

Title:

The Economics of Cryptocurrency -- Bitcoin and Beyond

Speaker:

Assoc. Prof. Jonathan Chiu, School of Economics and Finance,  
Victoria University of Wellington

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Abstract:

A monetary model is developed to study the optimal design of a cryptocurrency system based on a blockchain. We formalize the critical elements of a cryptocurrency: the blockchain to keep a history of transactions, the distributed updating of information and consensus through competition for such updating. The key economic nature of these features is that mining is a public good, while double spending to defraud the cryptocurrency depend on individual incentives to reverse a particular transactions. This implies that a cryptocurrency works best when the volume of transactions is larger relative to the individual transaction size. The model is then calibrated to Bitcoin transaction data. The cryptocurrency system designer optimally chooses the money growth and transaction fees to maximize social welfare. He faces a trade-off between optimizing the allocation of goods and minimizing mining costs subject to the constraint of no double spending. We find that the optimal system should use money growth rather than transaction fees as the optimal reward system to encourage mining.