (Working Paper), Sydney, NSW, 20 May 2012, pp 203-300, <http://ssrn.com/abstract=2063267>.
- HM Treasury, Bank of England & Financial Conduct Authority, *How fair and effective are the fixed income, foreign exchange and commodities markets? Consultation document*, Fair and Effective Markets Review, Bank of England, published by Bank of England, London, UK, October 2014, pp 1-67, <http://www.bankofengland.co.uk/markets/Documents/femr/consultation271014.pdf>.
- Holevas, Alex, "Twin Peaks: The envy of the world", 'News', *Wealth Professional*, published by Key Media Pty Ltd, Sydney, NSW, 22 February, 2012, <http://www.wealthprofessional.com.au/news/twin-peaks-the-envy-of-the-world-122530.aspx>.

House of Lords, House of Commons, *'An accident waiting to happen': The failure of HBOS*, in *'5: A failure of regulation'*, in HL Paper 144 HC 705, Vol. I, Parliamentary Commission on Banking Standards Fourth Report, Parliament of the United Kingdom, published by Publications and Records Parliamentary business, Select Committee publications, Parliamentary Commission on Banking Standards, London, 5 April 2013, pp 1-88, <http://www.publications.parliament.uk/pa/jt201213/jtselect/jtpCBS/144/144.pdf>.

Hughes, Sean, *"Financial Markets Authority - a new era in regulation - Webinar package"*, series edited by New Zealand Law Society, in *Continuing Legal Education*, published by New Zealand Law Society, Wellington, NZ, 25 November, 2011, accessed: 23 November 2015, <http://www.lawyerseducation.co.nz/shop/Webinar+Packages/Financial+Markets+Authority+-+a+new+era+in+regulation+-+Webinar+package.html>.

International Monetary Fund, *Financial Sector Supervision: The Twin Peaks Model - Technical Note*, in *'Financial Sector Assessment Program Update - Kingdom of The Netherlands-Netherlands, IMF Country Report'*, no. 11/208, Monetary and Capital Markets Department, International Monetary Fund (IMF), published by International Monetary Fund (IMF), Washington, DC, June/July 2011, pp 1-14, <https://www.imf.org/external/pubs/ft/scr/2011/cr11208.pdf>.

International Monetary Fund, *Kingdom of the Netherlands-Netherlands: Publication of Financial Sector Assessment Program Documentation □ Technical Note on Financial Sector Supervision: The Twin Peaks Model*, in *'Financial Sector Assessment Program Update, IMF Country Report No. 11/208'*, Monetary and Capital Markets Department, International Monetary Fund, published by International Monetary Fund, Washington, DC, July

- 2011, pp 1-14,
<http://www.imf.org/external/pubs/ft/scr/2011/cr11208.pdf>.
- Ioannidou, Vasso P., “Does monetary policy affect the central bank’s role in bank supervision?”, *Journal of Financial Intermediation*, Vol. 14, no. 1, January, 2005, pp: 58-85, 1042-9573,
<http://www.sciencedirect.com/science/article/pii/S1042957304000269>.
- Ioannidou, Vasso P., “*Monetary Policy And Bank Supervision*”, Paper presented at the Federal Reserve Bank of Chicago Conference on Bank Structure and Competition, *Federal Reserve Bank of Chicago Conference on Bank Structure and Competition Proceedings*, Chicago, Il, series editor: Federal Reserve Bank of Chicago, in ‘Federal Reserve Bank of Chicago Conference on Bank Structure and Competition Proceedings’, published by Federal Reserve Bank of Chicago, Chicago, Il, May, 2002, pp 1-18, sponsored by Federal Reserve Bank of Chicago.
- Kaufman, George G., “Bank contagion: A review of the theory and evidence”, *Journal of Financial Services Research*, Vol. 8, no. 2, April, 1994, pp: 123-150, 0920-8550,
<http://0-content.ebscohost.com.library.vu.edu.au/pdf10/pdf/1994/1MW/01Apr94/5877790.pdf?T=P&P=AN&K=5877790&S=R&D=bth&EbscoContent=dGJyMNHX8kSeqK84yOvqOLCmr0qepZSsaq4Sq6WxWXS&ContentCustomer=dGJyMPGnr0yrbNJuePfgeyx44Dt6fIA>.
- Killoren, Gregg D., “*Comparative Analysis of Non-U.S. Bank Regulatory Reform and Banking Structure*”, *Law & Business*, edited by CCH Incorporated, in ‘*Banking & Finance*’, published by Wolters Kluwer, New York, NY, 2009, pp 1-14,
<http://business.cch.com/bankingfinance/focus/news/comparative.pdf>.
- Krugman, Paul, “Looters in Loafers”, ‘Opinion’, *New York Times*, New York ed., published by The New York Times Company, New York, NY, 19 April, 2010, pp A23,

[http://devo.bl.gov/~dhaxton/Site_6/Articles_files/Op-Ed_Columnist - Looters in Loafers - NYTimes.com 1.pdf](http://devo.bl.gov/~dhaxton/Site_6/Articles_files/Op-Ed_Columnist_-_Looters_in_Loafers_-_NYTimes.com_1.pdf).

Laker, John F., “*APRA: The Global Financial Crisis And Beyond*”, Paper presented at the The Australian British Chamber of Commerce, Melbourne, published by Australian Prudential Regulation Authority, Sydney, NSW, 26 November, 2009, pp 1-9, <http://www.apra.gov.au/Speeches/Documents/26Nov09-JL-ABCC-Melb.pdf>.

Lee, Jane, Cameron Houston & Chris Vedelago, “CBA customers lose homes amid huge fraud claim”, ‘Victoria’, *The Age*, published by Fairfax Media, Melbourne, Vic, 29 May, 2014, <http://www.theage.com.au/victoria/cba-customers-lose-homes-amid-huge-fraud-claim-20140528-394se.html>.

Littrell, Charles, “*The APRA approach to insurance supervision*”, series edited by Australian Prudential Regulation Authority, in *Speeches*, published by Australian Prudential Regulation Authority, Sydney, NSW, 16 May, 2003, accessed: 2 August 2015, http://www.apra.gov.au/Speeches/Pages/03_11.aspx.

Llewellyn, David T., “*Institutional Structure of Financial Regulation and Supervision: The Basic Issues*”, Paper presented at the World Bank seminar *Aligning Supervisory Structures with Country Needs*, Washington, DC, series editor: The World Bank, published by The World Bank, Washington, DC, 6th and 7th June, 2006, pp 1-45, sponsored by The World Bank, <http://siteresources.worldbank.org/INTTOPCONF6/Resources/2057292-1162909660809/F2FlemmingLlewellyn.pdf>.

Long, Stephen, “*APRA: Government accused of politicising bank watchdog over super fund briefing to crossbench senators*”, in *News*, published by Australian Broadcasting Corporation, Canberra, ACT, 28 October 2015, 8:11pm, accessed: 22 November 2015, <http://www.abc.net.au/news/2015-10->

[28/apra-briefs-cross-bench-senators-on-superannuation-bill/6893816](http://www.abc.net.au/news/2015-10-28/apra-briefs-cross-bench-senators-on-superannuation-bill/6893816).

Long, Stephen, “*Why banks want a default superannuation free-for-all*”, The Drum Home ed., series edited by The Drum, in *Opinion*, published by Australian Broadcasting Corporation, Canberra, ACT, 28 October 2015, 12:03pm, accessed: 22 November 2015, <http://www.abc.net.au/news/2015-10-28/long-why-banks-want-a-default-superannuation-free-for-all/6891668>.

Manley, John, “Dutch regulator says “Twin Peaks” supervision best”, ‘Financial Regulatory Forum’, *Reuters*, US ed., published by Thomson Reuters, 9 October, 2009, <http://blogs.reuters.com/financial-regulatory-forum/2009/10/09/dutch-regulator-says-twin-peaks-supervision-best/>.

Martin, Ray, “*Bank of America’s great mortgage give-away*”, series edited by CBS Money Watch, in *CBS News*, published by CBS Interactive Inc., New York, NY, 9 May, 2012, 10:32 am, accessed: 26 September 2015, <http://www.cbsnews.com/news/bank-of-americas-great-mortgage-give-away/>.

Masciandaro, Donato, Rosaria Vega Pansini & Marc Quintyn, *The Economic Crisis: Did Financial Supervision Matter?*, series edited by International Monetary Fund, in ‘*IMF Working Paper*’, no. WP/11/261, IMF Institute, International Monetary Fund, published by International Monetary Fund, Washington, DC, November 2011, pp 1-47, <https://www.imf.org/external/pubs/ft/wp/2011/wp11261.pdf>.

Masciandaro, Donato, Marc Quintyn & Michael Taylor, *Financial Supervisory Independence and Accountability □ Exploring the Determinants*, series edited by International Monetary Fund, in ‘*IMF Working Paper*’, no. WP/08/147, IMF Institute, International Monetary Fund, published by International Monetary Fund, Washington, DC, June 2008, pp 1-34,

<https://www.imf.org/external/pubs/ft/wp/2008/wp08147.pdf>.

- Masselink, Maarten & Paul van den Noord, “The Global Financial Crisis and its effects on the Netherlands”, *ECFIN (Economic analysis from the European Commission’s Directorate-General for Economic and Financial Affairs) Country Focus*, Vol. 6, no. 10, 4 December, 2009, pp: 1-7, 1725-8375, http://ec.europa.eu/economy_finance/publications/publication16339_en.pdf.
- Masters, Brooke, “Focus on G20 vow to raise financial standards”, ‘Front Page’, *The Financial Times*, Morning ed., published by The Financial Times Ltd., London, 15 October, 2009 03:00 am, <http://www.ft.com/intl/cms/s/0/0f7f1bee-b923-11de-98ee-00144feab49a.html - axzz3OIUgUYaw>.
- May, Julie, “Regulatory board to beef up watchdog accountability”, ‘News / Financial Planning’, *Financial Observer, Daily News for Financial Services Professionals*, published by BenchMark Media Pty Ltd, Sydney, NSW, 10 December, 2014, <http://www.financialobserver.com.au/articles/regulatory-board-to-beef-up-watchdog-accountability>.
- McConnell, Pat, “Debunking the myth of our ‘well-regulated’ banks”, ‘Business & Economy’, *The Conversation*, published by The Conversation Media Group, Melbourne, VIC, 13 September, 2012 6.38am AEST, <https://theconversation.com/debunking-the-myth-of-our-well-regulated-banks-9333>.
- McConnell, Pat, “War on banking’s rotten culture must include regulators”, ‘Business & Economy’, *The Conversation*, published by The Conversation Media Group, Melbourne, VIC, 4 June, 2015 2.14pm AEST, <http://theconversation.com/war-on-bankings-rotten-culture-must-include-regulators-42767>.
- Merton, R. C. & Z. Bodie, *Deposit insurance reform: a functional approach*, paper presented at the Carnegie-Rochester Conference on Public Policy, Vol. 38, published by North-Holland, 1993, pp 1-34.

- Ministry of Finance, Government of the Netherlands, “*The Netherlands and the credit crisis*”, series edited by Ministry of General Affairs, in *Financial Policy*, published by Ministry of General Affairs, Den Haag, undated, accessed: 11 January 2015, <http://www.government.nl/issues/financial-policy/how-did-the-netherlands-handle-the-credit-crisis>.
- Mishkin, Frederic S., *Over the Cliff: From the Subprime to the Global Financial Crisis*, series edited by National Bureau of Economic Research, in ‘*NBER Working Paper Series*’, no. 16609, National Bureau of Economic Research, published by National Bureau of Economic Research, Cambridge, MA, December 2010, pp 1-32, <http://www.nber.org/papers/w16609>.
- National Treasury, Republic of South Africa, *Financial Sector Regulation Bill, Comments Received on the First Draft Bill Published by National Treasury for Comments in December 2013 (Comment Period from 13 December 2013 - 07 March 2014)*, in ‘*Documents for Public Comments - 2nd Draft Financial Sector Regulation Bill*’, Vol. 1, National Treasury, National Treasury, Republic of South Africa, published by Republic of South Africa National Treasury, Pretoria, RSA, December 2014, pp 1-233, http://www.treasury.gov.za/public_comments/FSR2014/FSR_Bill_Comments_Matrix_-_10_Dec_2014.pdf.
- National Treasury, Republic of South Africa, “*Implementing Twin Peaks Regulation in South Africa*”, *Media Statement*, (1 February, 2013), (accessed: 19 December, 2014), published electronically by the National Treasury, Republic of South Africa, Pretoria, RSA, pp. 1-2, <https://www.fsb.co.za/Departments/twinpeaks/Documents/MediaReleaseTwinPeaks.pdf>.
- National Treasury, Republic of South Africa, *A safer financial sector to serve South Africa better*, series edited by Republic of South Africa National Treasury, in ‘*National Treasury Policy Document*’, National

Treasury, National Treasury, Republic of South Africa, published by Republic of South Africa National Treasury, Pretoria, RSA, 23 February 2011, pp 1-85, http://www.treasury.gov.za/documents/national_budget/2011/A_safer_financial_sector_to_serve_South_Africa_better.pdf.

Nier, Erlend W., Jacek Osinowski, Luis I. Jacome & Pamela Madrid, *Institutional Models for Macroprudential Policy*, in 'IMF Staff Discussion Note', no. SDN/11/18, Monetary and Capital Markets Department, International Monetary Fund, published by International Monetary Fund, Washington, DC, 1 November 2011, pp 1-25, <http://www.imf.org/external/pubs/ft/sdn/2011/sdn1118.pdf>.

Pan, Eric J., "Structural Reform of Financial Regulation", *Transnational Law & Contemporary Problems*, Vol. 19, no. 3, Winter, 2011, pp: 796-867, <https://web-bebscohost-com.ezp.lib.unimelb.edu.au/ehost/pdfviewer/pdfviewer?vid=2&sid=b780b6ae-4dbe-41d7-b942-fd071f462457%40sessionmgr113&hid=128>.

Prast, Henriette & Iman van Lelyveld, *New Architectures in the Regulation and Supervision of Financial Markets and Institutions: The Netherlands*, in 'DNB Working Paper', no. 021/2004, Division Supervisory Policy, De Nederlandsche Bank, published by De Nederlandsche Bank, Amsterdam, NL, 21 December 2004, pp 1-30, http://www.dnb.nl/binaries/Working_Paper_21_tcm46-146678.pdf.

Pro Publica, *Bailout Recipients*, in 'Bailout Tracker, Tracking Every Dollar and Every Recipient', Pro Publica, published by Pro Publica Inc., New York, NY, 24 September 2015, <https://projects.propublica.org/bailout/list>.

Prudential Regulation Authority, "About the Prudential Regulation Authority", series edited by Bank of England, in *Prudential Regulation Authority*, published by Bank of England, London, 2014,

accessed: 25 September 2014,
<http://www.bankofengland.co.uk/prd/pages/about/default.aspx>.

Reserve Bank of Australia, “*Role of the Reserve Bank in Maintaining Financial Stability*”, in *Financial Stability*, published by Reserve Bank of Australia, Sydney, NSW, 2001-2015, accessed: 24 September 2015, <http://www.rba.gov.au/fin-stability/rba.html>.

Reserve Bank of Australia, *Submission to the Financial System Inquiry*, series edited by the Financial System Inquiry, Reserve Bank of Australia, published by the Financial System Inquiry, Sydney, NSW, March 2014, pp 1-249, http://fsi.gov.au/files/2014/04/Reserve_Bank_of_Australia.pdf.

Rothacker, Rick, “The deal that cost Bank of America \$50 billion □ and counting”, ‘News, Business, Banking’, *The Charlotte Observer*, published by The McClatchy Company, Charlotte, NC, 16 August, 2014, <http://www.charlotteobserver.com/news/business/banking/article9151889.html>.

Rudin, Jeremy, “*Opening remarks to the Senate Standing Committee on Banking, Trade and Commerce, by Superintendent Jeremy Rudin*”, Ottawa, in ‘Speeches and Presentations’, published by Office of the Superintendent of Financial Institutions, Canada, Ottawa, 5 November, 2014, sponsored by Office of the Superintendent of Financial Institutions, Canada, <http://www.osfi-bsif.gc.ca/eng/osfi-bsif/med/spds/Pages/jr20141105.aspx>.

Schmulow, A.D, *Approaches to Financial System Regulation: An International Comparative Survey*, series edited by The Centre For International Finance and Regulation (CIFR), in ‘*The Centre For International Finance and Regulation (CIFR) Research Working Paper Series*’, no. 053/2015 / Project No. E018, The Centre For International Finance and Regulation (CIFR), published by The Centre For International Finance and Regulation, Sydney, NSW, January 2015, pp 1-63,

[http://www.cifr.edu.au/assets/document/WP053-2015 Godwin E018 Approaches to Financial System Regul.pdf](http://www.cifr.edu.au/assets/document/WP053-2015%20Godwin%20E018%20Approaches%20to%20Financial%20System%20Regul.pdf).

Schmulow, Andrew, "Time for Abbott Government and ASIC to get serious about Australian banksters", 'Business', *Independent Australia*, published by Independent Australia, Isle of Capri, QLD, 10 August, 2015,

<https://independentaustralia.net/business/business-display/time-for-asic-and-other-regulators-to-get-serious-about-australian-banksters,8036>.

Schmulow, Andrew, "To clean up the financial system we need to watch the watchers", 'Business & Economy', *The Conversation*, published by The Conversation Media Group, Melbourne, VIC, 4 March, 2015 2.11 pm AEDT, <http://theconversation.com/to-clean-up-the-financial-system-we-need-to-watch-the-watchers-38359>.

Schmulow, Andrew D., "The four methods of financial system regulation: An international comparative survey", *Journal of Banking and Finance Law and Practice*, Vol. 26, no. 3, November, 2015, pp: 151-172,

http://www.westlaw.com.au.ezp01.library.qut.edu.au/maf/wlau/app/document?&src=search&docguid=Ifd3c1ffa88f111e584c5a2b5af565fd9&epos=1&snippet_s=true&fcwh=true&startChunk=1&endChunk=1&nstid=std-anz-highlight&nlds=AUNZ_SEARCHALL&isTocNav=true&tocDs=AUNZ_AU_JOURNALS_TOC&context=56&extLink=false&searchFromLinkHome=false.

Schmulow, D. & L. Greyling, "Monetary Policy in the New South Africa: Economic and Political Constraints", *South African Journal of Economics*, Vol. 64, no. 3, September, 1996, pp: 175-192,

<http://onlinelibrary.wiley.com.ezp.lib.unimelb.edu.au/store/10.1111/j.1813-6982.1996.tb01127.x/asset/j.1813-6982.1996.tb01127.x.pdf?v=1&t=hxkgzn1w&s=982851cad602f6ef5915b3eab2adf7b55b5542c6>.

- Schoenmaker, Dirk & Jeroen Kremers, “Financial stability and proper business conduct. Can supervisory structures help to achieve these objectives?”, Chap. 2, in *Institutional Structure of Financial Regulation: Theories and International Experiences* 1st ed., edited by Robin Hui Huang & Dirk Schoenmaker, in ‘Part I, Fundamental theories’, series editor: Routledge Research in Finance and Banking Law, published by Routledge Oxford, 2014, pp 1-280, 978-0415726870,
[http://reader.eblib.com.au.ezp.lib.unimelb.edu.au/\(S\(3po0djfcpcig4a0teuad2cfh\)\)/PrintProcess.aspx?p=45&m=2&c=48,49,50,51,52,53,54,55,56,57,58](http://reader.eblib.com.au.ezp.lib.unimelb.edu.au/(S(3po0djfcpcig4a0teuad2cfh))/PrintProcess.aspx?p=45&m=2&c=48,49,50,51,52,53,54,55,56,57,58).
- Schooner, Heidi Mandanis & Michael Taylor, “United Kingdom and United States Responses to the Regulatory Challenges of Modern Financial Markets”, *Texas International Law Journal*, Vol. 38, no. 2, Spring, 2003, pp: 317-346,
<http://www.tilj.org/content/journal/38/num2/Schooner-Taylor317.pdf>.
- Senator Mark Bishop (Chair), Senator David Bushby (Deputy Chair), Senator Sam Dastyari, Senator Louise Pratt, Senator John Williams, Senator Nick Xenophon, Senator David Fawcett & Senator Peter Whish-Wilson, *Performance of the Australian Securities and Investments Commission*, series edited by Economics References Committee, Economics References Committee, Parliament of Australia, The Senate, published by The Senate Parliament of Australia, Canberra, ACT, June 2014, pp 1-519,
[http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Economics/ASIC/Final_Report/~media/Committees/Senate/committee/economics_cte/ASIC/Final_Report/report.pdf](http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Economics/ASIC/Final_Report/~/media/Committees/Senate/committee/economics_cte/ASIC/Final_Report/report.pdf).
- Smith, Aaron & James O’Toole, “‘Fabulous Fab’ held liable in Goldman fraud case”, series edited by CNN Money, in *News*, published by Cable News Network, Atlanta, GA, 1 August, 2013, 6:21 pm ET, accessed: 26 September 2015,

<http://money.cnn.com/2013/08/01/news/companies/tourre-goldman-verdict/>.

Snyder, Benjamin, “ *Goldman Sachs in \$3.15 billion settlement with federal regulators*”, series edited by Fortune, in *Finance*, published by Time, Inc., New York, NY, 22 August, 2014, 7:50 pm EDT, accessed: 26 September 2015, <http://fortune.com/2014/08/22/goldman-sachs-in-3-15-billion-settlement-with-federal-regulators/>.

Srinivas, P. & D. Sitorus, “ *The Role of State Owned Banks in Indonesia* ” , Paper presented at the Brookings/IMF/World Bank conference on “The Role of State-Owned Financial Institutions: Policy and Practice” being held during April 26-27, 2004, Washington, DC, series editor: The World Bank, published by The World Bank, 2003, pp 1-49, http://info.worldbank.org/etools/docs/library/156393/stateowned2004/pdf/srinivas_rolesobsindonesia.pdf.

Standards Australia, “ *The Australian Standard on Compliance Programs*”, AS 3806-2006, published by Standards Australia, Sydney, NSW, 9 March, 2006, pp 1-25, <http://www.saiglobal.com/PDFTemp/Previews/OSH/as/as3000/3800/3806-2006.pdf>

Stevens, Glenn, “ *Liquidity and the Lender of Last Resort*”, in *Speeches*, published by Reserve Bank of Australia, Canberra, ACT, 15 April 2008, accessed: 24 September 2015, <http://www.rba.gov.au/speeches/2008/sp-gov-150408.html>.

Tarullo, Daniel K., “ *Good Compliance, Not Mere Compliance* ” , Paper presented at the Federal Reserve Bank of New York Conference, “Reforming Culture and Behavior in the Financial Services Industry” , New York, NY, series editor: Federal Reserve Bank of New York, published by Federal Reserve Bank of New York, New York, NY, 20 October, 2014, pp 1-12,

<http://www.federalreserve.gov/newsevents/speech/tarullo20141020a.htm>.

Tarullo, Governor Daniel K., “*Rethinking the Aims of Prudential Regulation*”, Paper presented at the Federal Reserve Bank of Chicago Bank Structure Conference, Chicago, Illinois, series editor: Board of Governors of the Federal Reserve System, in ‘Speeches’, published by Board of Governors of the Federal Reserve System, 8 May, 2014, sponsored by The US Federal Reserve System, <http://www.federalreserve.gov/newsevents/speech/tarullo20140508a.pdf>.

Taylor, Michael, “Regulatory reform after the financial crisis. *Twin Peaks revisited*”, Chap. 1, in *Institutional Structure of Financial Regulation: Theories and International Experiences* 1st ed., edited by Robin Hui Huang & Dirk Schoenmaker, in ‘Part I, Fundamental theories’, series editor: Routledge Research in Finance and Banking Law, published by Routledge Oxford, 2014, pp 1-280, 978-0415726870, [http://reader.eblib.com.au.ezp.lib.unimelb.edu.au/\(S\(3po0djfcpcig4a0teuad2cfh\)\)/PrintProcess.aspx?](http://reader.eblib.com.au.ezp.lib.unimelb.edu.au/(S(3po0djfcpcig4a0teuad2cfh))/PrintProcess.aspx?)

Taylor, Michael, “Welcome to Twin Peaks”, *Central Banking Journal*, 17 August, 2010, Electronic Article, <http://www.centralbanking.com/central-banking-journal/feature/2042899/welcome-twin-peaks>.

Taylor, Michael W., *Peak Practice: How to reform the UK’s regulatory system*, series edited by the Centre for the Study of Financial Innovation, no. 23, Centre for the Study of Financial Innovation, published by the Centre for the Study of Financial Innovation, October 1996, pp 1-19.

Taylor, Michael W., “*Regulatory reform after the financial crisis - Twin Peaks Revisited*”, Oxford, UK, in ‘Law and Finance Senior Practitioner Lectures’, published by the Said Business School, Wednesday 16 February, 2011, pp 19, sponsored by the Faculty of Law, University of Oxford, <http://www.law.ox.ac.uk/event=10961>.

- Taylor, Michael W., “The Road from “Twin Peaks” - and the Way Back”, *Connecticut Insurance Law Journal*, Vol. 16, no. 1, 2009-2010, pp: 61-96, <http://insurancejournal.org/wp-content/uploads/2011/07/Abstract-2.pdf>.
- Taylor, Michael W., ‘*Twin Peaks*’ Revisited... a second chance for regulatory reform, series edited by the Centre for the Study of Financial Innovation, no. 89, Centre for the Study of Financial Innovation, published by the Centre for the Study of Financial Innovation, London, UK, September 2009, pp 1-32.
- Taylor, Michael W., “*Twin Peaks*”: A regulatory structure for the new century, series edited by the Centre for the Study of Financial Innovation, no. 20, Centre for the Study of Financial Innovation, published by the Centre for the Study of Financial Innovation, London, UK, December 1995, pp 1-18.
- Temzelides, Ted, “Are Bank Runs Contagious?”, *Federal Reserve Bank of Philadelphia Business Review*, November/December, 1997, pp: 1-14, <http://www.phil.frb.org/research-and-data/publications/business-review/1997/november-december/brnd97tt.pdf>.
- The Churchill Society, “*The Lord Mayor’s Luncheon, Mansion House, “The End of the Beginning”, November 10, 1942*”, published by The Churchill Society, London, UK, Undated, accessed: 8 October 2015, <http://www.churchill-society-london.org.uk/EndoBegn.html>.
- The Council of Financial Regulators, “*The Council of Financial Regulators*”, series edited by The Council of Financial Regulators, published by Reserve Bank of Australia, Sydney, NSW, 2001-2014, accessed: 14 July 2014, <http://www.rba.gov.au/fin-stability/reg-framework/cfr.html>.
- The Council of Financial Regulators, *Memorandum of Understanding on Financial Distress Management between the Members of the Council of Financial Regulators*, series edited by The Council of Financial Regulators, The Reserve Bank of Australia, The

Australian Prudential Regulation Authority, The Australian Securities and Investments Commission and The Treasury of the Commonwealth of Australia, published by The Council of Financial Regulators, Sydney, NSW, 18 September 2008, pp 5, <http://www.cfr.gov.au/about-cfr/mou/mou-cfr-fdm.pdf>.

The HIH Royal Commission, *Report of the HIH Royal Commission*, The HIH Royal Commission, published by The HIH Royal Commission, Sydney, NSW, 16 April 2003, <http://www.hihroyalcom.gov.au/finalreport/index.htm>.

Thompson, Graeme, “*Regulatory Policy Issues in Australia*”, Paper presented at the The Future of the Financial System, Sydney, NSW, edited by Malcom Edey, series editor: Reserve Bank of Australia Economic Group, in ‘RBA Annual Conference’, published by Reserve Bank of Australia, Sydney, NSW, Vol. 1996, 8-9July, 1996, pp 252-270, sponsored by Reserve Bank of Australia, 0 642 25621 7, <http://www.rba.gov.au/publications/confs/1996/pdf/thompson.pdf>.

Treanor, Jill, “Farewell to the FSA □ and the bleak legacy of the light-touch regulator”, ‘Business’, *The Guardian/The Observer*, published by Guardian News and Media Limited, London, 24 March, 2013, <http://www.theguardian.com/business/2013/mar/24/farewell-fsa-bleak-legacy-light-touch-regulator>.

Tuya, José & Lorena Zamalloa, “Issues on Placing Banking Supervision in the Central Bank”, Chap. 26, in *Frameworks for Monetary Stability: Policy Issues and Country Experiences. Papers presented at the sixth seminar on central banking, Washington, D.C., March 1-10, 1994*, edited by Tomás J.T. Baliño & Carlo Cottarelli, series editor: the International Monetary Fund, published by the IMF Institute and Monetary and Exchange Affairs Department, International Monetary Fund, Washington □ 1994, Washington, DC, December, 1994, pp 663-690,

9781557754196,
http://www.elibrary.imf.org.ezp.lib.unimelb.edu.au/doc/IMF071/02625-9781557754196/02625-9781557754196/Other_formats/Source_PDF/02625-9781455227495.pdf.

U.S. Securities and Exchange Commission, *SEC Enforcement Actions. Addressing Misconduct That Led To or Arose From the Financial Crisis*, U.S. Securities and Exchange Commission, published by U.S. Securities and Exchange Commission, Washington, DC, 26 May 2015, <http://www.sec.gov/spotlight/enf-actions-fc.shtml>.

Van Oyen, Martin, "Ringfencing Or Splitting Banks: A Case Study On The Netherlands", *The Columbia Journal of European Law Online*, Vol. 19, no. 1, Summer 2012, pp: 6-15, <http://www.cjel.net/wp-content/uploads/2012/08/van-oyen.pdf>.

Wallis, Stan, Bill Beerworth, Professor Jeffrey Carmichael, Professor Ian Harper & Linda Nicholls, *Financial System Inquiry*, series edited by The Treasury of the Commonwealth Government of Australia, The Treasury, published by The Treasury, Australian Government, Canberra, ACT, 31 March 1997, pp 1-771, <http://fsi.treasury.gov.au/content/FinalReport.asp>.

Weiss, Debra Cassens, "SEC Accuses Goldman Sachs of Selling Mortgage Investment Designed to Fail", *ABA Journal, Law News Now*, Securities Law, (9:58 am, 16 April, 2010), (accessed: 25 June, 2014), published electronically by American Bar Association, Chicago, IL, http://www.abajournal.com/news/article/sec_accuses_goldman_sachs_of_selling_mortgage_investment_designed_to_fail/.

Williams, Marion, "APRA and ASIC need cultural shift", 'Banking', *Asia-Pacific Banking and Finance*, published by Australian Financial Publications Pty Ltd, Sydney, NSW, 9 March, 2015, <https://www.australianbankingfinance.com/banking/apra-and-asic-need-cultural-shift/>.

- Williams, Ruth, “Merit in oversight board for ASIC, but only if it’s got teeth”, ‘Business Day’, *The Sydney Morning Herald*, published by Fairfax Media, Sydney, NSW, 28 January, 2015, <http://www.smh.com.au/business/merit-in-oversight-board-for-asic-but-only-if-its-got-teeth-20150127-12z7zy.html>.
- Wilmarth Jr., Arthur E., “Turning a Blind Eye: Why Washington Keeps Giving In to Wall Street ”, *University of Cincinnati Law Review*, Vol. 81, no. 4/4, 2013, pp: 1283-1446, <http://scholarship.law.uc.edu/cgi/viewcontent.cgi?article=1154&context=uclr>.
- Working Group on Financial Supervision, *The Structure of Financial Supervision. Approaches and Challenges in a Global Marketplace*, series edited by Group of Thirty, in ‘ *Special Report* ’, Group of Thirty, Consultative Group on International Economic and Monetary Affairs, Inc., published by Group of Thirty, Washington, DC, 2008, pp 1-249, http://www.group30.org/images/PDF/The_Structure_of_Financial_Supervision.pdf.
- Wray, L. Randall, “Setting the Record Straight One More Time: BofA’s Rebecca Mairone Fined \$1Million; BofA Must Pay \$1.3Billion”, *New Economic Perspectives*, (2 August, 2014), (accessed: 26 June, 2015), published electronically, <http://neweconomicperspectives.org/2014/08/setting-record-straight-one-time-bofas-rebecca-mairone-fined-1million-bofa-must-pay-1-3billion.html>.
- Wyatt, Edward, “Promises Made, Then Broken, By Firms in S.E.C. Fraud Cases”, ‘Business Day’, *New York Times*, New York ed., published by The New York Times Company, New York, NY, 8 November, 2011, http://www.nytimes.com/2011/11/08/business/in-sec-fraud-cases-banks-make-and-break-promises.html?_r=0.
- Wymeersch, Eddy, “The Structure of Financial Supervision in Europe: About Single Financial Supervisors, Twin

Peaks and Multiple Financial Supervisors”, *European Business Organization Law Review (EBOR)*, Vol. 8, no. 2, June, 2007, pp: 237-306, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=946695.

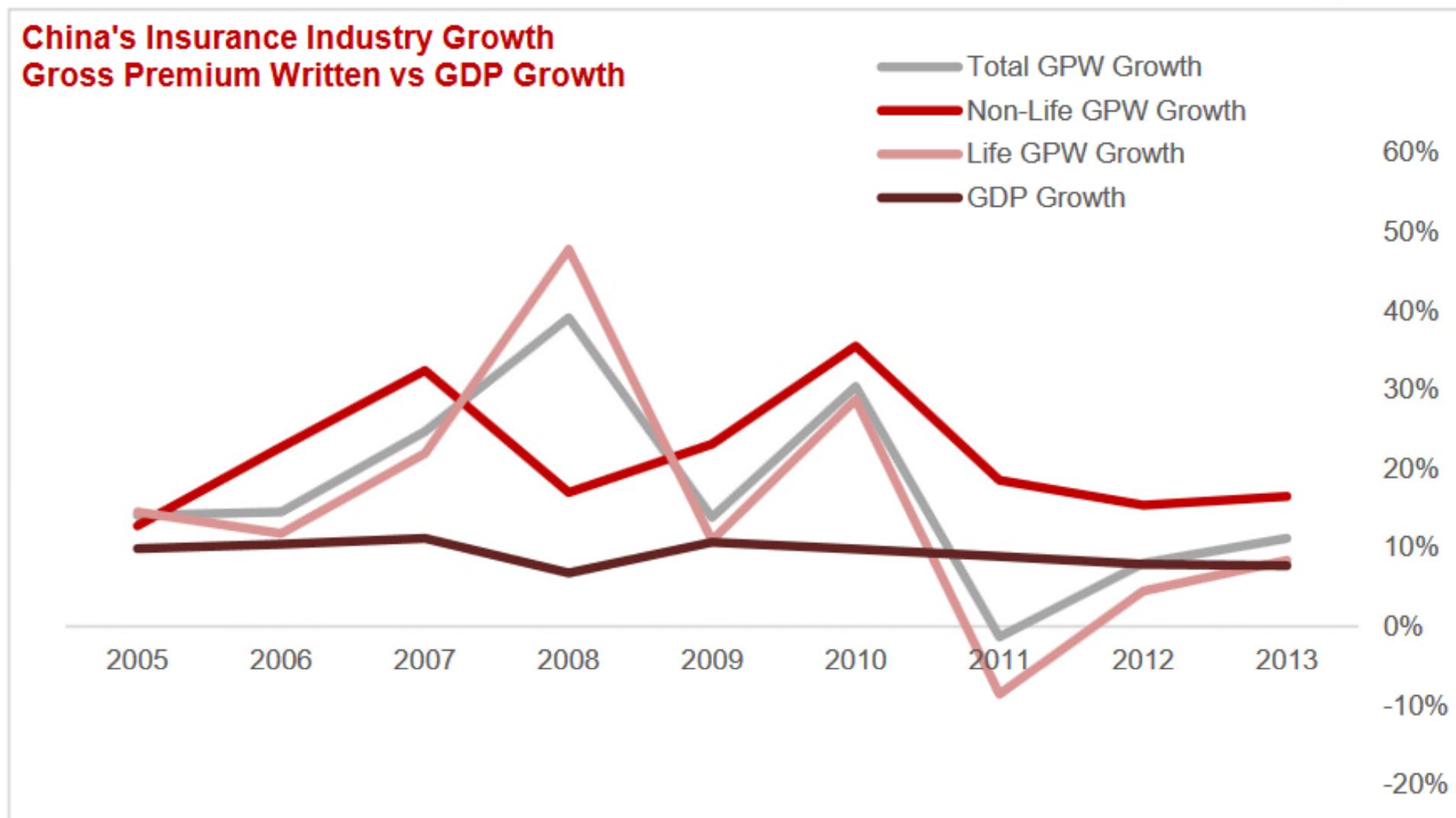


Is the Insurance Guaranty Fund Sufficient for the Insured in China

Xian Xu, Fudan University

- Introduction
 - Chinese insurance market development
 - China Insurance Guaranty Fund
 - Trends in the Chinese insurance market
- Literature
- Methodology and model
- Data
- Results and discussion

1. Introduction

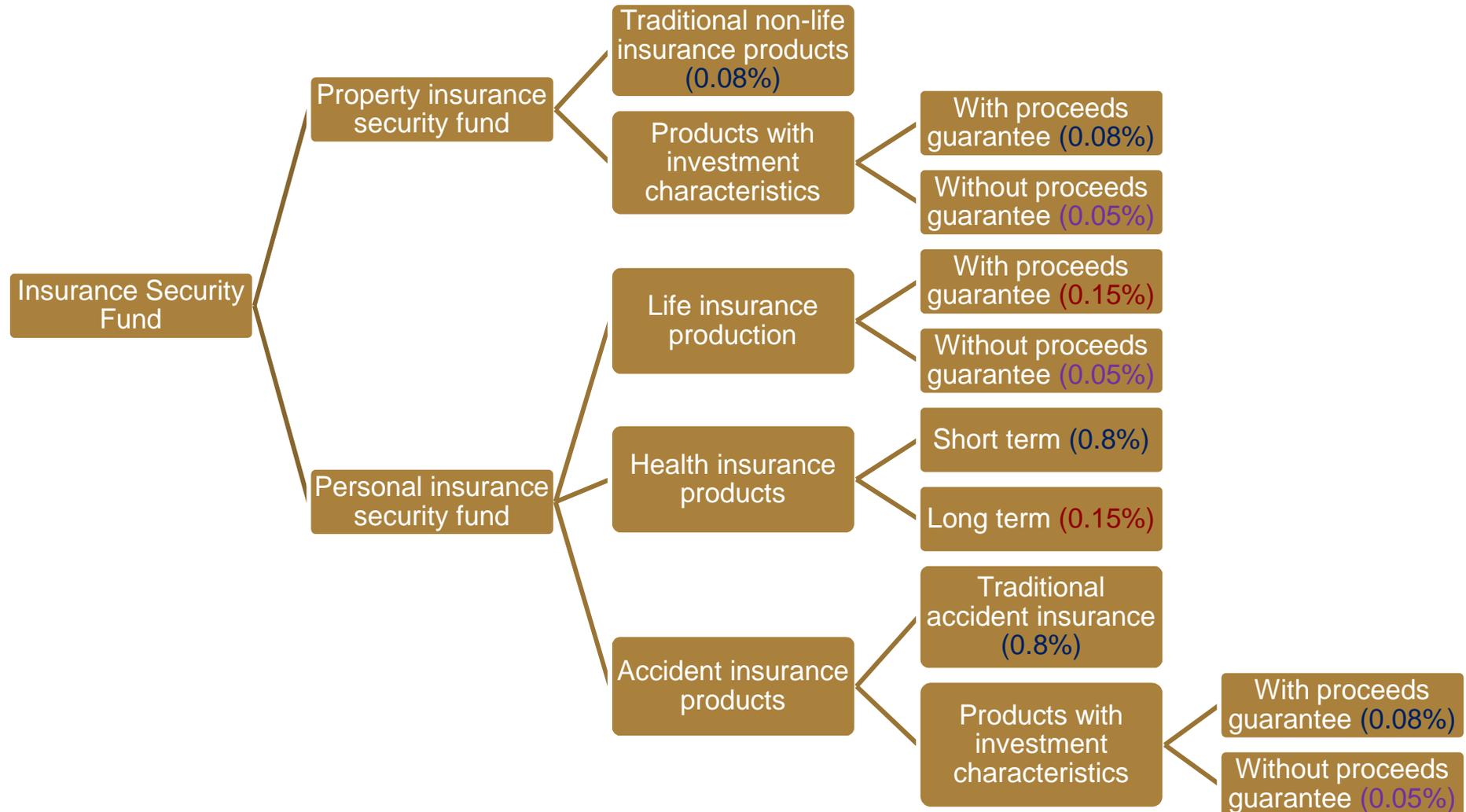


Source: CIRC, Bloomberg.

Total insurance assets in China grew from five trillion yuan (\$767 billion) in 2010 to 12 trillion yuan (\$1.83 trillion) in 2015; total premiums increased by an average of 13.4% per year from 1.3 trillion yuan (\$200 billion) in 2010 to 2.4 trillion yuan (\$370 billion) in 2015

1. Introduction

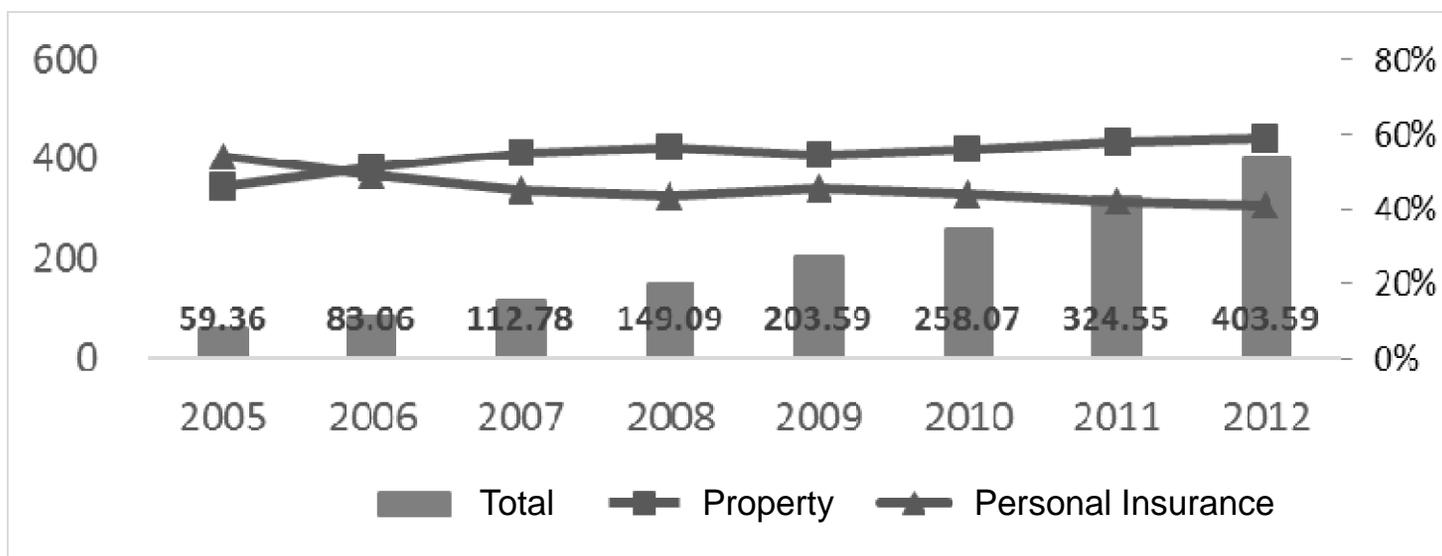
- China Insurance Security Fund Co., Ltd., which is wholly state-owned, is formed to be responsible for the fundraising, management, and use of the Insurance Security Fund according.



1. Introduction



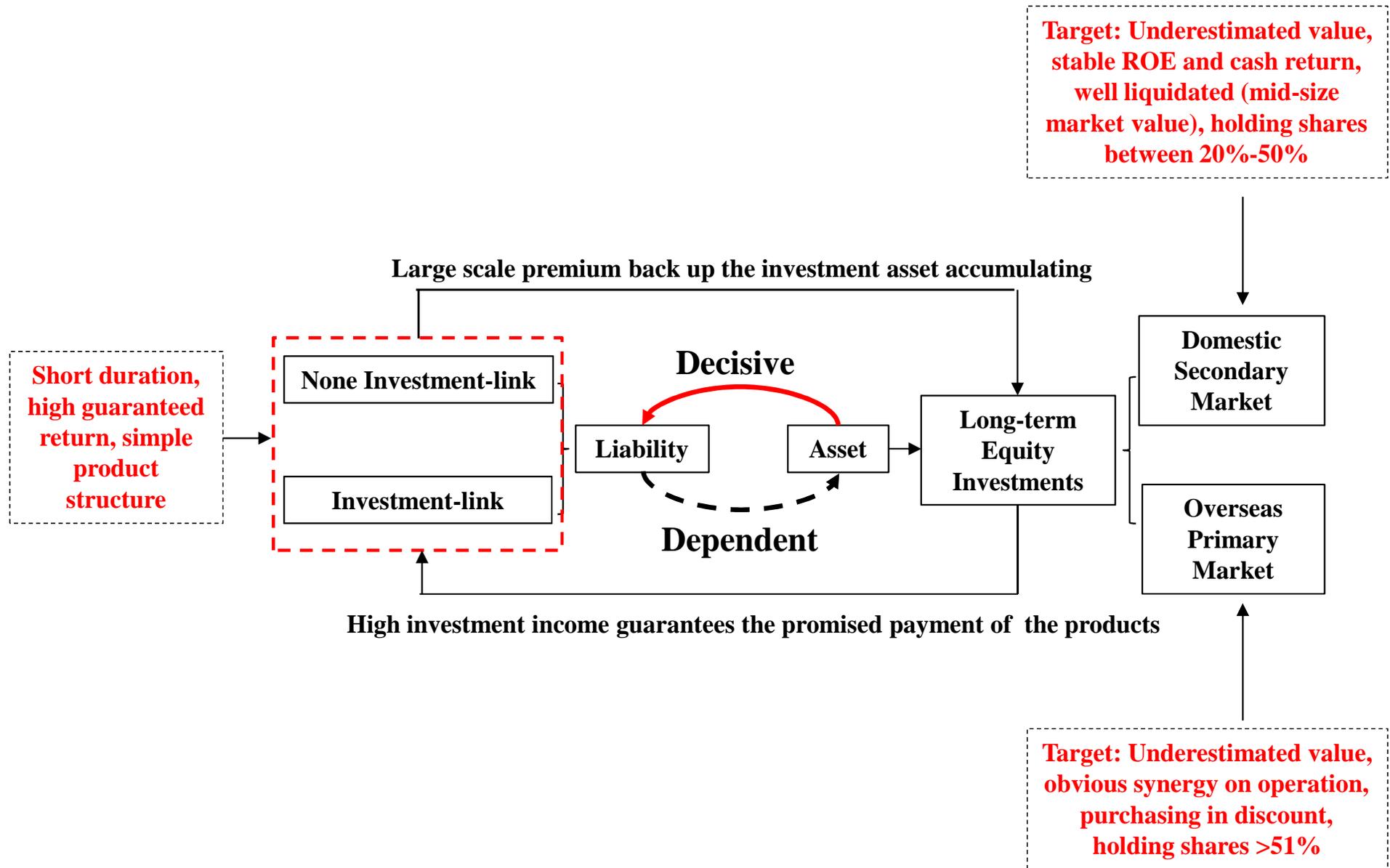
Premium income of China Insurance Security Fund Unit: 0.1 Billion RMB



Asset of China Insurance Security Fund

Source : Xu & Wang (2014)

1. Introduction



2. Literature



- Moral Risk
 - Duan,J.C , Yu M.T . Fair Insurance Guaranty Premium in the Presence of Risk-based Capital Regulation : Stochastic Interest Rate and Catastrophe Risk. . Journal of Banking and Finance , 2005 , vol.29 : 2435-2454 .
 - J. Wagner and H. Schmeiser . The impact of introducing insurance guaranty schemes on pricing and capital structure . The Journal of Risk and Insurance , 2012 : 1-36 .
 - H.Schmeiser , J . Wagner , A.Zemp . Proposal for a capital market-based guaranty scheme for the financial industry . The European Journal of Finance , 2013 : 1-28 .
- Fair Premium
 - Cummins,J.D . Risk-Based Premiums for Insurance Guaranty Fund . Journal of Finance , 1988 , vol.43(4) : 823-839 .
 - Dong M, Gründl H, Schluetter S. Is the Risk-Based Mechanism Always Better? The Risk-Shifting Behavior of Insurers Under Different Insurance Guarantee Schemes[J]. International Center for Insurance Regulation Working Paper Series, 2014 (12/12).

3. Methodology



- We evaluate the risk level of each insurance companies using a risk evaluation model, and apply differential rates to them;
- The fond of each company is the product of its premium income and the corresponding rate;
- The total value to raise is the sum of the fund from each company.

$$fund_value = \sum prem_i \cdot rate_i$$

$$rate_i = \begin{cases} r_1, & risk_level_i = 1 \\ r_2, & risk_level_i = 2 \\ r_3, & risk_level_i = 3 \end{cases}$$

3. Evaluation model



- Quantitative model which evaluates three aspects of an insurance company;
- The value is summed up to get a final score, which decides the risk level of the company;
- Uses indicators from C-ROSS.

crisis management	core solvency ratio
	composite solvency ratio
	current ratio
prudent management	admissible asset/total asset
	core capital/actual capital
resilience	net profit/premium income
	surrender rate

4. Data



- Annual reports;
- Solvency report summaries released by insurance companies;
- CIRC (China Insurance Regulation Commission);

4. Data



- Linear interpolation is used to calculate the exact score;
- The parameters are set such that the result coincides with the current C-ROSS rating.

crisis management	core solvency ratio	prudent management	admissible asset/total asset	resilience	net profit/premium income
	composite solvency ratio		core capital/actual capital		surrender rate
	current ratio				

	count	average	std_var	10-th percentile	50-th percentile	90-th percentile
core_sol_pc	131	369.36%	4.126111	134.25%	254.23%	619.08%
comp_sol_pc	131	379.99%	4.089472	139.51%	271.68%	619.08%
curr_pc	130	313.00%	13.40973	80.79%	194.84%	1068.71%
adm_ttl_pc	131	110.24%	0.403175	93.86%	102.04%	138.06%
core_act_pc	131	94.92%	0.100852	83.14%	100.00%	100.00%
prof_prem_pc	132	-1469.93%	156.0565	-25.58%	3.01%	13.96%
possitive_surr_pc	61	14.57%	0.233946	1.35%	6.44%	32.25%

5. Result

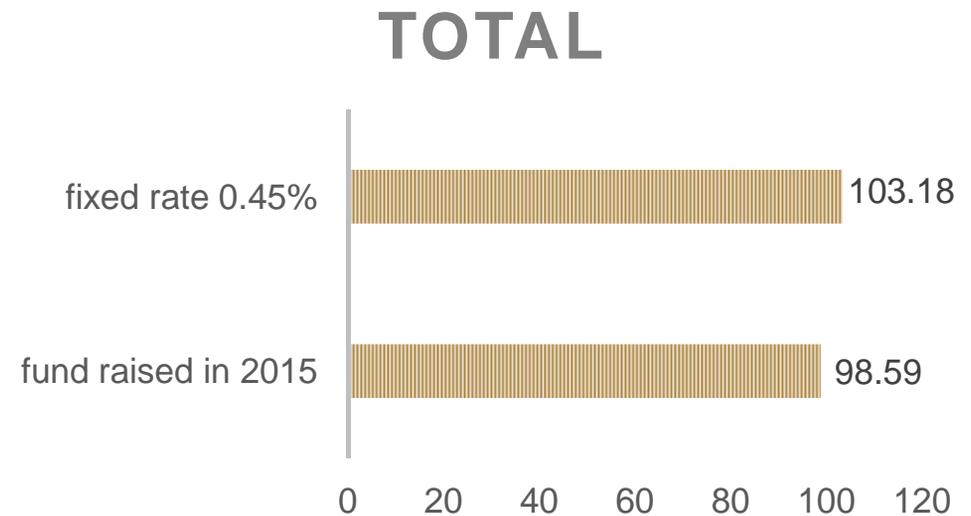
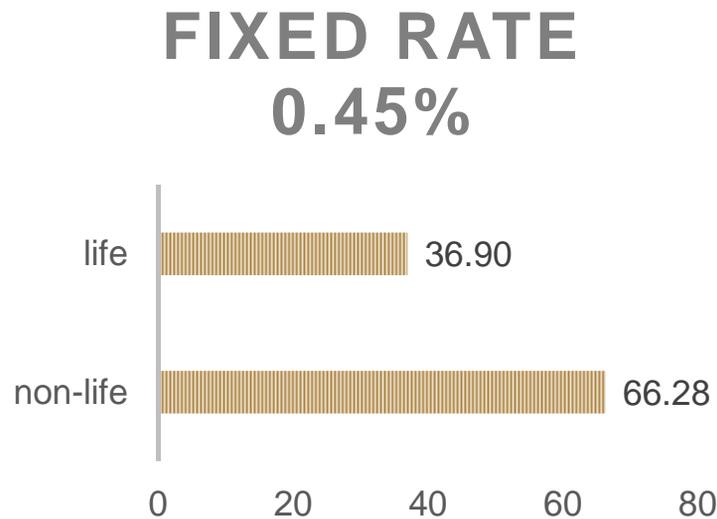


公司性质	公司性质	公司名称	年份	核心充足率	综合充足率	3月内综合流动比	认可资产/总资本	核心资本/实际资本	净利润/总保费	退保率	最新评级
内资	人寿	上海人寿	2015A	125.69%	125.69%	932.93%	201.60%	100.00%	-11.41%	0.00%	无
内资	人寿	东吴人寿	2015A	227.01%	227.01%	13.55%	129.98%	100.00%	22.61%	13.05%	A
内资	人寿	中融人寿	2015A	-18.22%	-18.22%	258.52%	85.28%	100.00%	5.53%	21.85%	D
内资	人寿	中邮人寿	2015A	209.55%	259.58%	263.57%	99.54%	80.73%	1.43%	26.35%	A
内资	人寿	人保健康	2015A	139.00%	166.00%	173.66%	133.55%	83.73%	-0.84%	42.37%	B
内资	人寿	人保寿险	2015A	145.00%	174.00%	122.00%	106.47%	83.33%	3.96%	13.76%	A
内资	人寿	信泰人寿	2015A	143.39%	154.00%	1839.50%	115.79%	93.11%	14.03%	4.53%	B
内资	人寿	光大永明	2015A	427.65%	489.18%		84.55%	87.42%	10.44%	5.70%	B
内资	人寿	农银人寿	2015A	164.31%	164.31%	1801.99%	153.97%	100.00%	1.54%	4.99%	A
内资	人寿	利安人寿	2015A	447.00%	447.00%	638.00%	154.48%	100.00%	-2.12%	29.63%	A
内资	人寿	前海人寿	2015A	70.70%	127.58%	1100.00%	125.13%	55.42%	17.83%	6.92%	B
内资	人寿	华夏人寿	2015A	61.43%	106.58%	883.73%	130.29%	57.64%	18.30%	4.85%	B
内资	人寿	合众人寿	2015A	174.52%	290.64%	177.87%	102.09%	60.05%	6.19%	19.47%	B
内资	人寿	吉祥人寿	2015A	138.68%	138.68%	280.00%	137.64%	100.00%	-10.24%	19.32%	A
内资	人寿	君康人寿	2015A	211.18%	242.20%	620.09%	94.78%	87.19%	1.34%	43.41%	B
内资	人寿	国华人寿	2015A	101.98%	117.54%	564.62%	120.35%	86.76%	6.97%	0.00%	B
内资	人寿	国寿股份	2015A	145.00%	174.00%	122.00%	155.49%	83.33%	9.67%	5.84%	A
内资	人寿	国联人寿	2015A	570.04%	570.04%	484.33%	119.65%	100.00%	73.93%	0.00%	无
...
内资	人寿	太保安联	2015A	1015.00%	1015.00%	257.00%	108.58%	100.00%	-37.45%	0.00%	无
内资	人寿	太保寿险	2015A	257.00%	262.00%	517.00%	101.60%	98.09%	9.78%	4.39%	A
内资	人寿	太平人寿	2015A	240.00%	250.00%	536.00%	91.33%	96.00%	6.84%	10.84%	A
内资	人寿	平安人寿	2015A	207.55%	219.69%	287.48%	100.31%	94.47%	9.93%	1.86%	A
内资	人寿	平安养老	2015A	287.21%	287.21%	176.70%	104.82%	100.00%	4.93%	0.18%	B
内资	人寿	幸福人寿	2015A	71.41%	139.60%	114.00%	121.32%	51.15%	3.12%	16.56%	A
内资	人寿	建信人寿	2015A	136.05%	193.46%	653.01%	144.34%	70.32%	2.01%	32.35%	A
内资	人寿	弘康人寿	2015A	217.00%	217.00%	1734.08%	131.41%	100.00%	1.06%	45.84%	B
内资	人寿	德华安顾	2015A	905.00%	905.00%	617.00%	103.97%	100.00%	156.56%	5.56%	无
内资	人寿	新华人寿	2015A	248.57%	279.32%	271.00%	100.40%	88.99%	7.69%	9.76%	A
内资	人寿	昆仑健康	2015A	110.00%	110.00%	656.00%	148.35%	100.00%	114.31%	0.59%	C
内资	人寿	民生人寿	2015A	420.00%	494.00%	1272.00%	101.78%	85.02%	14.07%	9.45%	B
内资	人寿	泰康人寿	2015A	264.46%	302.95%	118.50%	98.74%	87.29%	12.67%	3.86%	B
内资	人寿	泰康养老	2015A	487.07%	487.07%	144.77%	113.74%	100.00%	2.06%	0.84%	B
内资	人寿	渤海人寿	2015A	670.58%	670.58%	995.69%	491.75%	100.00%	19.64%	0.02%	无
内资	人寿	珠江人寿	2015A	118.07%	118.07%	128.77%	55.56%	100.00%	35.63%	168.95%	B
内资	人寿	生命人寿	2015A	79.00%	104.00%	352.00%	103.27%	75.96%	11.92%	4.77%	B

公司性质	公司性质	公司名称	年份	核心充足率评分	综合充足率评分	综合比率评分	认可资产/总资本评分	核心实际评分	净利润/总保费评分	退保率评分	总分	rating level	rate	base rate	rate	Premium
内资	人寿	上海人寿	2015A	0	0	13.3333	10	10	4.40188	10	47.7352	2	1	0.45%	0.450%	1980.56
内资	人寿	东吴人寿	2015A	6.63234	6.367718	0	10	10	10	6.21229	49.2123	2	1	0.45%	0.450%	199.575
内资	人寿	中融人寿	2015A	0	0	8.89501	0	10	9.66444	3.36547	31.9249	3	1.05	0.45%	0.472%	1630.28
内资	人寿	中邮人寿	2015A	5.38392	8.737911	9.14775	3.83834	0	8.38909	1.90778	37.4048	2	1	0.45%	0.450%	11134.0
内资	人寿	人保健康	2015A	0.33949	1.927883	4.64787	10	0.35465	7.68405	0	24.9539	3	1.05	0.45%	0.472%	7606.39
内资	人寿	人保寿险	2015A	0.76849	2.510061	2.06235	8.52144	0.11649	9.17493	5.9819	29.1357	3	1.05	0.45%	0.472%	42255.9
内资	人寿	信泰人寿	2015A	0.65338	1.054616	13.3333	10	5.91439	10	8.96941	49.9251	2	1	0.45%	0.450%	614.036
内资	人寿	光大永明	2015A	13.3333	13.3333	0	0	10	8.58991	45.2565	2	1	0.45%	0.450%	1404.69	
内资	人寿	农银人寿	2015A	2.14919	1.804898	13.3333	10	8.42561	8.81995	44.533	2	1	0.45%	0.450%	6493.60	
内资	人寿	利安人寿	2015A	13.3333	13.3333	13.3333	10	10	7.28813	0.84817	68.1363	1	0.95	0.45%	0.427%	2876.45
内资	人寿	前海人寿	2015A	0	0	13.3333	10	0	10	8.19605	41.5293	2	1	0.45%	0.450%	7819.17
内资	人寿	华夏人寿	2015A	0	0	13.3333	10	0	10	8.86490	42.1982	2	1	0.45%	0.450%	2350.72
内资	人寿	合众人寿	2015A	2.87922	10.99822	4.85858	5.56075	0	9.86829	4.13521	38.3002	2	1	0.45%	0.450%	5550.68
内资	人寿	吉祥人寿	2015A	0.31660	0	9.97005	10	10	4.76530	4.1839	39.2359	2	1	0.45%	0.450%	597.798
内资	人寿	君康人寿	2015A	5.50047	7.473129	13.3333	0.61725	2.40496	8.36166	0	37.6908	2	1	0.45%	0.450%	2096.88
内资	人寿	国华人寿	2015A	0	0	13.3333	10	2.14970	10	10	45.4830	2	1	0.45%	0.450%	10650.0
内资	人寿	国寿股份	2015A	0.76849	2.510061	2.06235	10	0.11649	10	8.54520	34.0026	3	1.05	0.45%	0.472%	172015.
内资	人寿	国联人寿	2015A	13.3333	13.3333	13.3333	10	10	10	10	80	1	0.95	0.45%	0.427%	9.43984
...
内资	人寿	太保安联	2015A	13.3333	13.3333	8.81893	9.94625	10	0	10	65.4318	1	0.95	0.45%	0.427%	2.52562
内资	人寿	太保寿险	2015A	8.77667	8.91402	13.3333	5.23164	8.86830	10	9.01368	64.1376	1	0.95	0.45%	0.427%	46421.9
内资	人寿	太平人寿	2015A	7.56115	8.040752	13.3333	0	7.62795	10	6.92668	53.4898	2	1	0.45%	0.450%	35965.2
内资	人寿	平安人寿	2015A	5.24092	5.835025	10.3444	4.35827	6.72304	10	9.8357	52.3362	2	1	0.45%	0.450%	93801.4
内资	人寿	平安养老	2015A	10.9367	10.74861	4.80002	7.40980	10	9.47629	10	63.3714	1	0.95	0.45%	0.427%	5594.09
内资	人寿	幸福人寿	2015A	0	0.006695	1.66196	10	0	8.91487	5.07797	25.6615	3	1.05	0.45%	0.472%	5078.63
内资	人寿	建信人寿	2015A	0.12856	3.926209	13.3333	10	0	8.57040	0	35.9585	2	1	0.45%	0.450%	9237.02
内资	人寿	弘康人寿	2015A	5.91661	5.639268	13.3333	10	10	8.27597	0	53.1651	2	1	0.45%	0.450%	986.104
内资	人寿	德华安顾	2015A	13.3333	13.3333	13.3333	6.83138	10	0	8.63661	65.468	1	0.95	0.45%	0.427%	30.1474
内资	人寿	新华人寿	2015A	8.17392	10.17444	9.5196	4.42046	3.47162	10	7.27648	53.0365	2	1	0.45%	0.450%	50336.3
内资	人寿	昆仑健康	2015A	0	0	13.3333	10	10	10	10	53.3333	2	1	0.45%	0.450%	61.1651
内资	人寿	民生人寿	2015A	13.3333	13.3333	13.3333	5.35088	1.11685	10	7.37699	63.8447	1	0.95	0.45%	0.427%	4065.56
内资	人寿	泰康人寿	2015A	9.31008	11.89404	1.88718	3.29584	2.46576	10	9.18710	48.0400	2	1	0.45%	0.450%	34213.2
内资	人寿	泰康养老	2015A	13.3333	13.3333	3.20196	10	10	8.58694	10	68.4555	1	0.95	0.45%	0.427%	873.788
内资	人寿	渤海人寿	2015A	13.3333	13.3333	13.3333	10	10	10	10	80	1	0.95	0.45%	0.427%	176.195
内资	人寿	珠江人寿	2015A	0	0	2.40118	0	10	10	0	22.4011	3	1.05	0.45%	0.472%	56.1027
内资	人寿	生命人寿	2015A	0	0	13.3333	6.3613	0	10	8.89214	38.5867	2	1	0.45%	0.450%	35549.2

5. Result

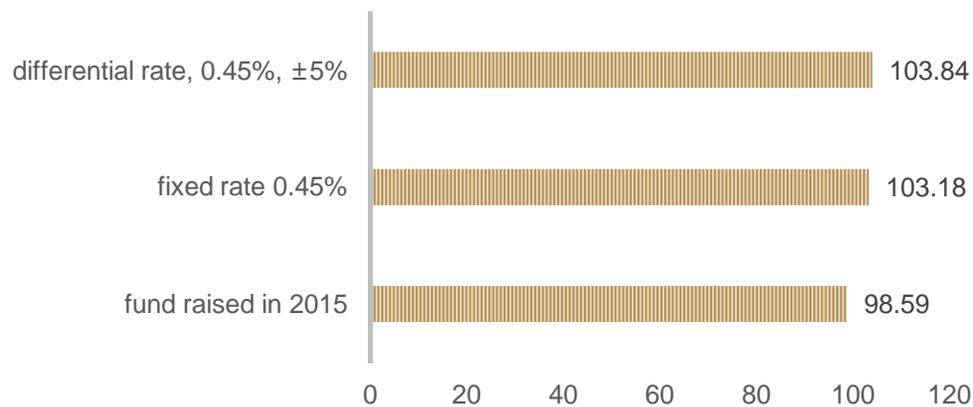
- using a fixed rate of 0.45%, 10.32 billion yuan is raised, with 6.63 billion from non-life companies and 3.69 from life companies, which is close to the fund raised in 2015;



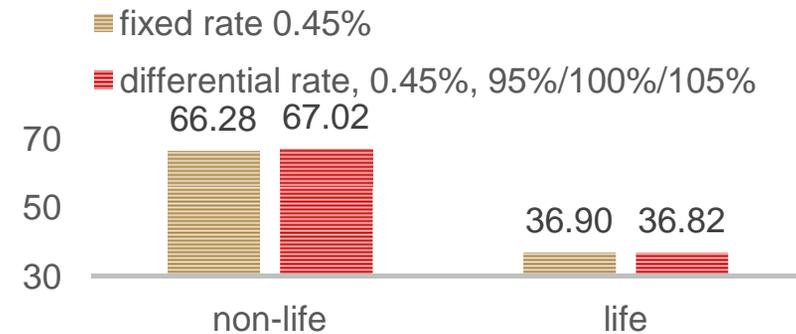
5. Result

- Using a differential rate of 95%/100%/105%, the value raised increased by 0.63%, to 10.38 billion;
- Non-life increases while life decreases;

TOTAL

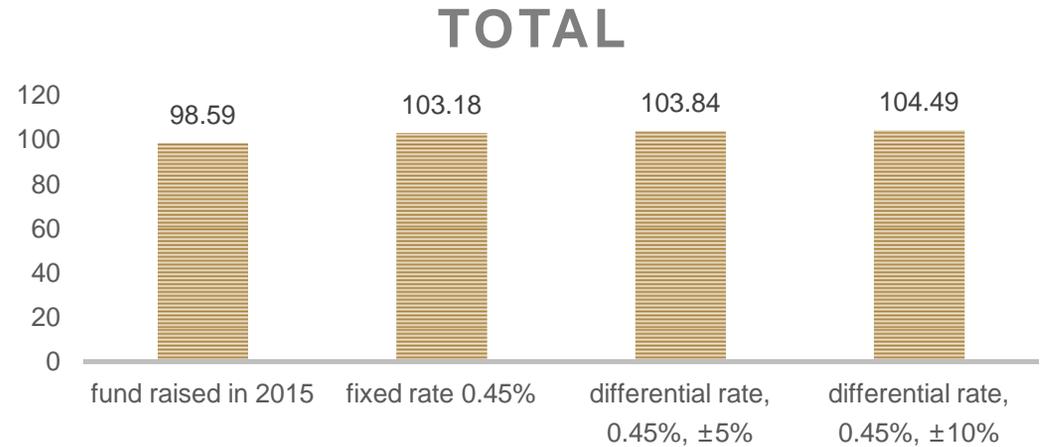


FIXED RATE & DIFFERENTIAL RATE

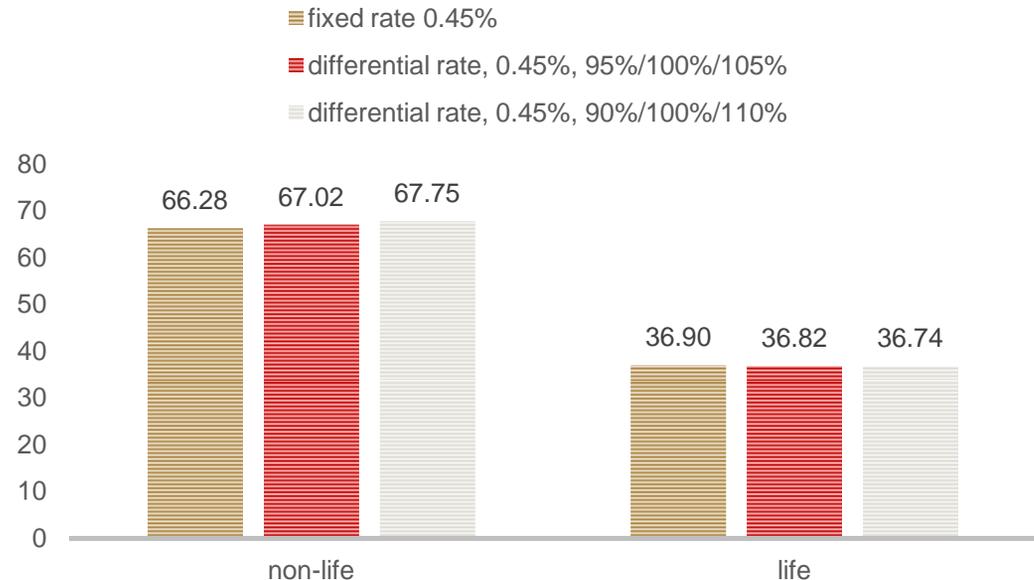


5. Result

- A more aggressive differential rate setting increases the total value;
- Fund from non-life companies increases;
- Fund from life companies decreases.



FIXED RATE & DIFFERENTIAL RATE





Thanks

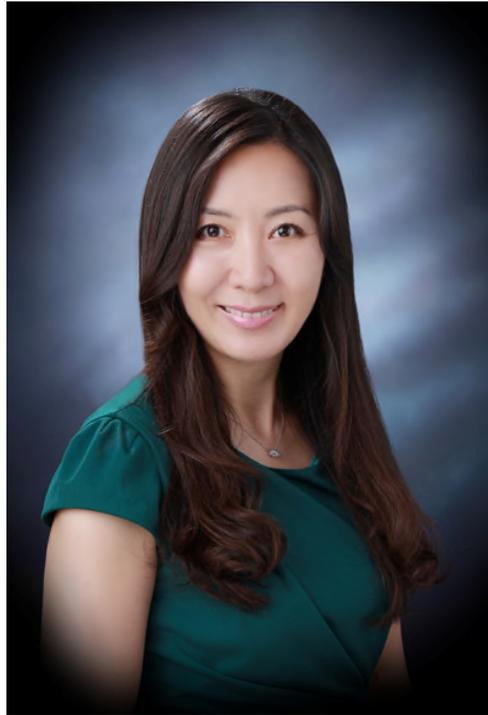
许闲, xxuita@gmail.com

핀테크 산업과 소비자



PARK SO YEONG

박소영페이게이트 대표, 한국핀테크포럼 의장



- 1996년 서강대학교 경영대학원 석사 학위 취득
- 1998년페이게이트 창업
- 2000년 국내 최초 모바일 결제 서비스 X-pay 출시
- 2003년페이게이트 재팬 설립
- 2006년 일본 시중은행의 계좌 입금 서비스 런칭
- 2007년 중국 알리바바 알리페이 중화권 외 최초 런칭
- 2009년페이게이트 홍콩, US 설립
- 2010년 중국 은행 연합 CUP카드 서비스 한국 런칭
- 2010년 중국 텐센트 텐페이 서비스 한국 런칭
- 2010년 기업호민관실과 함께 인증방법평가 위원회 설치 제안
- 2011년 공인인증서 대체 기술 정부 제안으로 국무총리 훈장 수상
- 2012년 금액인증 보안나군 평가 승인
- 2014년 홍콩 HSBC 은행 협업 '오픈페이' 서비스 출시
- 2015년 11월 24일 '금융위원회 핀테크 산업 육성 공로 표창장' 수상
- 2015년~ 현재 한국핀테크포럼 의장 . 한국 인터넷기업 협회 특별부회장. 기업은행 핀테크 자문위원.페이게이트 대표이사.

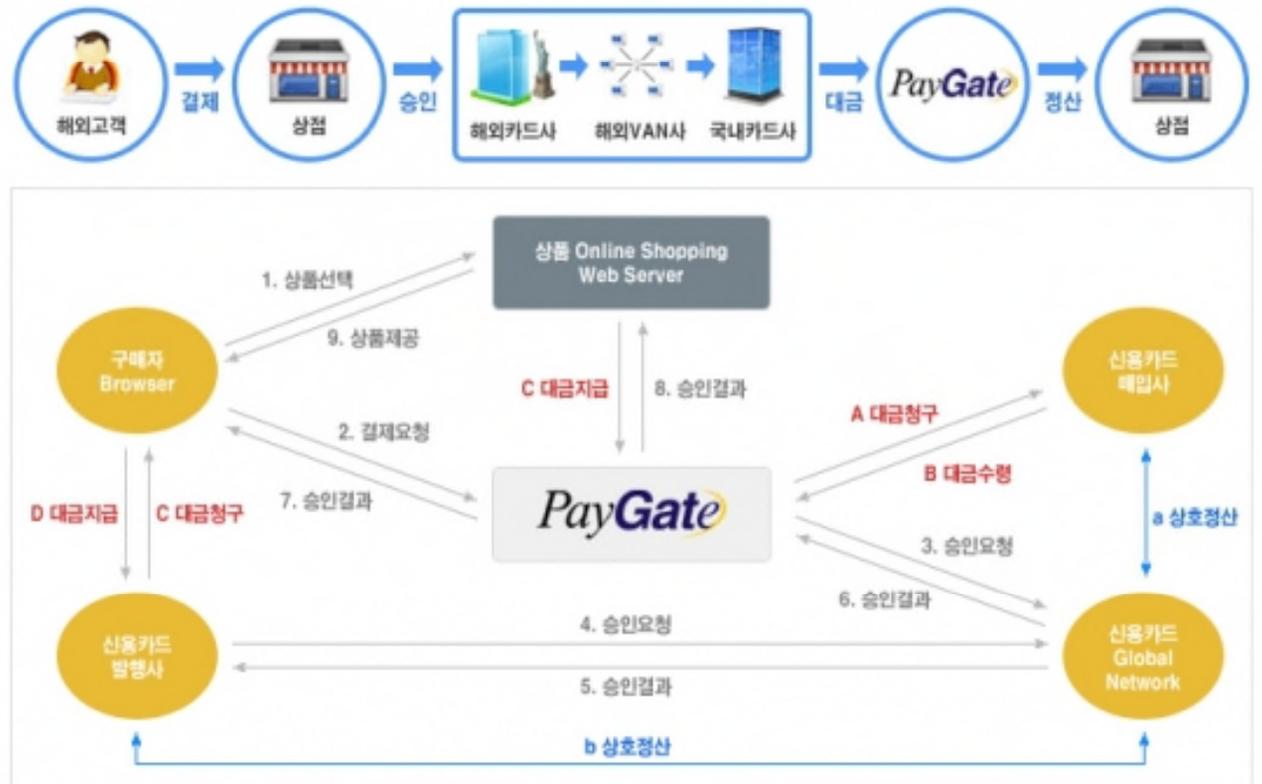
Fintech Sectors

**Payments, Remittance,
Foreign Exchange, P2P lending,
Crowdfunding, Robo-advisor,
Big-data, Bit-coin, Block-chain**

결제

**PAYGATE. GEO Payment. Paypal.
Zapp. Stripe. Photopay.**

PayGate



Openpay Service Flow



페이게이트, 글로벌시장 특화된 웹표준 간편 결제 '오픈페이' 서비스 리뉴얼 출시

차주경 기자 racingcar@chosunbiz.com
입력 : 2015.12.12 10:48:44

페이게이트가 해외 매입사 변경과 함께 가입절차를 한층 간소화시킨 '오픈페이' 서비스를 출시한다.

'오픈페이'는 국내 최초 금감원 인증방법평가위원회의 승인을 받은 '금액인증' 기반 결제 시스템이다. '오픈페이'는 디바이스와 브라우저에 구애받지 않으며 신용카드 발급 국가의 제한도 받지 않는다. 플러그인이나 앱에 의존할 필요도 없다. 사용 금액의 상한선도 없다.

'오픈페이'는 출시 당시 한국소비자를 포함해 글로벌 소비자들의 한국쇼핑물 결제 역구 시장 확대에 크게 기여할 수 있어 주목받았다. 리뉴얼을 통해 오픈페이 이용기업들의 신청절차가 대폭 간소화되었을 뿐만 아니라, 수수료도 인하돼 경제적인 가격에 서비스를 제공할 수 있게 됐다.

이동산 페이게이트 기술이사는 "글로벌 스탠다드인 웹표준을 준수하는 인증과 신용카드 결제 방식을 유지하는 것은 보안이나 인증 면에서 최고 수준을 유지해야 한다는 뜻이다. 결코 쉽지는 않으며 간단하게 구현하기도 어려운 것이 사실이다. 그러나 한국의 결제가 지향해야 하는 방향은 글로벌 트렌드에 맞는 웹 표준 결제, 유저 중심 결제이라고 생각한다"며 소회를 밝혔다.

오픈페이 2차 결제시

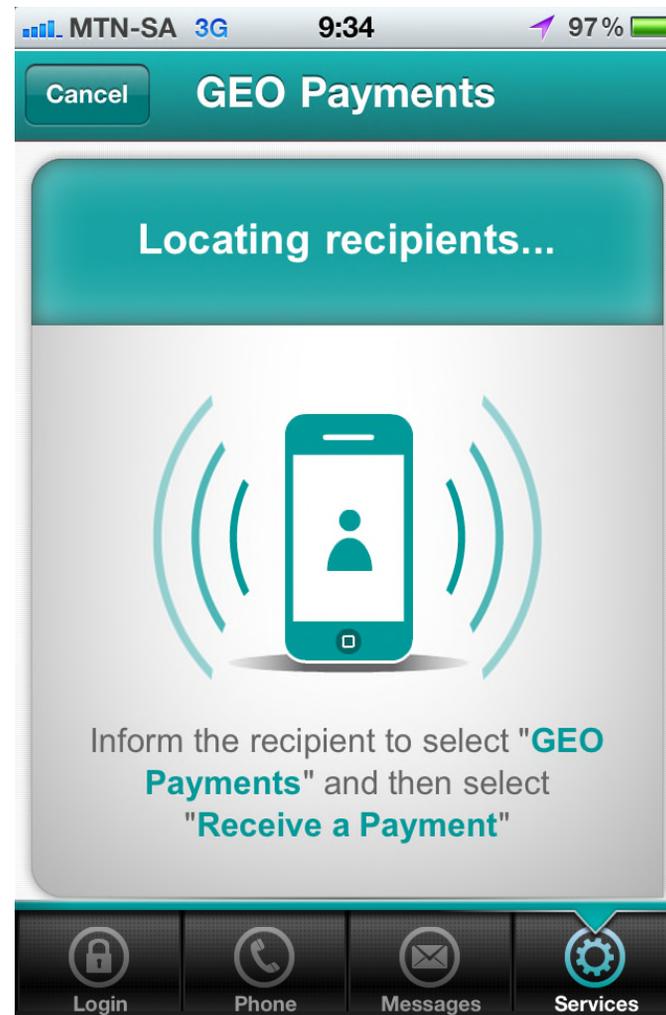
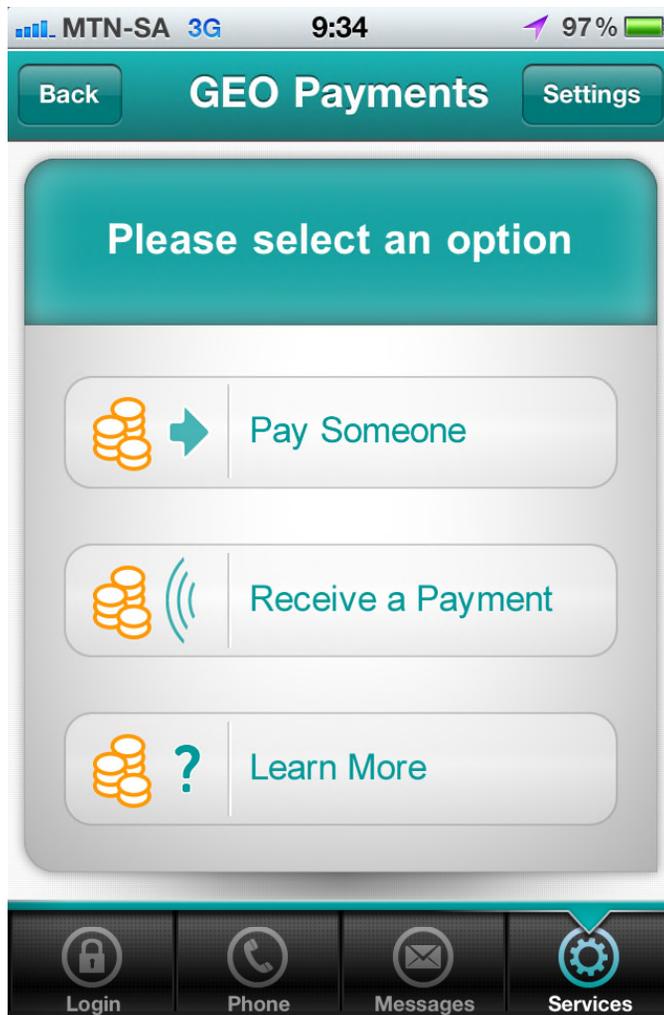
1. 카드정보 입력화면에서 신용카드 자동완성 선택
- 최초 결제시 입력한 카드번호 자동 완성

한국인의 해외카드 사용실적 추이

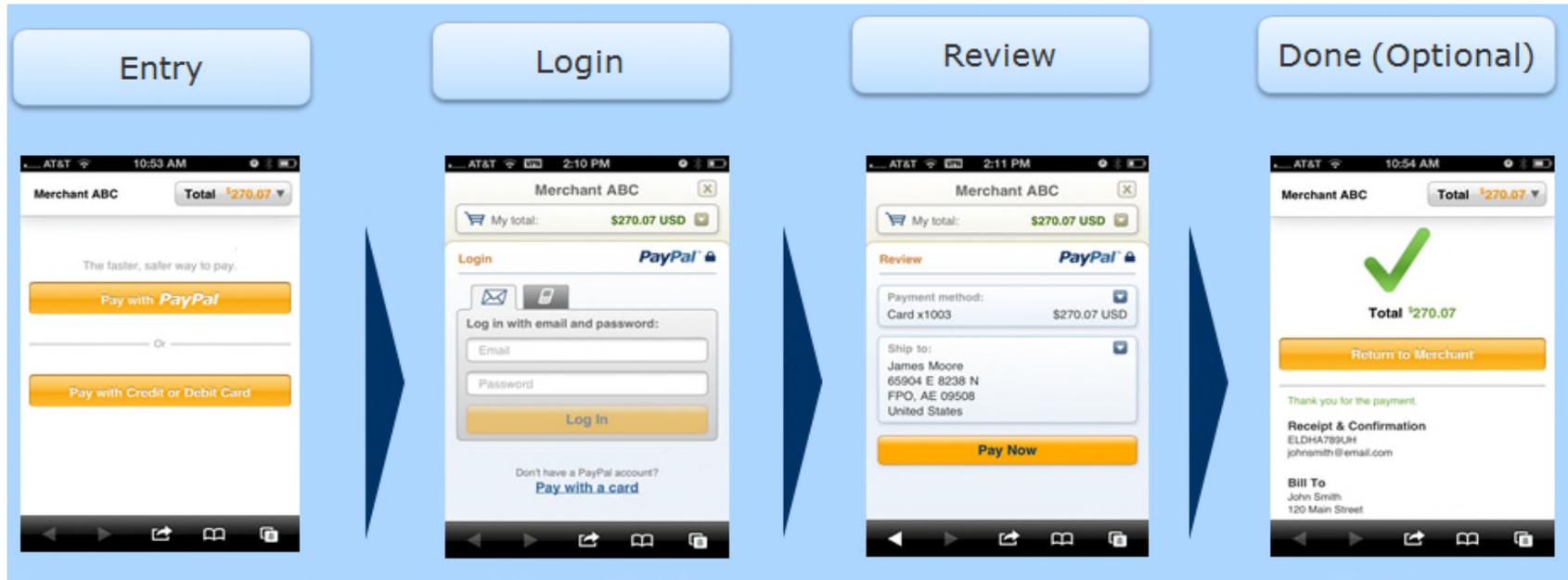


2016년 2분기 국내 거주자의 해외카드 사용액 34억 7000만 달러
(한화 약 4조 3600억원)으로 지난 1분기보다 5.2% 증가

자료: 한국은행(단위:백만\$)



- GEO Payment. 근거리 대면 인증을 통해 추가정보 없이 결제
- GPS, Wi-Fi, 기지국 삼각측량 기법 등 위치측위기법을 활용
- PIN 번호만으로 간편하게 송금



- Paypal. 세계 최대 온라인 지급결제 서비스.
- 2분기 총 거래액 28% 증가로 매출 26억 5천만달러
- 페이팔히어(Paypal Here) 기기를 스마트폰 부착하는 결제방식.
- 창업자 피터 틸 한미반도체에 375억원 투자
- 지난해 이베이에서 분리 후 제휴 전략 가속화. 비자와 마스터카드와 제
휴



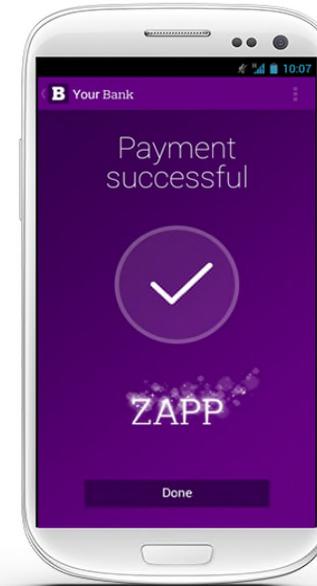
It's from your bank

Your card details don't need to be shared online. No information is passed to the businesses you want to pay. Just download your bank's mobile app and you are ready to Zapp



See your balance

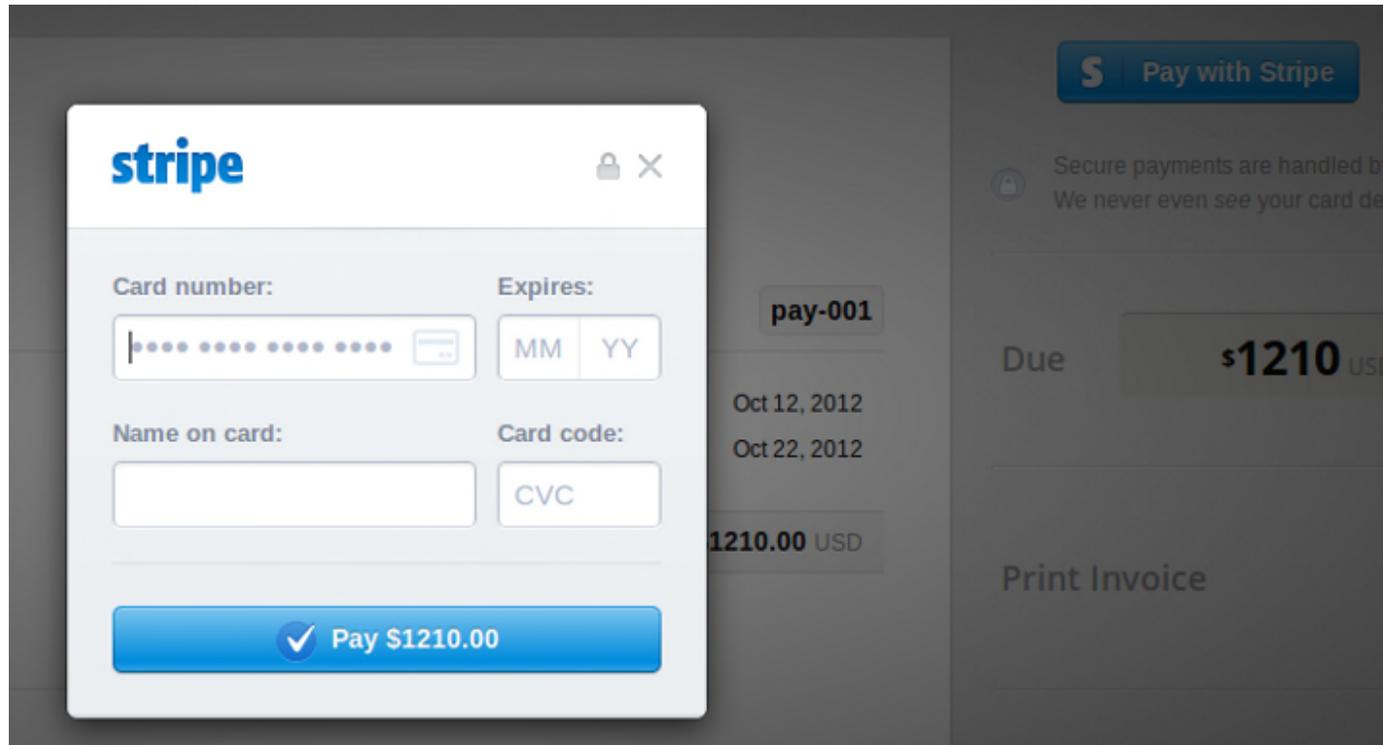
Zapp puts you in control – see your bank account balance before you pay for anything, so that you can buy with complete confidence.



Pay instantly

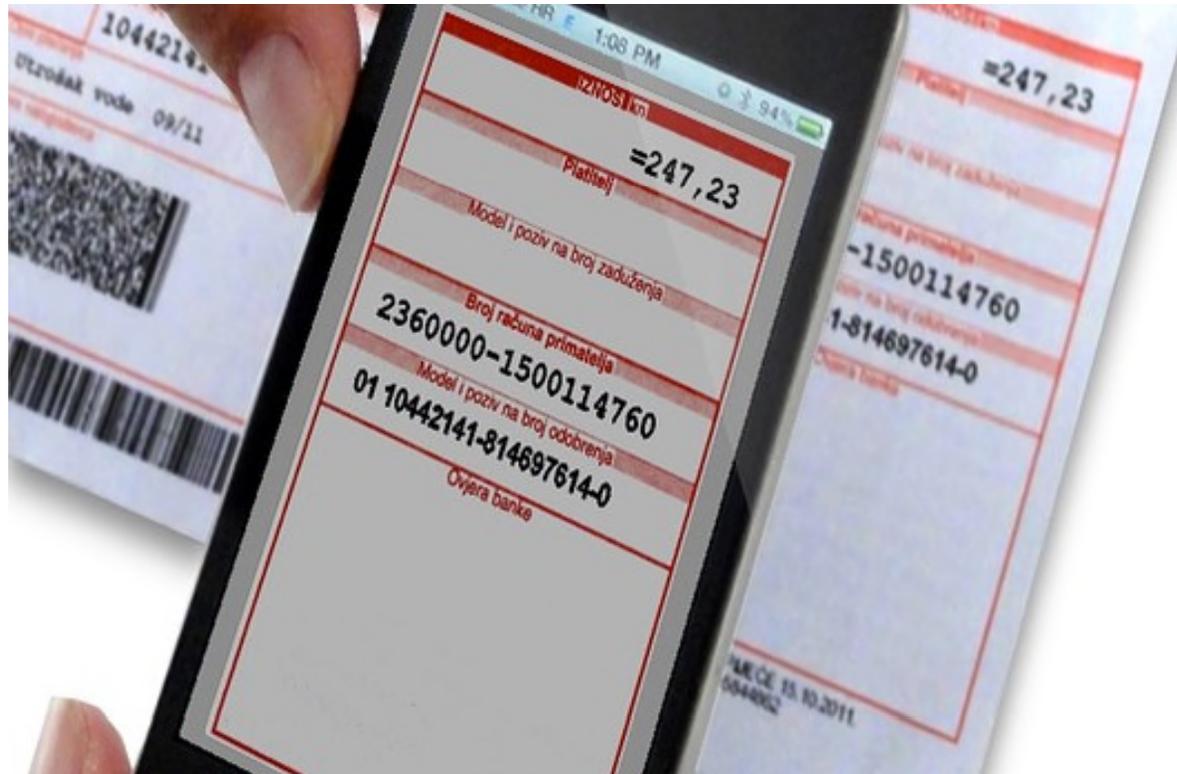
Zapp is faster – we move money instantly from your bank account to the business you are paying.

- Zapp. HSBC, First Direct, Nationwide 등 여러 은행과 제휴하여 서비스.
- 이름, 카드, CVV 번호, 유효기간 등 정보 입력 없이 비밀번호만으로 모바일 결제 가능.
- 결제 단계가 최고 60% 단축. 소요시간도 3분의 1로 줄어듬.



- Stripe. 웹 및 모바일 앱에서 카드를 통한 결제를 쉽게 해 주는 솔루션 제공.
- 모바일 앱 개발자는 스트라이프의 API코드만 가져다 자신의 앱에 삽입하는 방식으로 쉽게 연동.
- 전 세계로 139가지 통화를 지원하는 것뿐만 아니라 은행 계좌 이체와 비트코인, 중국의 알리페이 지원.
- 결제 회당 거래금액의 2.75%와 30센트의 수수료를 받음.

PhotoPay



- Photopay. 독일, 오스트리아, 벨기에 등 9개 국가에서 서비스.
- 사진 스캔만으로 지급결제 서비스 제공. 포토페이 앱으로 영수증 사진을 찍으면 계좌명, 번호, 금액이 스캔됨.
- 결제 버튼을 누르면 빌지에 적힌 금액이 자동 결제됨.

송금

**XOOM. Ripple. Pingit. Venmo.
Square Cash. XPressMoney.
M-Pesa. AZIMO. Revolut. Transferwise.
Nepal Remit. NexPay. Cohort Solution.
Merchantrade Asia. Cebuana Lhuilier.**

xoom

A **PayPal** Service

Just
slide to send

Review Call Us

Maria Lopez

200.00 USD → 2,248.00 MXN

Exchange rate* 1 USD = 11.2384 MXN*

Fee 4.99 USD

Total you pay 204.99 USD

Paying with VISA Card

Cash pickup Elektra

SLIDE TO SEND

xoom Vietnam ▾

Send Money

Fees and Exchange Rates

Recipient Banks

Vietnam fee calculator

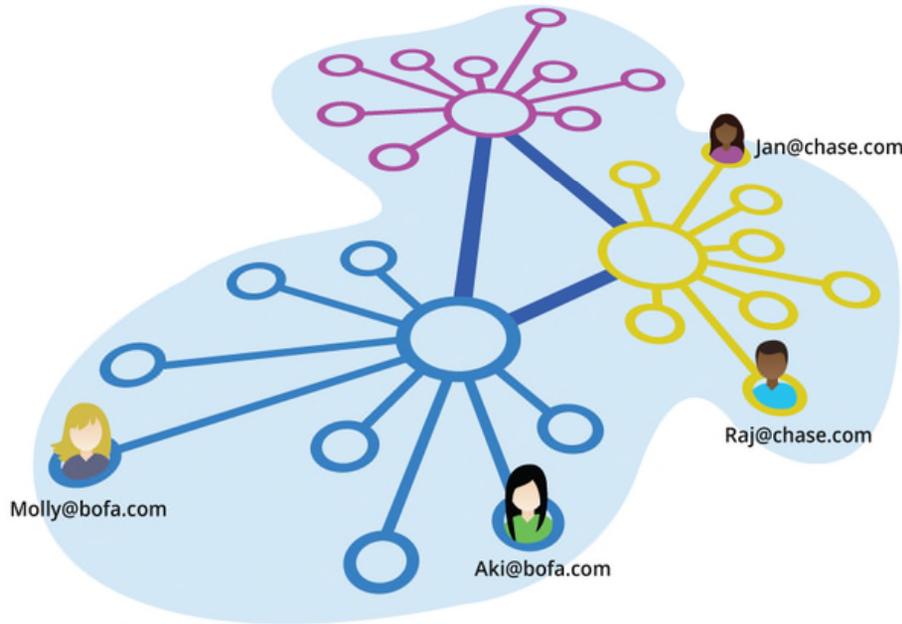
Locked-in exchange rate* **1 USD = 20,400.0000 VND**

Enter send amount

1000 → 20,400,000

U.S. Dollar (USD) Vietnamese Dong (VND)

- Xoom. PayPal과 함께하는 미국의 송금 및 환전 서비스 업체
- 9월 중에 실서비스 론칭 예정이었으나 KEB와의 우수탁 계약 진행으로 지체 중
- KEB와의 XOOM을 위한 전용 계좌 개설해야함



송금 수요 존재량
RIPPLE XRP 세계
한정된 가상화폐 암호화 통화
공동 결제 프로토콜
리플 자산

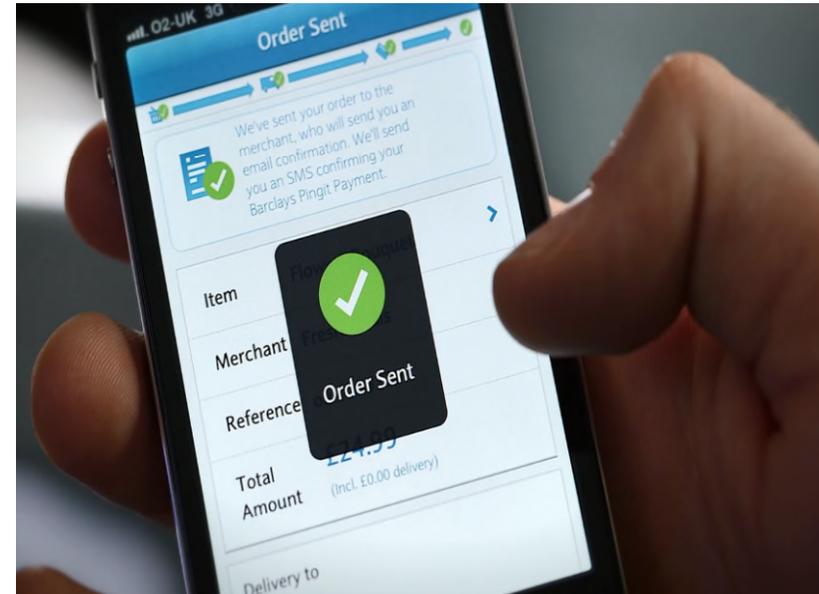
What is ripple?



-Ripple. 새로운 가상화폐이자 암호화 통화를 이용한 새로운 결제 프로토콜.

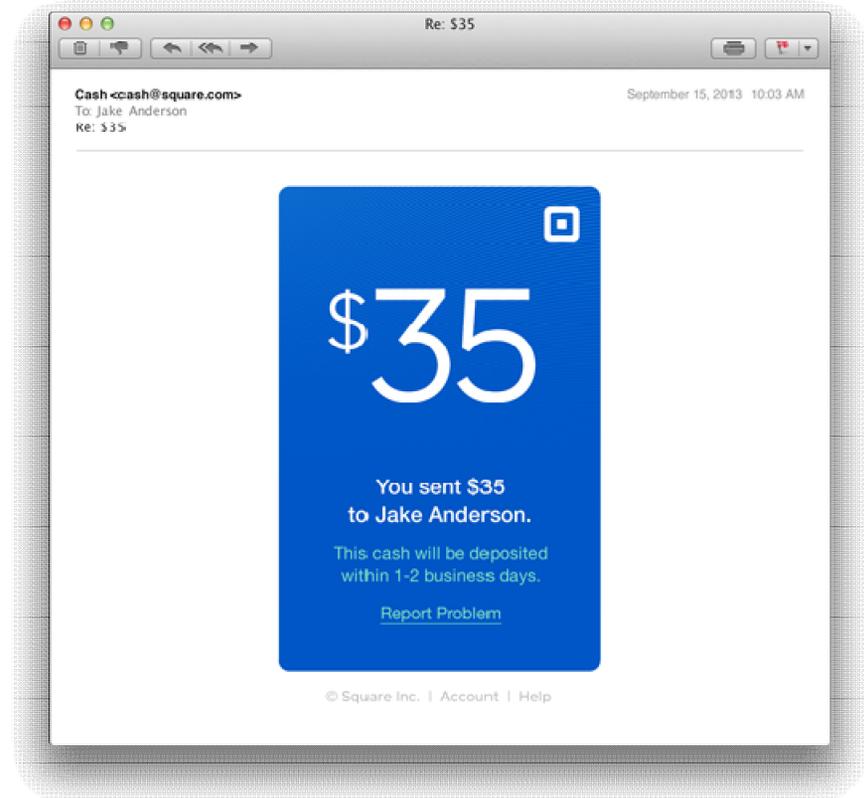
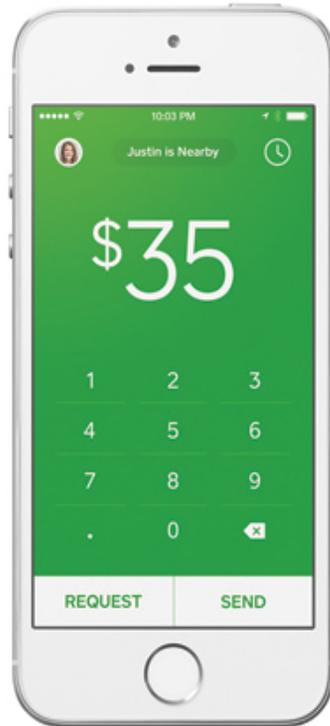
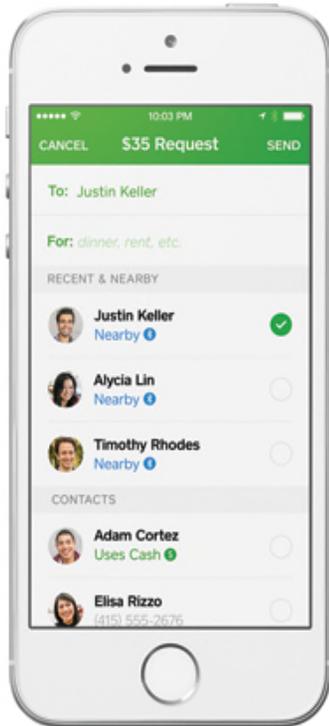
-제 2의 비트코인(BTC)으로 주목받고 있음.

-리플의 "XRP"는 상호간의 송금 서비스 요소를 가짐. 최근 구글 벤처스(Google ventures)의 투자 확정 및 미국,독일 등의 은행에서 리플 결제 시스템 도입을 확정짓는 등 세계의 주목을 받고 있는 가상화폐.



- Pingit. 2012년 영국의 Barclays에서 개발한 무료 송금 모바일앱.
- 상대의 전화번호만 있어도 간편한 무료 송금이 가능
- 전세계의 30여 개국에 별다른 추가 비용없이 전화번호와 기본적인 결제 정보만으로 송금 가능
- Pingit이 등록된 작은 사업체나 동네 레스토랑까지도 결제 가능

Square Cash



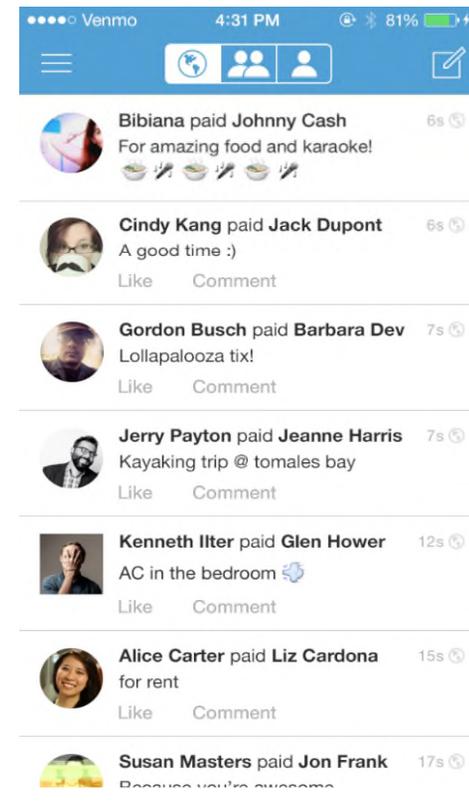
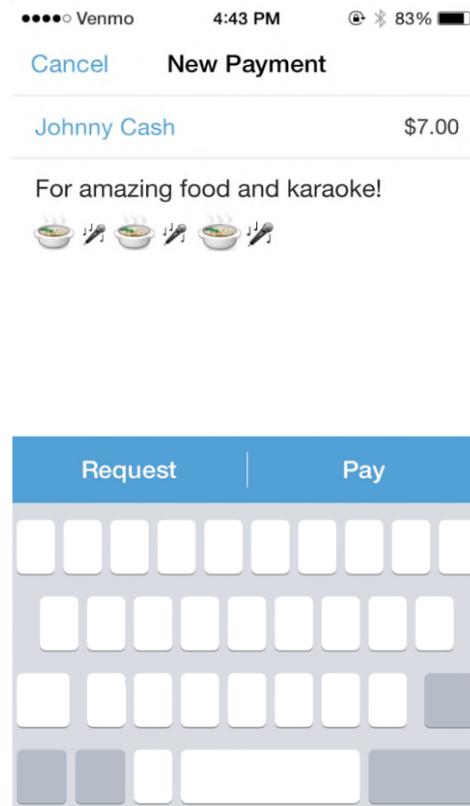
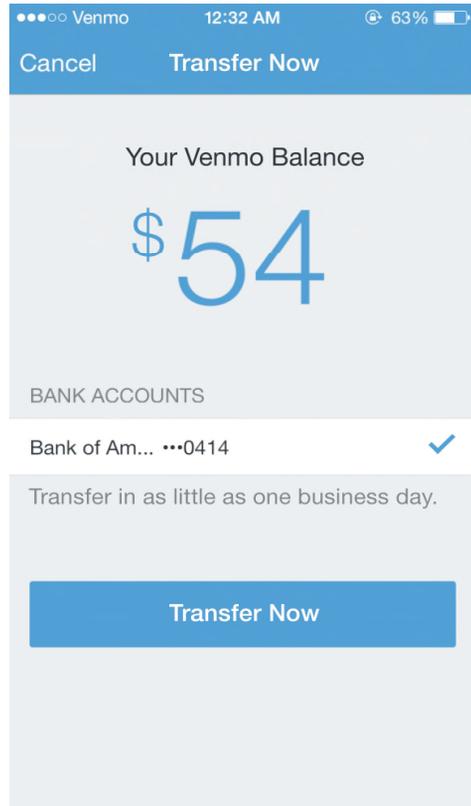
- Square Cash. E-Mail만으로 지불이 가능한 개인간 결제 서비스
- 로그인 및 별도의 App 설치 없음
- 이메일 계정과 직불카드만 있으면 언제 어디서나 결제 가능
- 돈을 받은 사람이 Square 사용자가 아니어도 그 사람의 직불카드로 바로 돈을 보낼 수 있음



GLOBAL MONEY TRANSFER

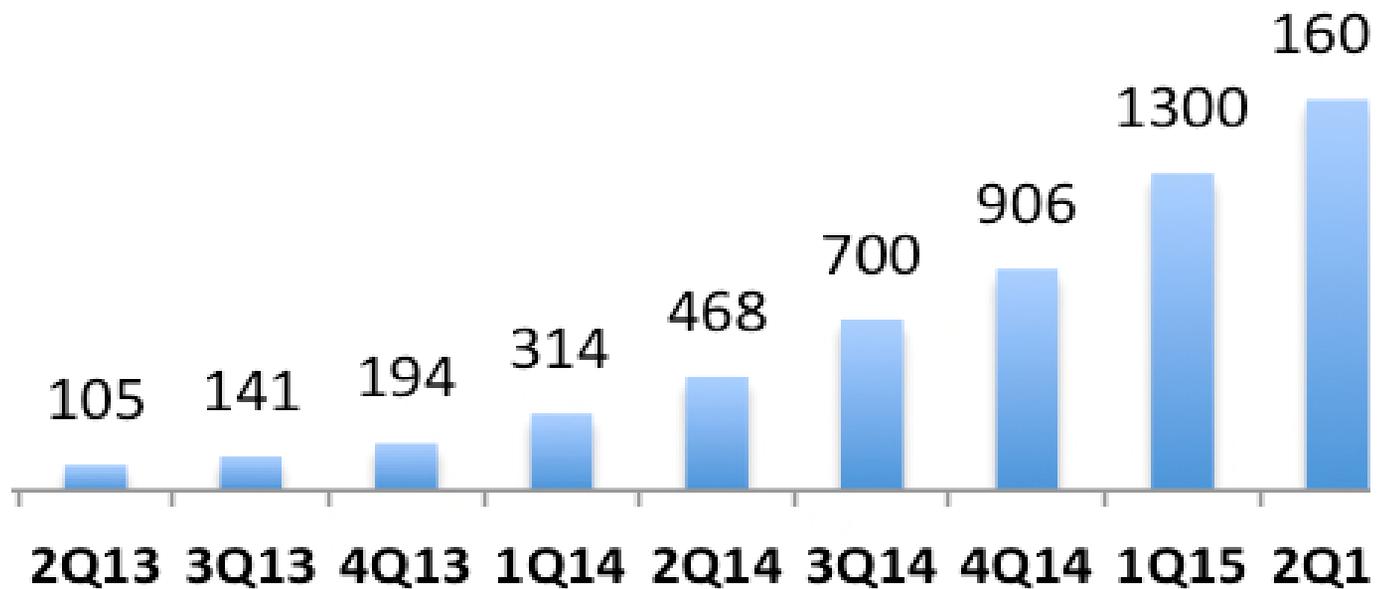
- XPressMoney. Due-Diligence가 마무리 되었으나 XPressMoney의 Compliance Team에서 현 한국의 규제를 문제삼아 PayGate가 은행과의 위수탁계약이 마무리 되어야만 계약을 할 수 있다고 알려진 상황
- 수취인과 송금인에게만 16자의 Xpin이 보내져 안전한 송금 거래 가능
- SMS 확인이 가능하고, Agent Network를 이용한 송금이 가능

venmo



- Venmo. 미국 내 전용 모바일 앱을 통해 지인 간 소액을 지불하고 이력을 온라인에 공유.
- 위치기반 기술로 결제 편의 제공
- 친구들의 거래가 뉴스피드로 보이고, 내 친구들이 벤모를 통해 이용한 거래 내역을 볼 수 있음.
- 댓글, 좋아요 클릭 가능.(사생활침해 방지를 위해 지불한 금액은 보이지 않음)

Venmo Payment Volume (\$millions)

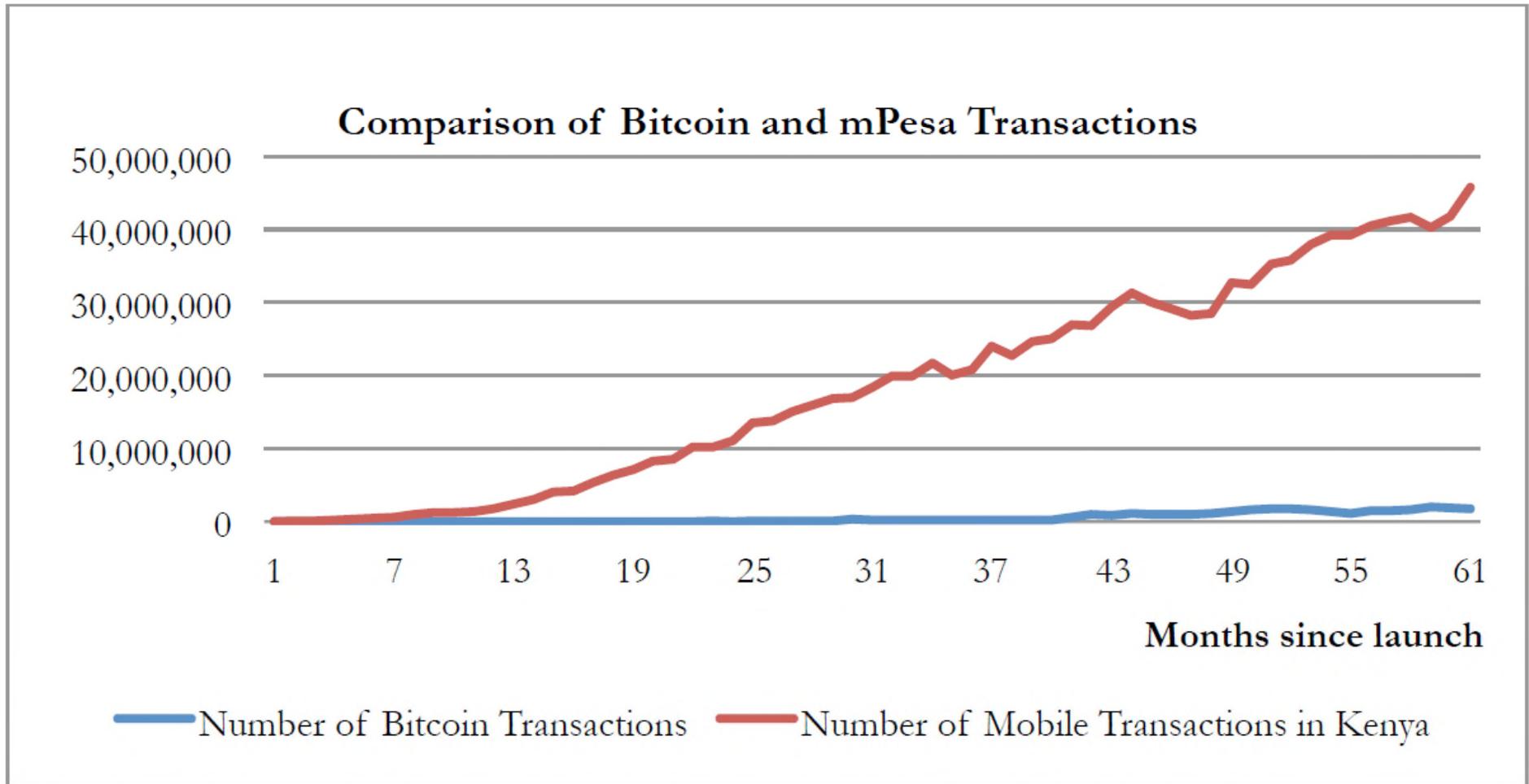


- 미국 젊은층 사이에서 특히 유행하며 점차 그 이용객도 늘어나고 있음
- 매년 증가하고 있는 Venmo를 통한 결제액

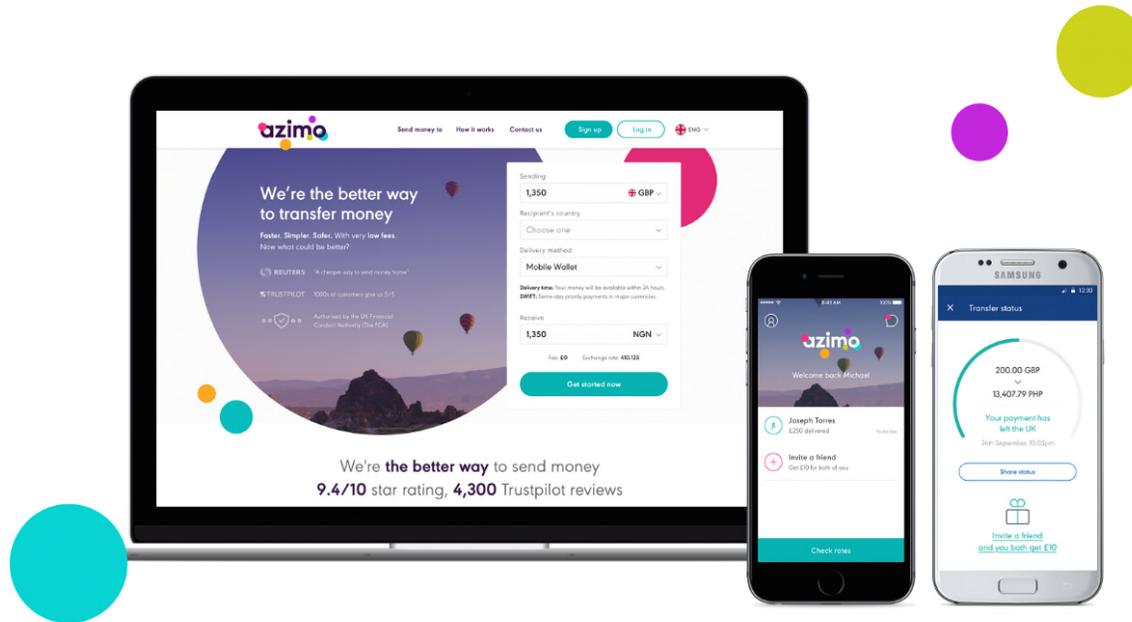


- M-Pesa. 영국 DFID의 지원으로 2007년 시작. Mobile과 Pesa의 합성어.
- 휴대전화를 이용한 간편한 송금 시스템
- 케냐 GDP의 25%에 해당하는 자금(한화 약 50조)이 매년 M-PESA를 통해 거래됨. 서비스를 시작한 이래 케냐 전역에 96,000개 이상의 가맹점 설립.
- 케냐 기존의 은행업이 발전하지 못했으나 휴대폰 사용량은 늘어난 점을 이용
- 현재 동아프리카가 모바일 금융 분야에서는 앞장서며 유럽까지 시장 확대

케냐에서의 비트코인과 M-Pesa의 거래량 비교

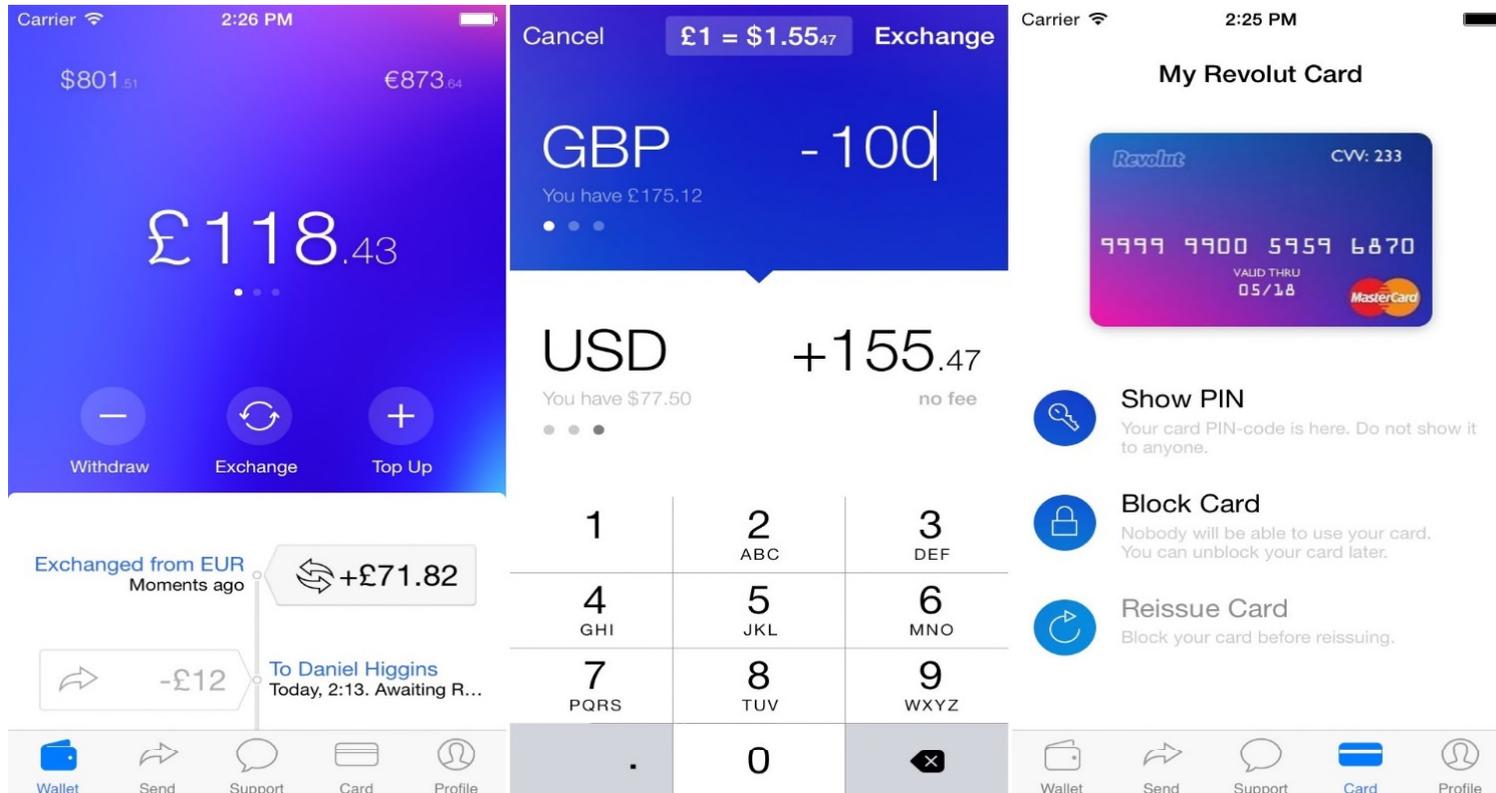


Source: Compilation with data from [quandl.com](https://www.quandl.com) for Bitcoins and Central Bank of Kenya for mPesa



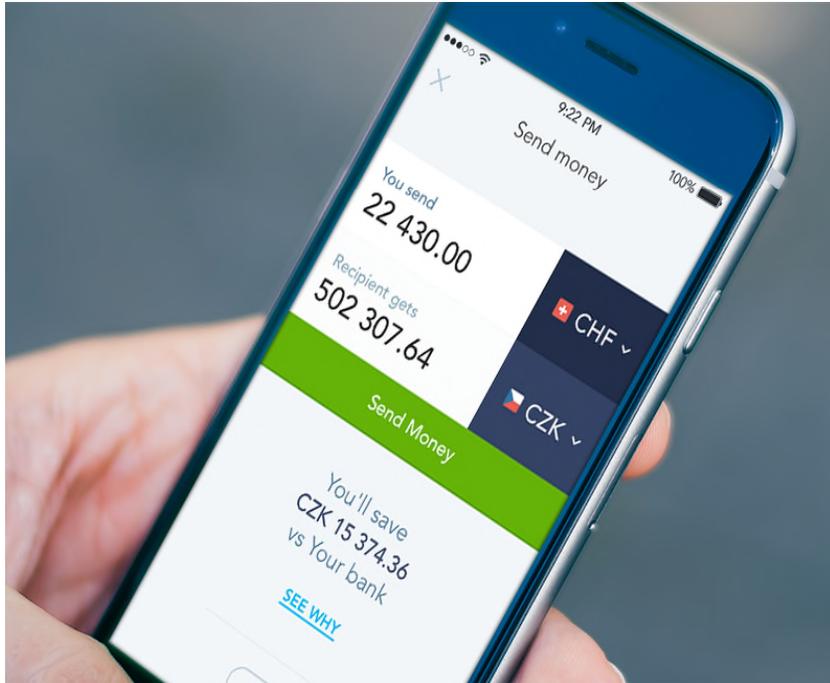
- Azimo. 터키, 필리핀 등의 해외 이주 노동자를 대상으로 서비스 시작.
- 모바일 애플리케이션이나 페이스북을 통해 20개국에서 192개국로 송금 서비스를 제공
- 은행 창구도 없고, 나라마다 직원을 두고 있지도 않기 때문에 기존 은행 등에서 받는 송금 수수료의 부담을 덜어줄 수 있다는 장점이 있음.

Revolut



- Revolut. Revolut 카드를 이용해 90여개 이상의 통화로 이용 가능
- SMS, 이메일, 소셜미디어 등을 통해 즉각적인 송금 가능
- 불필요한 은행 비용을 피하고, 은행의 도움 없이도 송금, 결제, 환전을 가능하게 해줌

TransferWise



- TransferWise. 영국의 대표적인 핀테크 스타트업. 해외 송금과 환전서비스.
- 트랜스퍼와이즈는 기존 은행의 해외 송금 수수료를 10분의 1 수준으로 줄임. 렌딩클럽과 비슷하게 P2P 매칭을 이용한 결과.
- 안전성, 정확함과 빠른속도, 그리고 60개 이상의 나라에서 쓰인다는 장점



Softbank - 080-4667-7011 & 080-3691-9798

Home

Foreign Exchange (¥)
(☎ 080-4667-8010)

JPY 1 = NPR 1.0362

NPR 100,000 = JPY 96,507

JPY 100,000 = NPR 103,620

Service Charge

¥ 1 - ¥ 30,000 = ¥ 500

¥ 30,001 - ¥ 150,000 = ¥ 1000

¥ 150,001 - ¥ 1,000,000 = ¥ 1500

ate Calculator

Exchange Rate Calculator

Send:
Receive:
Send Amount/Receive Amount:
Calc by :

JAPAN
NEPAL
 Please Provide valid Value .
 JPY CCY NPR CCY

Exchange Rate 1 JPY = 1.0362 NPR

- NepalRemit. 네팔의 가장 큰 IT 서비스이자 WorldLink Group의 소속
- Out-Bound 준비가 되는대로 시작 예정
- KEB와의 위수탁 계약 진행으로 지체 중



- NexPay. 2012년 설립된 호주의 유학생 학자금 송금 업체
- 계약 완료 후 시스템 연동 완료/ 실서비스 론칭
- 국제 송금비를 내지 않으며 결제 내용을 트래킹 할 수 있음



Pay less to study internationally

Cohortpay has helped thousands of students reduce the cost of their international study.
We can help you too!

Estimate your payment with Cohortpay

Home Country	Destination Country	Tuition Fee	You Pay
Japan ▼	New Zealand ▼	AUD 10,000	JPY 743,309.50 View Currency History

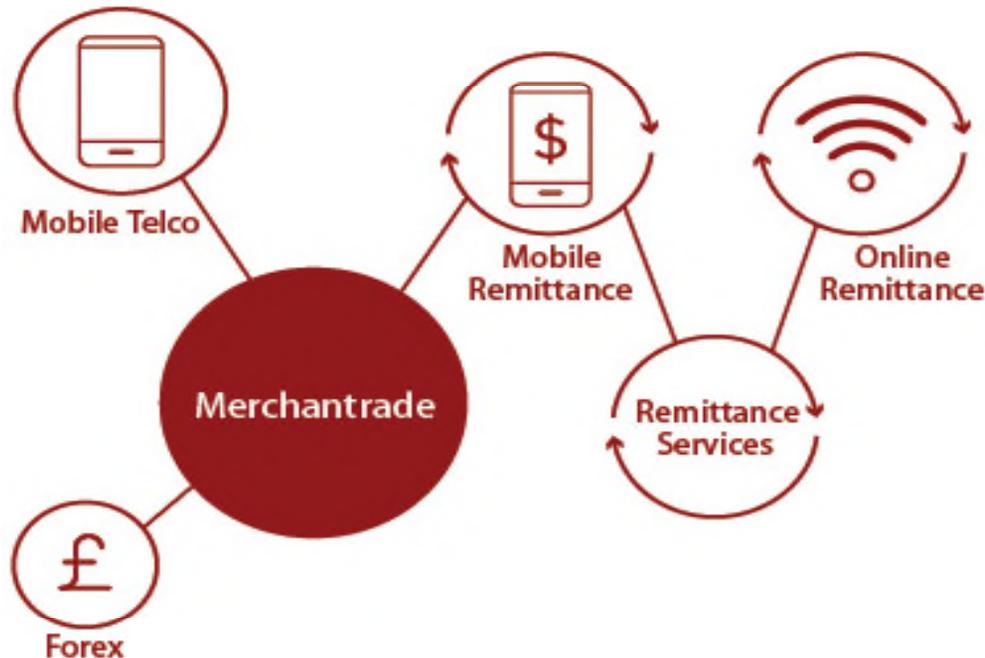
[Get Started](#)

Education Provider or Agent looking to reduce costs and simplify payments for your students? [Partner with Us](#)

- Cohort Solutions. 뉴질랜드 학자금 송금 업체
- 160여 개국의 국제 학생들이 호주, 캐나다, 뉴질랜드, 영국에서 공부할 때 이용하는 서비스
- CohortPay, CohortFlow, CohortSim, CohortArrivals 등의 서비스 제공



Money services & communication across borders



- Merchantrade. 말레이시아 최대 송금 업체.
- WOW/Standard Sim Pack, SUPER IDD Sim Pack
- 200여개 국가, 23만 4000개 지점에서 현금인출망 구축
- 2015년 12월, 한국의 옴니뱅크(옴니텔)와 LOI 체결

송금

LianLian Pay. Sumitomo Bank.

**Trade Solutions Group. Prabhu Money
Transfer. Pinoy Express. Payoneer. Flywire.
NorthStar. Fuiou. Transfermate. Earthport.
WorldRemit. Fastacash. OrbitRemit. Ersal.
MoneyGram. Western Union**



- LianLian Pay. 2003년 설립된 중국의 국제 결제 시스템으로 현재 19여개의 화폐 결제와 중국내 주요 은행들과의 서비스 연결
- American Express, Apple, Paypal, WorldFirst와 파트너십 체결
- 한국 머천트가 중국 아마존을 통해 물건을 파는 것에 대한 준비 가능



三井住友銀行

SMBC SUMITOMO MITSUI
BANKING CORPORATION

- SMBC. 2001년 설립된 Sakura Bank와 Sumitomo Bank의 합병 은행
- 말레이시아와 한국 간 B2B settlement 채널
- 자산 총합 JPY153,641.4 billion
- 예금, 대출, 현금수송, 담보, 외환 교환 등의 주업무



- Trade Solutions Group. 금융 거래, 국제 결제, 외환, 그리고 복수 통화 담보를 위한 혁신적인 소프트웨어 시스템을 개발
- 고객들의 편리한 온라인 banking 시스템을 도입, 은행 업무의 효율성 증가
- Infoel, Synergy, Ibacal.org 등과의 파트너십 체결
- 진행 중이며 첫 거래 기다리는 중. PayGate 측에서 Due-diligence 진행 대기 중

prabhu Money Transfer



[About Us](#) [How it Works](#) [Contact Us](#)

Call us anytime anywhere in USA ☎ (347) 813 4780

[MY ACCOUNT](#) [LOGOUT](#)

John Smith

[Calculate](#) [Beneficiary](#) [Review](#) [Confirm and Send](#)

[Cancel](#)

Calculate

Amount In USD

55.00

Amount In NPR

5,500.00

Guaranteed Exchange Rate 1.00 (USD) = 100.00 (NPR)

You Send	55.00 (USD)
Transfer Fee	10.00 (USD)
Tax	0.00 (USD)
Your Total Amount	65.00 (USD)

Beneficiary Receives 5,500.00 (NPR)

Estimated Delivery Time Tue, 06 Oct 2015 NPT

[Continue](#)

1 (USD) equals to 100.00 (NPR)



Money back guarantee
Every transaction of
prabhuonline.com comes
with money back
guarantee!

- Prabhu Group. 네팔의 송금 업체로 말레이시아, 인도, 방글라데시 등 동남아시아 국가들을 위한 서비스 제공 (미국의 11개 주에서도 승인받았음)
- \$2000 이상 결제 시 무료 거래 가능
- OFAC 리스트에 저장된 SDN 정보 업데이트로 송금자와 수취인이 일치하는지 알기 위함

Delivery Charges

1

Step 1: Select your country you were sending from.

Your Location

Hong Kong

Submit

2

Step 2: Delivery charges will be listed here.

SERVICESHARGES

Door To Door Delivery		
Metro Manila	Caloocan, Las Piñas, Makati, Malabon, Mandaluyong, Manila, Marikina, Muntinlupa, Navotas, Parañaque, Pasay, Pasig, Pateros, Quezon City, San Juan, Taguig, Valenzuela	20 HKD
Near Provinces	Bulacan, Cavite, Laguna, Pampanga, Rizal	25 HKD
Far Provinces	Aklan, Albay, Antique, Baguio City, Bataan, Batangas, Cagayan, Capiz, Cebu, Ilocos Norte, Ilocos Sur, Iloilo, Isabela, La Union, Pangasinan, Nueva Ecija, Nueva Viscaya, Quezon, Quirino, Tarlac, Zambales	35 HKD

Bank Deposits	
Online Banks in Metro Manila	20 HKD
Online Provincial Banks	25 HKD
Direct Deposit to provincial or rural banks	Door-to-door Charges

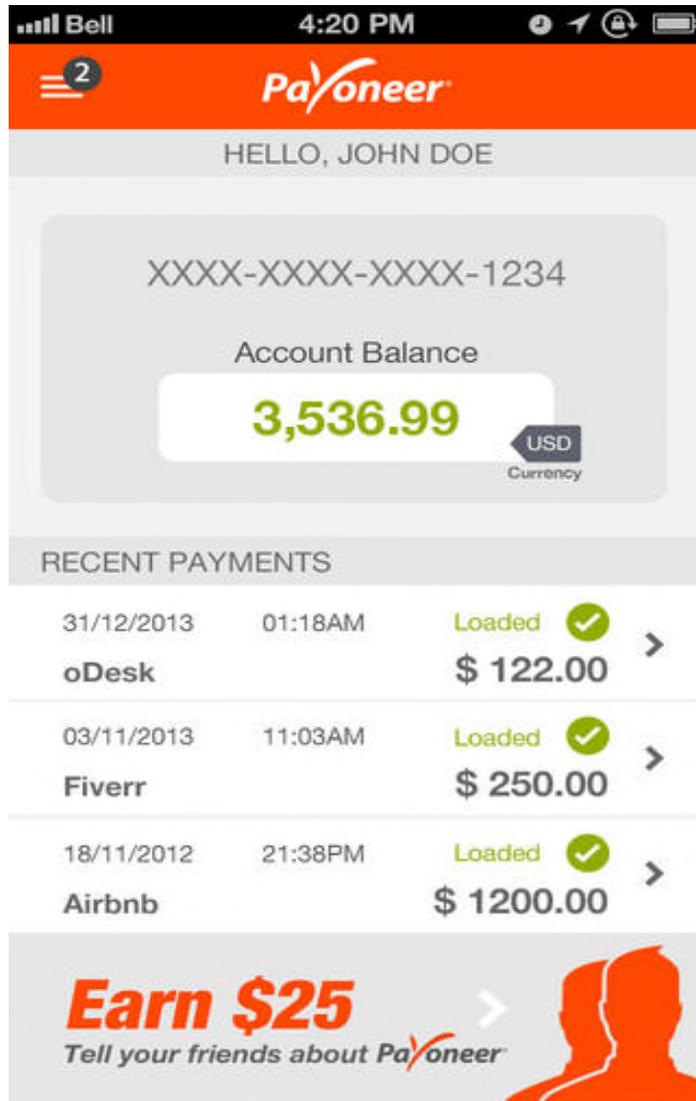
Pick Up	
Provinces (BDO, ONB, and SM)	25 HKD
Metro Manila (BDO, ONB, and SM)	20 HKD

Payment	
SSS Payment	7 HKD
Loyola Plan Payment	FREE

Other Service	
Other Remittance Services	Inquire

- PinoyExpress. 해외에 있는 필리핀 노동자들을 위해 설립된 필리핀의 송금 업체
- 전통적 방식의 door to door 송금, pick-up서비스,결제 서비스, 디파짓 등의 다양한 서비스 제공 (대출 서비스 X)
- 필리핀 이외 싸이판, 팔라우, 홍콩 등의 지점

Payoneer®



- Payoneer. 가입 후 전세계 회사로부터 대금을 받을 수 있고, 선불식 카드와 현지 은행계좌로 자금 출금 가능한 서비스
- 대금 가능 회사: Amazon, Newegg, Wish, 99Design, Fiverr, Airbnb, Gettyimages 등
- 200여 개국에서 3만명의 서비스 이용자
- 온라인 셀러, 프리랜서, 스톡사진가 등 다양한 전문직 종사자와 사업자를 위한 서비스가 특징

flywire

by peerTransfer



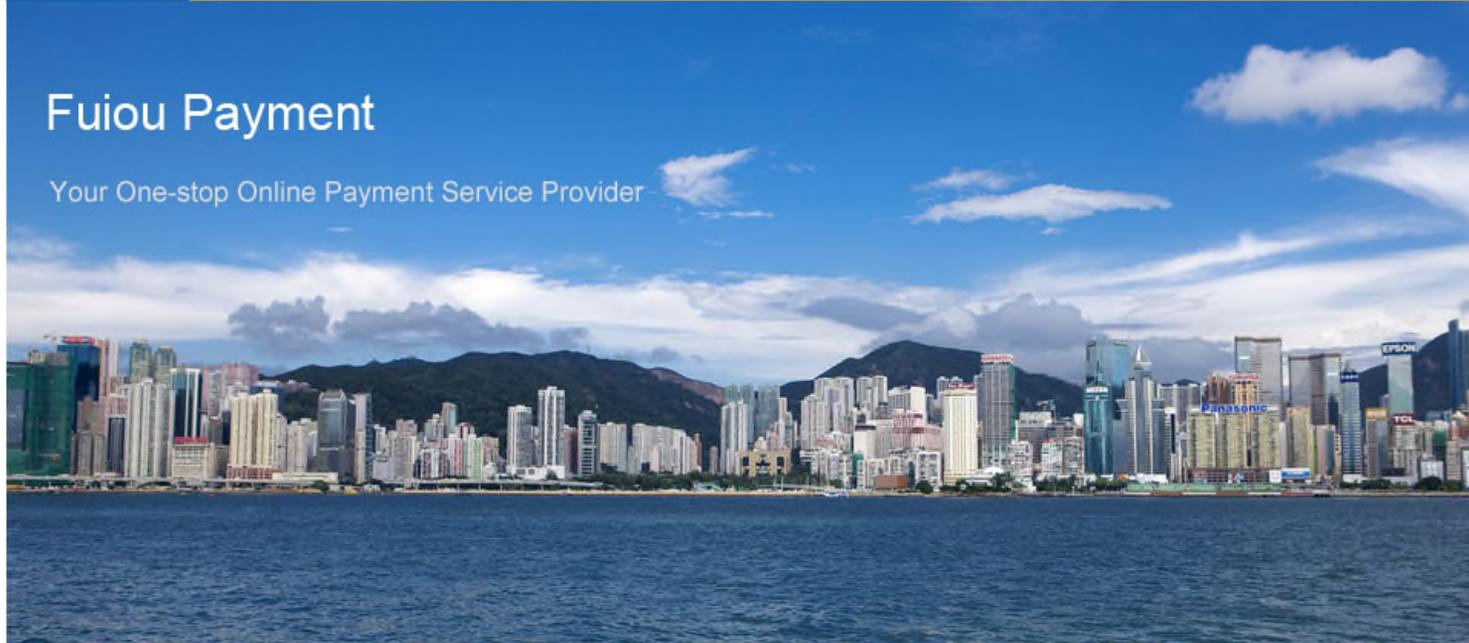
- Flywire. 외국의 학비 송금을 첫 시작으로 현재는 글로벌 소비자들에게 편리하며 안전한 송금, 결제 기회를 제공
- 주 업체는 교육기관과 의료기관
- 환율에서 작은 마진을 남기는 구조로, 기존 은행보다 50% 낮음
- 능률적인 시스템과 낮은 간접 비용의 인프라



- NorthStar Currency. 캐나다, 호주 등의 학교로 학비를 손쉽게 보내주는 국제결제 및 송금 업체
- 10,000여명의 학생들이 700여개의 학교로 송금

Fuiou Payment

Your One-stop Online Payment Service Provider



- Fuiou. 2008년 중국 상하이에 설립된 제3자 결제 솔루션 업체
- China UnionPay의 일원으로 은행 카드, 온라인 결제, 선불 카드 발급, 편의점 결제, 송금 등의 서비스 제공
- POS 시스템: 160개의 중국 은행들의 온라인 결제 가능, 중국의 모든 신용/직불 카드 수용 가능
- 300여개의 파트너, 매달 6만건의 거래량을 기반으로 빠르게 성장 중

TransferMate

GLOBAL PAYMENTS

STEP 3 of 3

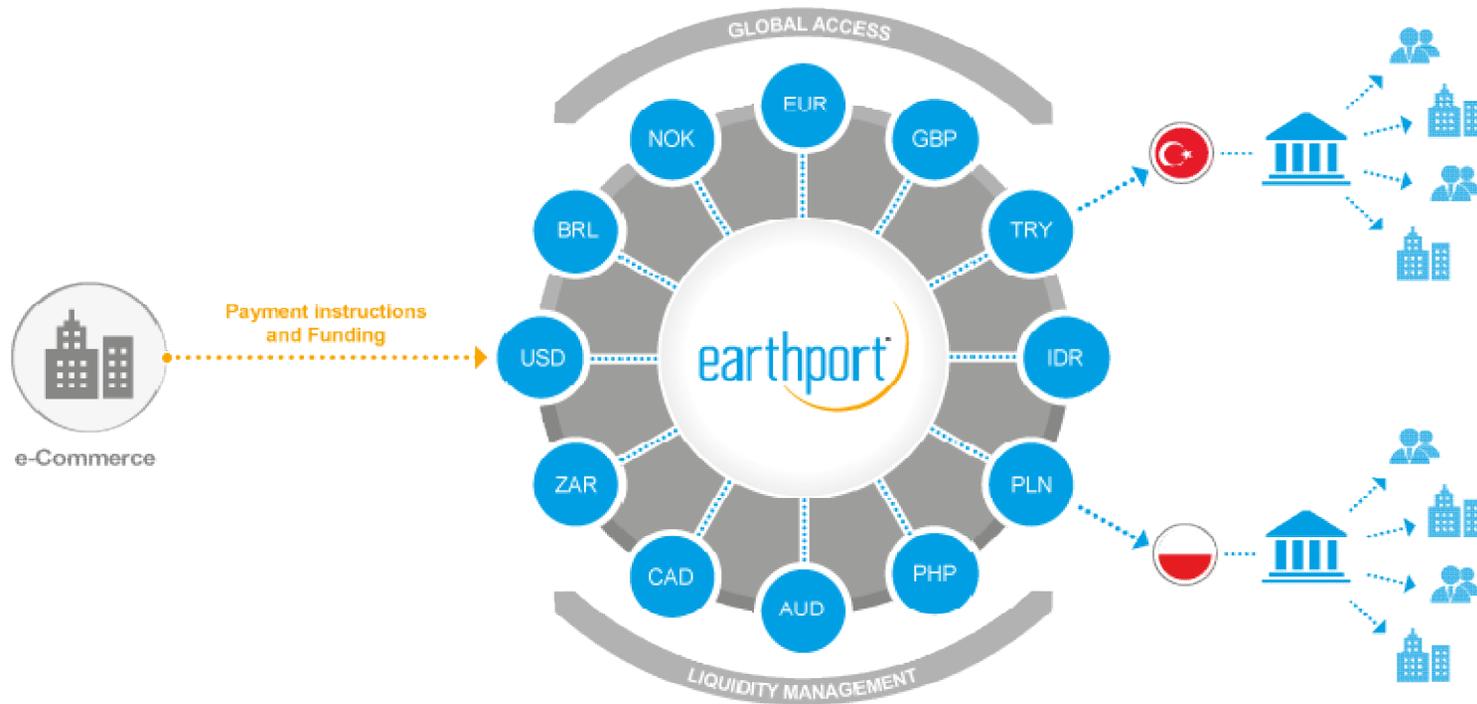
Transaction currency: Show all | Type of transfer: Show all | Status: Awaiting Authorization

Bank account sending money from: Show all

EXCHANGE RATE	TOTAL TO PAY
0.79026 ▼	EUR 20.00
0.79026 ▼	EUR 20.00

REFERENCE	DATE	FOREIGN AMOUNT	EXCHANGE RATE	TOTAL AMOUNT TO PAY	TRANSFER FEE	TOTAL COST	CURRENCY	STATUS
India Supplier	2015.01.17 13:38:00	EUR* 20.00	0.79026 ▼	EUR 20.00	15.00	EUR 7 548.97	Wire Transfer	Awaiting authorization
India Supplier	2015.01.17 13:38:00	EUR* 20.00	0.79026 ▼	EUR 20.00	15.00	EUR 7 548.97	Wire Transfer	Awaiting authorization
India Supplier	2015.01.17 13:38:00	EUR* 20.00	0.79026 ▲	EUR 20.00	15.00	EUR 7 548.97	Wire Transfer	Completed

- TransferMate. 35,000여명의 고객을 보유한 국제 송금 업체
- 50억 달러의 거래량 보유
- 미국, 캐나다, 유럽, 호주, 뉴질랜드 모두에 통합되는 규제 적용
- ERP 시스템을 통한 큰 규모의 거래 진행
- Spot Transaction으로 더욱 경쟁적인 환율 체크 가능



- Earthport. FCA의 승인을 받은 국제 공공 결제 업체
- SWIFT의 일원이자 런던 주식거래소에 등재 (AIM: EPO)
- 고객으로는 TransferWise, Xoom, Stripe, Azimo, WorldRemit, Japan Post Bank, Hyperwallet 등의 국제적 송금 업체들이 있음



The screenshot shows the 'Choose Amount' screen in the WorldRemit mobile app. At the top, there's a blue header with a back arrow, the title 'Choose Amount', and the time '9:44 AM'. Below the header is a progress bar with three steps: 'Calculate' (active), 'Confirm', and 'Send'. The main content area shows the destination 'Send to India' with the Indian flag, and the service 'Bank Transfer'. A table displays the exchange details: 'You Send' is GBP 25.00, and 'Receiver Gets' is INR 2,531. Below this, the 'Fees' are listed as GBP 2.99. There is a field for 'Enter Promo Code' with an 'Apply' button. The 'Total to pay' is GBP 27.99. At the bottom, it states 'Guaranteed Exchange Rate 1 GBP = 101.24 INR' and a large green 'Continue' button.

You Send	GBP	25.00
Receiver Gets	INR	2,531

Fees GBP 2.99

Total to pay GBP 27.99

Guaranteed Exchange Rate
1 GBP = 101.24 INR

- WorldRemit. 영국에서 공부하던 Ismail Ahmed가 아프리카에 있는 가족들에게 송금을 하는 과정에서 아이디어를 얻어 2010년 창립
- 2014년 Accel Partners의 후원을 받아 40만달러의 투자를 받고, 이어 2015년 TCV로부터 100만달러의 투자를 받았음
- Microsoft Azure, Norton Secured, Truste, PCI 등의 기술 규제로 송금 거래의 안전성 강조
- 계좌 입금, 현금 수령, 모바일 머니, 휴대전화의 앱을 통한 수취의 방법 제공

fastacash

 Send Money

 To: James Awoonor 

Send:	 GBP	180.00
Receive:	 KES	24,529.00
1 GBP	 136.37 KES	Total Fee 1 GBP
Card No.	XXXX-XXXX-XXXX-6118	
CVV	678	

 Hey James! Here's the money you need for the month. Take care and all the best! 77/140

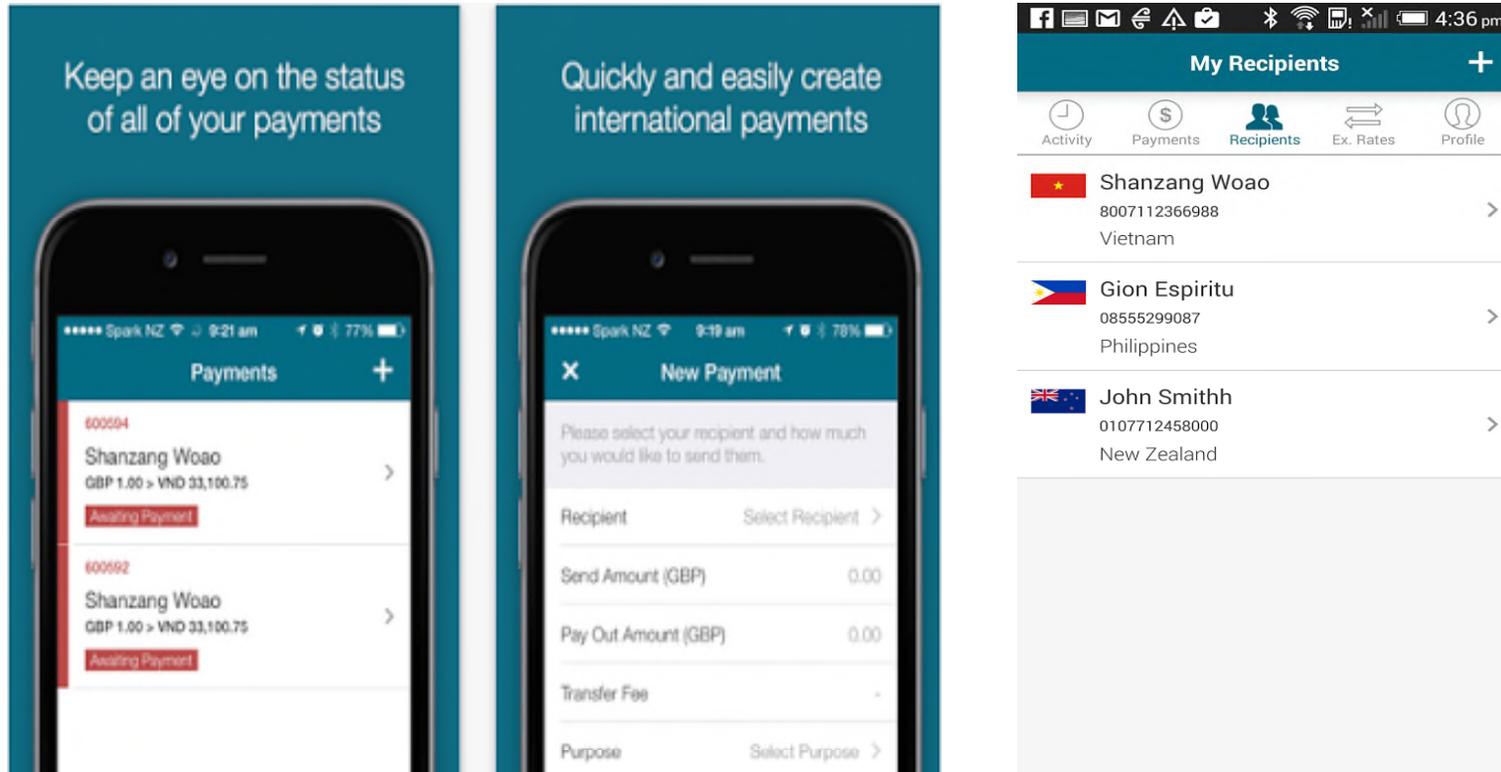




- Fastacash. 2012년 싱가포르에서 설립되어 소셜미디어, 메시지 플랫폼을 합친 결제 시스템
- 사용자의 경험, 사회적 행동 등을 바탕으로 보다 쉬운 결제 시스템을 전문가들이 구축해줌
- P2P 결제, P2M 결제 시스템 제공

ORBITREMIT

International online money transfer



- OrbitRemit.
- 뉴질랜드 IRD로 학자금 대출, 아이 보조, 외 다른 세금 결제 등의 업무 가능
- 가격과 상관없이 IRD를 통한 모든 결제에 별도의 비용이 붙지 않음
- 결제 한 당일 바로 처리된다는 시간적 장점



- Ersal. 사우디 아라비아의 송금 회사
- 계좌로 직접 현금을 보낼 경우 평균 하루, 현금 송금은 1-2시간 이내에 가능 (예멘, 파키스탄, 네팔, 인도네시아, 스리랑카, 필리핀 등)
- Western Union의 송금 서비스 제공. 이 서비스를 이용시 현금 송금 10분 소요.
- 우체국 서비스, 정부 관련, ecommerce 등 다양한 분야 서비스

해외송금 서비스 윙피그, 트루머니 캄보디아와 MOU 체결

2016.09.19 19:46 | 유수정 기자

핀테크 스타트업인 한패스글로벌(대표 김경훈)은 현지 모바일 송금업체인 트루머니(True Money) 캄보디아와 지난 1일 업무협약(MOU)을 체결하고, 한국-캄보디아간 해외송금 서비스를 위한 시스템 구축에 들어간다고 19일 밝혔다.

이들은 내년 1월 중 외국환업무취급기관 등록과 함께 진행되는 윙피그(WINGPIG)의 베타서비스 제공을 통해 동남아 출신의 해외송출 근로자, 국제결혼 여성 및 동남아 국가에 거주하는 교민들이 즐겁고(Fun), 쉽고(Easy), 안전한(Secure) 송금서비스를 이용할 수 있도록 할 방침이다.

윙피그란 모바일 앱 기반의 해외송금서비스로, 채팅을 주고받듯 쉽고 편리하게 이용할 수 있다는 강점을 지녔다.

이날 협약식에 참석한 이문원 한패스글로벌 공동대표는 "이번 협약은 휴대폰 보급률이 110%에 이르고 SNS 이용률이 지배적인 캄보디아 시장에서 윙피그의 해외송금 서비스 모델을 검증하기 위한 첫 단계"라며 "해당 서비스는 값비싼 은행권 외화송금의 확실한 대안을 제시하는 한편 불법 환차기 수요를 양성화하는데 기여할 것"이라고 자신감을 내비쳤다.

이어 "캄보디아의 서비스 안착 이후 동남아시아 10개국을 목표 시장으로 삼고 전체 외화이체 시장에서 빠르게 브랜드를 안착시킬 것"이라고 향후 계획을 전했다.

한편, 트루머니는 태국의 3대 통신사 중 하나인 트루코퍼레이션(True Crop.)에서 분리된 어센드 그룹(Ascend Group)의 자회사로 동남아 주요 도시에서 현금을 대신한 전자결제 서비스를 지원하고 있는 업체다.





MoneyGram
money transfer

MoneyGram ExpressPayment Service
Pay a bill or load a card Pagar una factura o recargar una tarjeta

MoneyGram CUSTOMER COPY

TO BE COMPLETED BY THE CUSTOMER DATOS QUE DEBE COMPLETAR EL CLIENTE

Receive Code (required) **7 5 2 3** Don't know the Receive Code? See this form for a list of common Receive Codes or call your company.
Código de recibo (requerido)

Company Name **MetroPCS Virtual MasterCard** City & State (optional) **Plano, TX**
Número de la compañía

Account number of the bill to pay or prepaid card number to load (required)
Número de cuenta de la factura a pagar o número de tarjeta de prepago a recargar (requerido)
1 2 3 5 5 5 1 2 3 4

Amount to Pay or Load **\$ 100.00** Agent must complete the reverse side of this form for transactions of \$900.00 or more.
Monto a pagar o recargar

Sender's Full Name **John Smith** Sender's Main Telephone Number **(123) 555-1234**
Nombre completo del remitente

Sender's Address **123 Main Street** State **TX** Zip Code **12345**
Dirección del remitente

City **Anytown** Date
Ciudad Fecha

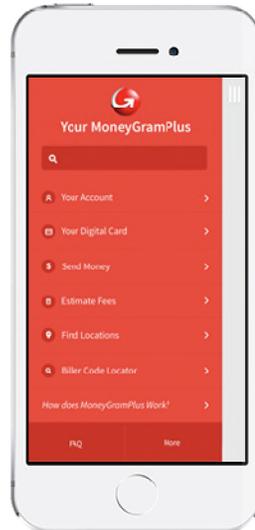
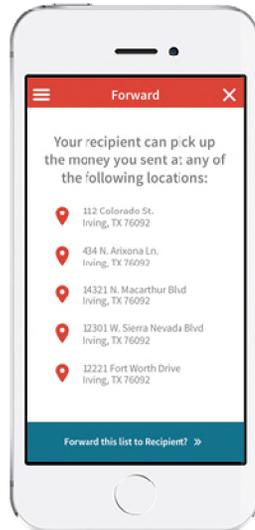
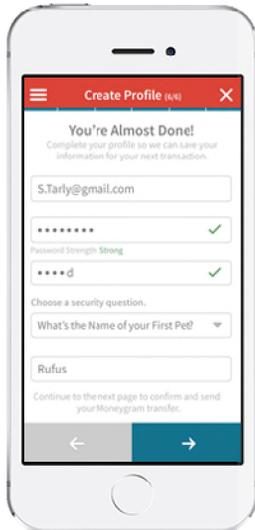
Sender's Signature **John Smith**
Firma del remitente

Message to Company
Mensaje a la compañía

TO BE COMPLETED BY THE AGENT A RELLENAR POR EL AGENTE

Reference Number Agent Employee Name/Operator Number
Número de referencia

Amount Paid to Company Consumer Fee Total Collected
Monto pagado a la compañía



- MoneyGram. 미국 텍사스의 송금 회사로 Travelers Express와 Integrated Payment Systems의 합병 회사로 시작
- 국제 펀드 트랜스퍼와 이 외 금융 관련 비즈니스 회사로 현재 세계에서 2번째로 큰 규모의 송금 업체로 성장. 200개 이상의 국가에 347,000여개의 지사가 있음.
- 연 수입 \$1.45 billion
- 2012년, 4만 달러를 아이들을 위한 교육에 기부
- 간편하고 신속하나 AML과 와이어 펀드 위반 등 사기 관련 일들이 많이 일어난다는 논란



moving money for better

To receive money **WESTERN UNION MONEY TRANSFER**
The fastest way to send money worldwide™

Please print information on this portion of form and present with valid I.D. Do not write in shaded areas

My first name is ZACARIAS Agent Operator number

My last name is HOUSSAOUI Date 1/1 Time

My home address is P.O. BOX 73070-6378 I.D. Type Number

NORMAN, OKLAHOMA 73070 State Expires

My home telephone no. is (405) 326-9885 Social Security No.

* Amount expected \$ Ten Thousand Dollars Preferred Customer No.

Sender's first name A.H.A.D. Height Hair color

Sender's last name S.A.B.E.T. Money Transfer Control Number

Sender's telephone no. () Check number Amount

City/state/country money sent from Germany Date filed 1/1 Cashed check Yes No

Money Transfer Control No. (if available) 5.2.7.1.0.2.9.9.8.6 Originating city/state/country Expected payout city/state/country

I.D. question Answer Agent's Signature

Signature [Signature] Oper USY

FBI 6391 (R 6-96) Copyright ©1996 WESTERN UNION FINANCIAL SERVICES, INC.

M-OCB-00007935

Western Union® Money Transfer Service

1: Transfer Details 2: Payment 3: Review 4: Receipt

* indicates required field

I am sending money to

A Person In:

Amount I would like to send *

Your send limit for this transaction is: € 800.00 ¹.

Amount I am sending United Kingdom Pound = Amount that will be received US Dollar

Your Receiver will pick up approximately 100.00 US Dollar (USD)
1 United Kingdom Pound(£) = 1.4699359 US Dollar (USD)²

Update fees and services

DELIVERY METHOD

Receive money in Available

Cash at agent location [Learn more](#) In minutes*

PAYMENT METHOD

Pay with

Credit/Debit card³ [Learn more](#) £ 5.90

Bank transfer⁵ [Learn more](#)

I am sending money to

Your Receiver can pick up your money transfer at any of our Agent Locations in United States. Please type the Receiver's Name as it appears on the identification they will be presenting to pick up these funds.

Receiver's First Name:

Receiver's Surname:

Receiver's City:

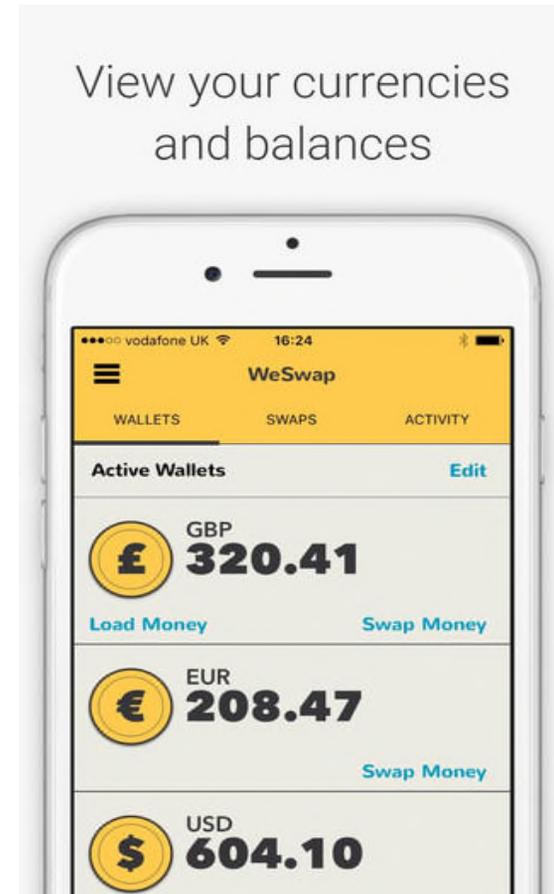
Receiver's State:

Add this person to address book

- Western Union. 164년의 역사를 가진 미국의 대표적 송금 회사
- 2015년 기준, 초당 31개의 거래가 이루어졌으며 130개 이상의 통화 거래. 10억개 이상의 은행 계좌 도달. 50만개 이상의 지점과 10만개의 ATM.
- 작년부터 우리나라의 부산은행, 기업은행, 국민은행, 농협은행 등에서 '웨스턴유니온 자동 송금' 출시 시작

환전

**WeSwap. Travelex. Thomas Cook.
HiFx, Torfx, CurrencyTransfer.**



- WeSwap. 여행객을 위한 P2P 환전 서비스 제공
- 선불카드(마스터) 4% 이상 절감
- 환전하고 싶은 여행객끼리 서로 돈을 맞바꿀 수 있도록 플랫폼만을 제공하고 일부 수수료만을 수취
- 2016년 7월 기준, 650만파운드 (한화 약 97억원) 펀딩에 성공하며 브렉시트를 딛고 Revolut와 함께 떠오르는 영국의 환전앱으로 급부상.



Currency Exchange

WE BUY	NOTES	WE SELL
1.4121	EURO	1.0517
1.7034	SWITZERLAND	1.2852
6.0385	POLAND	4.2934
1.8808	USA	1.422
11.6187	NORWAY	8.839
4.2502	TURKEY	3.2412
10.2966	DENMARK	7.8453
10.925	CROATIA	7.7841
4.8273	LITHUANIA	3.3856
12.1863	SWEDEN	9.2799

CASH PASSPORT™		
1.4121	EURO	1.0517
1.8808	USA	1.422

BE REWARDED FOR EXCHANGING MORE

ENJOY YOUR REWARD FREE BETTER RATE 0% BONUS DISCOUNT

SPEAK TO US TODAY!

COMMISSION 0% MINIMUM 4.99 GBP

- Travelex. 프랑스, 독일, 이탈리아, 룩셈부르크, 벨기에 등 유럽에 당행 유로 여행자수표를 건당 1,500유로까지 무료환전해주는 서비스
- 1000불 이상 주문 시 무료로 다음날 배송
- 현금 혹은 prepaid 카드 중 선택 후, 배달 장소 선택, 그리고 온라인 결제 순서의 시스템



- Thomas Cook. 세계적인 여행자 수표로 여행자를 위한 편리한 환전 서비스
- 1841년부터 시작된 국제 여행 회사로 여행자들을 위한 빠르고, 합리적인 환전 서비스를 제공
- 특히, 유럽 중심으로 매년 약 23만명의 고객이 토마스쿡을 이용해 더욱 편리한 여행을 즐기고 있음



£10,000 will get you

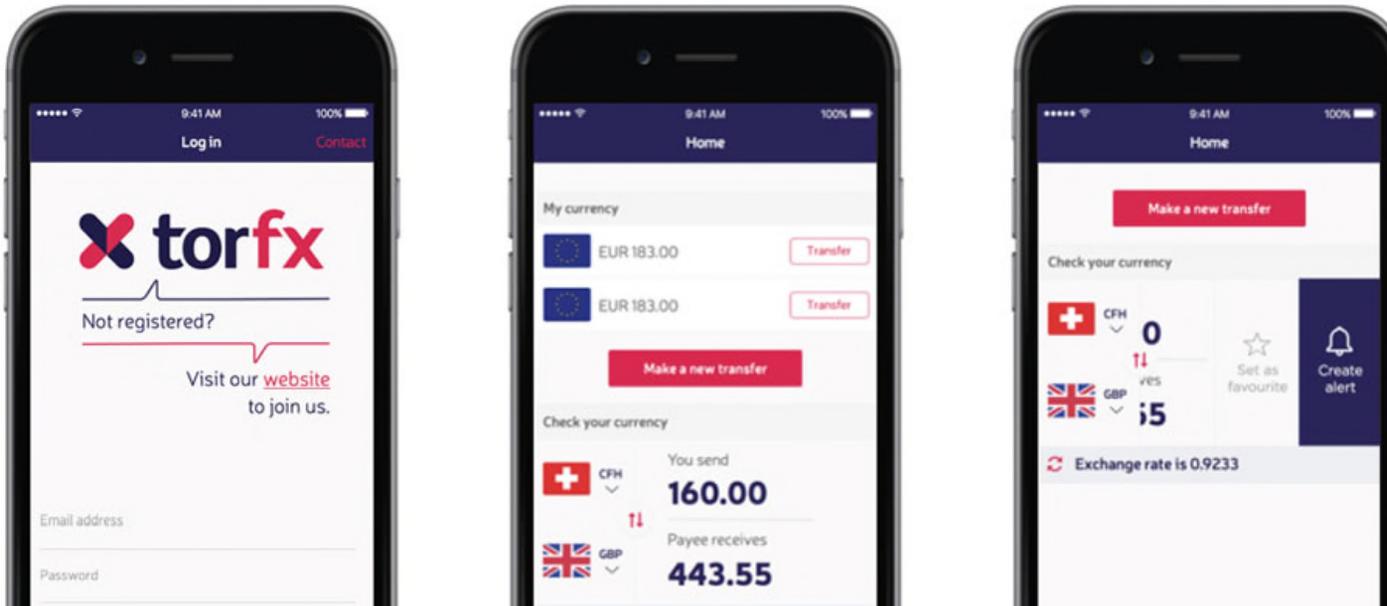
	Amount	Additional Fees
HiFX	€12,665	No Fees
NatWest	€12,503	£30
Lloyds	€12,463	£9.50
Barclays	€12,423	£25
HSBC	€12,422	£4
PayPal	€12,357	€370

These exchange rates were obtained online at 9.45am on 8th June 2016. They are based on sending an international money transfer of £10,000 in £s as quickly as possible. Results have been ranked by the amount you would receive not including any additional fees.

Our fees are also lower than the banks

Transfer Amount	Transfer Fee
Under £3000	£9
Over £3000	FREE

- HiFx. 2014년 설립된 영국의 국제 환전 서비스 회사
- 은행보다 낮은 비용을 제시하며 100,000명의 고객과 6,000여개의 회사에 보다 안전하고 빠른 환전 서비스를 제공
- Euronet Worldwide의 일원으로 세계에서 3번째 규모의 환전 회사



- Torfx. 국제 환전 기업으로 영국환전협회(UKMTA)의 회원
- 50,000명의 고객과 4,000여 개의 회사와 파트너십을 맺음
- 안전성을 중요하게 여겨 결제 서비스 규제에 따른 safeguarded account를 설치
- 환전 서비스 이외에도 사회적 책임을 중요히 여겨 소아암 환자, 재난 구조 등의 기부 활동도 꾸준히 하고 있음



The market rate for transferring:

GBP 1.5714 USD

Settlement date
5:30 PM, 10 Jul 2015

Delivered by
10 Jul 2015

	Sending	Your Rate	Receiving	
	3,186.50 GBP	1.5691	5,000.00 USD	BOOK
	3,186.50 GBP	1.5692	5,000.00 USD	BOOK
	3,186.50 GBP	1.5690	5,000.00 USD	BOOK

- CurrencyTransfer. 영국의 국제 환전 회사로 현재 런던과 이스라엘에 회사를 두고 있음
- 기술, 패션, 자선 단체, 여행, 항공, 온라인 마켓, 목재산업 등 다양한 분야 지원
- 거래의 투명성을 강조하여 매일 달라지는 환율을 고객들에게 보여주고 가장 경쟁력 있는 환율을 제시하는 시스템
- 수수료 0%로 저렴한 가격을 자랑

비트코인

**COINBASE, BTCC, BITSTAMP,
BITHUMB, KORBIT, SNAPCARD**



비트코인이란?

- 2009년 새로 나타난 운영자가 없는 가상 화폐
- 국가 간 규제에 묶이지 않아 국제 거래를 싸고 쉽게 할 수 있다는 장점이 있음. 일부 투자자들은 미래 가치를 위해 비트코인을 사놓기도함.
- 신용카드 비용이 없기에 작은 사업체들 사이에서 인기있음.
- 익명성으로 인해 온라인 마약거래나 불법 행위의 위험이 있음.

돈 굴릴 곳 사라진 일본 대형은행 “비트코인 투자”

(서울=뉴스1) 신기림 기자 2016-07-08

일본 미쓰비시 UFJ 파이낸셜 그룹(MUFG)이 가상화폐 비트코인 결제시스템 '코인베이스'에 투자해 비트코인 시장에 진출한다.

월스트리트저널(WSJ)에 따르면 코인베이스는 아시아 시장 확대를 위해 MUFG를 포함한 투자자들로부터 8일 1050만달러를 조달받겠다고 은행 관계자들이 밝혔다.

2012년 설립된 코인베이스가 진출한 국가는 지난해 1월 19개에서 최근 32개로 늘었다. 코인베이스는 지난해 뉴욕증권거래소(NYSE)와 다수의 은행들을 포함한 투자자들로부터 7500만달러 자금을 유치했다. MUFG 이전에 가장 최근에는 4억달러를 조달받기도 했다.

현재 아시아에서 코인베이스가 운영되는 곳은 싱가포르가 유일하다. 전 세계에서 코인베이스 사용자는 4100만명으로 개인 전자지갑만 600만개가 넘는다.

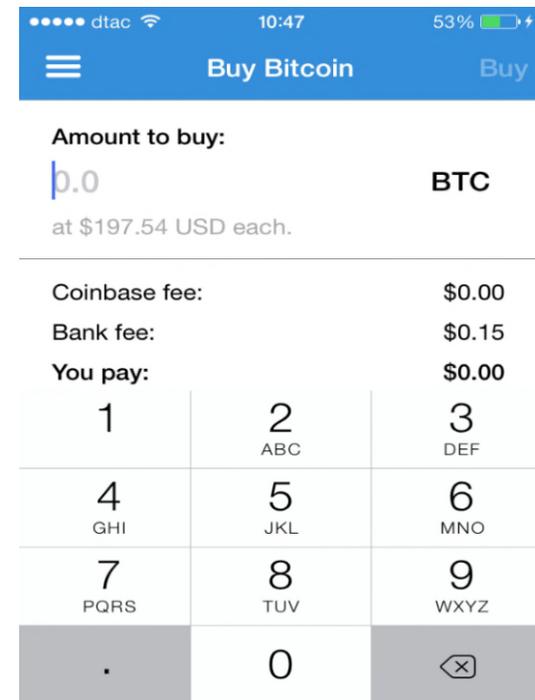
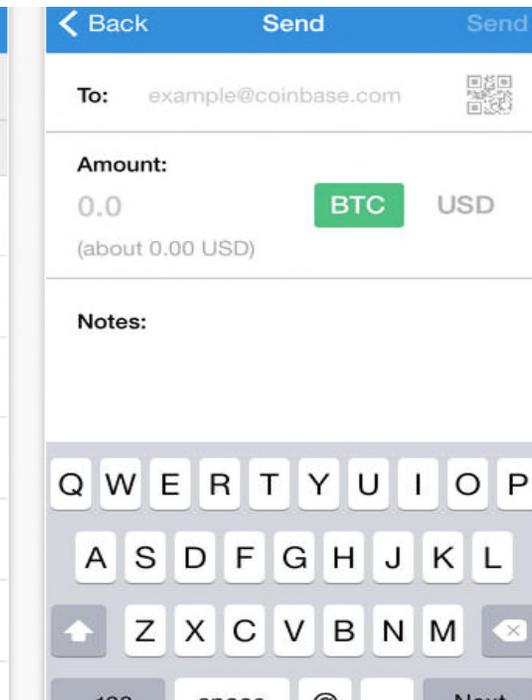
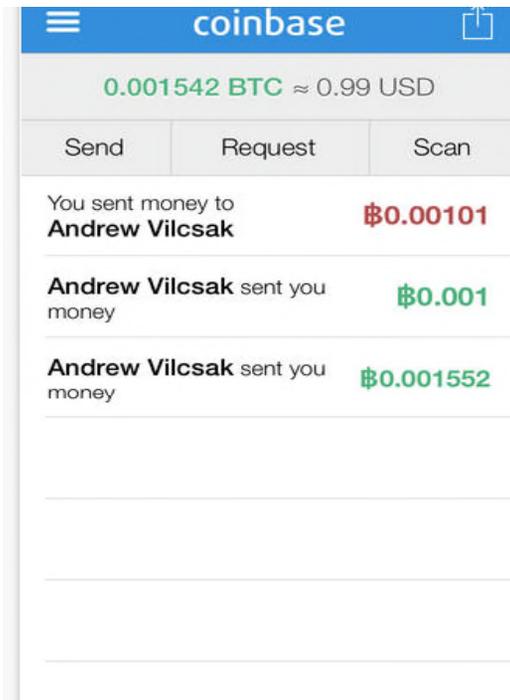
금융기관이 특히 관심을 보이는 대상은 비트코인으로 구현된 '블록체인' 기술이다. 블록체인(분산 원장) 기술은 정보를 한 곳으로 모으지 않고 컴퓨터에 모두 분산시켜 관리하기 때문에 보안과 속도면에서 압도적 성능을 보유했다. 은행들은 블록체인 기술을 금융 거래에 활용하고자 한다. 가와사키 유이치로 MUFG 시니어 매니저는 코인베이스가 범법행위에 대한 강력한 시스템을 갖추고 있다며 미국의 많은 주에서 금융거래 서비스를 제공하는 라이선스를 획득했다고 강조했다.





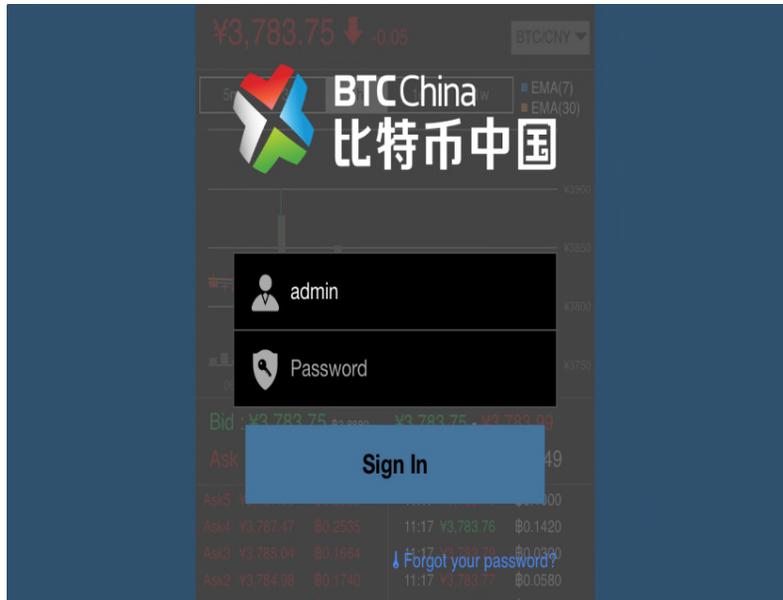
A promotional graphic for Coinbase. On the left, a blue background contains the word "coinbase" in white, with the tagline "Coinbase is the world's most popular place to buy and sell bitcoin." below it. On the right, there are three overlapping images: a smartphone displaying the Coinbase app interface with a balance of 3.3506 BTC and a list of transactions; a desktop browser window showing the Coinbase website with a balance of 1.71 BTC and a list of transactions; and a tablet displaying the Coinbase app interface with a balance of 42.42 BTC and a list of transactions.

- Coinbase. 2012년 샌프란시스코에 설립된 비트코인 거래소
- 미국과 영국 등 32개국에서 비트코인 지급결제서비스 제공 중
- 코인베이스는 일종의 비트코인 은행 역할을 하는 업체로, 비트코인 판매, 매입을 위한 거래소, 지급 처리기, 비트코인을 저장하는 일종의 지갑 서비스 등을 제공. 미국에서 법적으로 인정받은 첫 번째 환전소.



- 현재까지 소비자 3700만명, 판매업체 4만 3000여개 확보
- 비트코인 지갑(Bitcoin Wallet) 개설로 이용자들이 비트코인을 거래하고, 블록체인 기술을 적용해 거래내용에 대한 정보보안 체계를 갖추
- 대형 유통, 서비스, 제조업체 등과 제휴를 통해 비트코인 결제 범위를 확대하고 있음
- 거래내용은 개인 간 분산 네트워크 전송돼 블록체인에 기록된 후 거래 승인
- 다자간 정보공유체계를 통해 보안 강화

BTC China



- BTCC. 2011년 중국에서 설립되어 상하이에 본사를 둔 비트코인 회사
- 비트코인 외에도 Pro Exchange 20x, Spot Exchange, Mining Pool, JustPay Wallet 등의 서비스도 제공
- BTCC Mint라는 타이타늄을 이용해 만든 물질적 전자 화폐를 성공적으로 만듦
- 최근 증시 침체와 위안화 절하 전망, 당국의 부패 단속을 피하기 위해 중국인들의 비트코인 거래량 증가



BITSTAMP

BITSTAMP

Home Account Buy / Sell Tradeview Deposit Withdrawal

Deposit >

EU Bank (SEPA) >

International Bank >

Bitcoin >

Credit Card >

Ripple >

AstroPay >

CARD PAYMENT

Get ~ 0.12705882 BTC	<i>Popular choice!</i> Get ~ 0.38117647 BTC	Get ~ 0.76235294 BTC
for \$50	for \$150	for \$300
BUY	BUY	BUY

- Bitstamp. 2011년 설립되어 현재 룩셈부르크, 런던, 뉴욕에 사무실을 둔 비트코인 거래소.
- 회사와 개인들이 쉽고 믿을 수 있는 방법으로 비트코인을 교환하게 하는 서비스.
- 2012년, 1만건의 거래량에 도달함.
- 브렉시트의 영향으로 비트코인 관련주가 급등하며 2016년 6월 기준, 1비트코인 당 달러 교환 비율이 760달러대까지 기록.

Bithumb Transfer 빗썸 트랜스퍼

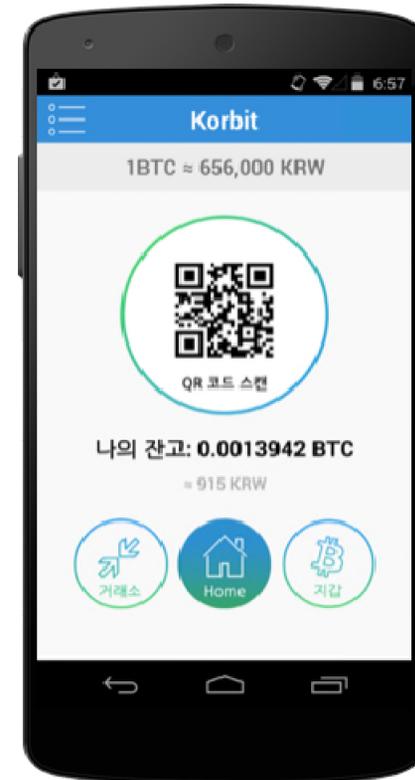
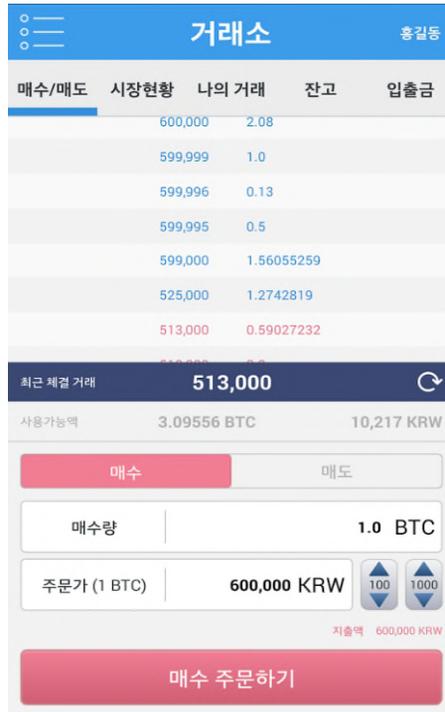


빗썸 트랜스퍼(Bithumb transfer)는 전세계의 비트코인 네트워크를 이용한 빗썸의 새로운 송금 대행 서비스입니다.

- Bithumb. 블록체인을 활용한 차세대 국제 송금 서비스.
- 저렴한 수수료와 30분 이내의 빠른 송금 속도.
- 국내 계좌가 없어도 간단한 인증 절차만 거치면 가능.
- SMS를 활용해 상대의 휴대번호만 알아도 SMS 송금이 가능.
- KRW 송금 대행 서비스와 BTC 송금 대행 서비스.



KORBIT



- Korbit. 세계 최초 원화/비트코인 거래소.
- 한국 최초의 비트코인 국제송금 서비스로써 빠르게 송금 수수료 없이 국제송금을 이용할 수 있음.
- Multi-signature Wallet (멀티시그 지갑)을 이용해 보다 안전하게 출금.
- 2013년 설립 후 총회원수 3만명, 가맹점 수 1300개, 누적 총 거래량 8백억의 규모로 성장.

국내 최초의 비트코인 거래소 '코빗', "기존 금융시장과 디지털 자산 네트워크를 연결하는 승차장 될것"

7월 19일 2016년 지승원기자

코빗은 분산장부 형태의 블록체인(blockchain) 기술을 기반으로 한 암호화폐(Cryptocurrency)인 비트코인과 이더리움(Ethereum)의 원화 거래를 지원하는 거래소를 운영 중이다. 코빗은 이 거래소를 중심으로 비트코인을 활용한 글로벌 결제 서비스 '[코빗페이\(KORBIT PAY\)](#)', 개인 사용자(B2C)를 위한 비트코인 국제송금 서비스이자 기업(B2B)을 위한 해외 송금 망인 '[하이픈\(HYPHEN\)](#)' 등을 제공한다.

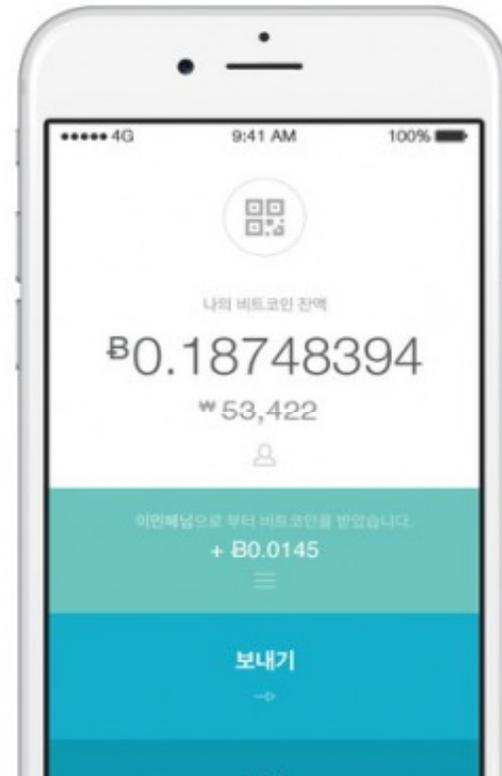
코빗의 하이픈은 외국인 근로자, 교환 학생, 비즈니스맨 등의 개인 사용자가 비트코인을 활용해 송금할 수 있는 서비스다. 기존에 은행을 통해 해외로 송금하려면 국제은행 간 통신협회(SWIFT) 망을 이용하는 전신료를 지불해야했다. 코빗의 유영석 대표는 "특히, 은행을 통하면 송금액과 상관없이 1건당 5천 원~8천 원의 전신료를 내야 함과 동시에 돈을 송금하는 국가의 은행에도, 돈을 수취하는 국가의 은행에도 송금 서비스 이용 요금을 내야 하기 때문에 적은 금액을 송금하는 데 적합하지 않다. 하지만 코빗의 하이픈을 사용하면 송금 건당 전체 송금 금액의 2%만을 부과하므로 은행을 통하는 송금에 비해 수수료가 저렴하며, 기존에 며칠 이상 걸리던 송금 완료까지의 시간도 몇 시간으로 단축할 수 있다"고 설명했다.

코빗은 300만 원 이하의 소액 국제 송금 시장을 보고 있다. 사용자 입장에서는 송금하려는 금액이 소액일수록 코빗의 하이픈을 통하는 것이 더욱 유리한 셈이다. 현재 사용자는 코빗의 하이픈을 통해 프랑스, 독일, 중국 등 24개국에 6개의 통화를 보낼 수 있다.

Korbit

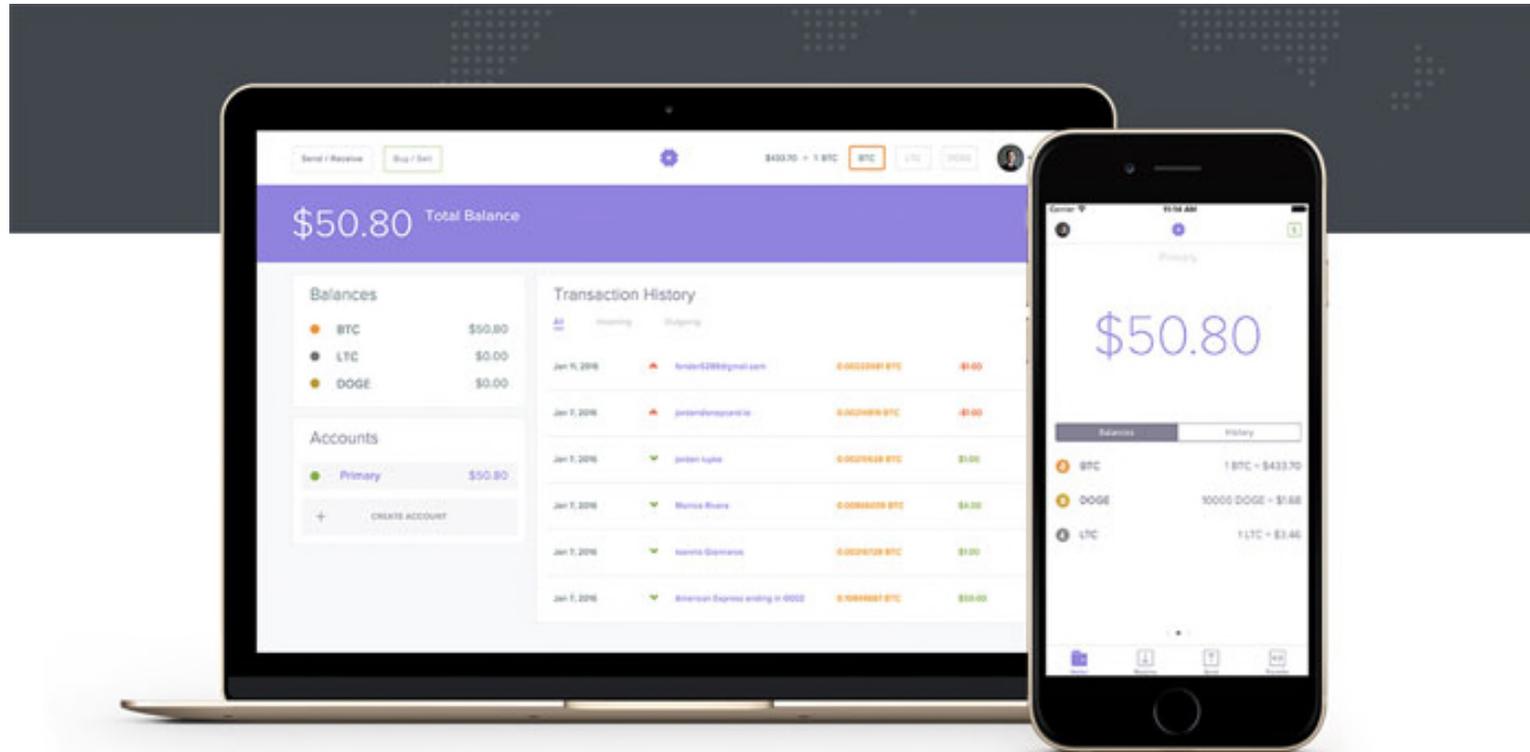
Korea
Bitcoin 
Exchange

쉽고 안전한 비트코인, 코빗





SNAPCARD

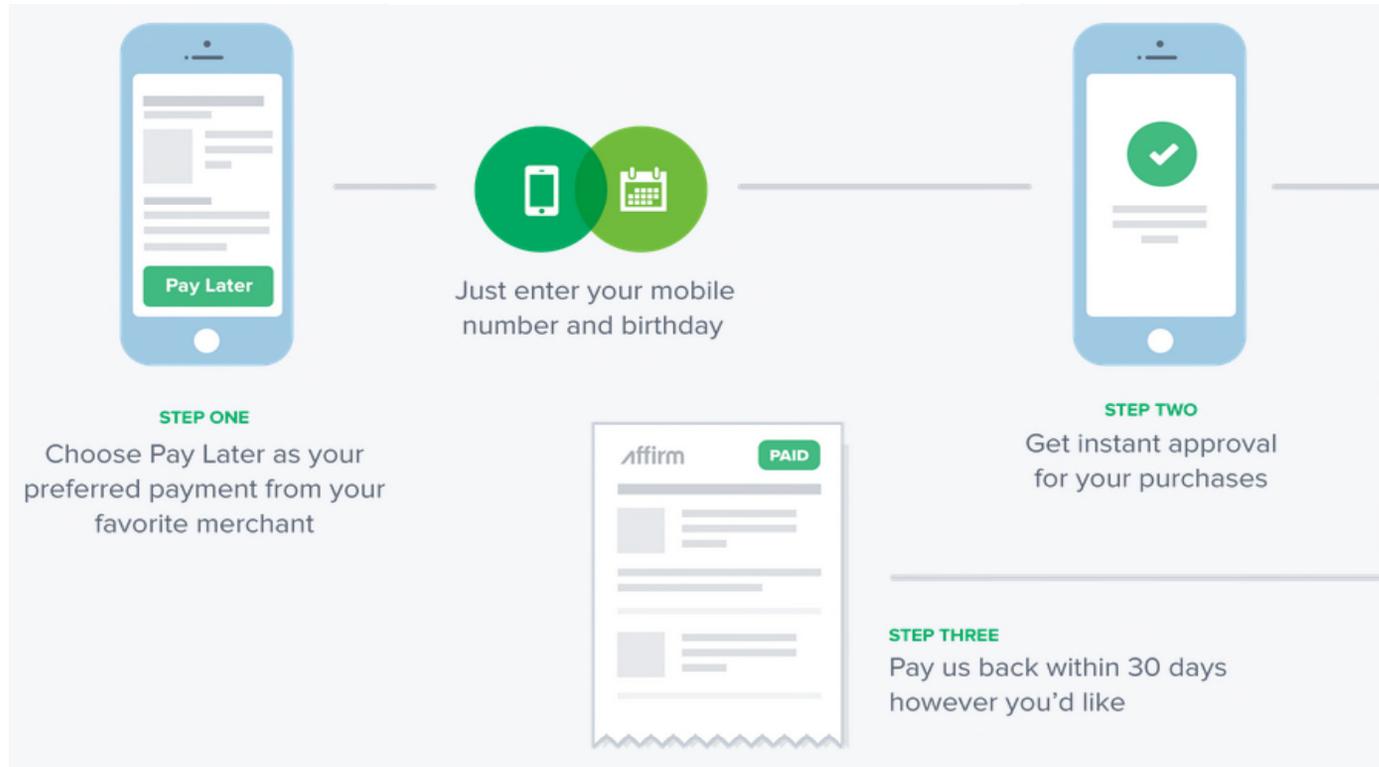


- Snapcard. 블록체인 기술을 이용해 다양한 비즈니스를 돕는 2013년 설립된 샌프란시스코의 비트코인 회사
- 'MassPay'를 개발해 fortune 500 회사들과 수많은 거래가 오가고 있음
- 은행 계좌만으로 Snapcard 비트코인 월렛에 비트코인을 구매할 수 있음

Big data Credit Analysis

**Affirm. OnDeck. Cloud Margin.
Billguard. Zest Finance. KD nuggets.
BankSalad. SPLUNK. Softcen.**

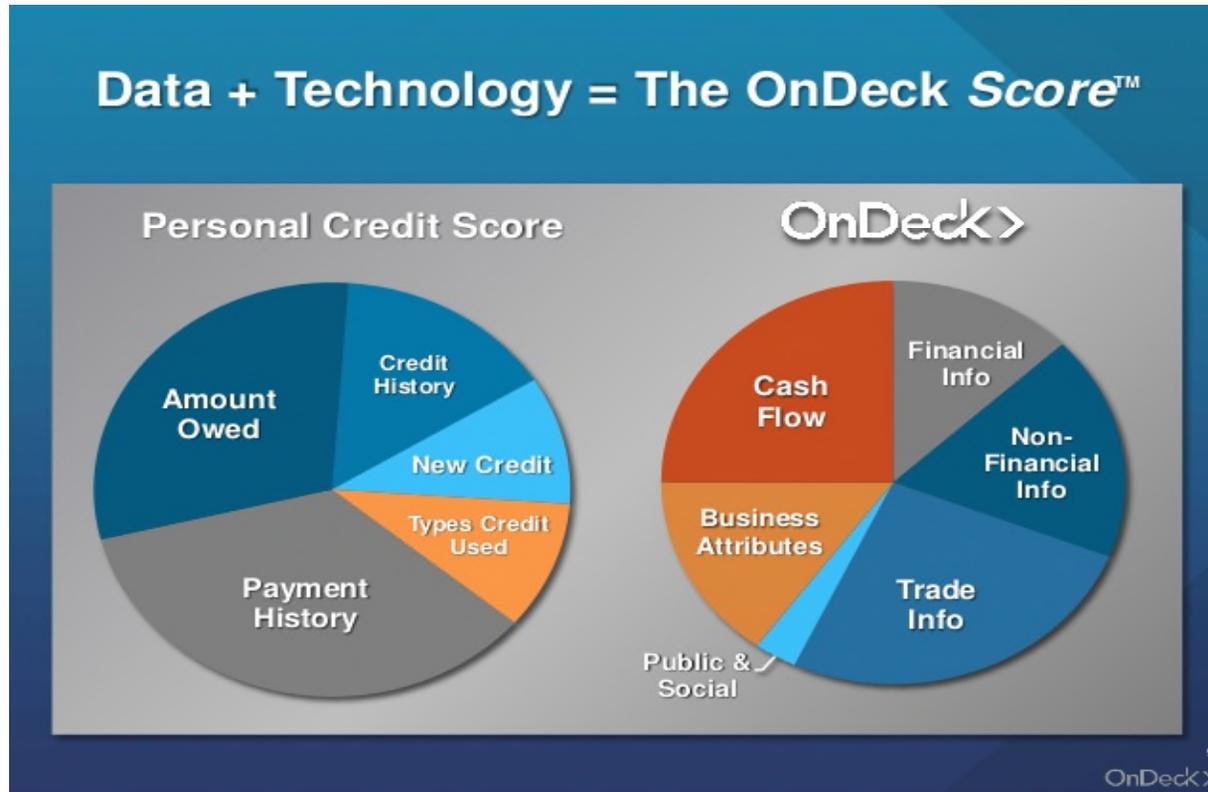
affirm



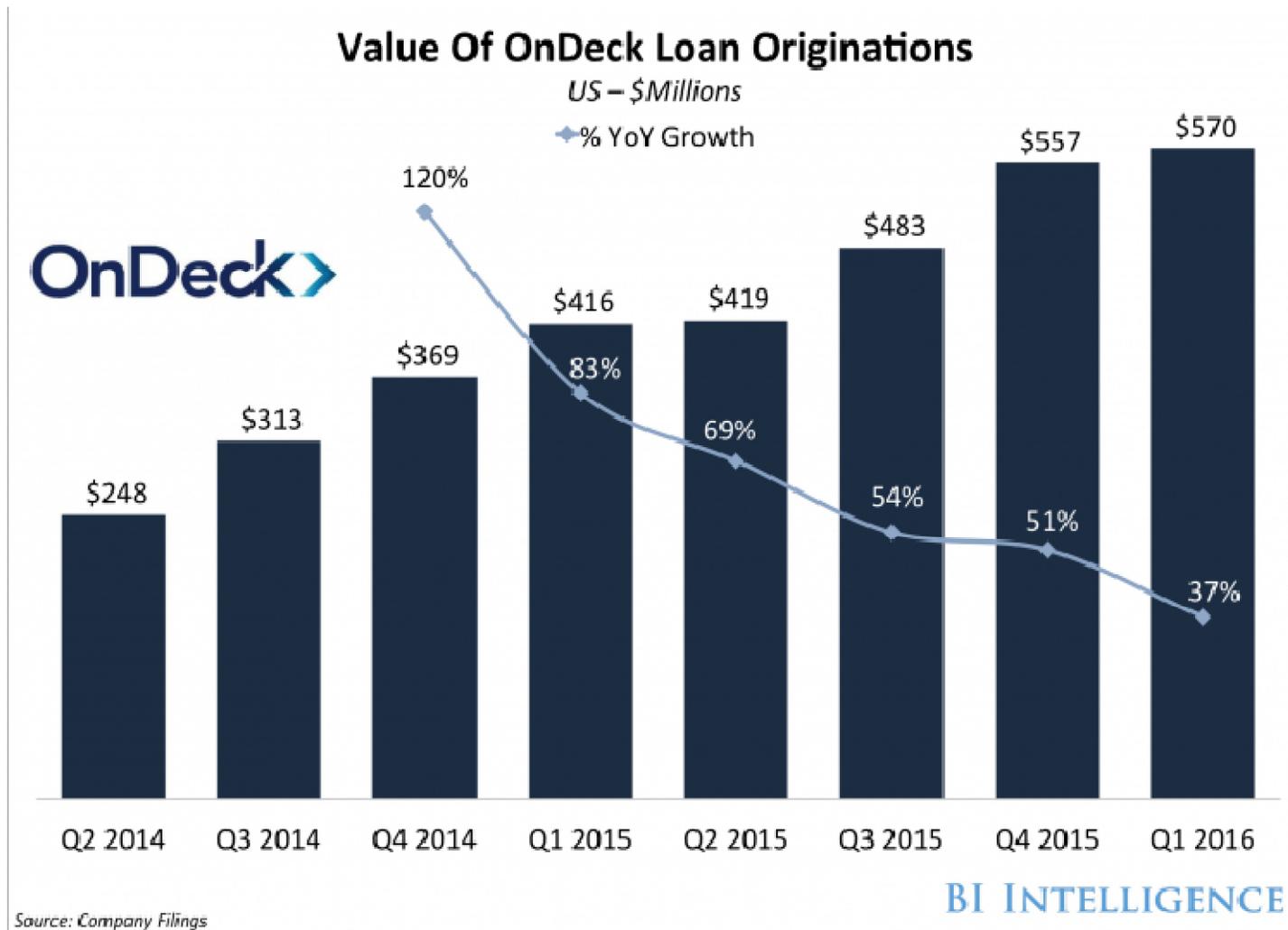
- Affirm. 소비자가 온라인에서 물건을 살 때 신용카드를 사용하지 않고, 자신의 신용으로 할부 구매를 할 수 있도록 해주는 결제 서비스.
- 고객은 이름, 전화번호, 이메일, 생년월일, 사회보장번호 4자리만 넣으면 됨.
- 공개된 데이터를 이용해 몇 초 만에 신용도 조사를 마친 뒤 어느 정도의 이율에 할부가 가능한지 문자메시지로 통보.
- 신용카드사와 똑같이 온라인 가맹점에는 물건 대금을 곧바로 지급해줌.

OnDeck

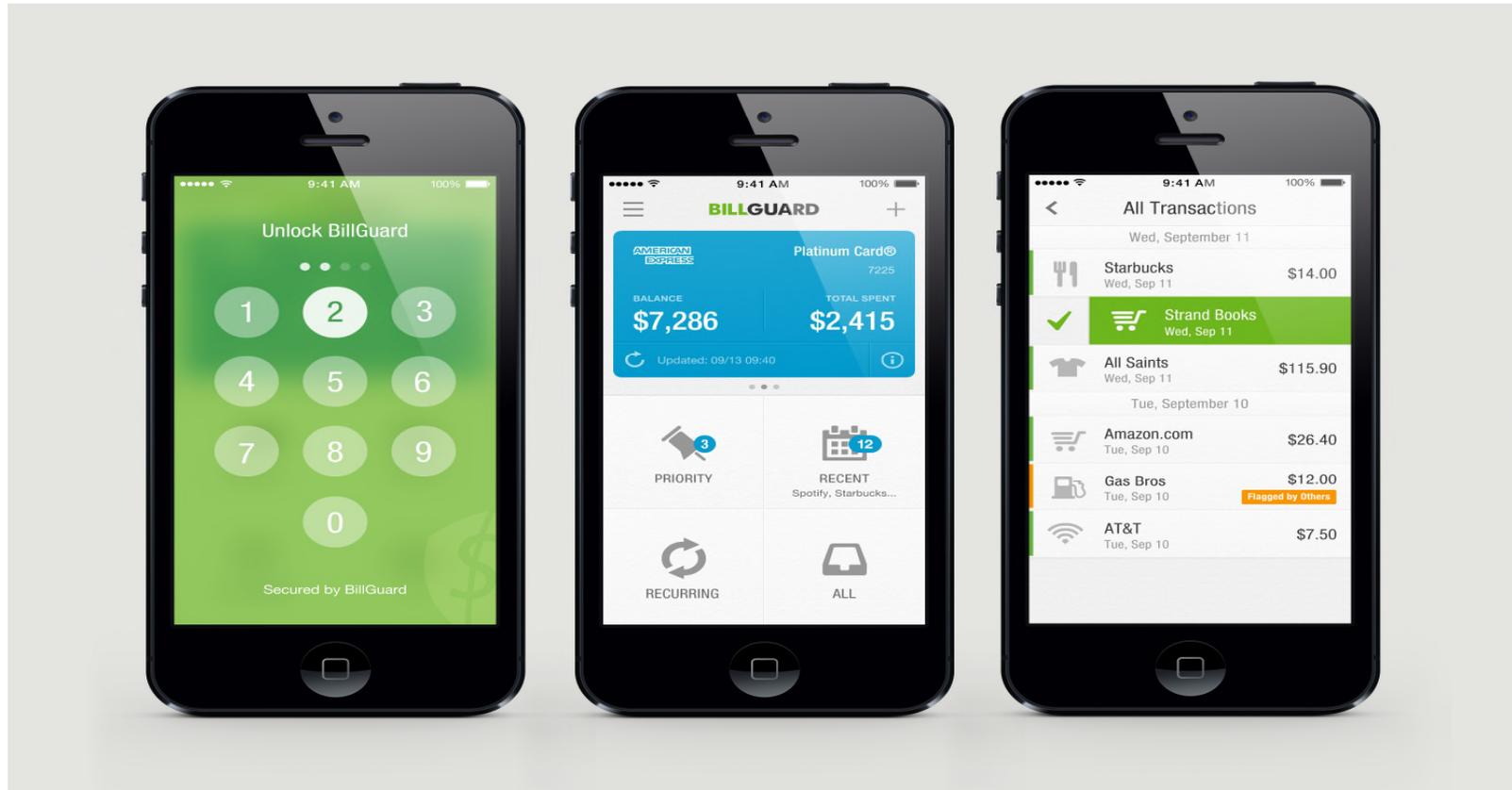
Data + Technology = The OnDeck Score™



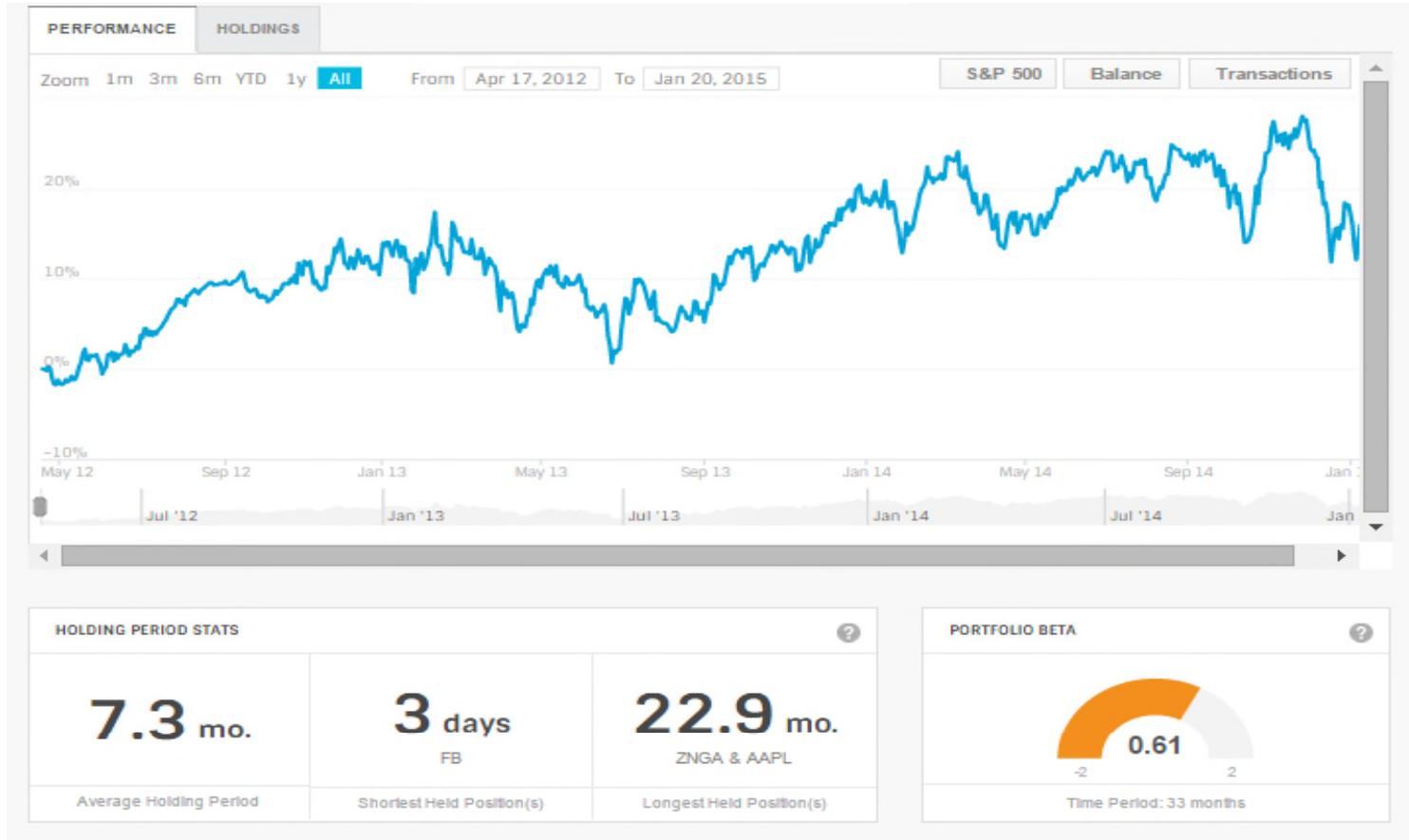
- OnDeck. 비대면 채널을 통한 온라인 중금리 대출 서비스를 제공. 2007년 설립 후 2014년 NYSE에 등록
- 대출심사기준을 완화해 제도권 금융이용이 어려운 소상공인을 주요 고객층으로 확보
- 온라인 정보입력 이외 추가 서류제출이나 심사를 생략해 대출 신청시간 단축



- OnDeck에서는 자체 개발한 온덱 스코어를 활용하여 랜딩 서비스 제공
- 소상공인, 자영업자 대상 소액대출서비스
- 온덱 스코어는 SNS의 평판도, 경영성과 등의 빅데이터를 분석하여 고객의 평가지수로 환산한 것을 말함.



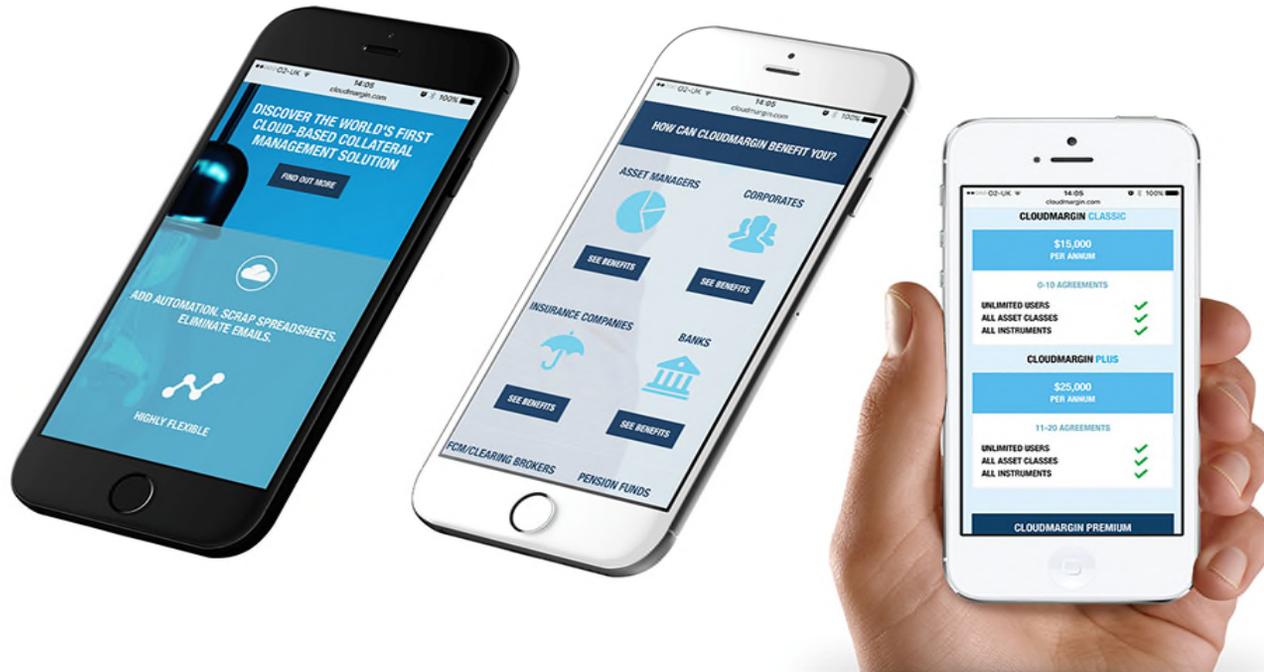
- Billguard. 이스라엘의 복잡한 신용카드 사용 빅데이터를 해독하는 안티 바이러스 시스템 회사
- 예측 알고리즘을 통해 고객의 신용카드와 은행계좌 이체 내용을 감시. 수상한 내용이 나오면 경보를 울려서 알림.
- 모바일 앱(Prosper Daily)으로 자신의 다양한 신용카드와 은행계좌를 통합 관리하는 것이 가능.



- Nvestly. 미국의 세계 최초 글로벌 투자 네트워크 시스템.
- 증권회사, 주식중개와 연계한 소셜 기반 주식관리 회사
- LinkedIn이나 Facebook에 연결된 사람들의 주식운용 빅데이터 분석
- 유명투자자의 주식운용방법을 copy할 수 있도록 정보 제공



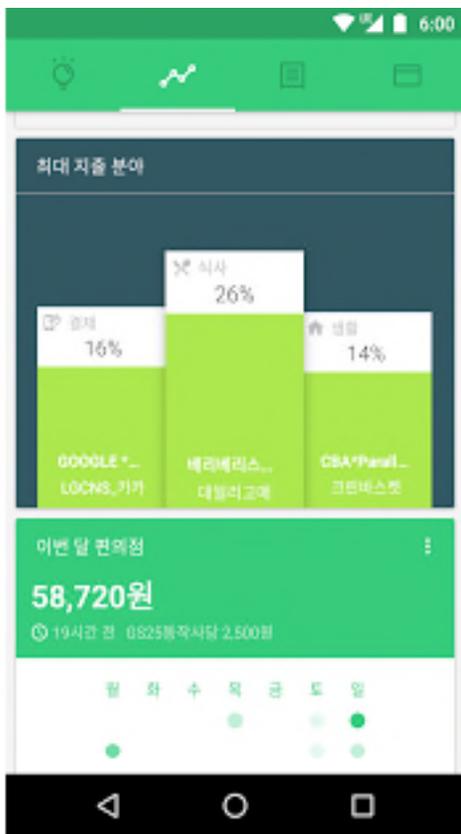
CloudMargin



- CloudMargin. 2014년 설립 후 빅데이터를 활용한 담보평가 / 마진 관리 기술 솔루션을 제공하는 업체
- 기업들, 헤지 펀드, 보험 및 연금 펀드, 자산 관리자, 소매 및 은행을 위해 클라우드 기반 담보 및 마진 관리를 위한 솔루션
- 운영 효율성에 대한 스프레드 시트를 제공. 증가 볼륨과 규제 변화에 대처하기 위한 효율적인 플랫폼.



- Zest Finance. 대출 신청자의 통화습관, SMS메시지, 대출신청서의 문체 등 수천 개의 변수를 반영해 신용평가
- 빅데이터를 통해 기존의 신용거래 실적이 없더라도 대출을 진행할 수 있는 독자적인 플랫폼
- 개발 도상국의 개인들에게 기존의 신용 점수를 부여
- 2016년 7월, 중국의 온라인 쇼핑몰 JD.com과의 콜라보 런칭



- BankSalad. 고객들이 스스로 자신의 소비 패턴을 입력하면 3,500여개의 카드와 1,100여개의 예적금 상품 데이터를 분석해 최적화 된 신용카드를 추천하는 서비스
- 정규화된 모델에 다양한 알고리즘을 적용한 추천 엔진 "Chef" 개발
- 맞춤형 서비스를 통해 석달 만에 7000여명이 실제로 2억원 이상을 절약



- SPLUNK. 2004년 샌프란시스코에서 설립된 빅데이터 분석 소프트웨어 회사.
- 검색가능한 머신 데이터 저장소에서 실시간 데이터를 획득, 인덱싱 후, 데이터 사이의 연관성을 찾아 시각적 결과로 생성.
- 스플렁크 엔터프라이즈, 스플렁크 클라우드, 스플렁크 민트, 헝크 등의 제품들이 대표적으로 있음.
- 간단한 설치 및 설정으로 네트워크 트래픽 분석, ID 접근 및 통제, 보안 분석 등 500여개 이상의 앱 지원.

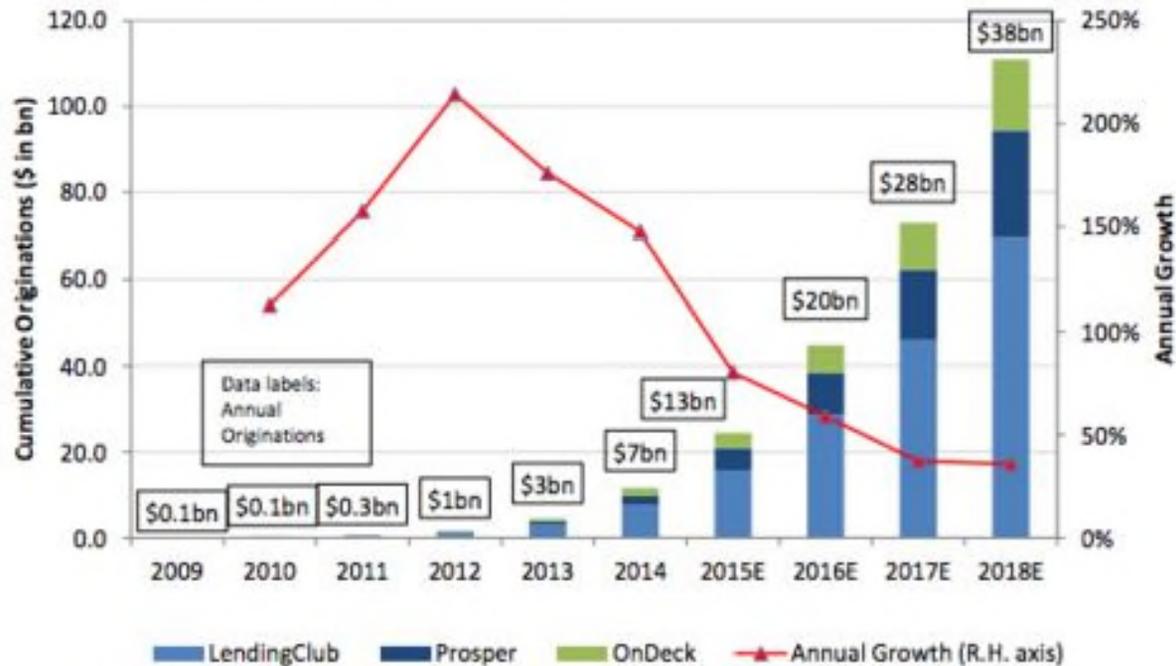


- Softcen. 의료 정보 관련 빅데이터, 헬스인포매틱스 등을 주로 분석.
- 2106년 상반기 누적 매출액 451억 600만원으로 지난해 같은 기간보다 93.2% 증가.
- 2014년, 병원 내 환자정보, 진료정보, 처방정보 등의 데이터로부터 의미 있는 정보를 찾아내는 '빅센-메드' 분석 솔루션 출시.
- 이외에도 빅센-VOC, 빅센-CRM 등의 서비스 출시예정

P2P 렌딩

LendingClub. Zopa. Smava.
PROSPER. Kiva. Villy.

Columns (left axis): actuals through 1H2015*
 Data labels: annual originations **
 Red line (right axis): year-over-year growth in annual originations



* Forecast volumes for LC and ONDK in line with KBW Model; Prosper scenario created by applying KBW's forecast growth rates for similarly sized LC on 2014 actual results.

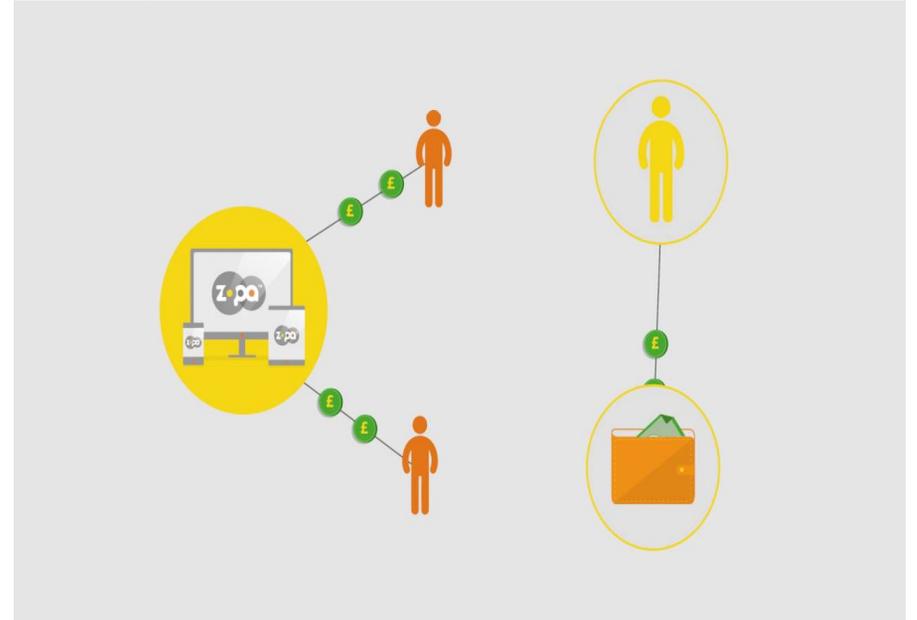
** Originations for Prosper exclude pre-2009 (business reorganization) and ONDK originations pre-2012 N/A.

- 금융위기 이후 금융기관의 대출은 하향하는 반면, 미국의 Lending Club, 영국의 Zopa, Prosper 등 P2P 대출은 오히려 급격히 성장

LendingClub



- Lending Club. 높은 문턱 탓에 은행 대출이 어려워 고리로 대부업체에 돈을 빌릴 수밖에 없던 이들을 위해 '중간 금리 제공'이라는 아이디어로 서비스를 시작. 은행 거래 과정에서 발생하는 비용 대신 온라인 기반 서비스로 비용을 낮춤.
- 9조원 기업가치에 달하는 대표적 핀테크 기업으로 성장.

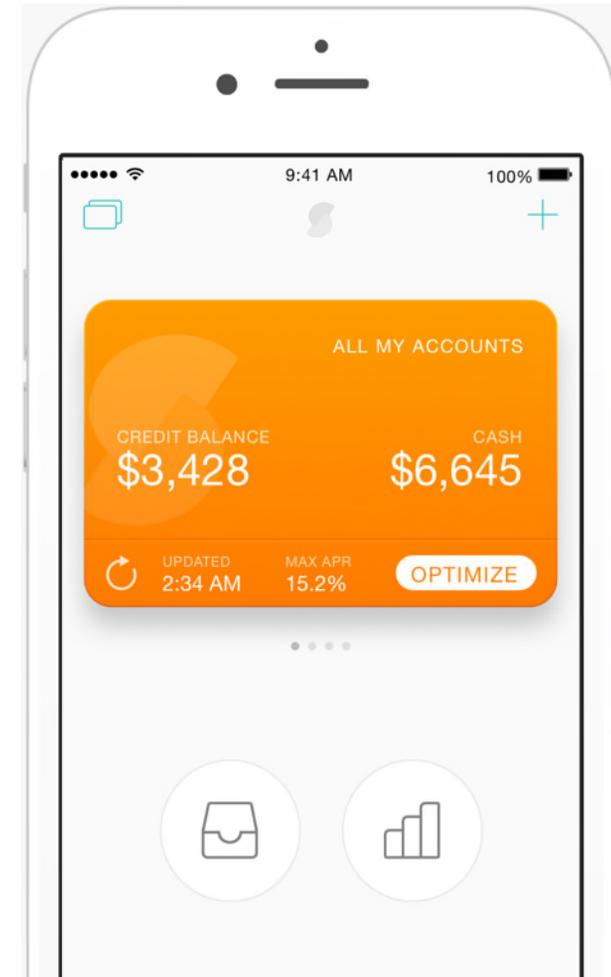


- Zopa. 2005년 설립된 영국의 대표적 P2P 렌딩 서비스
- 조파는 돈을 빌리기를 원하는 사람들의 신용등급을 A*, A, B, C, Young market으로 평가. 여기서 평가된 신용등급은 이자율에 반영. 조파의 사전 검열로 인해 높은 상환율을 유지.



- Smava. 독일의 P2P 대출중개 사이트.
- 독일에서 가장 유리한 대출금리 제공. 0.99% 은행권 대비 월등히 저렴한 이자율.

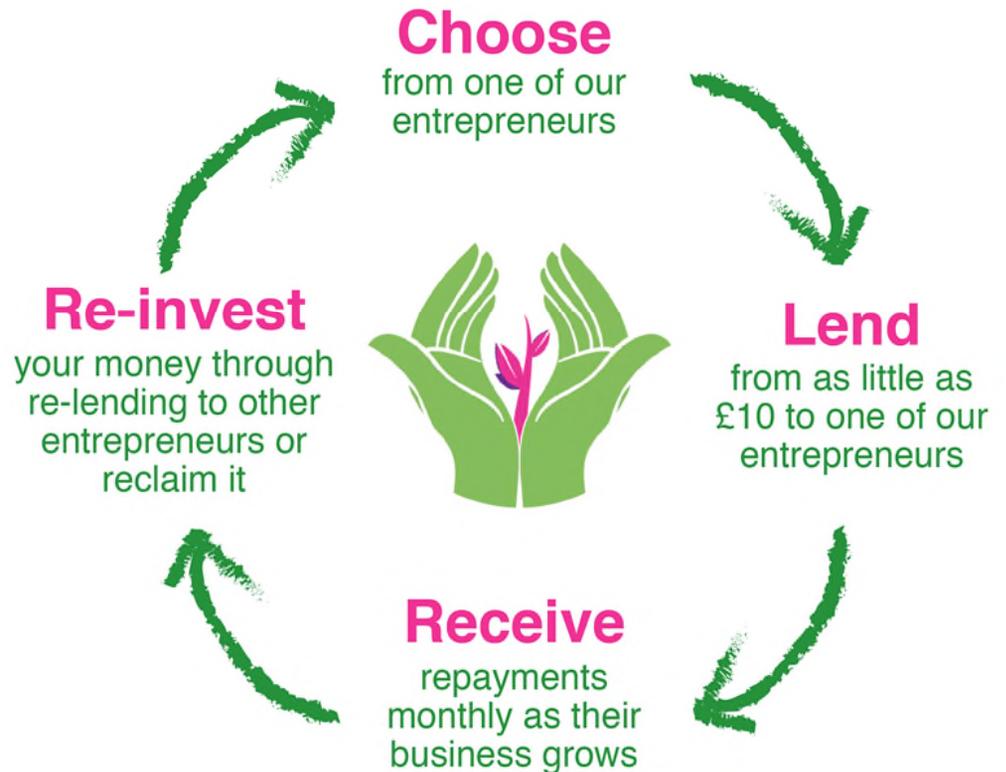
PROSPER[®]



- Prosper. 지난 2006년부터 안정적으로 서비스를 제공.
- 프로스퍼는 지난 3월 현재 회원 수가 18만명에 달하며 대출 건수는 6000건, 대출금액은 6600만달러를 넘어섰으며 매월 800만달러의 신규 대출을 집행하고 있음.



loans that change lives



- Kiva. 동아프리카 스와힐리어로 단합을 뜻함.
- 저소득층이 자활할 수 있게 창업 자금을 무담보로 빌려주는 마이크로크레디트를 인터넷으로 옮겨 놓은 형태. 타지키스탄 페루 캄보디아, 에콰도르, 우간다 등 저개발국 창업 지망자들이 대상.
- 후원자들은 자신이 빌려준 돈이 어떻게 쓰이고 빌려간 사람의 사업이 어떻게 진행되고 있는지 홈페이지와 인터넷을 통해 실시간으로 알 수 있음.
- 키바의 대출금 상환율은 97.5% 기록.

Villy



따뜻한

차가운 금융 시스템이 아닌,
따뜻한 사람들이 만들어 가는
대출형 크라우드 펀딩입니다.



합리적인

면 5%~14% 사이의 이자율을 통해
투자자에게는 합리적인 수익을,
대출자에게는 합리적인 이자를 제공합니다.



안전한

PG사 전산망을 이용한 안전한 자금관리 및
대출자의 신용/소셜 정보를 바탕으로한
빌리등급을 통해 투자 리스크를 감소시킵니다.

대출자

빌리는

투자자

Villy 빌리다

사람이 빌려주는 따뜻한 금융,
당신의 일상을 더욱 따뜻하게 만듭니다.

012 : 23 : 50 : 02

D-Day

Hours

Minutes

Seconds

- Villy (빌리). 개인 소액 투자자와 대출자를 중계 해주는 플랫폼
- 페이지트의 세이프트(온라인뱅킹시스템)를 이용해 타사보다 안전한 대출서비스를 제공
- 신용정보, 상환능력, 소셜정보, 상환이력 등을 조합하여 보다 현실적인 고객 가치를 평가할 수 있도록 설계된 빌리등급(대출자 평가 시스템)으로 보다 폭넓은 대출 기회를 제공

RoboAdvisor

**Irobo, AIM, Wealthfront, Betterment,
Future Advisor, Vanguard, SigFig**

로보어드바이저의 국내외 전망

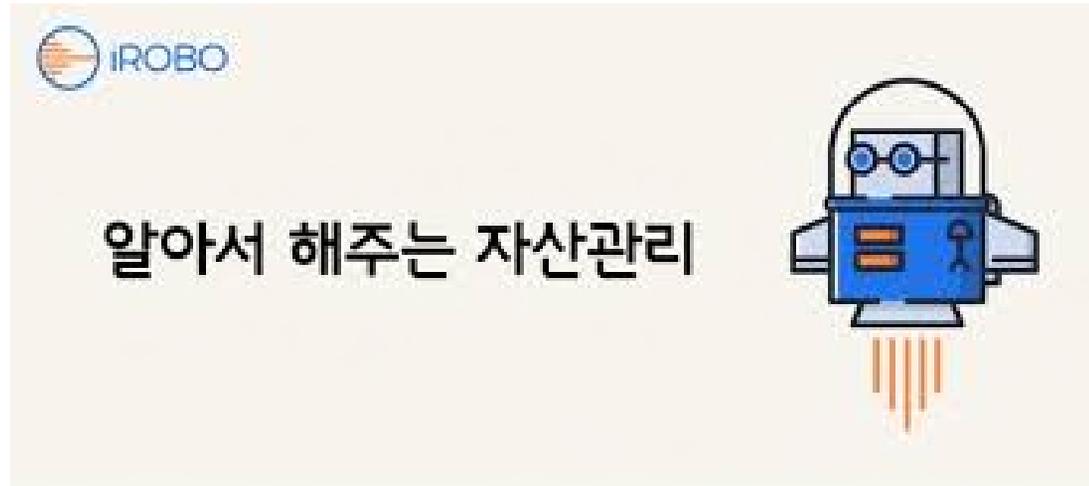
로보어드바이저의 발전단계



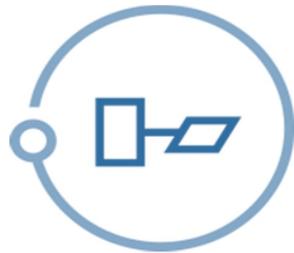
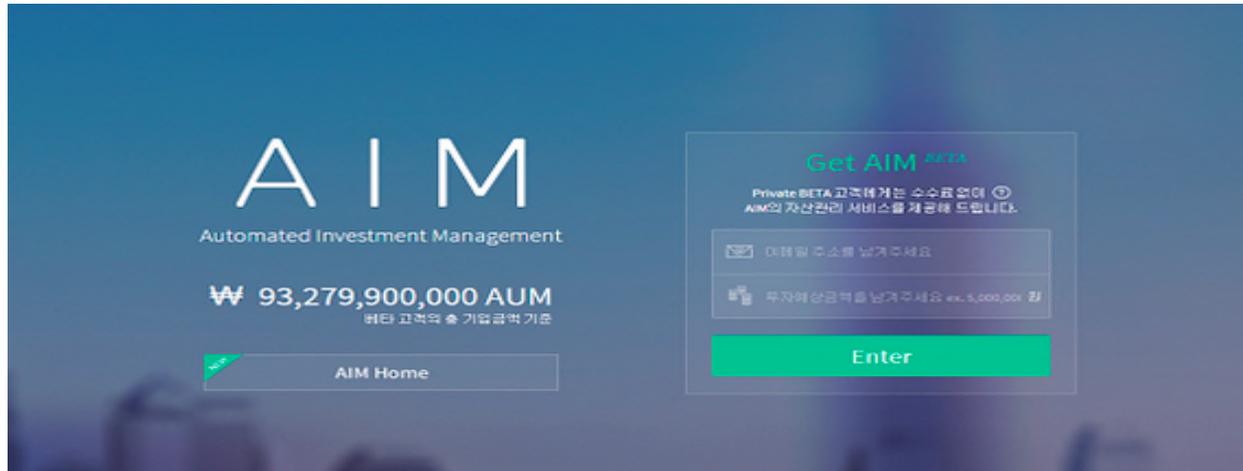
〈자료: 금융위원회, 국제금융센터〉



- RoboAdvisor: Robot과 Advisor의 합성어로 인공지능 (AI) 방식의 자산관리를 뜻함
- 개인의 재무목표에 맞게 안정적인 수익을 가져다 주는 자산관리 방식
- 인간보다 빠르고 정확하며 일관된 서비스 제공 가능, 상대적으로 비용이 싸고 접근성이 우수함
- 알고리즘 오작동, 해킹, 정보의 쓸림 현상 등의 위험성
- 아직까지 국내는 시작 단계이나 미래 성장 가능성이 매우 큰 분야



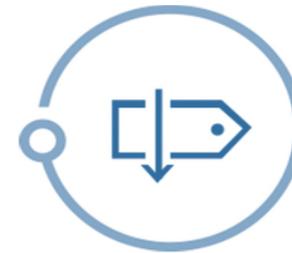
- Irobo. 증권사들과 전략 맞춤형 투자 상품을 소개.
- 주식형 투자일임서비스에서 기본 수수료가 없어 합리적 비용.
- 최소 가입금액 700~1000만원
- 1:1 맞춤형 포트폴리오 제공
- 실시간으로 투자 포트폴리오 및 운용성과 확인 가능
- 예시) 현대증권: 고객 성향에 따른 다섯 가지 형태의 자산배분 결정 후, 적극적 종목선정을 통해 시장 초과 수익 추구



AUTOMATED



REAL-TIME



LOW FEE

- AIM. (Automated Investment Management)모두를 위한 전문 자산관리가 목표로 국내 로보어드바이저 시장을 연 벤처기업
- 기존 운용 수수료보다 70% 이상 낮음
- 일반인, 소액투자자를 대상으로 한 맞춤형 자산관리 서비스
- 컴퓨터 프로그램이 투자자의 위험 성향을 분석한 후 수익성이 가장 높은 2500여개의 상장지수펀드(ETF)에 분산 투자

Your Risk Tolerance



8.0

(originally 10)

[Change My Answers](#)

Amount to Invest

\$ 100,000

[How do I decide?](#)

Your risk tolerance evaluation and asset allocation recommendation are based on the data you provided us, so be sure your answers are complete and accurate. As your life situation changes, our recommendations for you will also change.

Your Investment Mix

[Why this mix?](#) | [Can I change it?](#) | [Why Vanguard?](#)



Asset Class	Investment	Percentage	Amount
US Stocks	Vanguard VTI ETF why?	49.3%	\$49,290
Foreign Stocks	Vanguard VEA ETF why?	12.4%	\$12,440
Emerging Markets	Vanguard VWO ETF why?	13.2%	\$13,200
Real Estate	Vanguard VNQ ETF why?	15.1%	\$15,070
Natural Resources	iPath DJP ETN why?	5.0%	\$5,000
Bonds	Vanguard BND ETF why?	5.0%	\$5,000

Projected Performance

Historical Performance

Your Costs

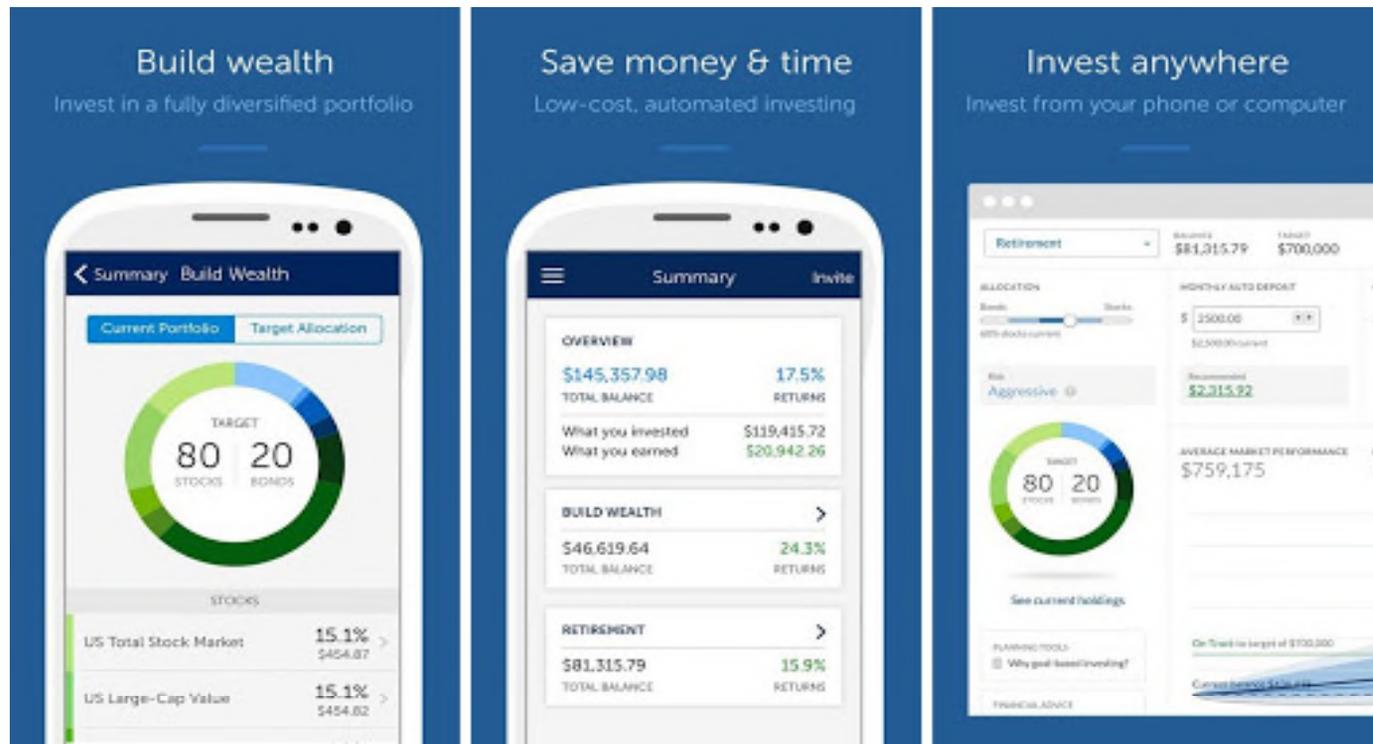


This projection is net of all fees (our fee and ETF expenses) and includes dividends. This chart is intended to show only an expected range of possible investment outcomes and does not take into consideration the effects of taxes, changing risk profiles, or future investment decisions. Past performance is no guarantee of future results. [Full Disclosure](#)

- Wealthfront. 캘리포니아 팔로 알토에 본사를 둔 로드어드바이저의 선구자로서 최다 자금조달액 자랑
- 전세계 50개 도시에서 서비스를 제공하며 운용자산 총액 17억 달러
- 저렴한 비용, 간단함, 세금의 효율적인 투자가 특징



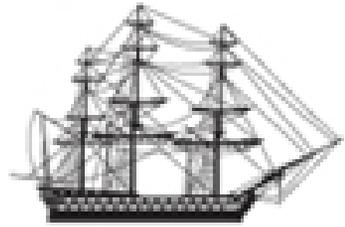
Betterment



- Betterment. 아이셰어즈(iShares)와 같은 ETF로 포트폴리오를 구성.
- 운용자산 총액 25억 달러의 대표적인 로드어드바이저 회사
- 매달 10만달러 이상 투자 시 잔고 1만 달러 이하 고객은 무료 서비스 이용 가능
- 0.15~0.35%의 연간이용료



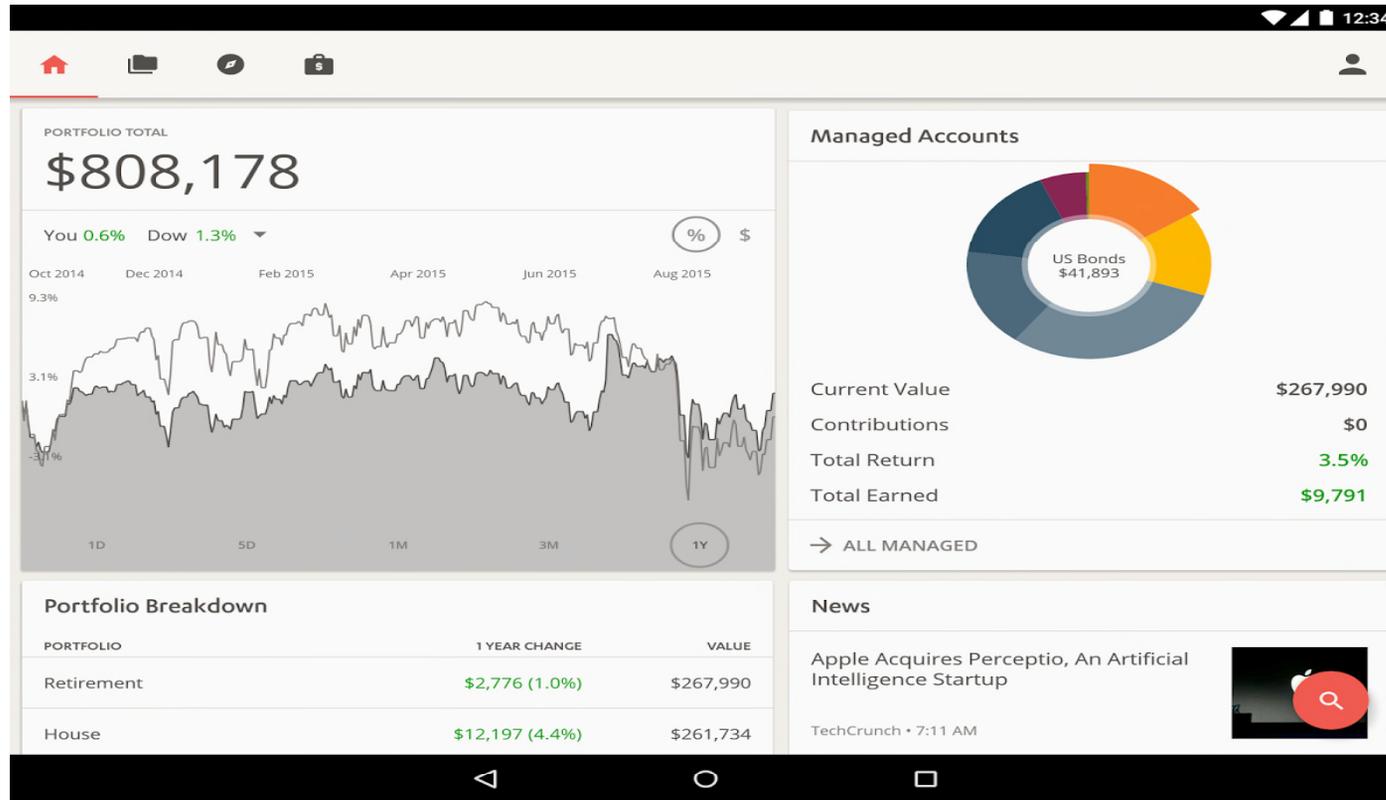
- Future Advisor. 20만 세대가 이용하는 대형 로보어드바이저 서비스
- 운용 자산 총액 2억 달러
- 최대 장점은 무료 포트폴리오 분석 서비스
- 0.50%의 연간 이용료



Vanguard®

- Vanguard. 1975년 펜실베이니아의 뮤추얼 펀드 회사로 시작하여 2013년 로보어드바이저 채택해 현재 전세계 16개의 회사를 두고 있음
- 이후 1년 만에 운용자산 42억 달러로 증가
- 국제적 시장에 초점을 둔 로보어드바이저 회사
- 최저잔고 10만달러로 일반인이 쉽게 이용하기는 어렵다는 단점이 있음

SigFig



- SigFig. 2007년 캘리포니아에서 설립된 간편함과 편리함이 장점인 로보어드바이저 회사
- 폭 넓은 층을 대상으로 자동 포트폴리오 관리 툴 제공
- 최저잔고 1만 달러 이하는 이용료가 무료이며 1만 달러 이상은 0.25%
- 운용자산 총액 6000만 달러

크라우드펀딩

Lily (Kick starter). Opentrade.
Teespring. Gofoundme. Patreon.

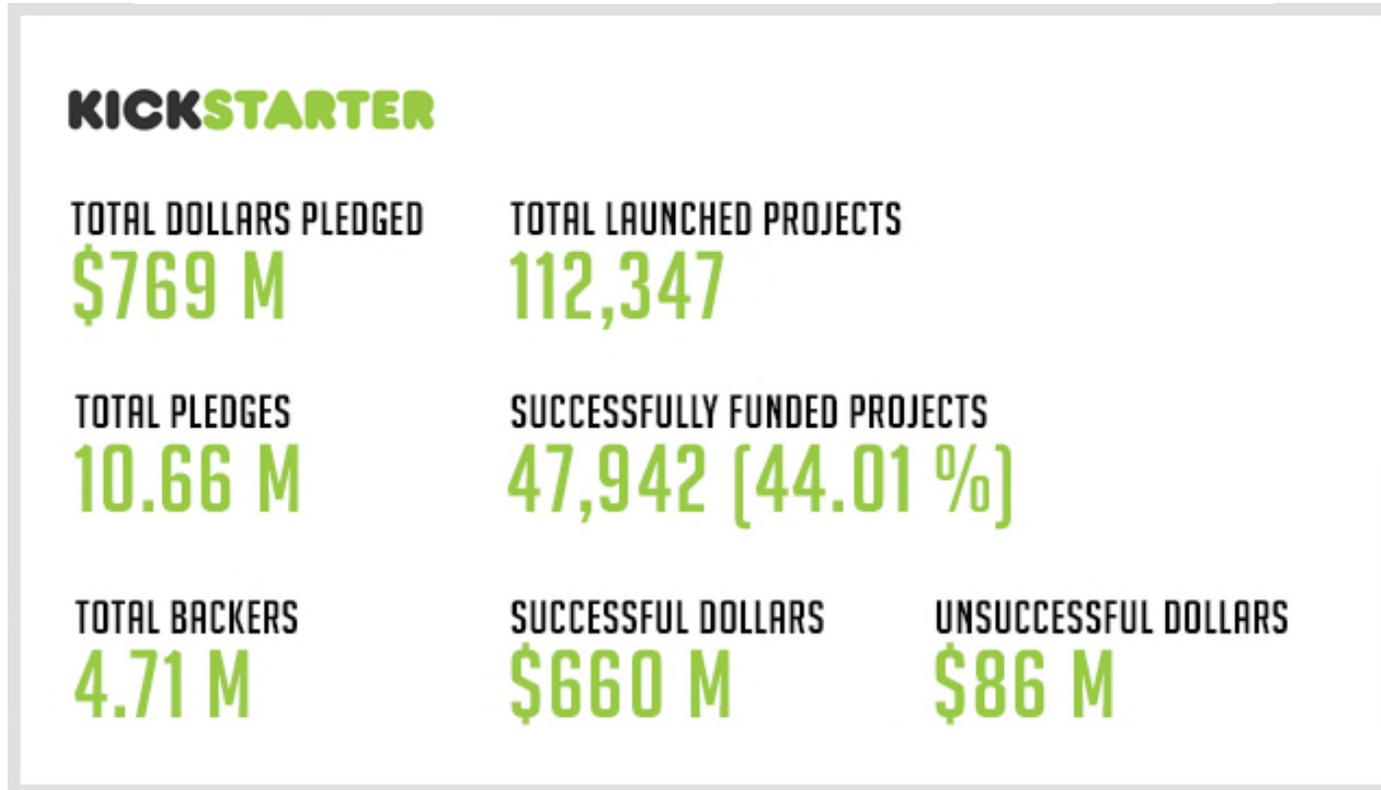
릴리(LILY)

동영상 보러가기

[세계에서 가장 유명한 크라우드펀딩 플랫폼인 미국의 '킵스타터(kickstarter)'에 뜬 셀피드론, 릴리]

-자유로이 하늘을 날아다니며 주인을 찍어주는 카메라

KICKSTARTER



- Kick Starter www.kickstarter.com
 - Crowdfunder www.crowdfunder.com
- 기술력과 아이디어는 있으나 자금이 없어 시제품을 개발하지 못하는 '젊은' 기업에게 기회를 부여하면서 공동의 이익을 추구하고, 밑바닥부터 경제를 활성화시킬 수 있는 수단.

OpenTrade



협업 및 투자자와 소통이 원활해지고,
신뢰성을 기반으로 투자를 유치

Open innovation

소통형 크라우드펀딩 플랫폼

- 스타트업/벤처 기업의 자발적 활동
- 타임라인에서 스타트업들의 성장기록 관리
- 투자자와 기업간의 자유로운 커뮤니케이션
- 온라인 전문 멘토단 운영
- SNS 연동
- 스타트업 홍보 기능 지원
- 투자 포트폴리오 관리



집단지성을 통해 확인하며 투자함으로써
위험을 낮추고, 온라인을 통해 기업의
실시간 정보를 접할 수 있음

“새로운 사업영역의 확장!
창조적 사업을 실현할 수 있었어요!”

“꿈을 담아 개발한 제품을
생산 할 수 있게 되었어요!”

“가치있는 기업에 의미있는 투자를
하였기에 뿌듯하며 기대가 큼니다”

- OpenTrade. 창업자의 비즈니스모델 개발과 엔젤투자를 위한 플랫폼.
- 창업자가 만들어 가는 비즈니스모델의 우수성 및 장기적인 목표를 위해 어떤 마일스톤들을 달성하고 있는지를 투자자들에게 자연스럽게 알릴 수 있음.
(창업자와 투자자를 위한 폐쇄형 SNS 서비스)
- 약 28,000명의 투자자와 34억원 이상의 펀딩성공금액을 이루어냄



- Teespring. 2011년 미국 로드아일랜드에서 시작된 새로운 마켓 플레이스 플랫폼 방식의 비즈니스.
- 개인의 아이디어와 그 아이디어를 시장에 내놓는 사이의 장벽을 없애기 위한 비즈니스.
- 현재까지 19,000,000개 이상의 제품이 세계적으로 배송됨
- 누구든지 쉽게 티셔츠를 만들고, 가격 위험의 부담 없이 양질의 티셔츠를 파는 서비스



Help Elle Get Cancer Treatment



DENVER, CO

\$847 of 200k

Raised by 41 people in 16 hours

[Donate Now](#)

[SHARE ON FACEBOOK](#)

gofundme

\$23,740 of \$50k



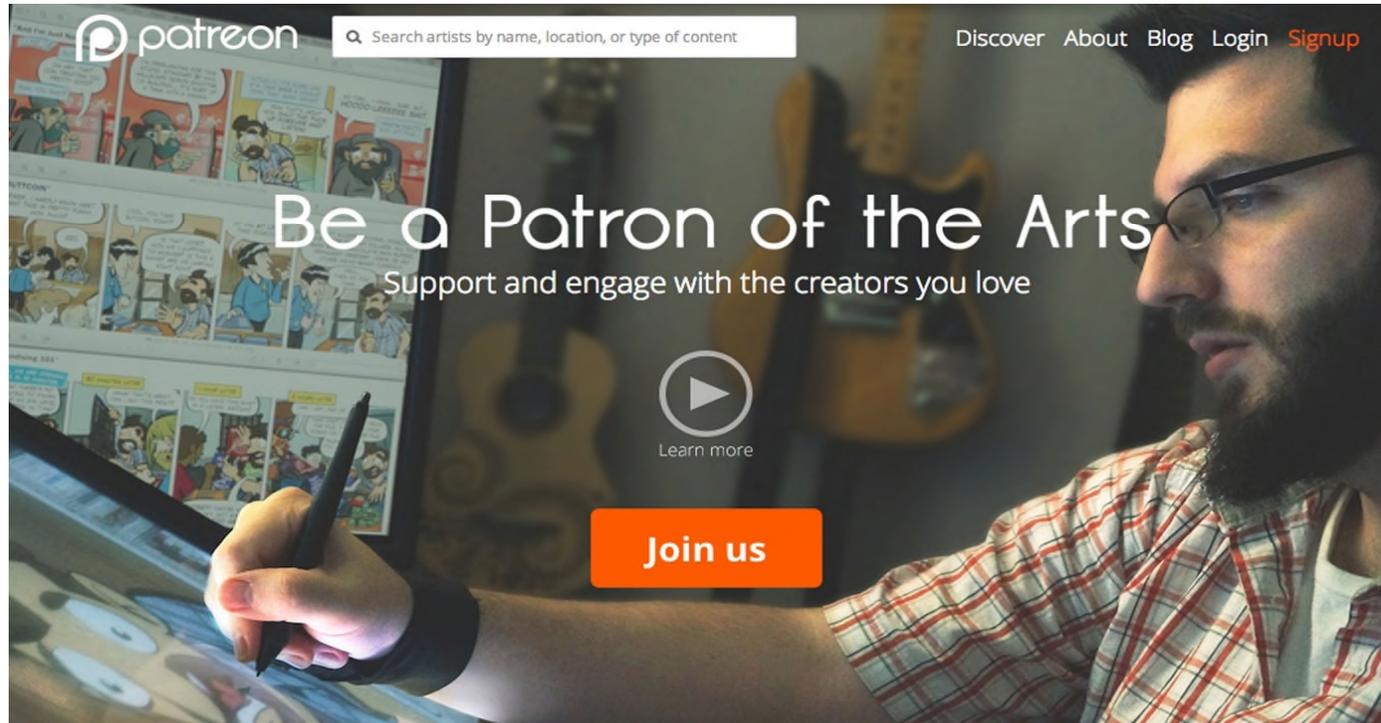
Raised by 418 people in 2 days

[Donate Now](#)

[SHARE ON FACEBOOK](#)



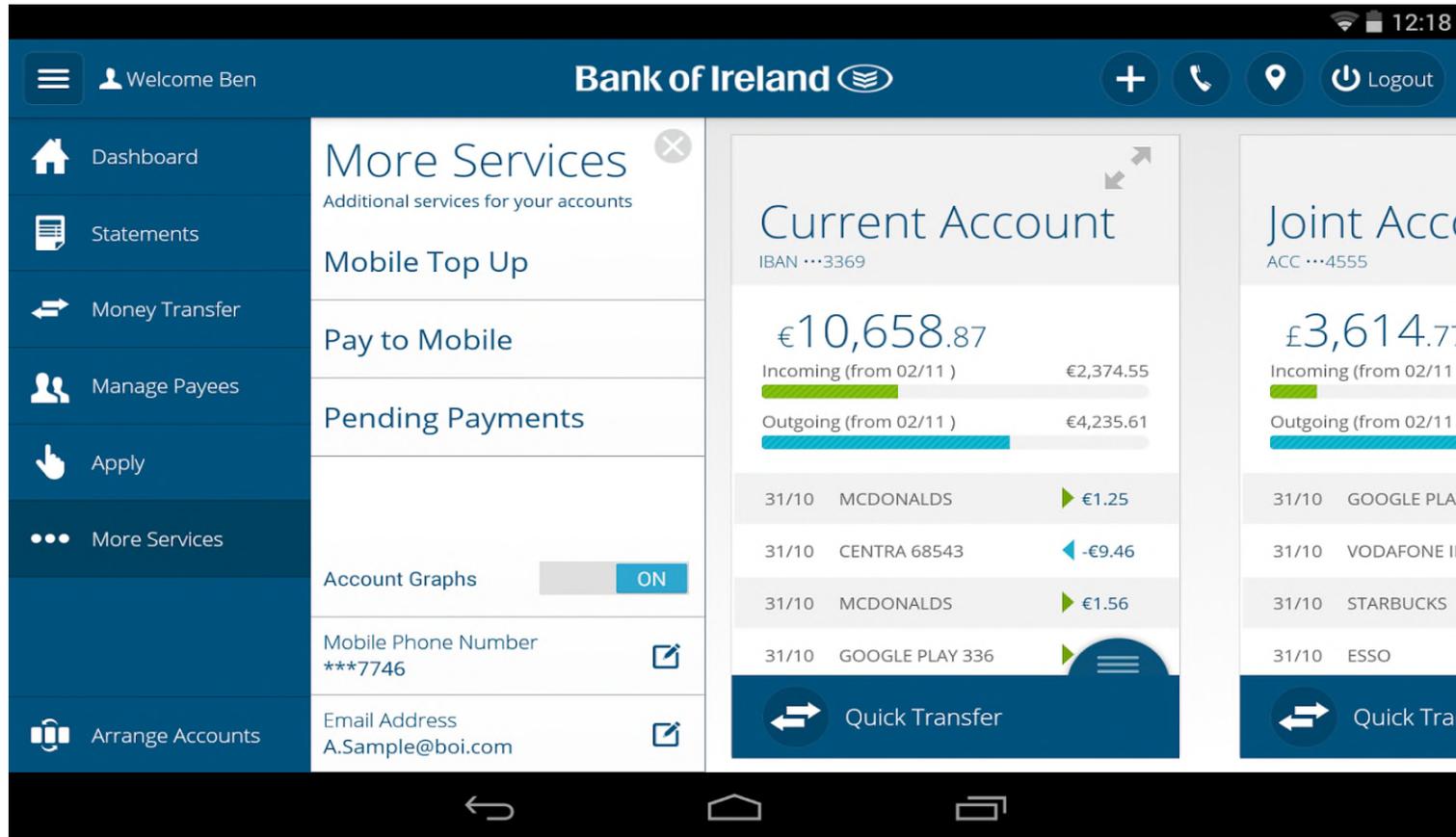
- GoFundme. 의학, 교육, 자원봉사, 개인적 위급상황, 스포츠팀 등의 분야를 펀딩해주는 서비스
- 매일 4만 달러가 유저들에 의해 모아지며, 작년에는 20억이 모아졌음



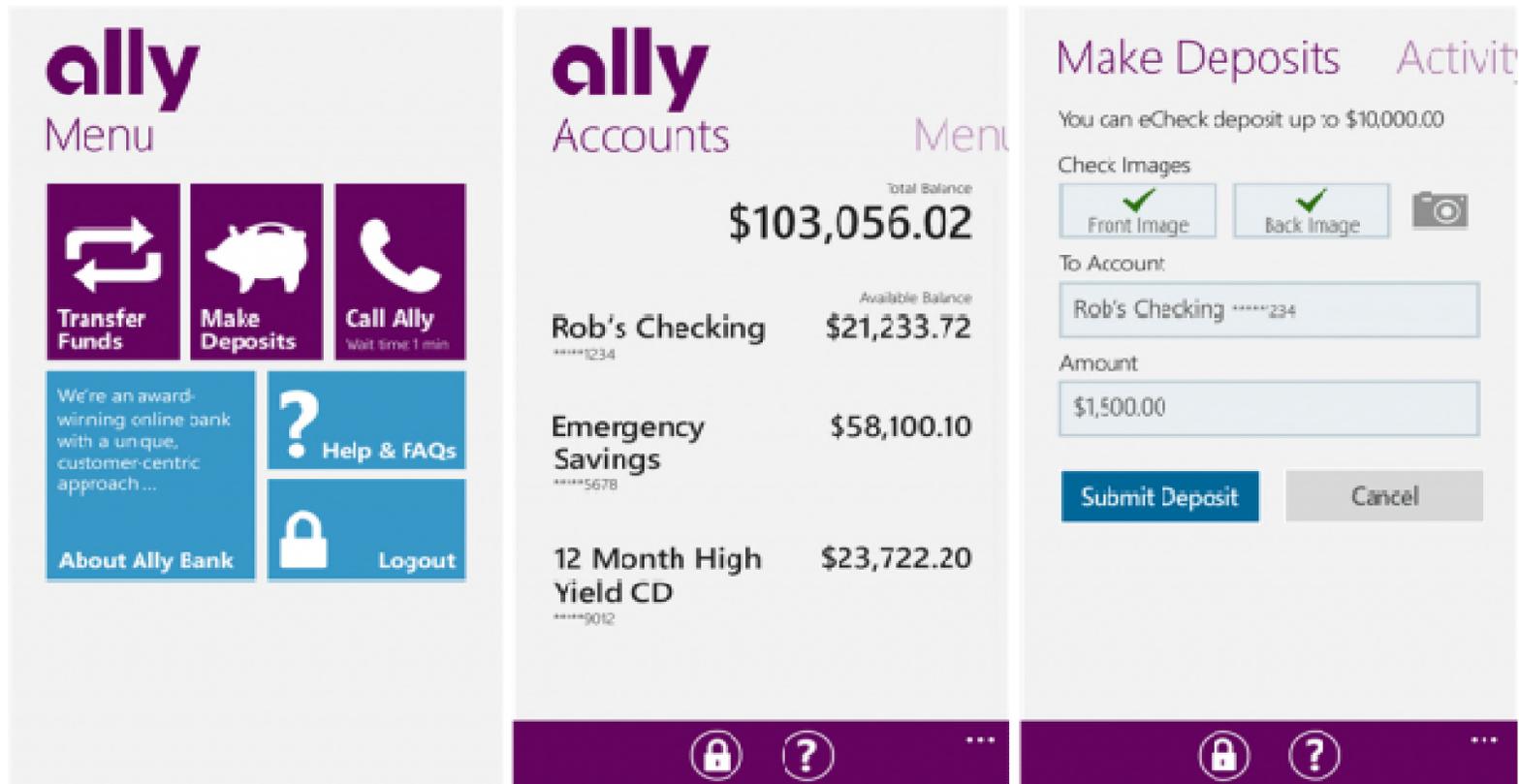
- Patreon. 미국의 창작자 후원 공식 사이트를 활용하여 운영하는 기업
- 주로 콘텐츠 창작자들이 정기적 혹은 일시적 후원을 받고 그 값에 할당하는 혜택을 지불하는 클라우드 펀딩형 시스템을 활용한 사이트
- 현재까지 50만 달러의 펀딩이 창작자들에게 주어졌음
- 창작의 자유와 작품에 더 많은 시간을 할애할 수 있게 됨

뱅킹

**B OF I. Ally Bank. SIMPLE. Fidor.
Kakao Bank, Kbank, Hello Bank
SBI Sumishin Net Bank, Egg Bank**



- 가장 신뢰받는 인터넷 전문은행 중 하나
- 주 수익원은 일반은행과 마찬가지로 주택관련 대출(82%)과 기업대출(7.2%)를 통한 이자수입
- 리테일 뿐 아니라 기업뱅킹 제공
- 해당분야 전문성 어필을 위한 멀티브랜드 전략(Bank of Internet USA, Bofl Advisors, Apartment Bank, Annuitants Federal Bank)



- Ally Bank. GM이 세운 은행으로 자동차 딜러나 구매자들을 대상으로 하는 자동차 할부 상품을 중심으로 운영
- 15만~250만 달러의 거래가 이루어짐
- 미국 내 17,00명의 딜러와 4만명의 고객 유지
- Allpoint ATM을 무료로 사용 가능
- 고객 서비스와 유지 비용이 적다는 장점

A screenshot of the SIMPLE online banking interface. At the top, a dark blue banner displays the account balance: "\$4,816.86" in white on an orange background, followed by "Safe-to-Spend™" and "4,920.93 total balance - 104.07 in pending transactions - 0.00 in upcoming payments". Below this is a search bar for transactions and sorting options (Date, Size, Export). The main area shows a list of transactions with checkboxes, dates, merchant names, descriptions, and amounts. A central smartphone mockup displays the mobile app interface, showing the same balance and transaction list. To the right, a partial view of a world map is visible.

Date	Merchant	Description	Amount	Category
APR 22	The Green Dragon	A couple of #beers with #friends	11.00	Alcohol & Bars
APR 22	Grain & Gristle	Our latest brunch yet	33.00	Restaurants
APR 21	Paper Source	Supplies for a craft project #deduct		
APR 21	Sterling Coffee Roasters	Two cappuccinos, made by Ryan		
APR 21	Shell Oil	Nearly the full tank		
APR	ATM			

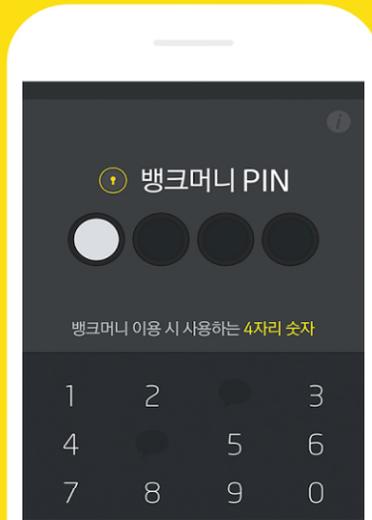
- SIMPLE. 온라인뱅킹 서비스
- 고객이 일정 금액 이상을 예치하지 않아도 벌금이 없는 무료 체킹 계좌 제공
- 계좌의 각 사용 내용에 기억해 두기 편하도록 사진이나 PDF를 추가할 수 있는 기능이 큰 인기



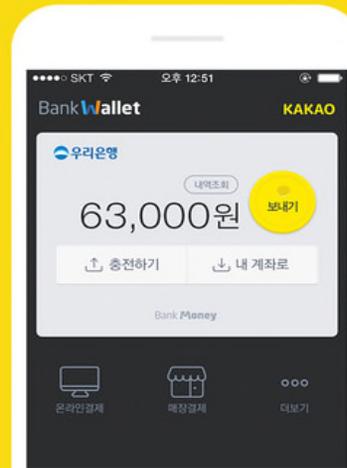
- Fidor Bank. 독일 온라인은행
- 라틴어 fides에서 따온 말로, 친구와 बैं킹이란 회사의 모토를 가지고 있으며 고객 소통을 통한 신뢰를 중요시함
- 2009년 설립, 소셜미디어를 적극적으로 접목한 온라인 बैं킹
- 페이스북 'Like(좋아요)' 연동 통해 예금/대출금리 인하
- 고객이 온라인으로 서비스 개선의견 시 10~25% 인센티브 지급

KAKAO
뱅크

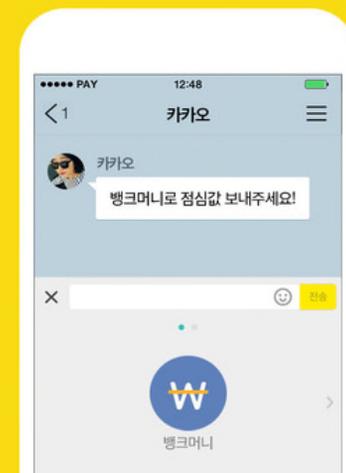
공인인증서 없이,
보안카드 없이
비밀번호 하나로 송금



폰으로 발급하고
비밀번호 하나로 충전



계좌번호없이
카톡 친구에게 송금



- 카카오뱅크. 약 3800만명이 하루 55회 사용하는 카카오 플랫폼을 이용한 '카톡으로 금융하다' 라는 모토의 인터넷 전문은행
- 3000억 원의 자본금
- 지급결제, 여신, 수신, 고객서비스의 4대 금융 생활 영역을 관리
- '금융봇'을 도입해 24시간 비대면 온라인 자산관리 계획
- 빅데이터 기반의 중금리 대출



인터넷 전문은행 도입
KT·카카오 컨소시엄 선정

YTN

'K-뱅크' 컨소시엄

- KT, 우리은행 등 20개 업체 참여
- 접근성, 친숙함 갖춘 신개념 은행 추구
- KT 보유 공중전화 부스 7만 개 ATM 활용
- 예·적금 이자를 IPTV VOD 등 다양한 형태로 제공



- Kbank. 기존 은행에 비해 초간편 대출을 실행하고, 금리와 수수료 등의 가격 경쟁력을 확보하는 전략
- 2500억 원의 자본금
- KT의 통신, 결제, 유통 정보 등 빅데이터 기술이 주강점
- 채널 혁신, 고객이해 혁신, 상품/서비스 혁신, 프로세스 혁신 서비스 제공
- 빅데이터 기반의 중금리 대출

住信SBIネット銀行

SBI Sumishin Net Bank



- SBI 住信ネット은행. 2006년 설립된 일본의 인터넷전문은행.
- 310억 달러의 자본금
- SBI Securities(계열 증권사)와 합작해 공동설립주체인 스미모토미쓰이은행과 연계한 주택담보대출 등을 기반으로 성장
- 고객의 편의성 제고를 통한 다양한 고객니즈 충족과 함께 모회사의 고객기반 및 네트워크 활용을 중심으로 성장



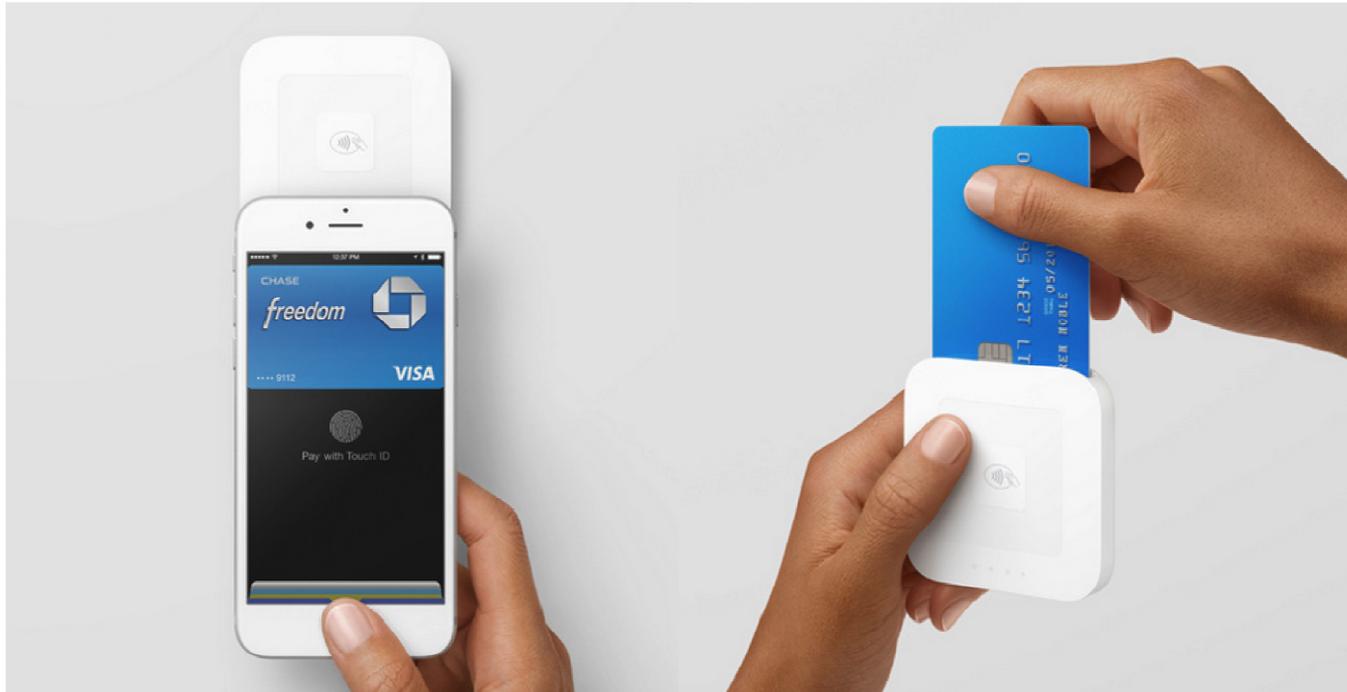
- Egg Bank. 유럽 최초이며 영국 인터넷전문은행으로 보험사 푸르덴셜이 1995년 설립
- 유럽의 인터넷전문은행은 대부분 은행의 자회사 형식으로 운영되며 은행의 영업채널 성격이 강함
- 16,973백만 달러의 총자산



- Hello Bank. 유럽계 금융회사 BNP파리바가 내놓은 디지털 전문 बैं킹 브랜드
- 젊은 세대 소비자들이 자신들의 라이프스타일에 맞는 간편한 제품 설정
- 버디 프린스플(Buddy Principle) 도입하고, 관심과 행동을 통한 소비자 커뮤니티를 겨냥해 단순한 은행을 넘어선 라이프스타일 브랜드로 재정립

User Experience

**Square, Softcard, Samsung
Pay, Apple Pay, Amazon
OneClick, Uber**



- Square. 조그마한 Square 리더기로 폰과 태블릿에서 결제가 가능. 다양한 포스 시스템 서비스를 제공.
- 결제 당 수수료로 2.75%를 받음.
- 결제뿐만 아니라 예약 서비스, 온라인 상점 개설, 고객 피드백 제공 등 다양한 비즈니스 마케팅 기능.

SOFT
CARD

SOFT
CARD

- Pay smarter



- Softcard. NFC를 기반으로 심 카드의 시큐어 엘리먼트에 결제 정보를 저장하는 방식의 서비스.
- 80여 개 스마트폰에서 사용할 수 있으며, 30여 개의 기기에는 기본으로 설치되어 있음. 베리폰과 협력.
- 아멕스, 체이스, 웰스파고 은행의 신용카드 등으로 결제 가능.

SAMSUNG pay



- Samsung Pay. 삼성전자의 모바일 결제 서비스.
- 마그네틱 보안 전송(MST) 기술을 적용. 신용카드나 체크카드 정보를 스마트폰에 입력하여 마그네틱 신용카드 결제기에 스마트폰을 갖다 대면 기기 간 통신을 통해 이루어지는 결제 방법
- 근접무선통신(NFC) 결제 단말기를 설치하지 않아 한국 전체 상점의 90% 이상에서 사용 가능

보안성 높은 홍채인식 삼성페이

2016.08.09 송기영기자

다음 달 9일부터 은행들이 모바일 홍채(虹彩) 인식을 통한 삼성페이 서비스를 시작한다. 삼성페이는 계좌만 등록해 놓으면 별도 카드 없이 가맹점에서 바로 결제 가능한 서비스다. 이에 따라 금융권 생체 인증 방식이 지문 인식에서 홍채 인식으로 빠르게 옮겨갈 전망이다.

9일 금융권에 따르면, KB국민·신한·우리·농협·기업 등 은행들은 삼성페이 본인 인증 방식에 홍채 인식을 추가하기로 했다. 삼성전자가 지난 2일(현지 시각) 미국 뉴욕 맨해튼에서 홍채 인식 기능을 탑재한 신형 스마트폰인 '갤럭시 노트7'을 공개한 데 따른 후속 조치다.

은행들은 홍채 인식으로 삼성페이를 이용할 수 있도록 약관을 개정하기로 했다. 현재 약관에는 삼성페이를 이용한 결제나 출금시 본인인증 방식으로 '비밀번호' 혹은 '지문 인식'만 허용하고 있다. 은행들은 '지문 인식'을 '생체 인식'으로 개정할 방침이다.

홍채 인식이 추가된 개정 약관은 다음 달 9일부터 적용된다. 홍채 인식으로 삼성페이 가입부터 결제, ATM 출금까지 가능하다. 은행들은 약관 개정에 맞춰 시스템 구축 작업도 진행하고 있다.

기업은행 관계자는 "오는 19일 국내에 출시되는 노트7에 홍채 인식 기술이 탑재되고 삼성페이에도 이 기술이 적용됨에 따라 관련 내용을 약관에 반영하려고 한다"며 "노트7이 홍채 인식을 하고 은행 서버에 인증 값만 전송하는 방식이라 시스템 구축에는 무리가 없다"고 말했다. 삼성전자 관계자는 "홍채 인증을 사용하면 삼성페이도 보다 안전하고 편리하게 사용할 수 있다"고 했다.

SAMSUNG pay



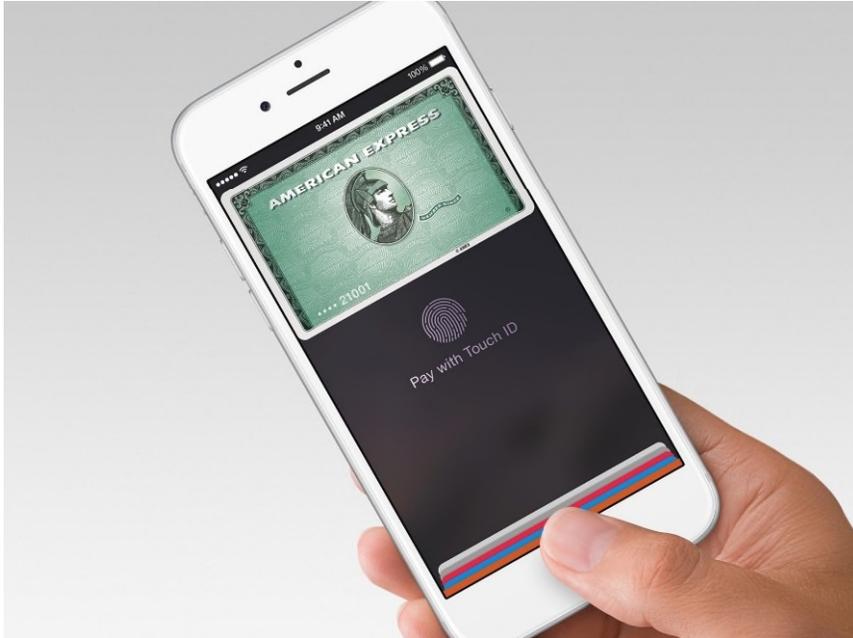
SAMSUNG

Family Hub



- Family Hub. 냉장고에 전용 결제 톨을 넣어 '냉장고 쇼핑' 활성화 기대
- 냉장고의 기본 기능 이상으로 커뮤니케이션, 쇼핑, 엔터테인먼트의 부가기능 추가
- 패밀리 허브 문에 달린 LCD를 터치하면 식재료 주문하는 '푸드 매니지먼트' 온라인 쇼핑 서비스
- 이마트, 롯데마트, 홈플러스와 제휴. 곧 현대백화점 온라인몰 추가
- 삼성카드 SMS 결제 기능을 넣어 공인인증서 없이 휴대폰 인증 문자로 결제 가능. 비밀번호만 입력하면 결제 완료.

Apple Pay



- Apple Pay. 애플이 2014년 10월부터 시작한 모바일 결제서비스.
- 세계 주요 신용카드사들, 백화점, 맥도날드, 홀푸드마켓 등과 제휴 맺음
- 지문인식센서 터치ID와 근접무선통신기술(NFC)를 활용한 기술로 신용카드 정보 저장 후 아이폰6나 애플워치로 결제 (NFC 단말기에 대면 결제 가능)
- 점원이 카드번호와 소비자의 이름을 볼 수 없어 안전성 있음
- 별도의 결제 단말기가 필요하다는 한계때문에 확산 속도는 느림

amazon.com.

Quantity: 1 ▾

 Add to Shopping Cart

or

 Buy now with 1-Click®

Ship to:

▾

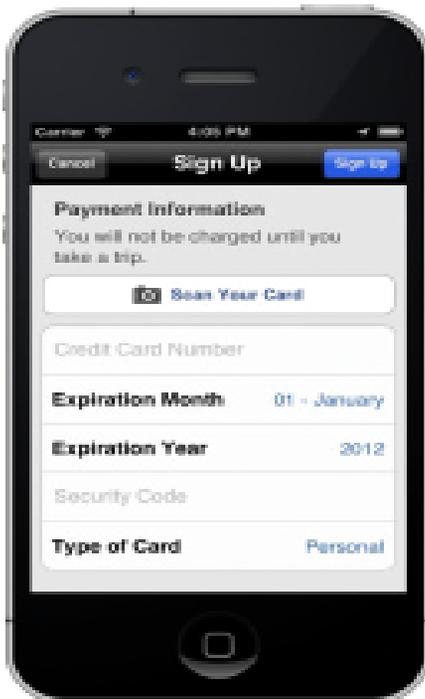
Add gift-wrap/note



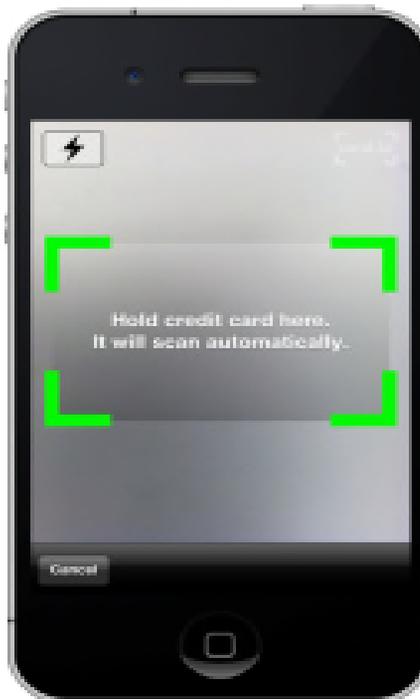
- One Click. 아마존사의 기술로 고객이 물건을 살 때마다 새로 입력할 필요 없이 고객에 관한 정보를 저장해두고 간단하게 접속시키는 방법
- 쿠키(Cookie) 이용으로 주문절차가 간단하다는 것과 개인정보를 매번 다시 입력할 필요가 없다는 효과
- 접속 속도가 빨라져 많은 인터넷 업체에서 이용하게 됨
- Dash. 바코드 스캐너와 음성 인식기가 합쳐진 혁신적 사물인터넷



1 Click the "Scan Your Card" button



2 Hold your card up and align it within the green box



3 Confirm your card number and expiration



- Uber. 신용카드 사진을 등록하여 탑승 시 결제하는 방법
- 호출할 때 목적지를 미리 입력해놓고, 신용카드를 등록해봤기 때문에 운전자에게 설명할 필요 없이 간편한 이용 가능
- 이외에 아메리칸 익스프레스와의 제휴로 우버를 사용할 때 마다 포인트 적립 가능

Blockchain Network



BLOCKCHAIN

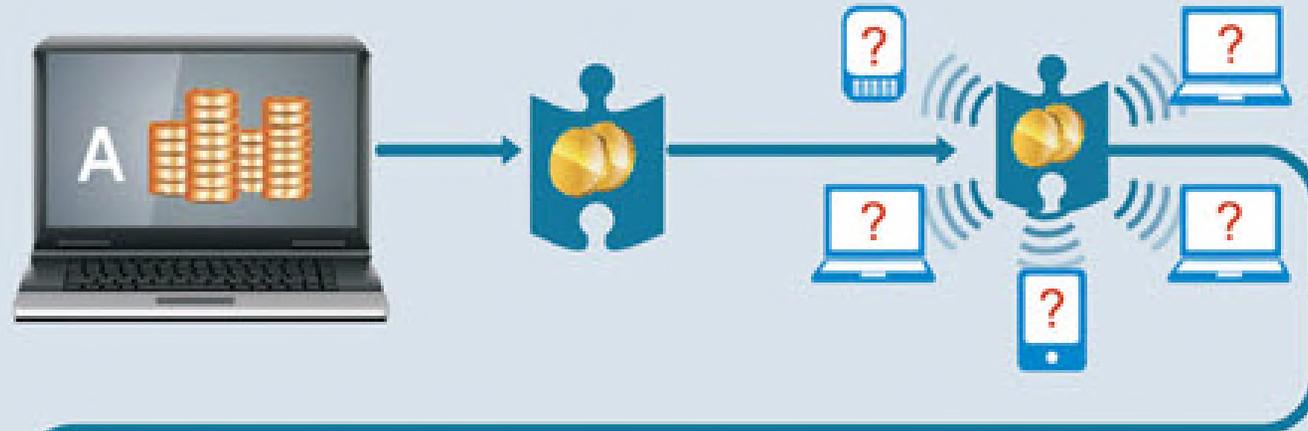
- 비트코인을 안전하게 저장하고 사용하기 위해 고안된 보안기술
- 기존 전자금융거래가 중앙 집중형 구조인 반면, 블록체인은 분산형 구조
- 거래내역이 모든 네트워크 참여자에게 공유 및 보관
- 모든 거래 참여자가 거래내역을 확인
- 거래정보가 투명하며 시스템 구축 및 유지보수 비용이 적다는 장점
- 거래속도가 상대적으로 느리고, 제어가 복잡하다는 단점
- 비트코인 외에도 크라우드 펀딩, 주식 거래, 증권 등에서도 활용되고 있음

블록체인 거래 흐름

① A가 B에게 송금 희망

② 거래정보는 '블록'으로 온라인에서 생성

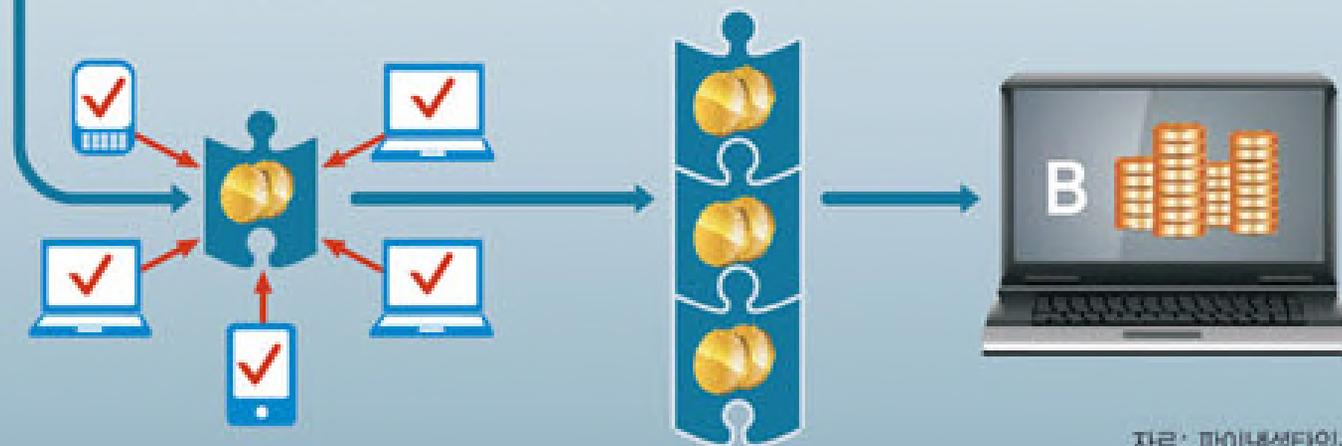
③ 해당 블록은 네트워크상의 모든 참여자에게 전송



④ 참여자들은 거래정보의 유효성을 상호 검증

⑤ 거래정보의 검증이 완료된 블록은 체인에 등록

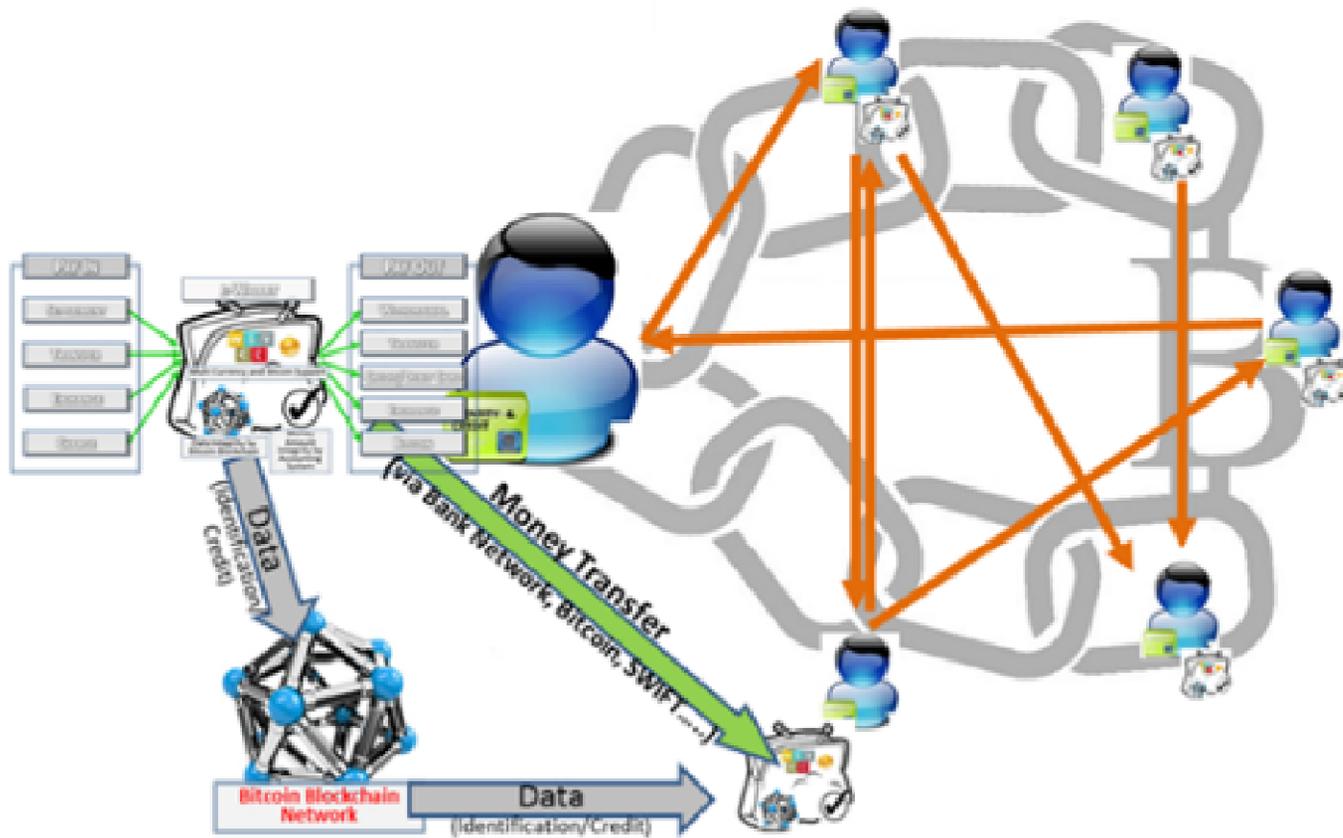
⑥ A는 B에게 송금 완료



자료: 파이낸셜타임스

Remittance Service

Fintech Architectural Overview



- Settlement - Bitcoin
- Clearing - Blockchain

Exchange - Bitshare

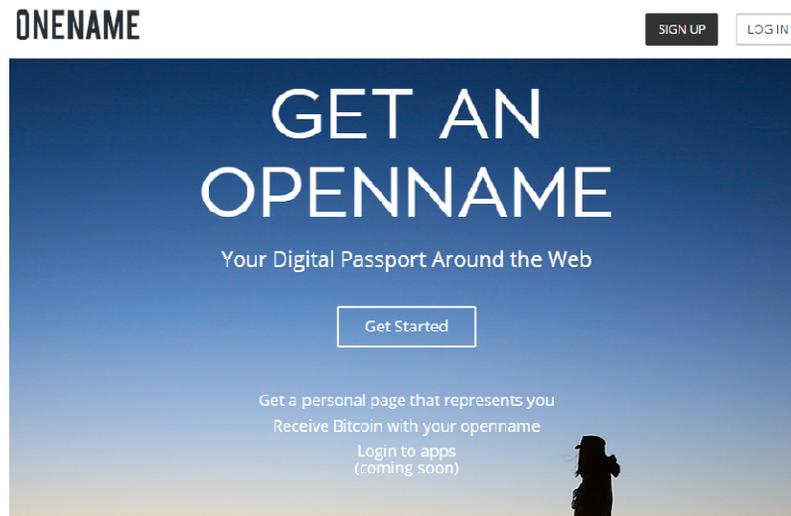


- 1BitUSD=1USD, 1BitCNY=1CNY 등의 가치가 고정된 블록체인 기반의 자산 거래를 위한 분산화 거래소
- 최근 Bitshare 2.0를 표방하며 Industrial financial Smart contract platform이란 기치 아래 플랫폼 고도화 작업 진행 중

BitUSD?
BitCNY?

Market pegged Assets

Open identity- Onename



Users on Openname



- 블록체인 기반의 ID시스템을 구축 온라인 Passport처럼 사용 할 수 있게 해주는 서비스
- 사용자 ID나 Social 계정과 BTC Address를 연동하는 방식
- 투자 규모:150만 USD (Union Square Ventures, SV angle)

DNS- Namecoin



namecoin Home Video Exchanges Team Download
Forum Wiki FAQ

Against censorship.

Namecoin is a decentralized open source information registration and transfer system based on the Bitcoin cryptocurrency.

What does it do?

- Securely record and transfer arbitrary names (keys).
- Attach a value (data) to the names (up to 520 bytes, more in the future).
- Transact namecoins, the digital currency (N, NMC).

Namecoin was the first fork of [Bitcoin](#) and still is one of the most innovative altcoins. It was first to implement [merged mining](#) and a [decentralized DNS](#).

- 비트코인을 fork하여 만든 첫번째 알트코인
- 화폐로써의 비트코인 대신 각각의 코인은 온라인 레코드들의 Key와 value를 저장하는 토큰 역할을 함
- 최초 등장 목적은 DNS와 같은 인터넷 어드레스 북을 분산화 환경에서 투명하고 수평적으로 관리 하기 위해 등장



Coincert

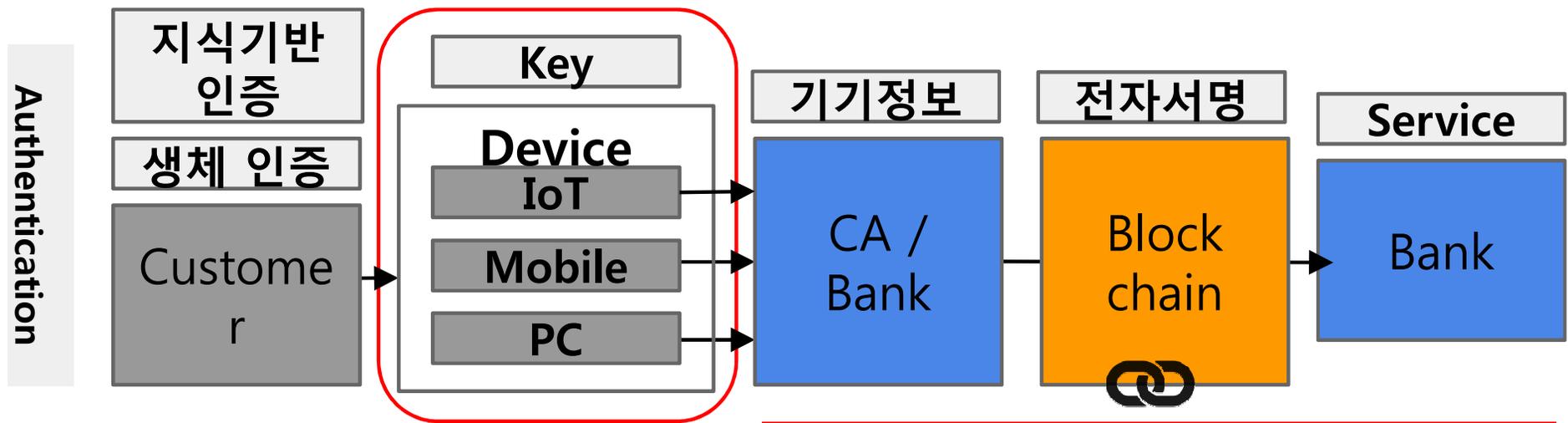
IoT시대를 위한 스마트 비대면 인증 기술





Coincert

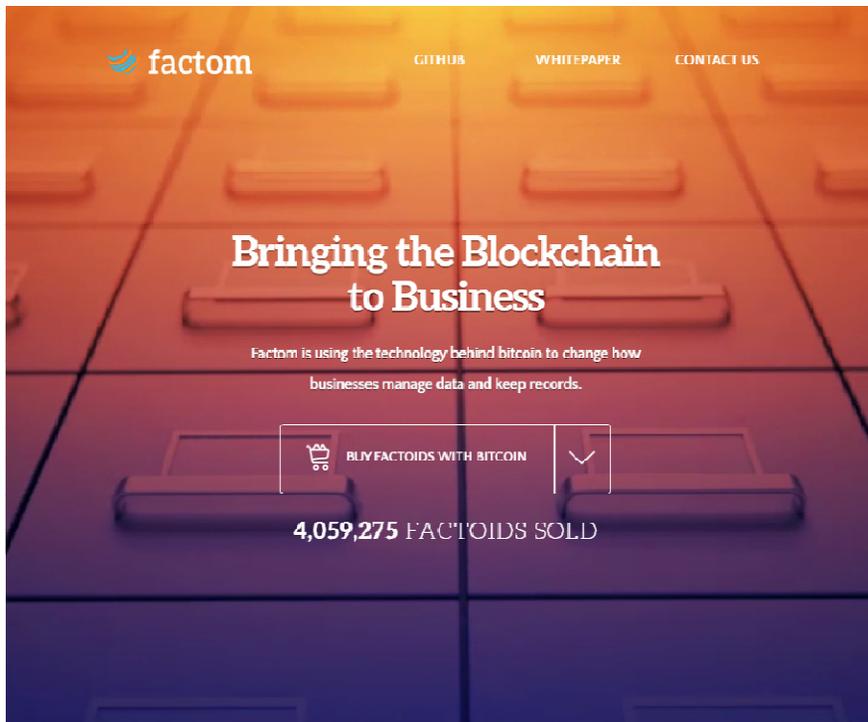
IoT시대를 위한 스마트 비대면 인증 기술



Whose device?

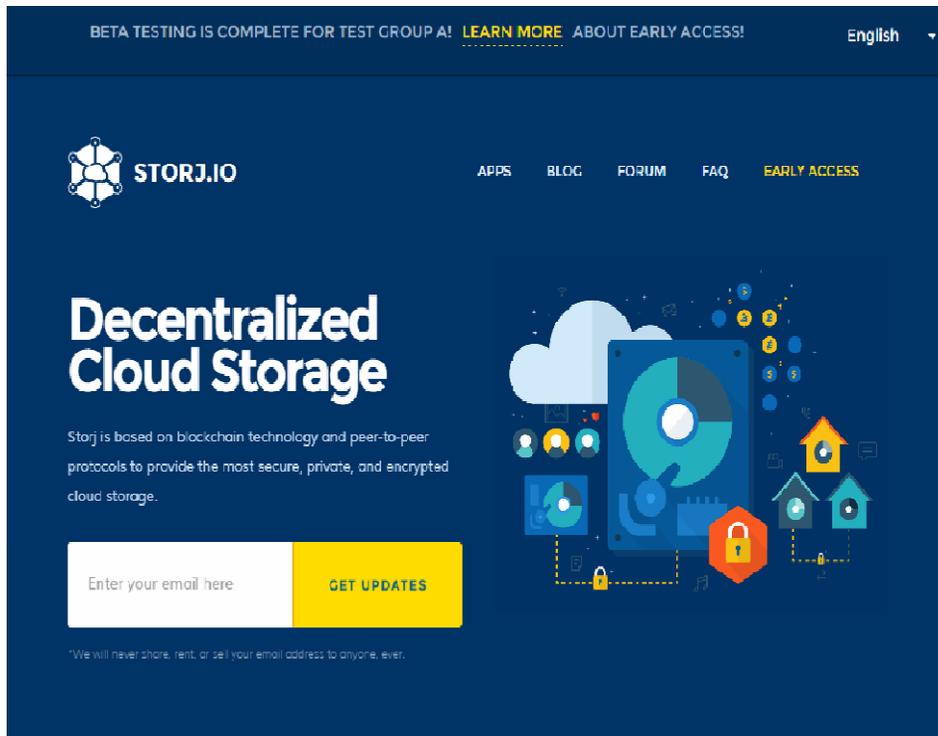
사용자 중심의 PKI

Document stamping - Factom



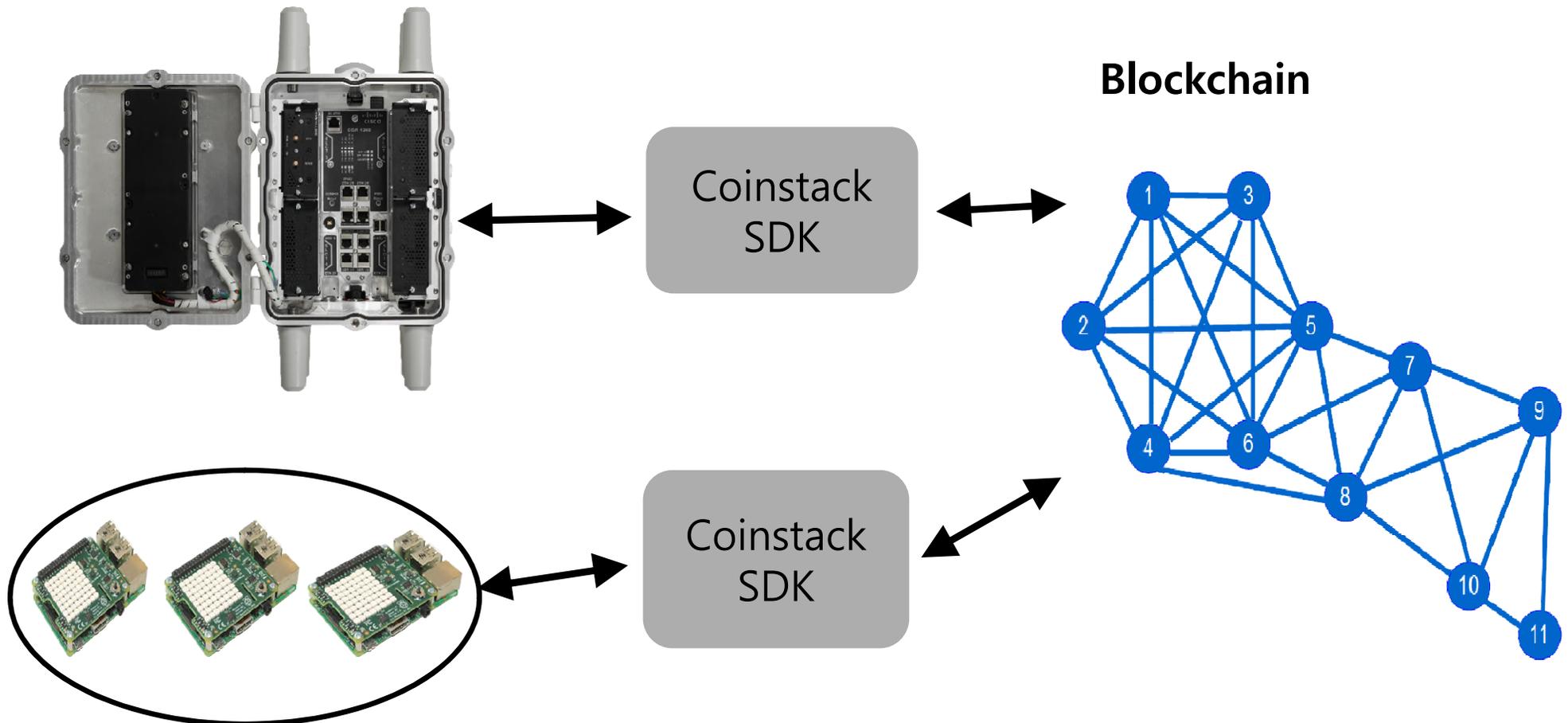
- 블록체인 기반의 문서 공증 시스템, Blockchain 이외에 Data Layer를 사용하여 record keeping network를 구축함.
- 비트코인 수수료 대신에 Factoid라는 고유한 마일리지 코인을 발행, 해당 코인의 판매 및 순환으로 수익 창출

Cloud Storage - Storj.io



- 분산화 클라우드 저장소를 표방, P2P protocol로 유저간 남는 용량을 암호화화폐로 빌려주고 받는 클라우드 스토리지 서비스
- 암호화와 분산 데이터 저장 방식으로 프라이버시와 데이터 보안 보장
- B2C서비스로 용량을 빌려주는 Drive share와 용량을 빌려 쓰는 Metadisk 서비스 중.

IoT - Cisco & Blockco



Fintech Rankings Top 10 (2016)

2016년 기준 핀테크 매출기업 순위

No.	회 사 명	웹 사이트	국 가	설 명
1	Tata Consultancy Services	http://www.tcs.com	INDIA	IT 서비스, 컨설팅 및 비즈니스 솔루션
2	FIS	http://www.fisglobal.com/	US	소프트웨어, 결제 처리 및 금융 솔루션
3	Cognizant Tech Solutions	http://www.cognizant.com/	US	금융 서비스 기술 제공 업체
4	Fiserve, Inc	http://www.fiserv.com/	US	IT, 컨설팅 및 비즈니스 프로세스 아웃소싱 제공
5	NTT Data	http://www.nttdata.com/	US	오라클, 클라우드, 빅데이터 및 M2M 솔루션 제공
6	Infosys Limited	http://www.infosys.com/	INDIA	비즈니스 컨설팅, 정보 기술, 소프트웨어 엔지니어링 및 아웃소싱 서비스
7	NCR Corporation	http://www.ncr.com/	US	컴퓨터 하드웨어, 소프트웨어, 전자 제품 및 서비스를 제공
8	Total System Services, Inc	http://www.tsys.com/	US	신용카드 프로세서, 발급사, 매입사로 미국의 신용카드 발행 1위업체
9	Nomura Research Institute	http://www.nri.com/	JAPAN	IT 시스템 솔루션 및 컨설팅
10	Diebold, Inc.	http://www.diebold.com	US	ATM 제조, 보안, 글로벌 금융 및 상업 시장에 대한 소프트웨어 및 통합 시스템 서비스제공

2016년 기준 핀테크 투자기업 순위

2016	Company	Location
1	IBM	US
2	Hewlett-Packard	US
3	Microsoft	US
4	Accenture	Ireland
5	Cisco Systems, Inc.	US
6	Dell, Inc.	US
7	Oracle Corp.	US
8	EMC	US
9	Intel	US
10	Deloitte	US
11	Thomson Reuters	US
12	Fujitsu	Japan
13	CapGemini	France
14	Hitachi, Ltd.	Japan
15	SAP SE	Germany
16	CSC	US
17	Wipro Limited	India
18	HCL Technologies Ltd.	India
19	CGI Group Inc.	Canada
20	Teradata Corporation	Canada
21	Unisys Corporation	US
22	Tech Mahindra	India
23	Verint Systems Inc.	US
24	EPAM Systems	US
25	TeleTech	US

Financial Insights FinTech 100 (2016)

Q & A

Thank you