

**Hong Kong University of Science and Technology**  
**Department of Economics**  
**ECON 5040 (L1): Economics of Financial Technology**  
**2021-22 Spring**

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**Description**

Financial technology (FinTech) refers to technologically enabled financial innovation that could result in new business models, processes or products with an associated material effect on financial markets and institutions and the provision of financial services. The emergence of FinTech firms may have both positive and negative impacts on the financial sector and the broader economy: affecting the viability of traditional financial institutions, the provision of financial services, the interest rates, and the riskiness of investment projects being financed. In other words, the rise of financial technologies may affect the financial stability of the economy and have important macroeconomic implications. This course focuses on using economic concepts to analyze the implications of financial technologies on the macroeconomy. It also addresses policy implications of FinTech on financial stability, central banking, and monetary policy. The aim is to highlight the importance of formulating appropriate policies to foster healthy development of the FinTech sector and at the same time ensure the financial stability of the economy.

**Prerequisite**

ECON 5130

**Assessments**

Group Project: Report*	40%	Analysis on a specific FinTech sector analysis
Group Project: Presentation*	20%	Online presentation on March 23
Online Quiz	40%	Online quiz on March 30

\*Please form a group of 5-6 members. The actual group size depends on the final enrollment number. Please email your group information (names and student numbers) to me no later than Feb 17 (the last add/drop date). To prevent free-rider issue, we may conduct peer evaluation to assess individual contribution to the group.

## **Course Intended Learning Outcomes**

Upon successful completion of this course, students will be able to:

1. Use economic concepts to analyze the reasons for the rises of FinTech. (PILG 1, 4)
2. Explain implications of FinTech on the financial sector and the rest of the economy. (PILG 1, 4)
3. Identify potential benefits and risks of FinTech for financial stability. (PILG 1, 4)
4. Address implications of FinTech on central banking and monetary policy. (PILG 1, 4)

## **Teaching Approach**

This course is mainly delivered through online lectures and discussion.

<b>Teaching &amp; Learning Activities</b>	<b>Roles in the Course</b>	<b>Course Learning Outcomes Addressed</b>
Lecture	Explain key concepts and models to students.	1, 2, 3, 4
Class discussion	Learn to develop critical thinking in analyzing Fintech questions.	1, 2, 3, 4
Group project with presentation	Learn to apply concepts to analyze real world issues and present case-study analysis.	1, 2, 3, 4

## **Course Outline**

1. Introduction to FinTech (Week 1)
  - Types of FinTech
  - Reasons for the Rises of FinTech
2. Determinants of FinTech (Weeks 1-3)
  - Supply and Demand Analysis of FinTech
  - Economics of Crowdfunding
  - Economic and Technological Determinants
3. Economic and Financial Implications of FinTech (Weeks 3-4)
  - Impacts on Household Saving
  - Impacts on Financial Services Industry
  - Monetary Policy Implications
4. FinTech and Financial Stability (Weeks 4-5)
  - Potential Benefits and Risks for Financial Stability
  - Policy Implications for Financial Stability
5. Macroeconomic Implications of Virtual Currencies (Week 6)
  - Implications of Virtual Currencies
  - Central Bank Digital Currencies

## **Teaching Materials**

Lecture notes and selected references are downloadable from the course's CANVAS website. The content of the course draws on various sources, including books, academic articles, and policy papers. Please refer to the following list for your reference.

### **References**

- Agrawal, A.K., Catalini, C., Goldfarb, A., 2013. Some Simple Economics of Crowdfunding. NBER Working Paper No. 19133.
- Barrdear, J., Kumhof, M., 2016. The Macroeconomics of Central Bank Issued Digital Currencies. Bank of England, BoE Staff Working Paper 605.
- Becker, G., 2017. Does FinTech Affect Household Saving Behavior? Working Paper.
- Berentsen, A., 1998. Monetary Policy Implications of Digital Money. *Kyklos* 51(1), 89–117.
- Bernoth, K., Gebauer, S., 2017. Monetary Policy Implications of Financial Innovation: In-Depth Analysis. Monetary Dialogue May 2017, Policy Department A: Economic and Scientific Policy European Parliament.
- Boot, A. W. A., 2017. The Future of Banking: From Scale & Scope Economies to Fintech. *European Economy*, 2017 (2), 77-95.
- Braggion, F., Manconi, A., Zhu, H., 2018. Can Technology Undermine Macroprudential Regulation? Evidence from Peer-to-Peer Credit in China. Working paper.
- Chiu, J., Koepl, T.V., 2017. The Economics of Cryptocurrencies – Bitcoin and Beyond. Working paper.
- Easley, D., Kleinberg, J., 2010. *Networks, Crowds, and Markets: Reasoning about a Highly Connected World*. Cambridge University Press.
- Ennis, S., 2015. Refining Regulation to Enable Major Innovations in Financial Markets. Issues Paper, Working Party No. 2 on Competition and Regulation, Hearing on Disruptive Innovation in the Financial Sector, Directorate for Financial and Enterprise Affairs Competition Committee, OECD.
- Farboodi, M., Veldkamp, L., 2017. Long Run Growth of Financial Data Technology. Working paper.
- Fatas, A. (editor), 2019. *The Economics of Fintech and Digital Currencies*. CEPR Press, 2019.
- Feder, C., 2018. The effects of disruptive innovations on productivity. *Technological Forecasting & Social Change* 126, 186–193.
- Financial Stability Board, 2017. *Financial Stability Implications from FinTech: Supervisory and Regulatory Issues that Merit Authorities' Attention*. FSB, 27 June, 2017.
- Foo, J., Lim, L-H, Wong, K., 2017. Macroeconomics and FinTech: Uncovering Latent Macroeconomic Effects on Peer-to-Peer Lending. Working paper.
- Frost, J., 2020. *The Economic Forces Driving Fintech Adoption Across Countries*. BIS Working Papers No. 838.
- Furche, P., Madeira, C., Marcel, M., Medel, C. A., 2017. *FinTech and the Future of Central Banking*. Economic Policy Papers of the Central Bank of Chile, ISSN 0717-7151.

- Gray, A., Leibrock, M., 2017. Fintech and Financial Stability: Exploring How Technological Innovations Could Impact the Safety and Security of Global Markets. DTCC Papers October 2017.
- Grechyna, D., 2013. Technological Progress and Financial Stability. Working paper.
- Haddad, C., Hornuf, L., 2016. The Emergence of the Global Fintech Market: Economic and Technological Determinants. University of Trier Research Papers in Economics No. 10/16.
- He, D., Leckow, R., Haksar, V., Mancini-Griffoli, T., Jenkinson, N., Kashima, M., Khiaonarong, T., Rochon, C., Tourpe, H., 2017. Fintech and Financial Services: Initial Considerations. IMF Staff Discussion Note SDN/17/05.
- Jagtiani, J., Lemieux, C., 2017. Fintech Lending: Financial Inclusion, Risk Pricing, and Alternative Information. Federal Reserve Bank of Philadelphia Working Papers.
- Leipziger, D., Dodev V., 2016. Disruptive Technologies and their Implications for Economic Policy: Some Preliminary Observations. Institute for International Economic Policy Working Paper 2016-13.
- Moore, T., Christin, N., 2013. Beware the Middleman: Empirical Analysis of Bitcoin-Exchange Risk. Financial Cryptography and Data Security, Springer.
- Nakaso, H., 2016. FinTech – Its Impacts on Finance, Economies and Central Banking. Remarks at the University of Tokyo - Bank of Japan Joint Conference in Tokyo on “FinTech and the Future of Money”.
- Pereira da Silva, L. A., 2018. Fintech in EMEs: blessing or curse. Bank for International Settlements. Panel Remarks at CV Meeting of Central Bank Governors of CEMLA - Asuncion, Paraguay, 5 June 2018.
- Philippon, T., 2015. Has the US Finance Industry Become Less Efficient? On the Theory and Measurement of Financial Intermediation. American Economic Review 2015, 105(4): 1408–1438.
- Philippon, T., 2016. The Fintech Opportunity. NBER Working Paper 22476.
- PWC, 2016. Blurred lines: How FinTech is shaping Financial Services. PWC Global FinTech Report.
- Raskin, M., Yermack, D., 2016. Digital Currencies, Decentralized Ledgers, and the Future of Central Banking. NBER Working Paper No. 22238.
- Schindler, J., 2017. FinTech and Financial Innovation: Drivers and Depth. Finance and Economics Discussion Series 2017-081, Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, Washington, D.C.
- Smets, J., 2016. Fintech and Central Banks. Fintech and the Future of Retail Banking, Brussels, 9 December 2016.
- World Economic Forum, 2017. Beyond Fintech: A Pragmatic Assessment Of Disruptive Potential In Financial Services.
- World Economic Forum Industry Agenda, 2017. The Role of Financial Services in Society: Understanding the impact of technology-enabled innovation on financial stability.

### **Academic Policy**

Dishonesty or plagiarism will not be tolerated. Any student violating HKUST Academic Integrity and Honor Code (<http://www.ust.hk/vpao/integrity>) will be subjected to disciplinary procedure.