Understanding Economic and Social Dynamics of Thai Households

A workshop supported by
Puey Ungphakorn Institute for Economic Researh,
Thai Research Fund,
and University of Thai Chamber of Commerce

Robert M. Townsend
Elizabeth & James Killian Professor of Economics, MIT
Research Associate, University of Chicago and
National Bureau of Economic Research

Dec 15, 2015

Survey Data as Continuous Monitor, Indicators

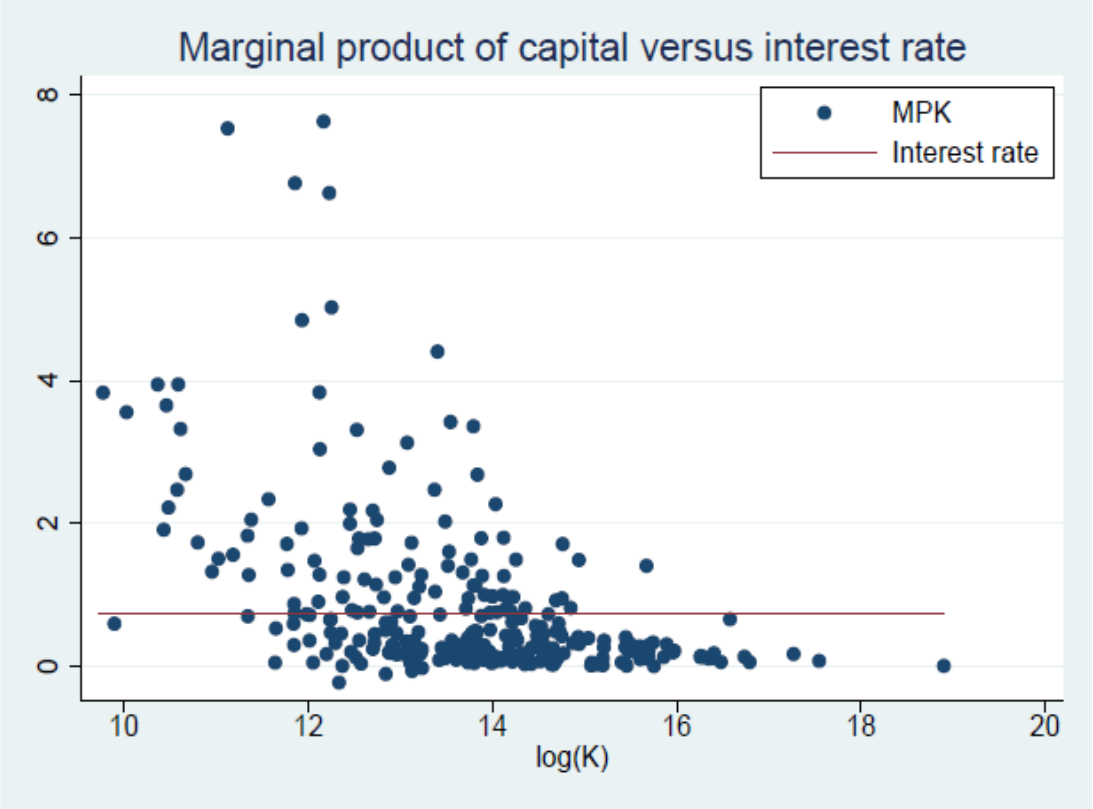
- Wealth increased over the last 15 years (Pawasutipaisit & Townsend)
  - 22% per year for relative poor
  - Only 0.09% for relatively rich
  - Poverty traps or not?
  - Driving National GDP
    - Contribution to TFP = 73% (Jeong & Townsend)
- Indebtedness problem?
  - Median Debt/Income ratio
    - 0.6 in 2005
    - Dropping substantially in recent years
  - Debt/Asset ratio
    - Below 20% for most households
    - Only 5% lower tail in some kind of trouble
- Like Expectations Surveys
  - Need to expand and include expectations of traders, decision makers in markets, institutions

Local Markets/Institutions Working Well

- Consumption risk sharing
  - Almost perfect within each village (Chiappori, Samphantharak, Schulhofer-Wohl & Townsend)
- Labor Supply
  - "Sharing Wage Risk" (Bonhomme, Chiappori, Townsend & Yamada, 2012)
  - Little response to idiosyncratic non-labor income shocks
    - Though it is not zero
- Production Risk
  - "Risk and Return in Village Economies" (Samphantharak & Townsend, 2013)
  - As if come close to achieving standard of Capital Asset Pricing Model, on the mean variance frontier
    - Higher risk ⇒ higher expected return
  - But they are not trading in formal stock markets, they are engaged in risk sharing as if deciding collectively what projects/assets to fund
    - There is some idiosyncratic risk in the risk premia, not just aggregate risk

Bad News: Need Remedies

- Divergent marginal product of capital
- Can be far away from benchmark standards
- Even risk adjusted, we get similar picture
- As we shall see below, this is most consistent with buffer stock, limited credit model
- Policy remedy
- But over 15 years, the gap has narrowed, due in part to own savings, but process is slow



[Pawasutipaisit & Townsend, 2010]

Performance of the Financial System

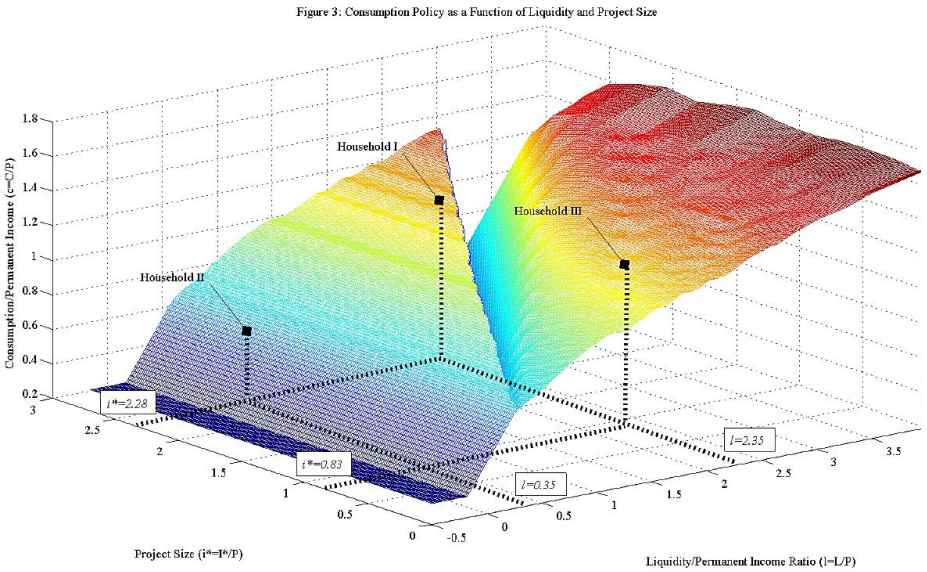
- Exposure to disability shocks (Hendren, Shenoy & Townsend)
  - Maybe not well covered
  - Savings, business investments drop, household size decreases
  - Policy remedy
    - Improved national level insurance
- Life cycle smoothing (good for some, but not all)
  - Not saving enough for older age
  - Policy remedy
    - Pilot in progress
      - Planning tool
      - Wealth management advisory
      - Links of households, SMEs to bank and non-bank financial services/products
- Managing cash (Alvarez, Pawasutipaisit & Townsend)
  - They hold far too much
  - Not in bank at interest (not lent to others, intermediated)
  - Policy remedy
    - Cash management training
    - E-money, mobile banking
    - Accurate tracking

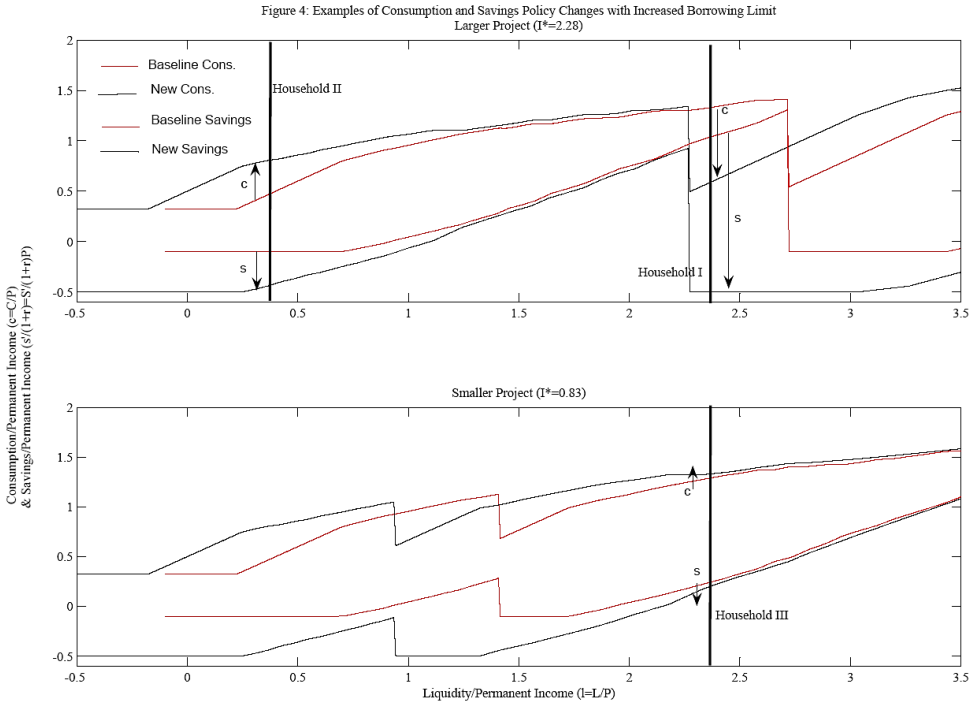
Modeling and Testing Obstacles to Trade: Implication for policy (Karaivanov and Townsend, 2014)

- Develop methods based on mechanism design, dynamic programming, linear programming, and maximum likelihood to
  - **compute** (Prescott and Townsend, 1984; Phelan and Townsend, 1991; Doepke and Townsend, 2006)
  - **estimate** (via maximum likelihood)
  - **statistically test** the alternative models (Vuong, 1989)
- Rural
  - Savings/credit constrained
  - Missing financial products
  - As if incomplete markets/contracts
  - Introduce new products, but with the caveat from before
  - It is not risk-sharing, which is good, but divergent MPK, money not flowing
- Urban/Towns
  - Information problems
    - moral hazard in effort
    - interim adverse selection
    - unobserved capital
  - Better information systems with incentives to report accurately
  - Not simple credit registry but innovative platform (to be designed) for within village or neighborhood

Policy Implications: Validating Models, Evaluating Policy

- Village fund as relaxing credit constraint
- Strong impacts on consumption but with heterogeneous impacts depend on liquidity and project size
- Access to Credit and Productive Heterogeneity (Banerjee, Breza & Townsend)
  - Investment and business profit did increase for top tier productive households
- But, heterogeneous welfare gains relative to lump sum transfers
  - Many would have preferred the latter





(with Kaboski, *Econometrica*, 2011)

Policy Implication

- Evaluating the role of formal outside financial institutions, ratings
- Using theory/data algorithm to get score card, impact on clients
  - Not simply ratios, non-performing loan
- Annual rural data (with Mauro Alem)
- Risk sharing equations from theory
- Instruments for access (as if random)
- BAAC does well through credit operations that have insurance components
- Commercial banks smooth investment through savings

$$c_{it} = P_{i0}\left[f_i + dem_i + d_t + \xi_{it}\right] + \left(1 - P_{i0}\right)\left[\eta_0 k_{it} + \eta_1\left(\frac{q_{it}}{k_{it}}\right) + \chi_{it}\right]$$

$$\frac{I_{it}}{k_{it}} = P_{i0}\left[const_1 + d_t + b_i + \omega_{it}\right] + \left(1 - P_{i0}\right)\left[\phi_0 + \phi_1\left(\frac{q_{it}/k_{it}}{k_{it}}\right) + \nu_{it}\right]$$

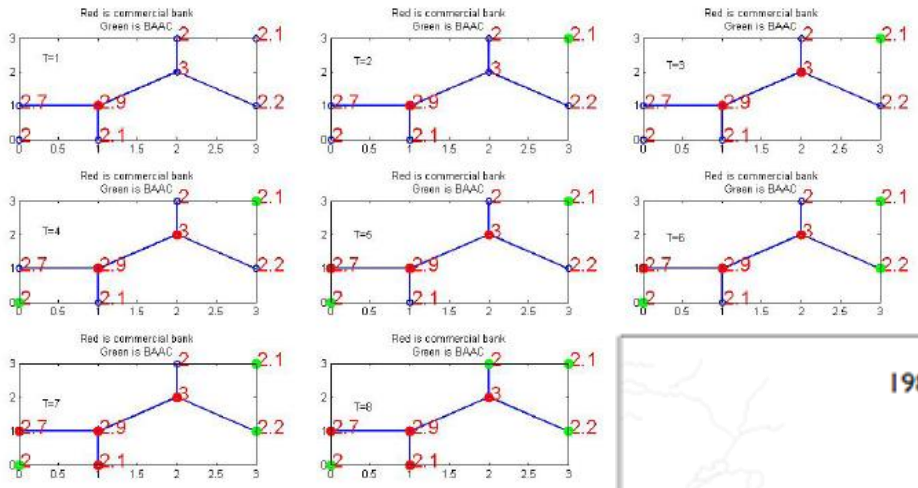
Table 1
Policy Functions for the Different Financial Regimes

		Consumption	Investment
$P_{i0} = 1$ (participation)	for all $t > 0$	$c_{it} = c_i(\lambda_i, \xi_{it}, \bar{c}_t)$	$I_{it} = I_i(k_{it}, \omega_{it}, \bar{c}_t)$
$P_{i0} = 0$ (autarky)	for all $t > 0$	$c_{it} = c_i(k_{it}, \xi_{it}, \theta_t + \varepsilon_{it}, \omega_{it})$	$I_{it} = I_i(k_{it}, \xi_{it}, \theta_t + \varepsilon_{it}, \omega_{it})$

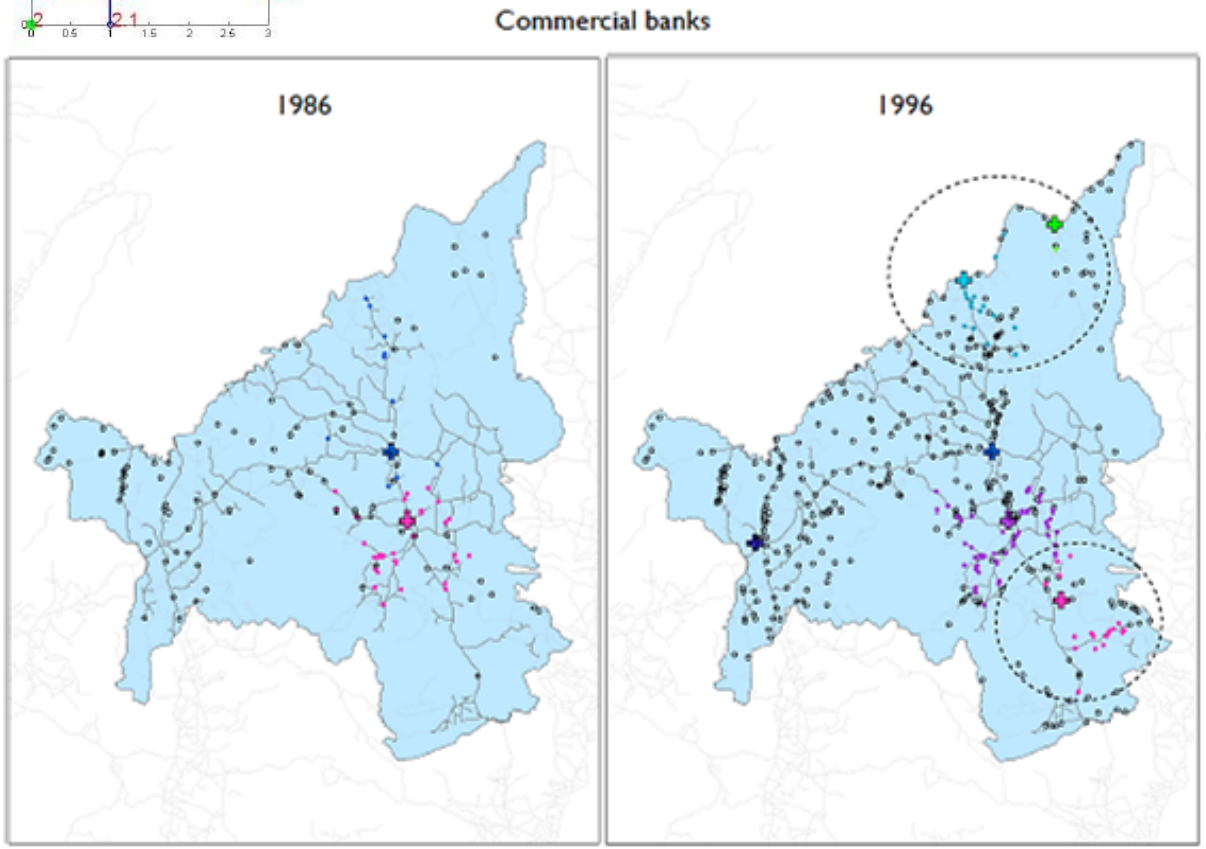
Table 4
Impact of Financial Institutions on Consumption Smoothing (Eq. 24)

	F-test $P_0\, dt = 0$ (p-value)	η_1 (p-value)	$P_0\, \eta_1$ (p-value)	F-test $\eta_1 + P_0\, \eta_1 = 0$ (p-value)
BAAC				
OLS	1.66	.249***	-.062	13.04
	(.157)	(.000)	(.439)	(.000)
IV	17.21	.571***	-.618***	.31
	(.002)	(.000)	(.000)	(.578)
Commercial Banks				
OLS	8.01	.246***	-.094	7.97
	(.000)	(.000)	(.234)	(.0048)
IV	29.58	.299***	-.223*	1.08
	(.000)	(.000)	(.072)	(.300)
Agric. Cooperatives				
OLS	7.17	.204***	-.006	1.95
	(.000)	(.000)	(.966)	(.163)
IV	34.25	.303***	-1.427	.77
	(.000)	(.010)	(.304)	(.379)
PCG – Village Funds				
OLS	1.19	.221***	-.116	.33
	(.313)	(.000)	(.539)	(.567)
IV	23.82	.196***	.427	1.31
	(.000)	(.000)	(.455)	(.253)
Informal Sector				
OLS	4.45	.117***	.223***	50.35
	(.001)	(.001)	(.000)	(.000)
IV	32.70	.156***	.114	13.44
	(.000)	(.001)	(.279)	(.000)

Industrial Organization of Financial Service Providers
(with Juliano Assunção and Sergey Mityakov)



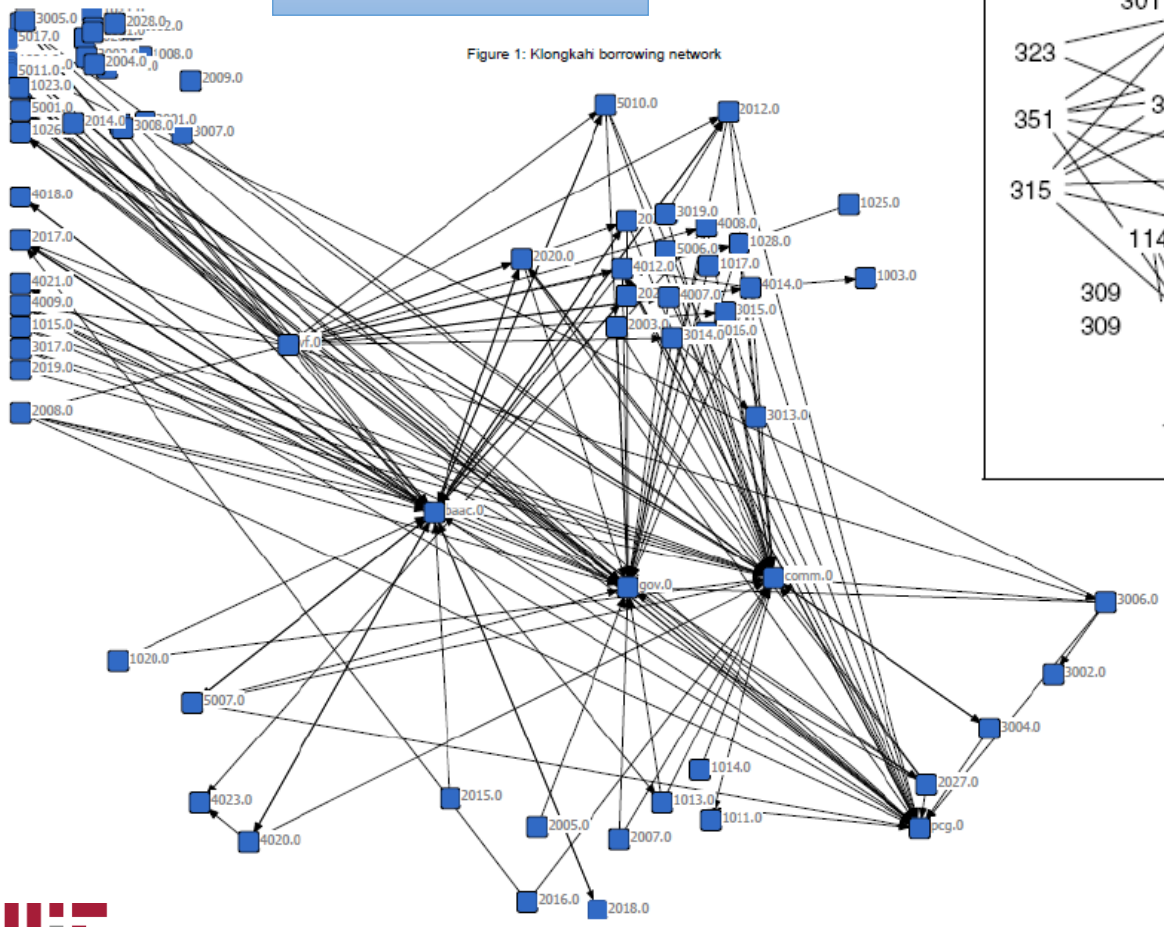
- Using CDD data and BoT branch level data with GIS interface
  - Mentioned earlier
- Strategic interactions evident
- Markets end up segmented
- Brick & mortar banking
- Without electronics
- Will/should change



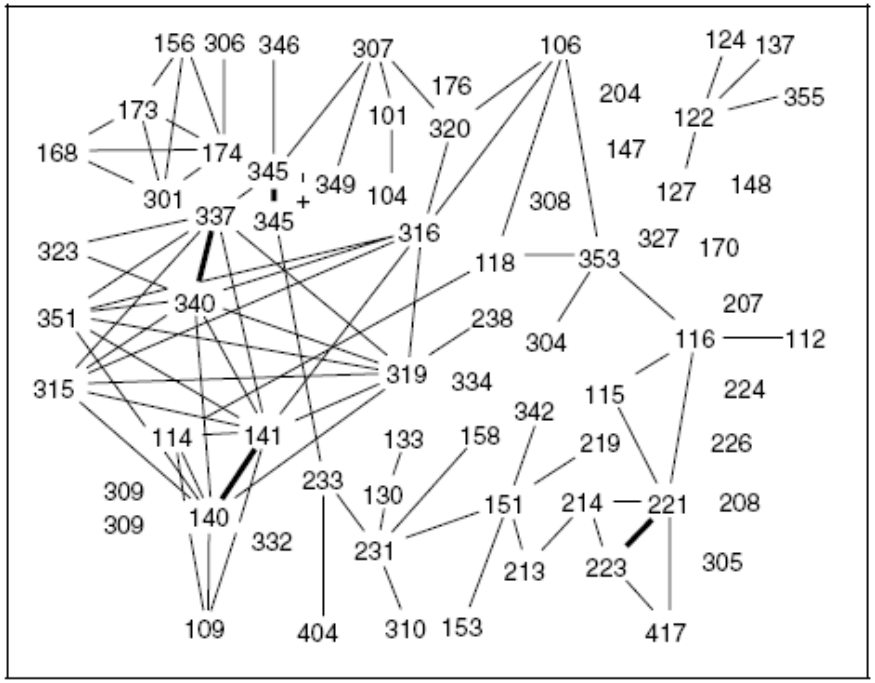
Shadow Banking: Informal Financial Networks as Links to Outside Financial Provider (Kinnan & Townsend)

- Consumption smoothed by active networks
- Investment by kin, threat for default
- Not linked in any way are most vulnerable
  - This was somewhat concealed before

Active Financial Network



Panel B: A Village in Srisaket



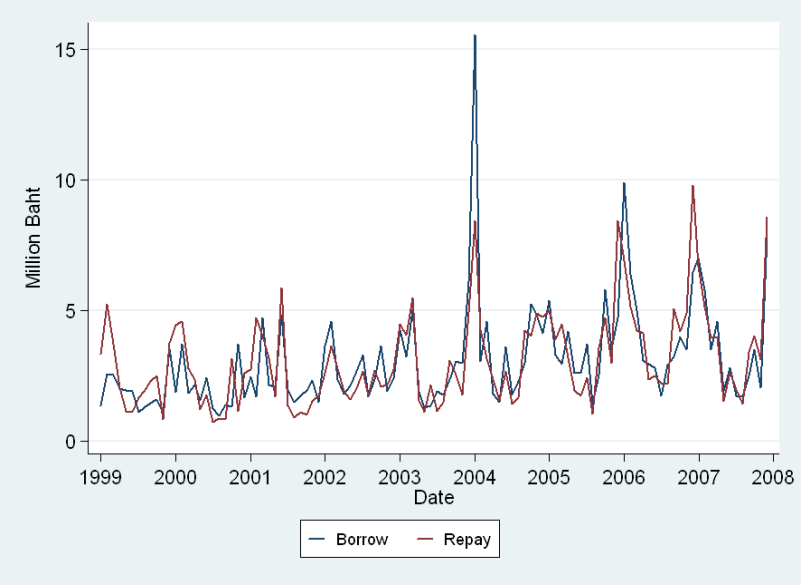
Family Ties

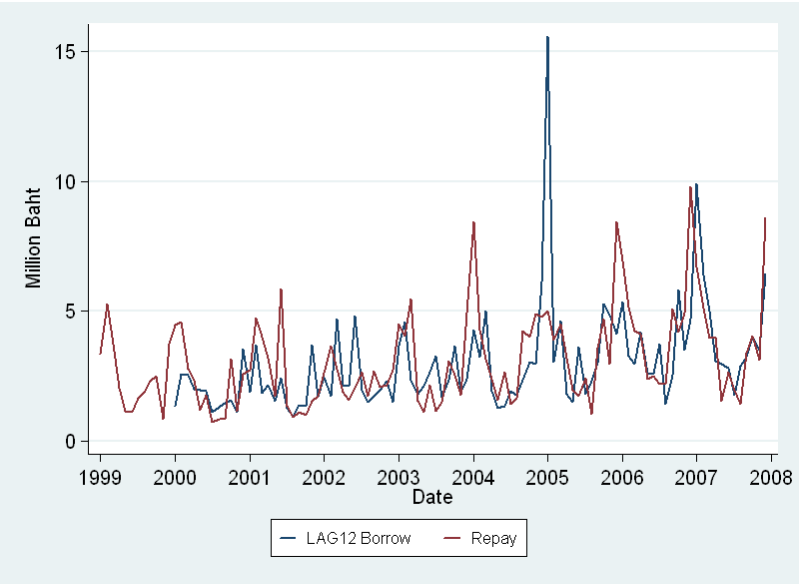
Massachusetts Institute of Technology

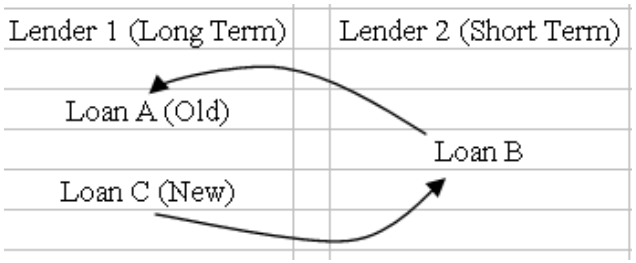
One of the Mechanisms Used: Bridge Loans

(with Parit Sripakdeevong)

Correlation Between Amount Repaid and Amount Borrowed







(Flow of Repayment) % of Total (51.7 M Baht)		'Target' Loan		
		Short Term	Long Term	Total
'Repay' Loan	Short Term	0.2	30.7	30.9
	Long Term	27.6	41.4	69.1
	Total	27.8	72.2	100