Lecture notes on financial access

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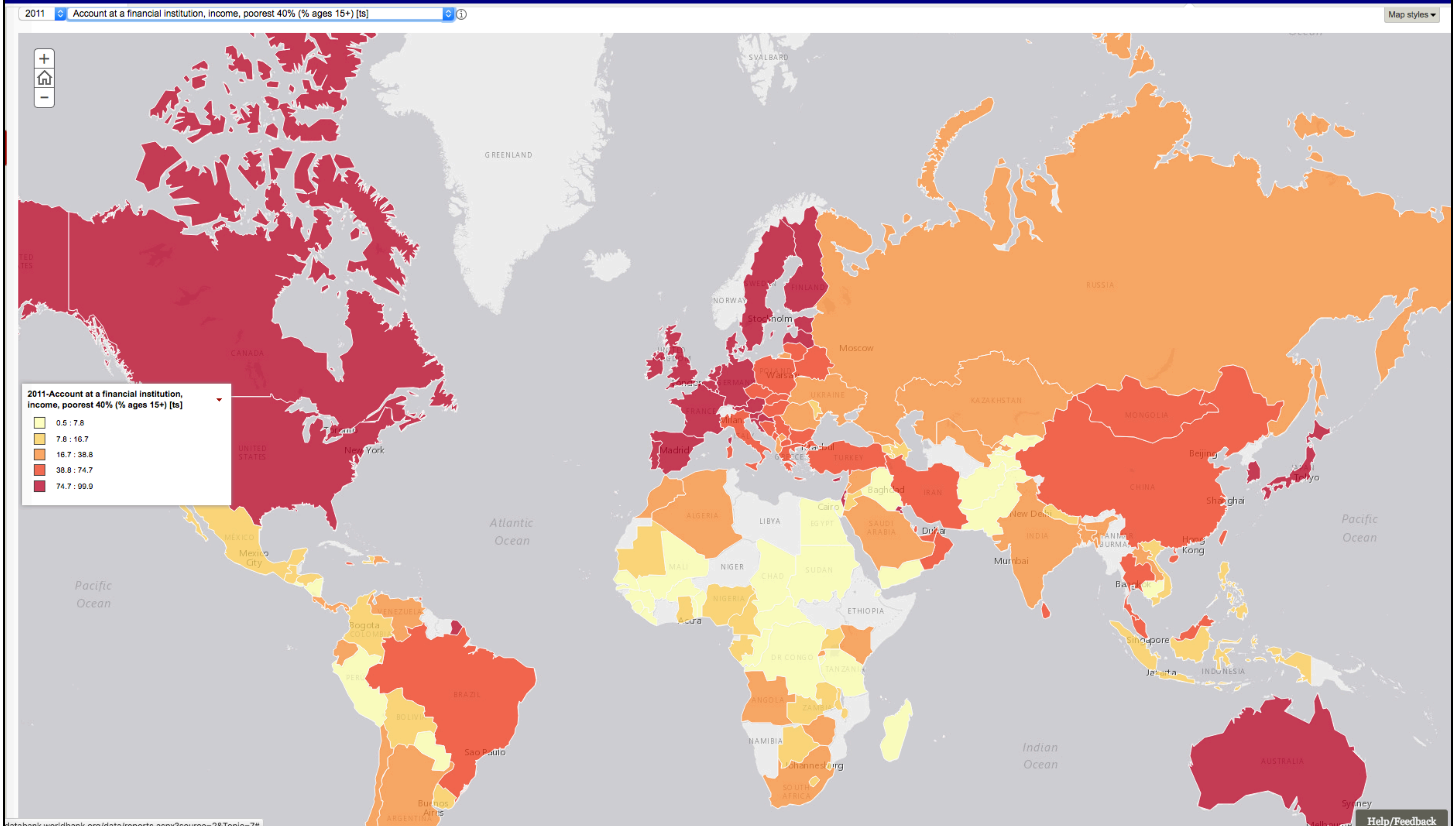
Today

- The empirical landscape
- Informal finance
  - Institutions
  - Mechanisms
  - Demand
- Market failure
  - Adverse selection
  - Moral Hazard
- Making bank available

The empirical landscape

The Banked:

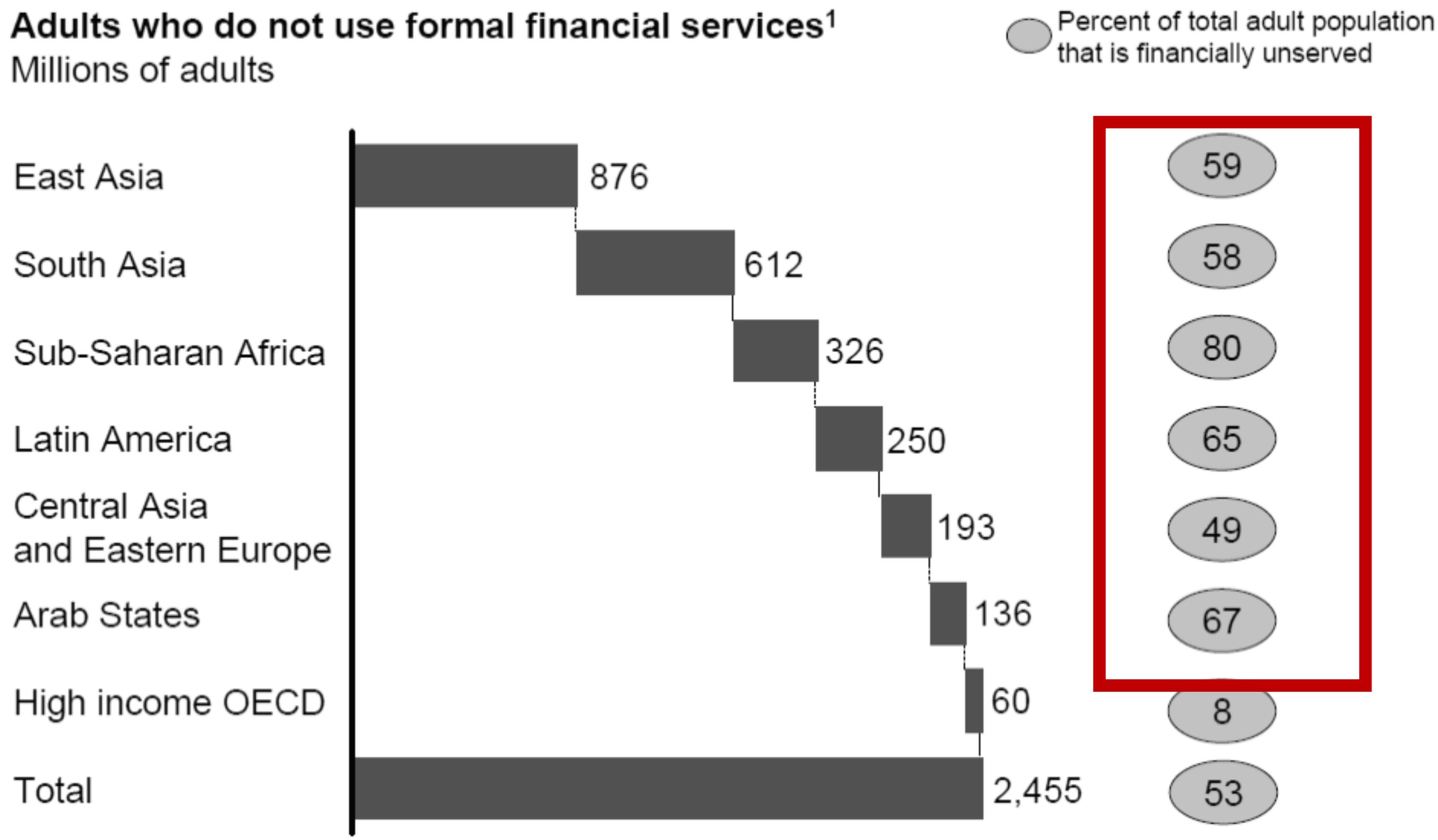
Fraction of Households with an Account in a Financial Institution



Source: World Bank, Databank

Half the world is unbanked

Figure 2: Nearly all of the world's financially unserved adults live in Africa, Asia and Latin America



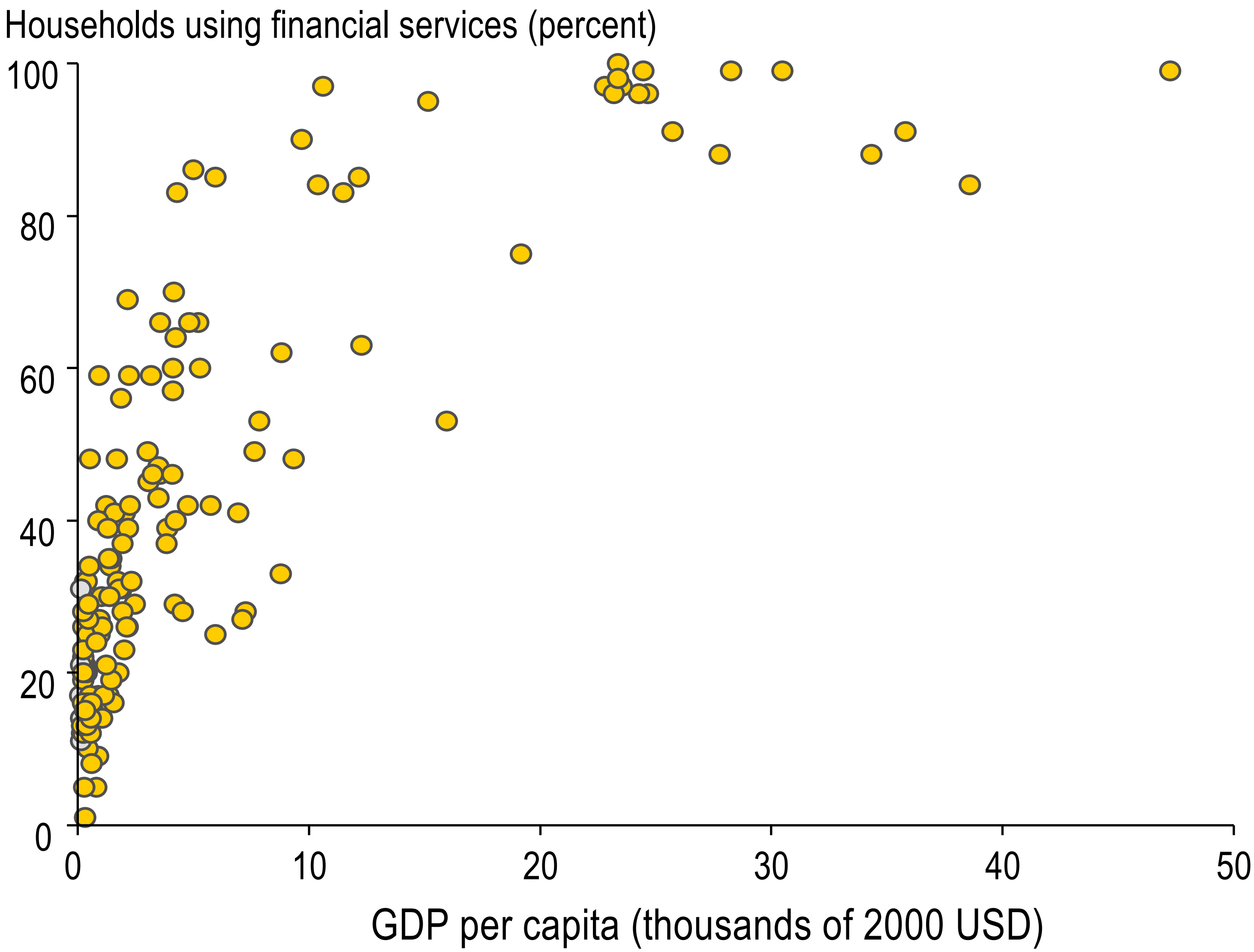
1 Regional groupings based on UN Human Development Index

SOURCE: Honohan, 2008; Human Development Index; World Bank

"Half the world is unbanked." Financial Access Initiative. www.financialaccess.org

Formal financial access increases with income.

World Bank, Finance For All.



Defining "access" is not easy

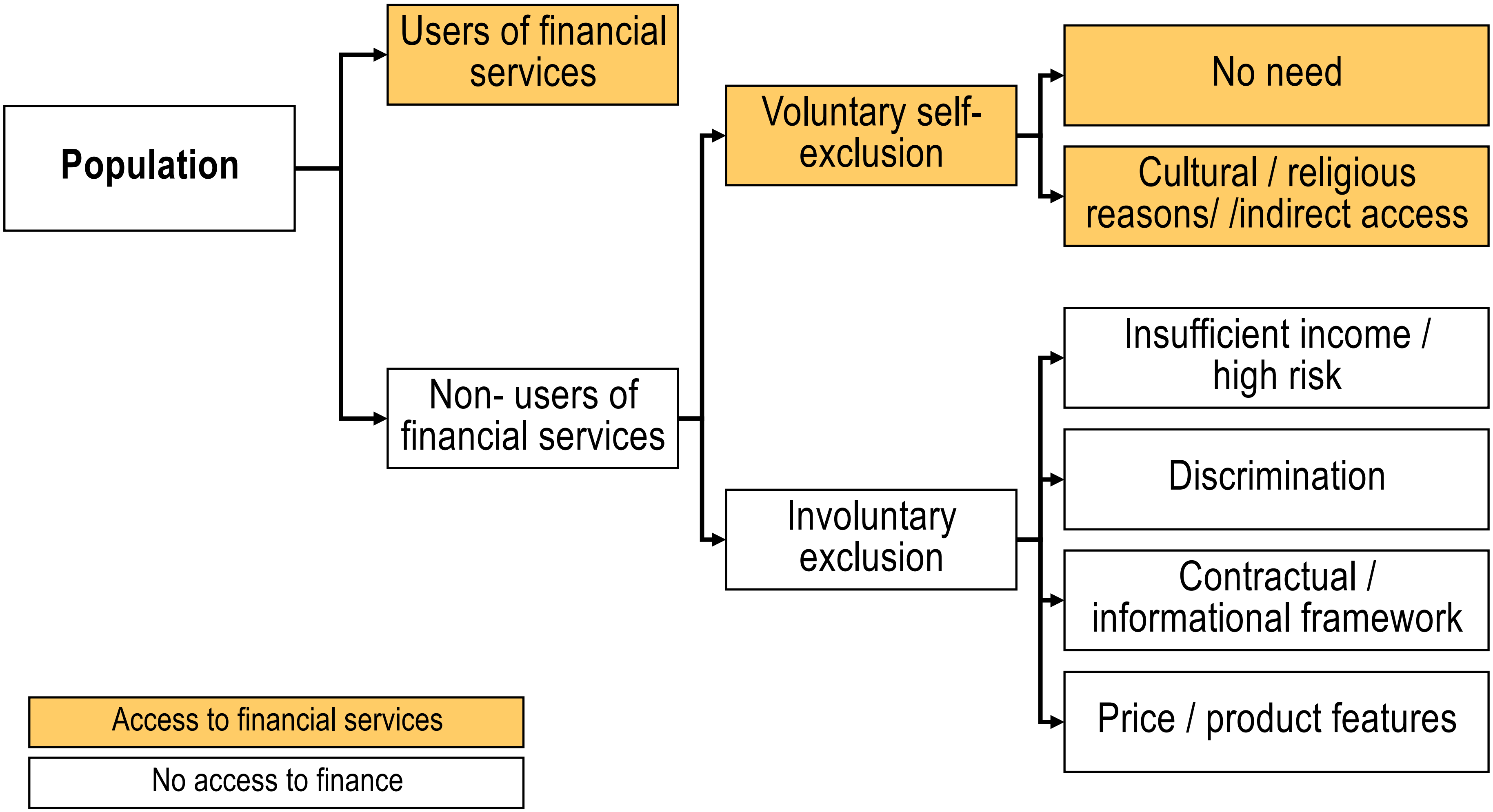
World Bank, *Finance For All*.

Access versus use

- Usage is much easier to measure
- Need to collect indicators on:
  - Actual use of various services (savings, payment, credit)
  - Barriers to access, to identify boundaries and causes of exclusion

Access versus use

World Bank, *Finance For All*.



Barriers to access

World Bank, *Finance For All*.

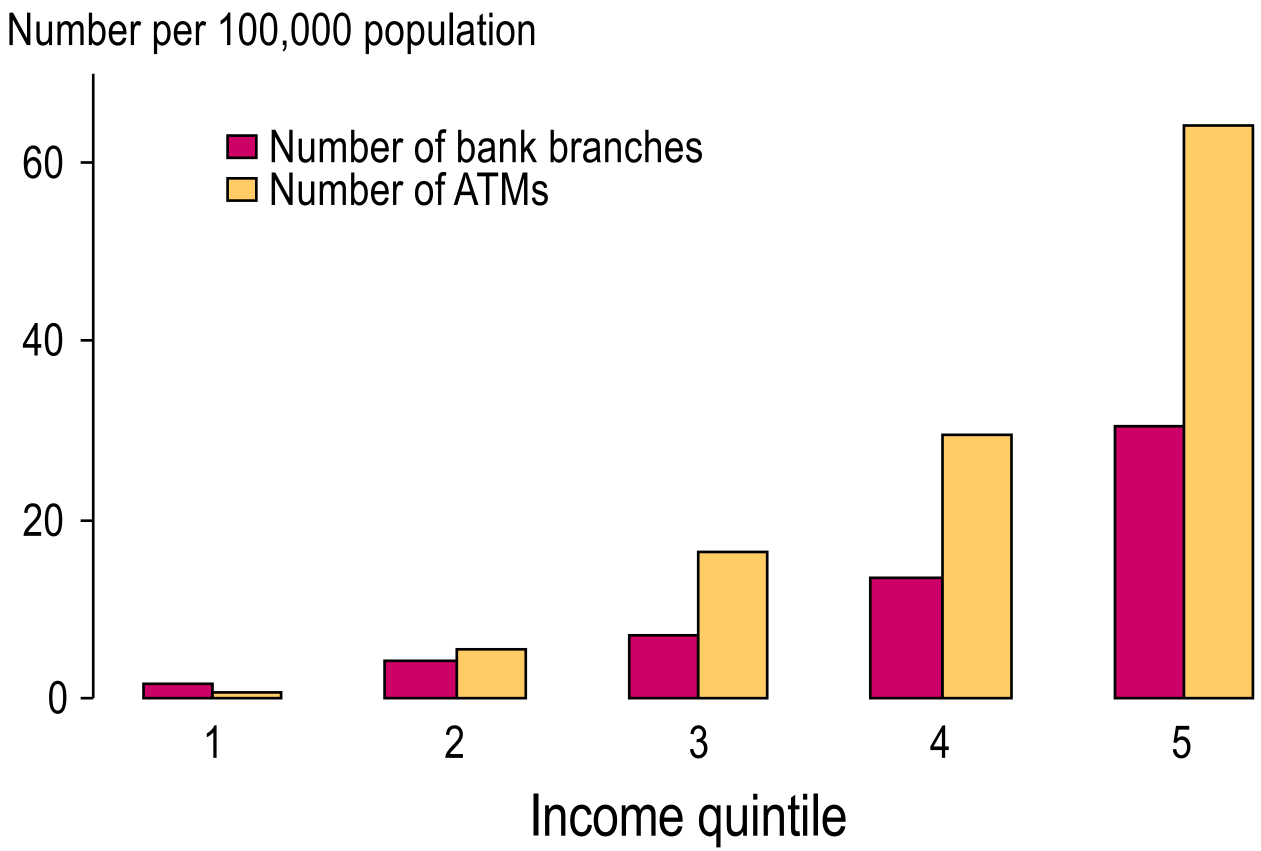
- Through bank surveys identify barriers to
  - Opening and maintaining an account
  - Applying/processing, getting a loan
  - Paying bills, making money transfers

- Along different dimensions
  - Physical barriers: branches, ATMs,
  - Eligibility: documentation, paperwork, procedures
  - Affordability: interest rates, fees, minimum balances

Physical access

World Bank, *Finance For All*.

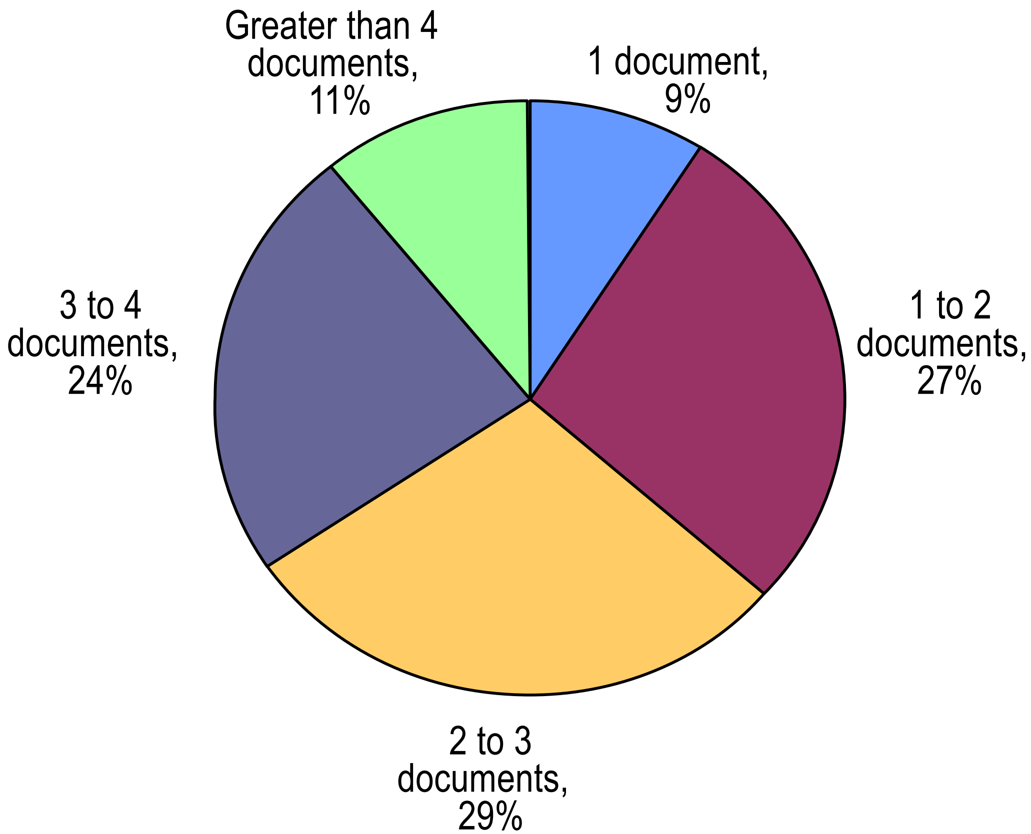
Branch and ATM penetration, by income quintile



Eligibility…documentation

World Bank, *Finance For All*.

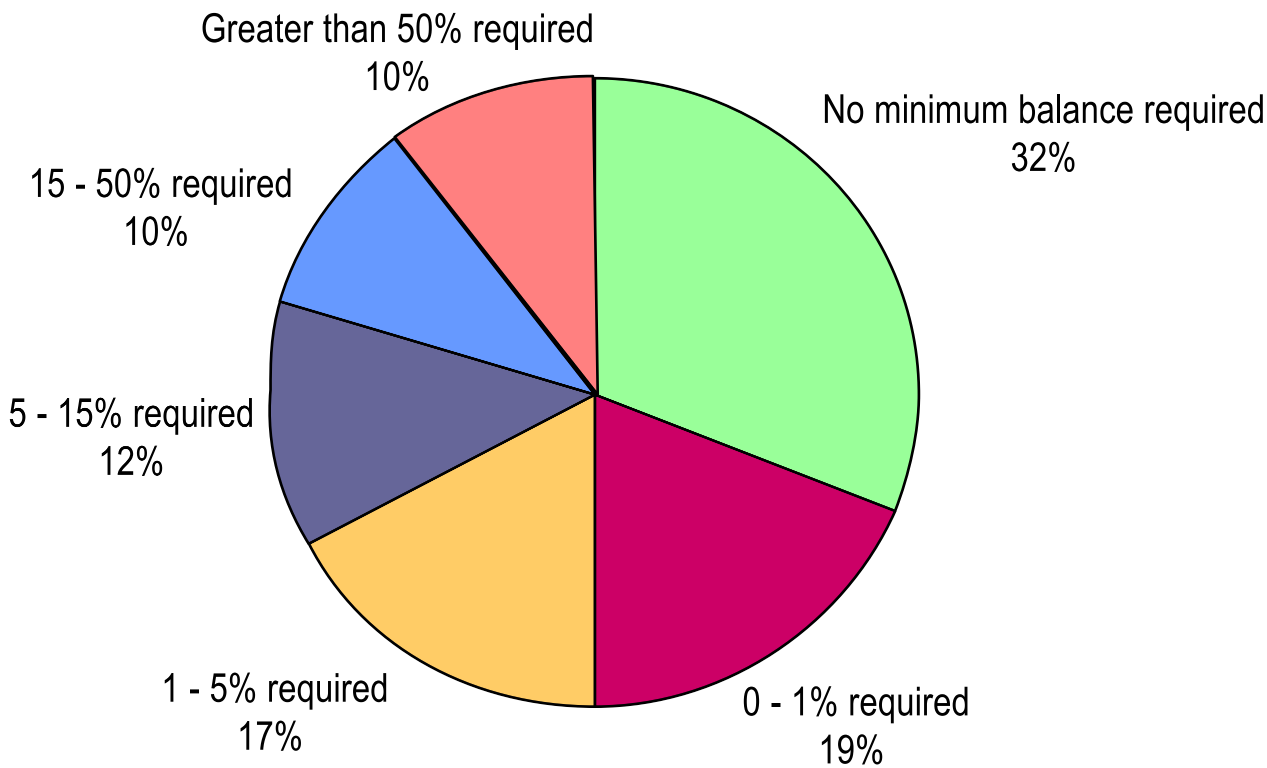
Number of documents required to open a checking account



Affordability…minimum balances

World Bank, *Finance For All*.

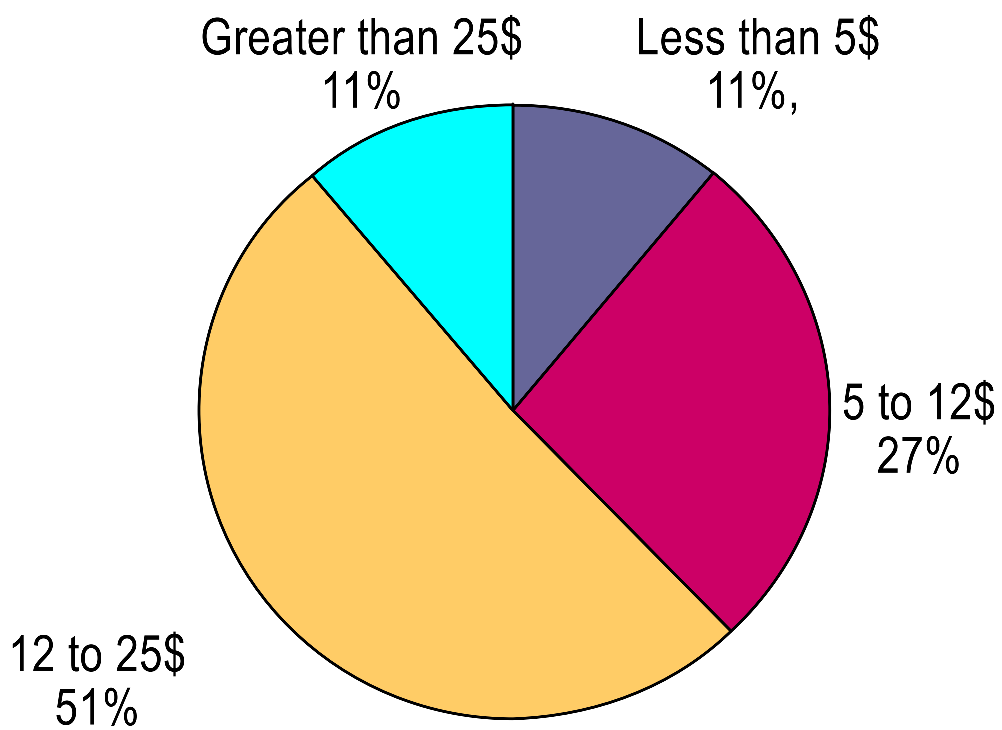
Minimum balance required to open a checking account (percent of GDP/capita)



…and fees

World Bank, *Finance For All*.

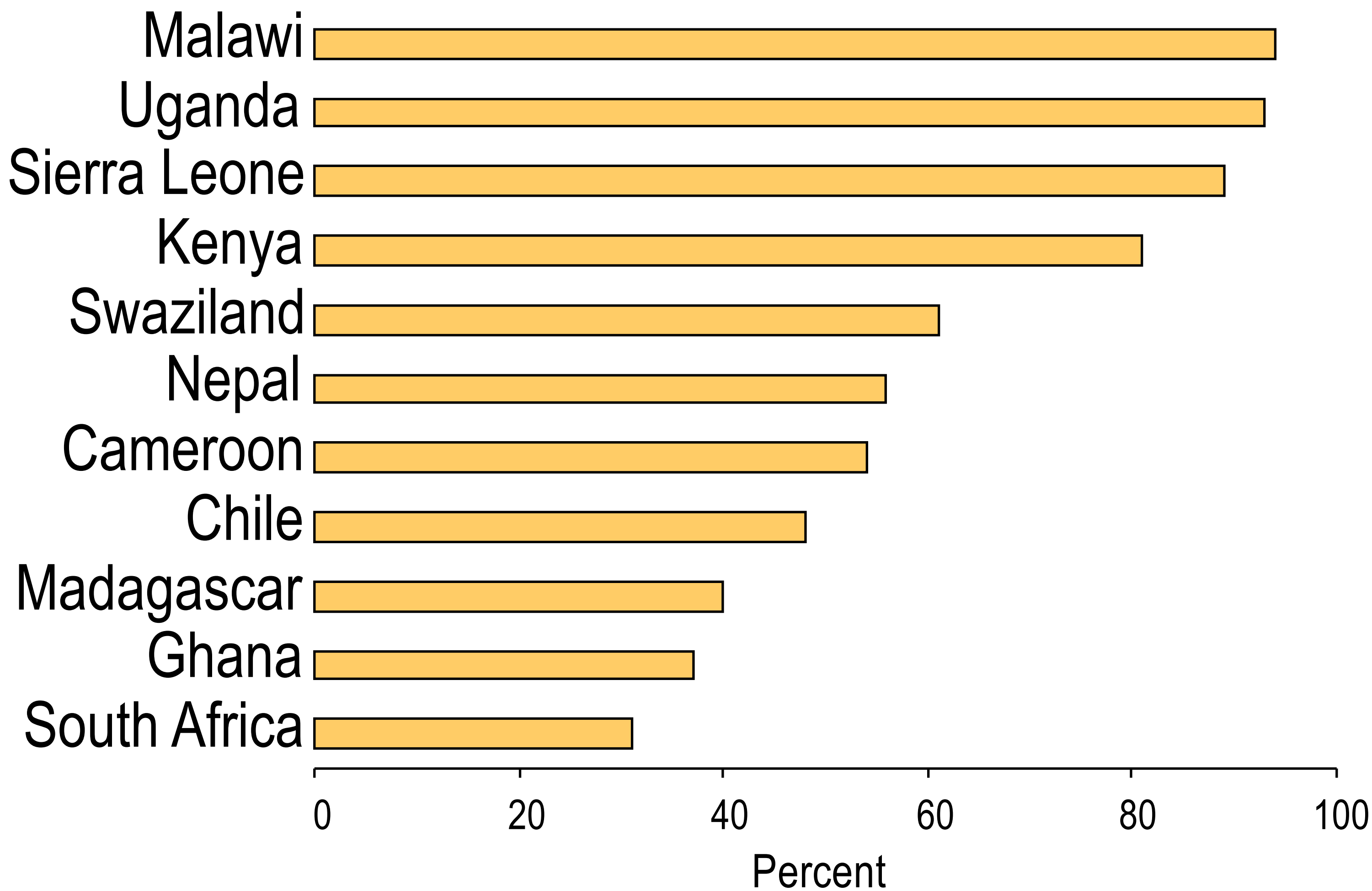
Costs of transferring funds abroad
(percent of $250, a typical remittance)



Barriers and financial exclusion

World Bank, *Finance For All*.

Share of population unable to afford checking account fees



Informal institutions serving the poor

- *Informal commercial lenders*: Moneylenders, traders, landlords etc.
- They have rich information and effective enforcement but limited resources
- Easy access to credit
- Very high interest rates e.g. 10%-100%pm
- Do not provide other financial services e.g. savings

Formal institutions dealing with the poor

- State owned Banks: Regional Rural Banks, Specialized Banks, IRDP, BAAC, foreign aid
- After WWII – most low income countries tried to develop agri sector – rural finance became crucial
- Heavy subsidies to compensate for losses due to high transaction costs and inherent risks
- Subsidized credit, capped roi e.g. Phillipines
- Siphoned off by local elites, do not reach poor
- High default rates, high arrears, large losses
- Inefficient and corrupt

An example: IRDP's in India

- Allocated credit according to "social" targets
  - 30% to SC – ST, 30% to women
- Subsidies between 1979-89: $6b: 25-50% of loan volume
- Poor institutional performance:
  - Repayment rates fell below 60%
  - Only 11% borrowers took a second loan
- In 2000 – repayment rate was 30%
- Devastating criticisms of state-led development banking
- Credit is not like seeds and fertilizers…
- Subsidies made it worse – weakened incentives, created monopolies, undermined poverty reduction.

Informal finance: Mechanisms

Stuart Rutherford:
Saving up and saving down

Stuart Rutherford

From *The Poor and their Money*

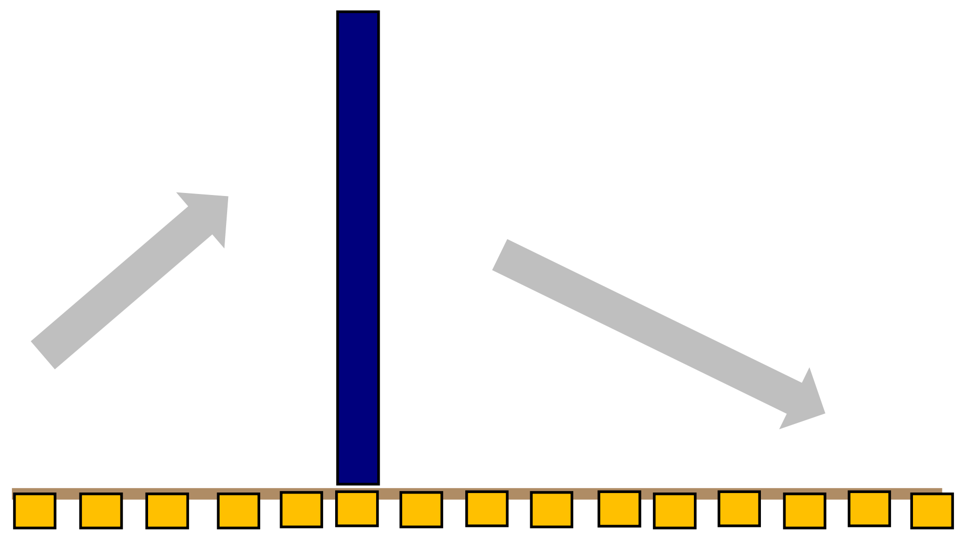
Mary's **RO**tating **S**avings and **C**redit **A**ssociation from a Nairobi slum

"Mary is a single mother who sells vegetables.

"Her stock is worth about 1500 shillings.

"When she has to run her stock down because of some need for a lump sum – such as medicine for her son – she can re-stock within 15 days from her ROSCA."

MERRY GO ROUND



15 members each contribute100 Kenyan shillings/day. Each day one takes 1,500 shilling pot

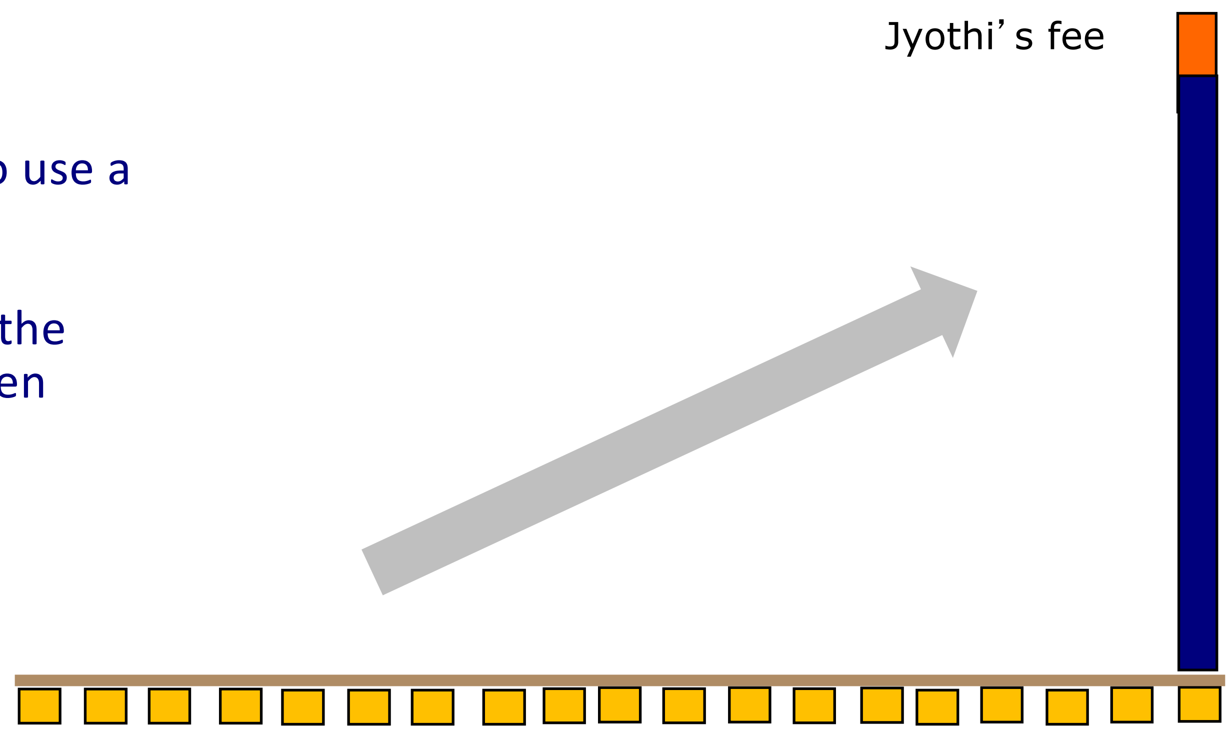
Stuart Rutherford

From *The Poor and their Money*

Jyothi – a deposit collector from India

"Slum women are very keen to use a deposit collector like Jyothi.

"Where else can they save up the usefully large sums they so often need?"



Jyothi collects a set amount from her clients every day for **220** days.

At end, clients get back value of **200** days' savings.

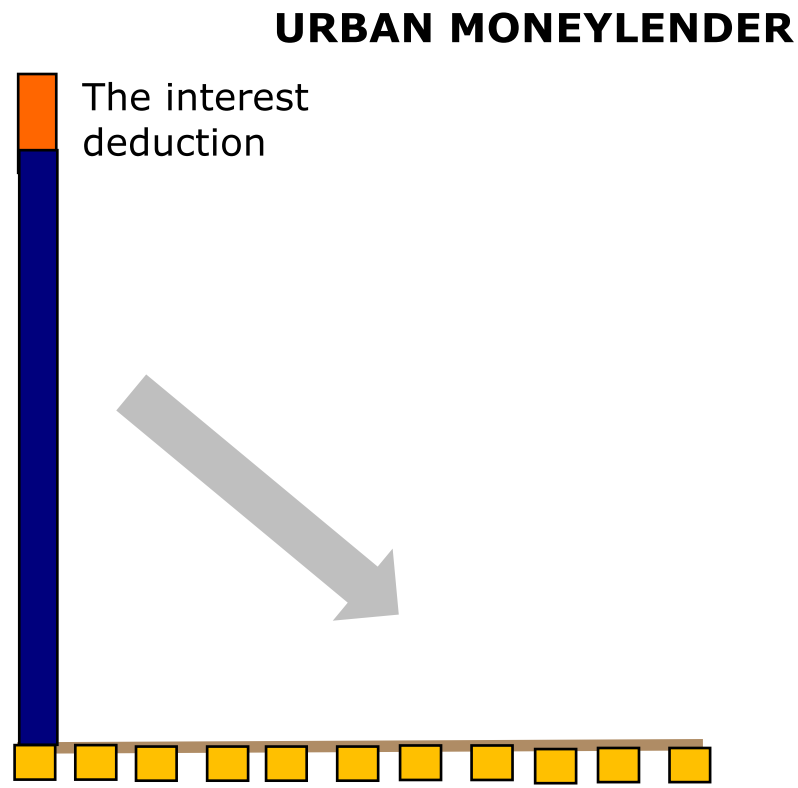
Stuart Rutherford

From *The Poor and their Money*

An urban money lender from India

"…sequence of small repayments resembles the deposits made by Mary's ROSCA members and Jyothi's clients.

"Loan repayment is based on the ability to save, and loans are essentially 'advances against future savings'."



Weekly repayments for 10 weeks.

Moneylender deducts fee (or interest) up front

Informal finance: pent-up demand

What proportion of respondents applied for a loan?	***Brazil***	***Colombia***	***Mexico***	***India***
	15%	9%	14%	3%

Did the banks award them loans?	***Brazil***	***Colombia***	***Mexico***	***India*** ***(formal and informal)***
Approved	68%	72%	75%	20%

Source: Anjali Kumar et al "Access to Financial Services - What Do we Know Across Countries? Preliminary Comparisons". Presentation at World Bank Finance Forum 2004

Indonesia MASS 2002 Survey

- Survey covered a randomized sample of 1438 Indonesian households in six provinces, completed by Bank Rakyat Indonesia in July/August 2002.
- Coverage of six provinces: West Java, East Java, West Kalimantan, East Kalimantan, North Sulawesi, and Papua.
- Provinces included 20.6 million households and 85 million people.
- Enumerators were BRI loan officers and other professionals, offering the chance to **assess the creditworthiness of both customers and non-customers** using the standard procedures applied by the bank.
- Study used the household survey to revisit claims made largely on the basis of administrative data and anecdote.

Loan Uses

Business:

- working capital of existing venture,
- Diversify income,
- Starting a new business,
- Purchasing new equipment,
- New business infrastructure (e.g., store or warehouse),
- Business infrastructure improvement.

Household:

- Home improvement,
- Non-business land or building purchase,
- School tuition,
- Medical treatment,
- Loan repayment,
- Meeting daily needs or retirement needs,
- Vehicle purchase,
- Buying household goods,
- Ceremony or social expenditure,
- Holiday needs
- Jewelry purchase.

Uses of loans (percent) within income groups. Borrowers from any source

	Below poverty line	Per capita income is 1 to 3 times the poverty line	Per capita income is more than 3 times the poverty line
Loan use			
Business	49	55	57
Household	35	43	45
Other	23	6	7
Observations	69	208	271

Loan Sources

- **“BRI Unit Borrowers”** have taken loans from the microfinance arm of Bank Rakyat Indonesia.
- **“Other formal bank borrowers”** have taken loans from other “formal” sources including the BRI branch offices, Bank Central Asia (BCA), Bank BNI, a local development bank, Bank Danamon, Bank Mandiri, Bank Bukopin, a Sharia commercial bank, other private commercial bank, Bank Perkreditan Rakyat (BPR), or a Sharia rural bank.
- **“Microbank”** borrowers have borrowed from a rural credit agency (BKD/TPSP/LDKP), credit union/cooperative, rural unit cooperative (KUD), BMT/BMM Islamic institution, “market bank,” local financing institution, or government bureau.
- **“Informal”** sources include pawnshop service, joint venture, a self-managed institution, professional moneylender, family/relative/friends, or other informal source.

Would the enumerator make a loan to this household?

		%
Poor	Bottom 50%	49
	Top 50 %	43
Not poor	1-2 times *z*	59
	2-3 times *z*	72
	3-4 times *z*	82
	4-7 times *z*	80
	> 7 times *z*	88

The advantages of moneylenders

- Moneylenders (vs. formal banks) have good information on who is who and who did what in the neighborhood.
  - Moneylenders tend to live and work among the people to whom they lend.
  - They build up histories over time.
  - They are able to enforce contracts through social, and sometimes physical, means, even when contracts have not been written down and when a court would refuse to hear a case.
- The lack of collateral is not a problem; it may even provide a profitable business opportunity.
- And their clients, who often have nowhere else to turn, accept high charges willingly if not happily.
- But moneylenders have only limited amounts of money, and, because their information is rich but very localized, moneylenders can only lend in small amounts to a narrow band of clients.

Why do credit markets fail?

Context

- "Limited liability" due to lack of collateral
- Weak enforcement of contracts
- Limited property rights

These problems then facilitate:

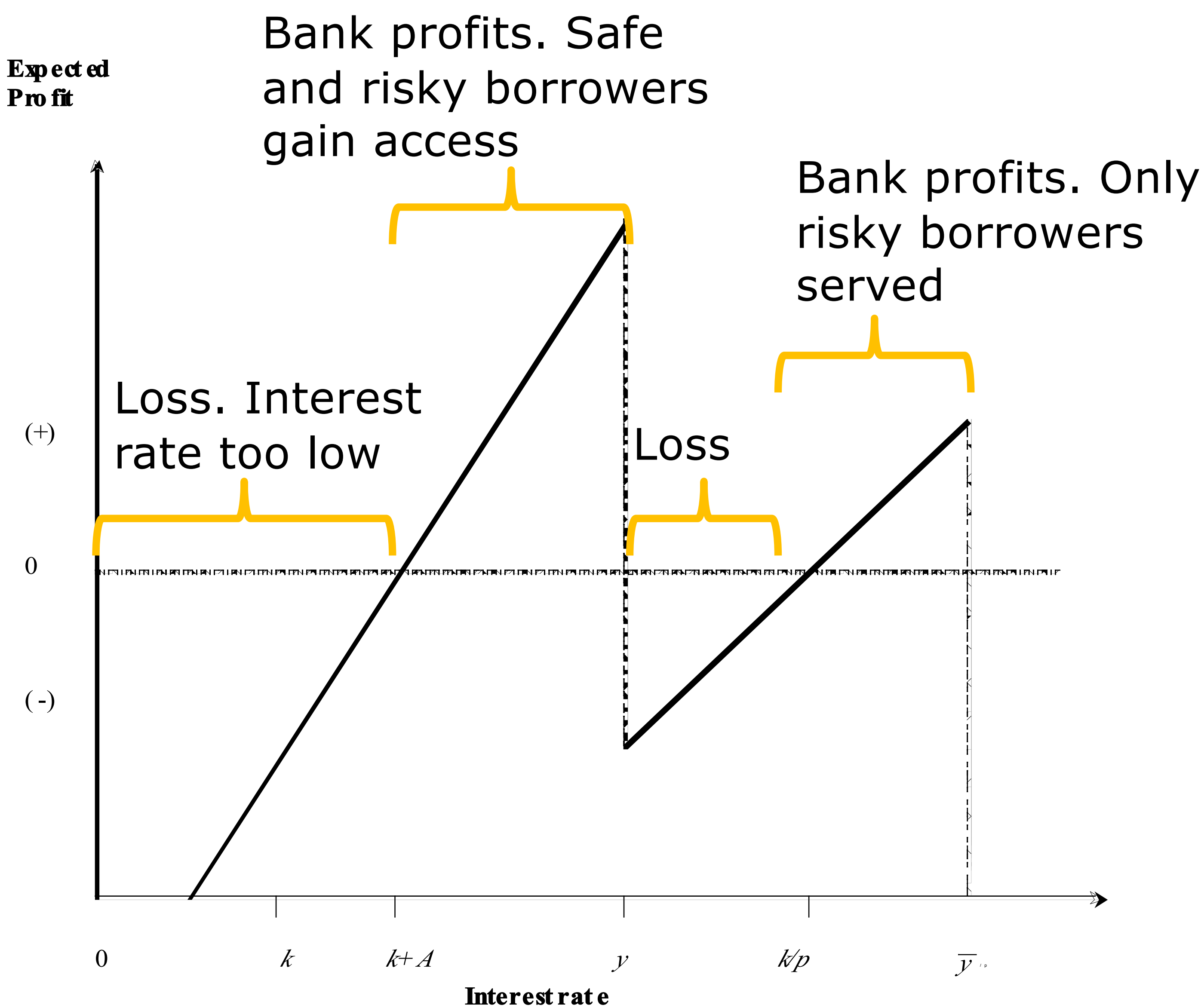
- Adverse selection: "hidden information"
- Moral hazard: "hidden action"

Adverse selection and moral hazard

- Basic problem: Raising interest rates reduces average loan repayment rates.
  - Adverse selection: safe borrowers are screened out, risky borrowers option in.
  - Moral hazard: benefit of safe behavior falls, less need to exert effort for success of project

- Implication: May not be able to find profit-making interest rate

Figure 2.1: Adverse selection example (a). At interest rates between *k+A* and *y* the bank earns a profit and both safe and risky types want to borrow. Safe types leave the market once interest rates rise above *y*, and the bank loses money. Once interest rates are pushed up to *k/p*, the bank can again earn profits, while serving only risky borrowers. At interest rates above *y-bar* even the risky borrowers leave the market.



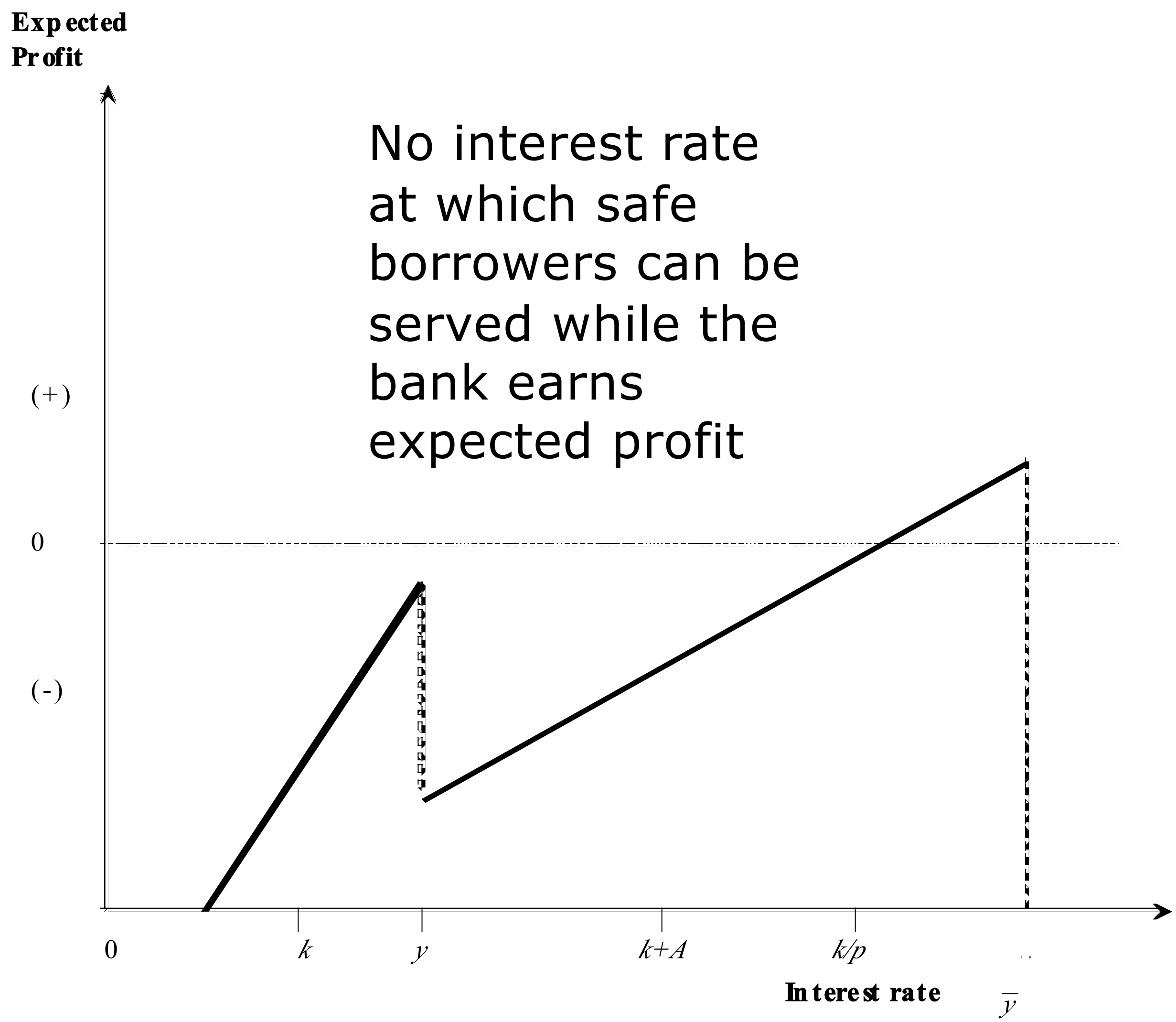
- Think of k as the risk-free rate.
- A is the premium needed above the risk-free rate to break even with all borrowers.
- With only risky borrowers to break even you need

$$p \cdot r + (1-p) \cdot 0 = k$$

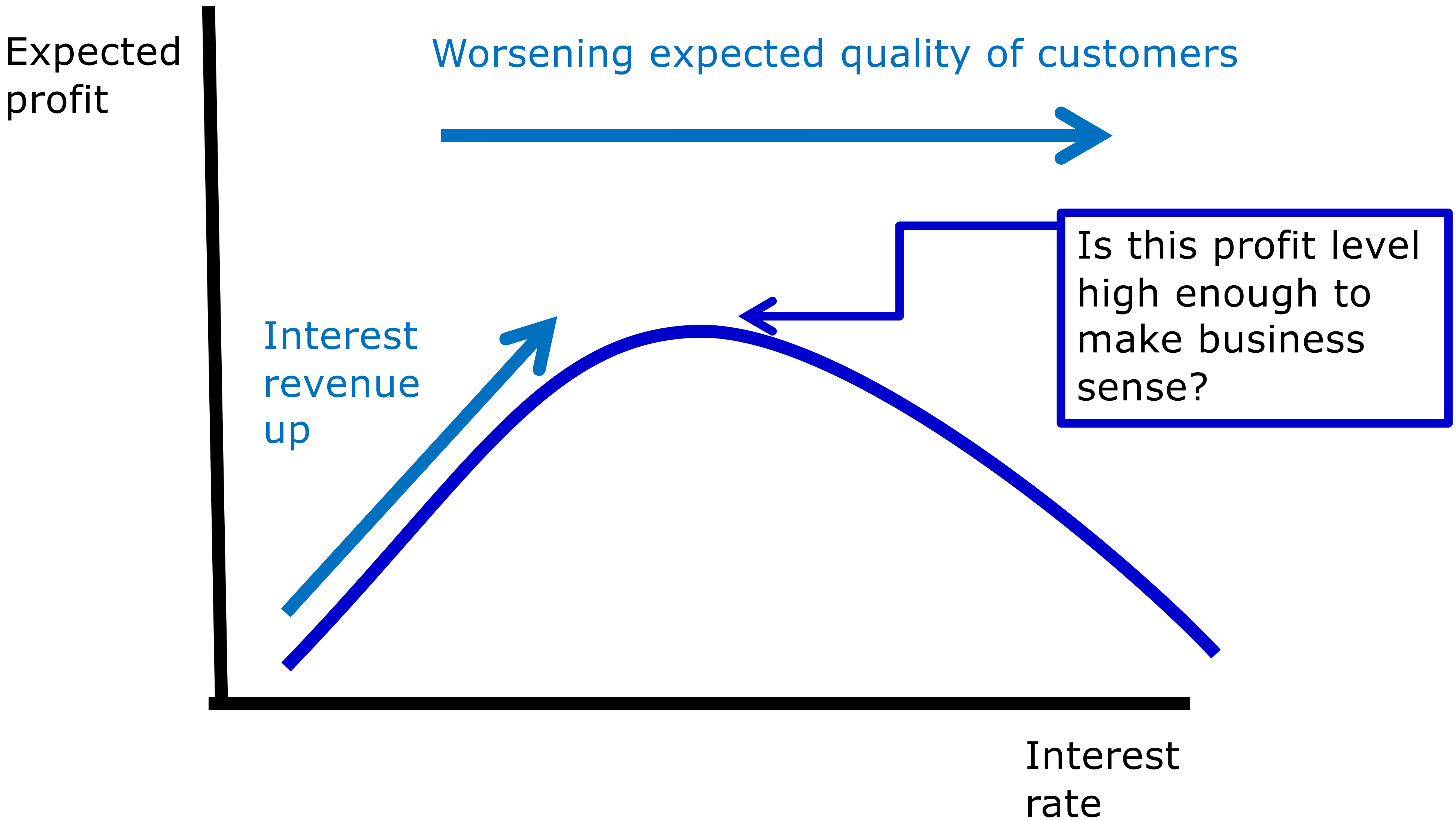
where p is the prob of risky borrowers repaying and r is the risky interest rate

or $r = k/p$

Figure 2.2: Adverse selection example (b). Here, the "risky" types are riskier than in example (a) in Figure 2.1. Now the "safe" types can never be served by a bank aiming to break even (since profits are negative even at interest rate *y*). The bank must raise rates to *k/p* to earn profits, at which price the bank will only attract risky borrowers. At interest rates above *y-bar,* the risky borrowers leave the market.



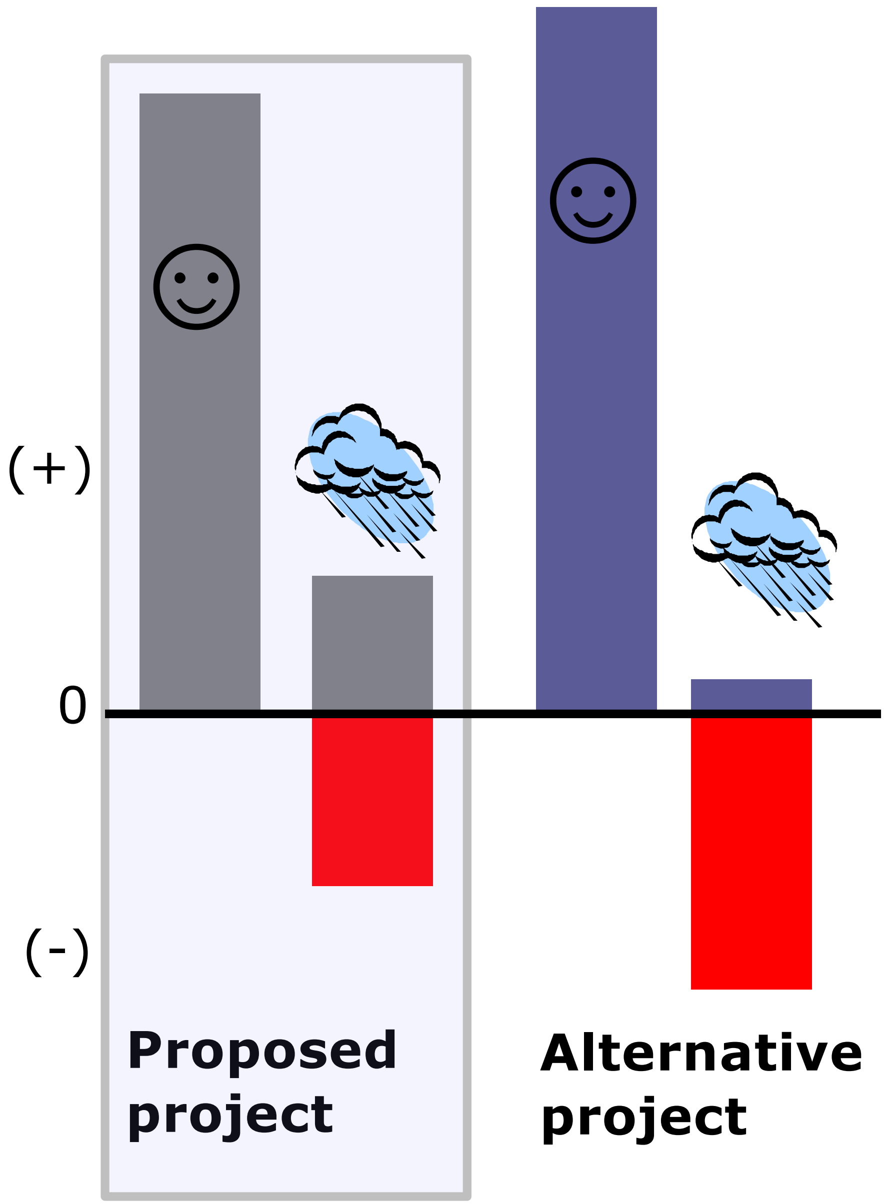
Adverse selection



Enough collateral: riskless world

1. Post sufficient collateral
2. Take loan
3. Work hard. Earn profit/loss
4. Repay loan, keep net

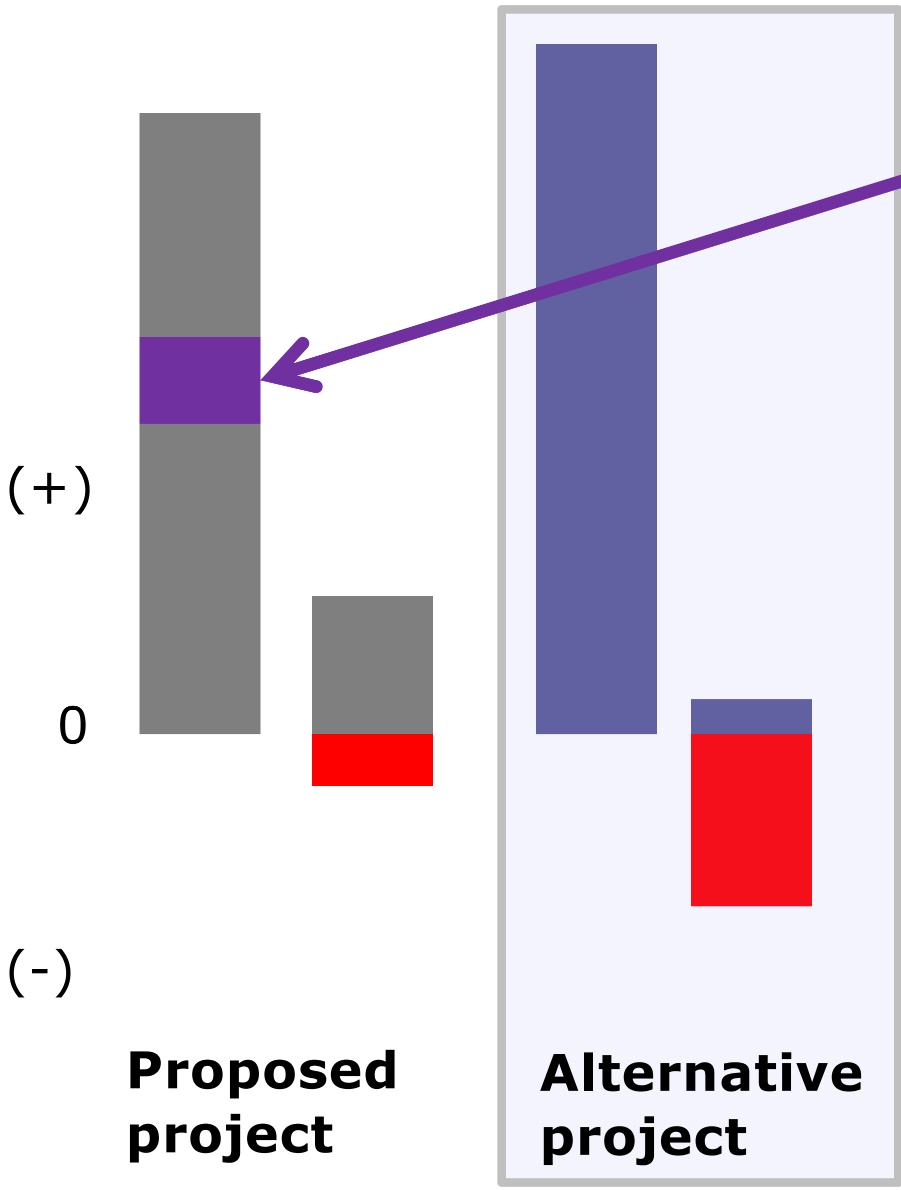
Enough collateral: risky world



1. Compare expected gross income from 2 risky projects (with expected value of first project > second project).
2. Repay loan, keep net income

Insufficient collateral

Agency rent Agents lacking collateral to credibly pledge to absorb losses in bad times must instead earn **agency rents** that makes them more risky and costly to contract with.



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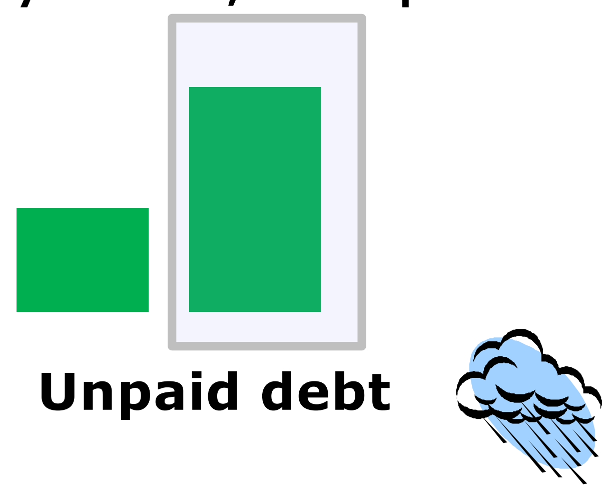

Insight from modern corporate finance

1. ***Skin in the game.*** Agents who can affect the value of the firm through costly unverifiable actions need to **share in both fortunes and losses** to have incentives to maintain the value of the firm and the claims it sells to outsiders.

2. ***Inefficiencies.*** Agents that do not have additional (or collateral) resources to offer as guarantee to credibly pledge to absorb losses in bad times must instead earn **agency rents** that makes them more risky and costly to contract with.

Reproduction of poverty

Thus, all else equal, individuals with low net worth:

- More likely to be excluded from capital markets
- Or to obtain finance on less favorable terms than others.

Making banking available: strategies

Problem: lack of collateral impedes credit access

Solutions:

- Secure property rights
- Public sector banks
- Social business (microfinance --next time)

Securing property rights

- If the problem is that the poor lack collateral, then why not give them collateral? How?
- Grant property rights to land they occupy.
- Also increases the incentives to make improvements.
- Also increases labor supply (willing to leave the house / don’t need to stay home to protect their claim).

Burgess and Pande

- Examine a bank expansion in India.
- Some issues similar but they can also look at effect of bank expansions on poverty.
- India nationalized banks in 1969 and then required them to expand into under-banked areas:
- Banks were restricted to selecting unbanked locations for branch expansion from a list circulated by the central bank. This list identified all unbanked locations with a population above a certain number, and was updated (with a lower population cut-off) every three years. The same population cut-off was used across India, and therefore the list featured relatively more locations from states with a lower initial stock of bank branches per capita. Having a common criteria for identifying unbanked locations also implied that, within a state, more locations were targeted in districts with fewer bank branches per capita pre-program.

Banking policy

- 1:4 policy: 4 branches in under-banked area for one in an area with banks already.
- To ensure that rural branch expansion translated into increased credit and savings opportunities for the rural population the central bank regulated banks's deposit-taking and lending policies.
- Policy was in place 1978-1990, and cancelled after that.
- Use this a "natural experiment" for bank expansion.

First stage

- Chart shows that 1961-1977 rural bank locations positively correlated with the initial number branches, then during policy correlation turns negative.

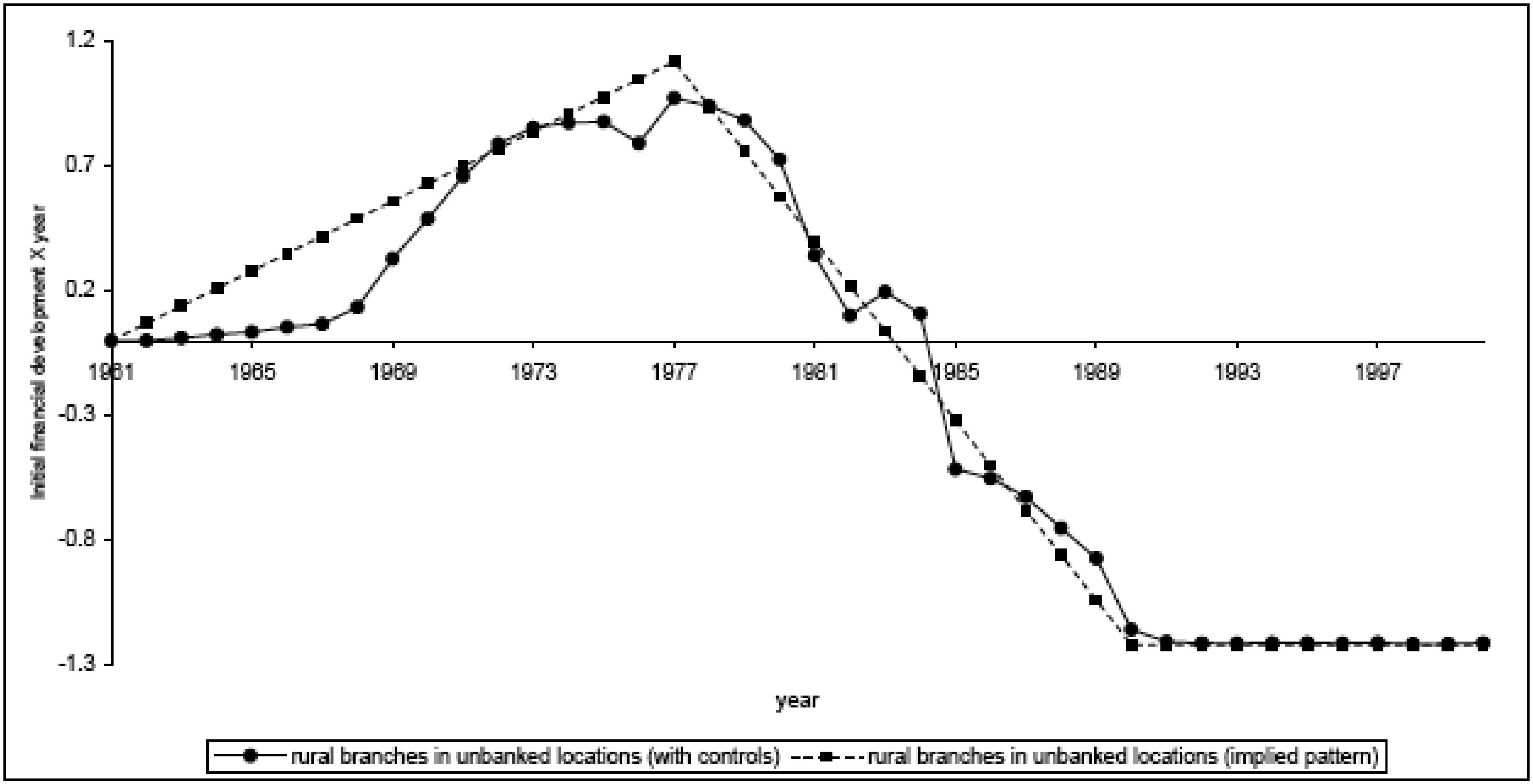

FIGURE 1: INITIAL FINANCIAL DEVELOPMENT AND BRANCH EXPANSION INTO RURAL UNBANKED LOCATIONS

Reduced form

TABLE 7:BANK EXPANSION PROGRAM AND POVERTY: REDUCED FORM EVIDENCE

	Head count ratio		Rural head count ratio		Urban head count ratio		Rural-Urban head count diff		Log real agri. wage	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number banked locations in 1961 *1961-77 Trend	-231.69*** [43.44]	-229.87*** [51.28]	-256.04*** [51.42]	-259.31*** [59.29]	-91.10** [36.19]	-37.81 [47.32]	-164.94*** [54.00]	-221.50*** [65.28]	-0.99 [1.26]	1.46 [1.15]
Number banked locations in 1961*Post-77 Trend break	346.27*** [52.63]	364.96*** [58.47]	409.92*** [63.80]	410.21*** [68.24]	70.11 [48.69]	57.33 [65.54]	339.81*** [72.54]	352.88*** [84.91]	-4.55*** [1.52]	-6.44*** [1.55]
Number banked locations in 1961*Post-90 Trend break	-307.20*** [105.18]	-412.44*** [107.40]	-359.33*** [126.75]	-425.11*** [131.91]	-45.43 [81.02]	-234.13*** [79.42]	-313.91** [129.24]	-190.98 [144.43]	10.87*** [2.42]	15.98*** [2.49]
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R-squared	0.85	0.87	0.8	0.83	0.91	0.92	0.59	0.64	0.89	0.91
Number observations	691	691	691	691	691	691	691	691	609	609

Locations getting less banks as a result of the policy (i.e., those that that had more initial banks in 1961) show greater poverty.

Locations getting more banks as a result of the policy (i.e., those that that had more initial banks in 1961) show greater poverty.

Dehejia and Gupta

- Look at cross-sectional location of branches in 1991 and ask whether location of branches in 1991 affects service sector and education choices from 2000-2005.
- They find:
  - Reduced probability of being household employer or worker.
  - More likely to be a formal employee.
  - Wages increase in large firms.
  - More likely to be a student.

Dupas, Karlan, et al

- "Banking the unbanked": Gave access to *basic* bank accounts in Uganda, Malawi, and Chile.
- Incremental deposits were 17, 10, and 3%.
- No impact on downstream outcomes.
- Suggests that access to basic accounts has little micro impact.
- Doesn't preclude macro channnels.

Takeaways

- A vast number of poor are unbanked.
- The poor use loans for more than businesses.
- Raising interest rates to cover costs of banking to poor exacerbates moral hazard / adverse selection.
- Poverty = lack of collateral = precludes usual solution to MH/AS = exacerbates MH/AS
- Banks can be part of the solution when their profit motive is retained but rechanneled.