

Digital monies for a sustainable future

Points: 7.5 ECTS

Level

PhD Program

Main category of the course

Innovation and entrepreneurship

Doctoral School

To be offered through the Research School Agenda 2030.

Course Faculty

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Course content

Growing inequality, apocalyptic environmental damage, and the protracted effects of a global financial crisis have resulted in a discussion on the role of our monetary system for the organization of society. At the same time, new technological and financial developments are giving rise to much experimentation on new forms of money. This PhD course looks at how the new technologies are re-thinking money. It explores opportunities for addressing big societal challenges and asks in particular how new forms of money can contribute to developing more just and equal societies.

Course design

The course is structured in 3 modules as follows:

1. Setting the Stage

To be able to carry an educated discussion of the role digital monies can play in advancing a sustainable future, we need first to understand 1. contemporary money, and 2. the digital technologies that are re-imagining money.

2. Monetary innovations past and present

This module looks at past and present efforts to change the monetary system. In this doing, it elicits the resemblances and difference between today's monetary and tech entrepreneurs and those of previous times. How are past monetary ideas being adapted into today's tech and monetary innovations? And how do they contribute (or not) to create more resilient communities, more equal societies, and a more sustainable environment? We will discuss such questions in four sessions, each focusing on one particular type of money: 1. Sovereign money; 2. Global cryptocurrencies; 3. Citizens monies; 4. Corporate monies.

Particular monies we will discuss in this module include Bitcoin, FairCoin, Kenyan community cryptocurrencies, Wörgl's scrip, e-Kronan and Libra

3. Money Co-Design Workshop (6 hours)

Imagine you have the possibility to re-imagine our monetary system: Where would you start? How would you build it on the new monetary technologies? How would you work to make it more conducive to just, equal and sustainable societies? This session puts that question to work in the design of a monetary system for a particular social challenge of your choice. We will work in groups to Co-design a monetary system that you will be presenting in class.

Learning objectives

By the end of the course, students should be able to:

(Knowledge and understanding)

- Demonstrate an understanding of how our national and international monetary systems work.
- Demonstrate an understanding of how the new digital technologies are contributing to re-shape, or reproduce, the monetary system as well as their impact on the form of our societies and sustainability of our economies.
- Demonstrate an ability to identify relevant research topics at the intersection between the monetary, engineering and grassroots innovation studies.

(Skills and abilities)

- Demonstrate an ability to integrate knowledge on monetary theory, digital technologies, and grassroots innovations to analyse, assess and deal with issues related to various forms of local, national and international monies.
- Demonstrate an ability to independently identify a social / environmental challenge and formulate a design for a monetary system addressing that challenge.
- Demonstrate an ability to assess the potentials and limitations both of particular monetary system and of digital monetary technologies and clearly present arguments of its strengths and weaknesses.
- Demonstrate an understanding of the future challenges and main issues related to local, national and global digital monies.

(Judgement and approach)

- Demonstrate an ability to assess the boundaries of the current monetary system and discuss the opportunities and limitations for change agents to impact it.
- Demonstrate an ability to identify their need of further knowledge concerning monetary systems and technologies and to take responsibility for developing their knowledge.

Examination

Examination in this course is a two-step process:

1. Group work – PhD students will be grouped in interdisciplinary teams. Each group will be asked to design a monetary system for a particular sustainability challenge and present it for the rest of the class. Their presentation will be the basis for class discussion in the course's last session.
2. Individual written assignment; max. 5 pages. In a written essay, students will be asked to summarise the main lessons of the course and relate them to their own research projects. This exam needs to engage the literature discussed throughout the course.

The grades awarded are Pass or Fail.

Teaching methods

The course combines a variety of methods, ranging from traditional lectures, case studies, reading groups, student debates, and group work. Students are expected to participate actively in class.

Course schedule

The course will run over 24 confrontation hours, in seminars of 3 hours.

Entry requirements and selection

Applicants must be admitted to a doctoral programme. If the number of applicants exceeds the number of available places in the course, students from the Agenda 2030 Research School, Lund University, will be given priority.

Preliminary Course literature

- Gesell, S. 1916. A story of Robinson Crusoe. In [The Natural Economic Order](#), part V (“The free-money theory of interest”), pp. 365-370.
- Callon, M. 2007. [What does it mean to say that economics is performative?](#) In McKenzie et al. (eds.) *Do Economists Make Markets*. Princeton Univ. Press
- Baumol, W.J. 1990. [Entrepreneurship](#): Productive, Unproductive, and Destructive. *Journal of Political Economy*, 98(5):893-921.
- Desan, C. 2017. [The Constitutional approach to money](#): Monetary design and the production of the modern world. In Bandelj, Wherry & Zelizer (eds.) *Money Talks: Explaining how money really works*, ch.6, pp.109-130.
- Werner, R.2014. [Can banks individually create money out of nothing?](#) The theories and the empirical evidence. *International Review of Financial Analysis*, 36:1-19.
- Goodhart, C.A.E. 1998. [The two concepts of money](#): implications for the analysis of optimal currency areas *European Journal of Political Economy*, 14: 407-432
- Wray, R. L. 2012. [Introduction to an Alternative History of Money](#). *Levy Economics Institute Working Paper*, 717
- Kiyotaki, N. & Wright, R. 1989. [On Money as a Medium of Exchange](#). *Journal of Political Economy*, 97(4): 927-954
- Kocherlakota, N.R. 1998. [Money Is Memory](#). *Journal of Economic Theory*, 81:232-251
- Rendahl, P. och Lukas B. Freund. 2019. [Banks do not create money out of thin air](#). *Centre for Economic Policy Research*.
- Nakamoto, S. 2008. [Bitcoin](#): A Peer-to-Peer Electronic Cash System. Bitcoin White Paper.
- D. Yaga and P. Mell. 2018. [Blockchain Technology Overview](#), NISTIR 8202, NIST.
- R. Houben and A. Snyers. 2018. [Cryptocurrencies and blockchain - Legal context and implications for financial crime, money laundering and tax evasion](#), Study by the Policy dept of the European Parliament.
- Ögren, A. 2019. Replacing Bank Money with Base Money: The Consequences of Ending the Private Bank Note Issuance in Sweden. *Working paper LUPEH*.
- Sweden Central Bank. Special issues on the E-krona. *Sveriges Riksbank Economic Review*, [2018:3](#) and [2020:2](#).
- Vasiliauskas, V. 2019. [Central bank digital currencies](#). Speech by Mr Vitas Vasiliauskas, Chairman of the Board of the Bank of Lithuania, at the Reinventing Bretton Woods Committee conference *Managing the Soft Landing of the Global Economy*, Washington DC, 12 April, 2019.
- Köning et al. 2018. [The proof-of-cooperation blockchain FairCoin](#). White Paper.
- Rozas et al. 2018. [When Ostrom Meets Blockchain](#): Exploring the Potentials of Blockchain for Commons Governance.
- Swartz, L. 2017. [Blockchain dreams](#): Imagining techno-economic alternatives after Bitcoin. In Castells, M. et al. (eds.) *Another economy is possible: Culture and economy in a time of crisis*, Ch.4 (pp.82-105). Polity Press.
- Ostrom, E. 2010. [Beyond Markets and States](#): Polycentric Governance of Complex Economic Systems. *The American Economic Review*, 100(3):641-672.
- Zelizer, V. 2012. [How I Became a Relational Economic Sociologist and What Does That Mean? \(Links to an external site.\)](#) *Politics & Society*, 40(2):145-174.
- Smelser & Swedeberg. 1996. [The sociological perspective on the economy](#). In *Handbook of Economic Sociology*, Princeton University Press.
- Fantacci, L. 2005. Complementary Currencies: A prospect on money from a retrospect on premodern practices. *Financial History Review*, 12(1):43-61.