DEMEL, MCKENZIE & WOODRUFF: FIELD EXPERIMENT ON RETURNS TO CAPITAL

Experimental economics

Experiments usually done in "labs"
Subjects: college students
Playing games for money
Test predictions of game thy, rationality etc.
DMW is "Field" experiment

Hawthorne effect

Late 1920s, experiments to improve productivity of workers in a mfg plant.

Whenever experimenters changed anything, prod'ty ↑
hence "h e": a person's behavior changes just because he knows he's being observed, part of an experiment.

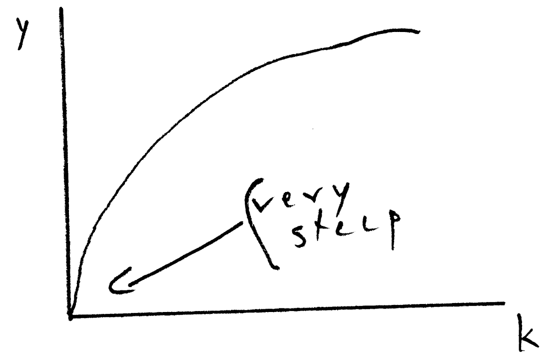
Attenuation bias

Measurement error in RHS variable biases coefficient toward zero, if error uncorrelated with other RHS variables or residual.

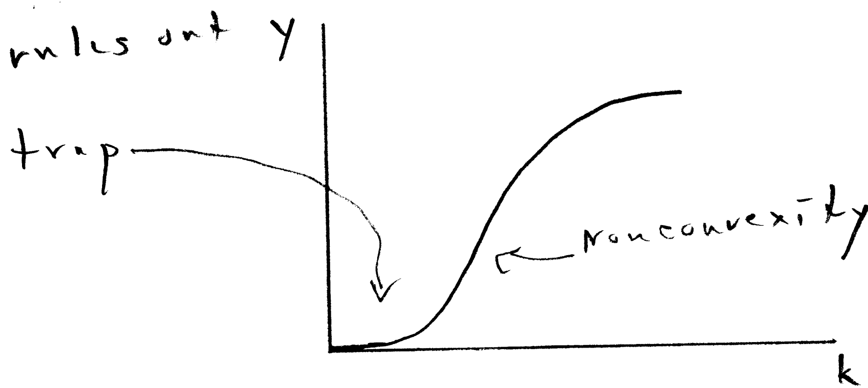
D, M, W (cont.)

Nonconvexity & poverty trap

Recall for Solow model etc.
we assumed "Inada conditions":
$\frac{\partial y}{\partial k} \to \infty$ as $k \to 0$



rules out



Sources of credit to small business in US

answers to surveys of small business owners

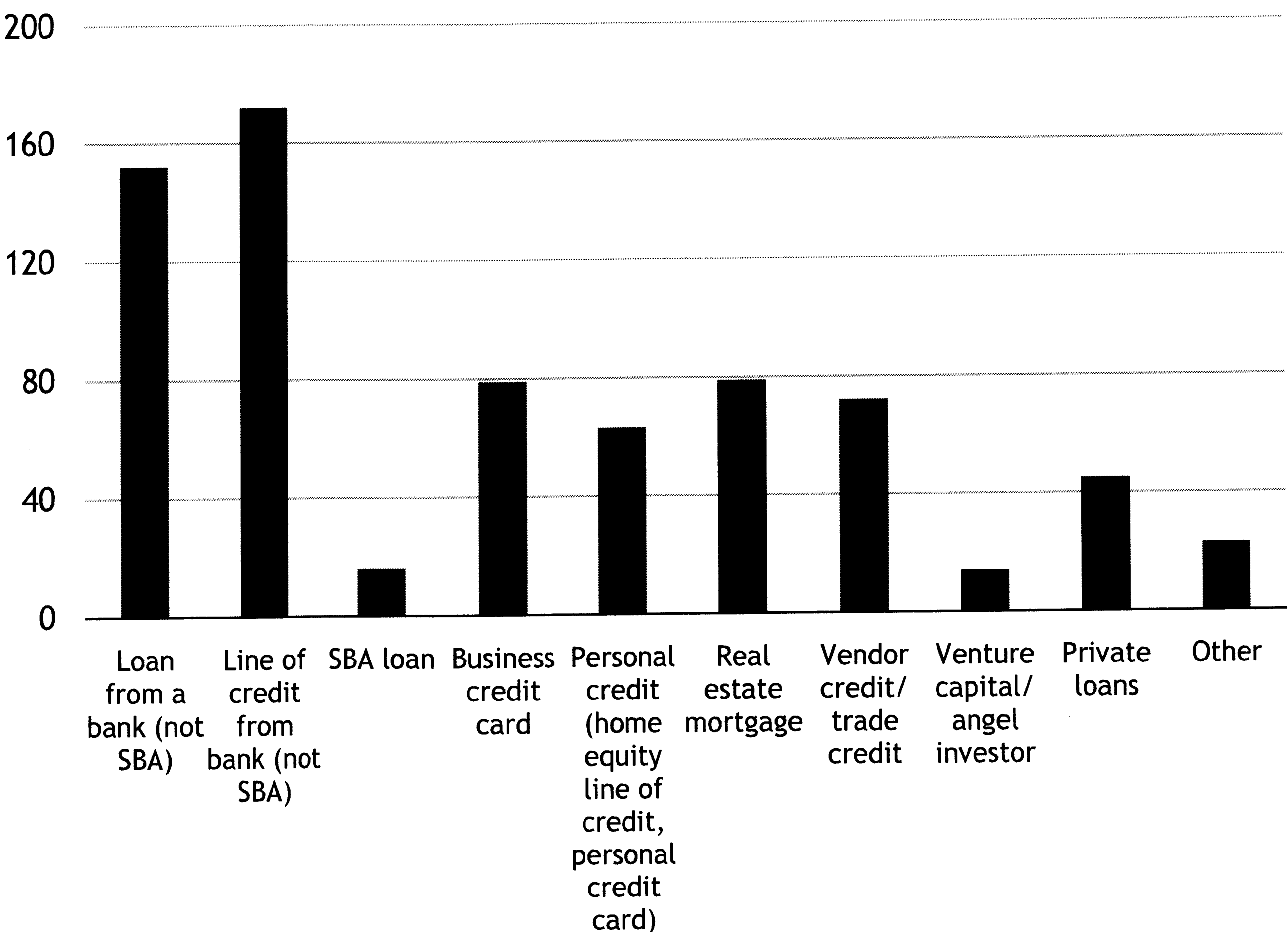
Banks supply **most** credit through loans, lines of credit, credit cards issued to business

Also lots from suppliers of inventory & capital equipt. ("vendors," motor vehicle loans)
& by renting or leasing equipt.

Very small firms use less credit directly to business, more credit through borrowing of owner.

Small Business Administration: politics!

Historical Sources of Financing



- When asked to report their three most important sources of credit or financing, roughly half of survey participants cite bank loans and lines of credit (49% and 55%, respectively).
- While participants also cite business credit cards, personal credit, and real estate mortgages, these are important for only 20–25% of responding firms. These sources were slightly more important for real estate and construction firms (27–39%).
- Vendor credit/trade credit, while not involving access to the traditional credit market per se, was also cited by 72 firms (23% of all participants).

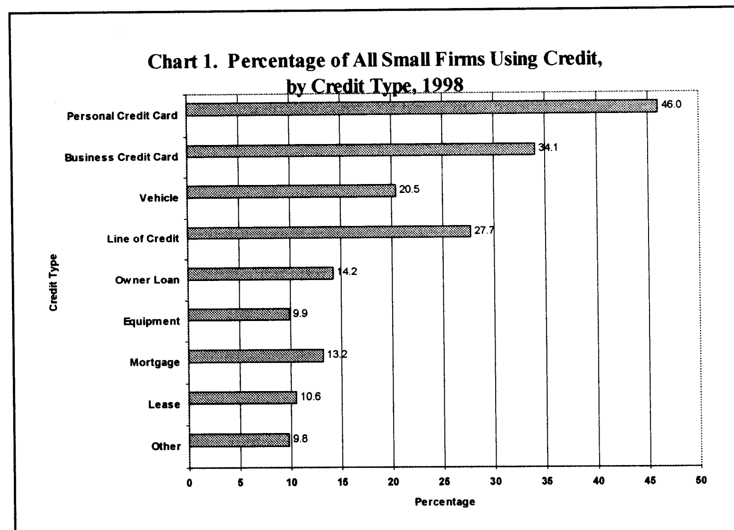
2. Financing Patterns of Small Firms

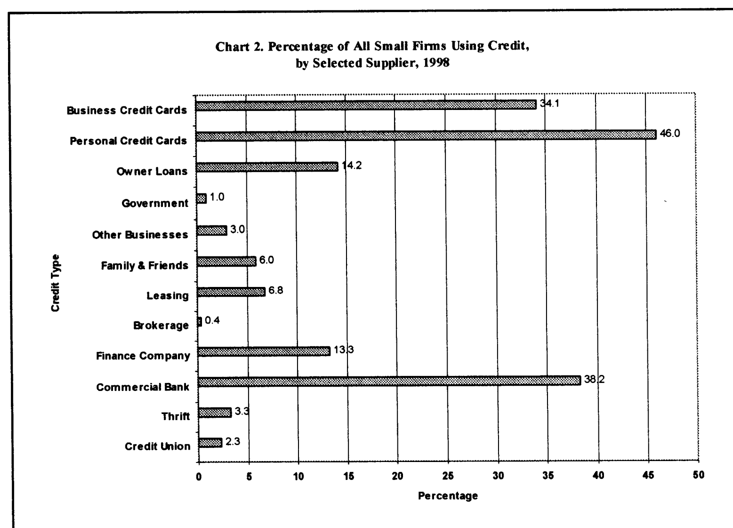
Financing patterns for small firms in 1998 were captured in the SSBF. The financing patterns for all small firms, small minority-owned firms, and small women-owned firms are described in the next three sections.

2.1 All Small Firms

2.1.a Percentage Who Use Credit (Tables 1.1a through 1.3a)

Over 80 percent of small businesses surveyed used some kind of credit and had outstanding debt on their books at the end of 1998.[4] Fifty-five percent of small firms had used some type of traditional loan, while 71 percent had used non-traditional sources (mainly owners' loans and credit cards), for their credit needs.[5] Among the different types of credit used, credit cards (both personal and business), credit lines, and vehicle loans were the most widely used. Some 46 percent of small firms used personal credit cards, 34 percent used business credit cards, 28 percent used credit lines, and 21 percent used vehicle loans (Table 1.1a and Chart 1). Among financial institutions, banks are the most widely used source of credit; 38 percent of small firms had credit outstanding with commercial banks in 1998. Owners' loans were next, used by 14.2 percent of small firms, followed by finance companies, 13.3 percent (Chart 2 and Table 1.2a). The smallest firms have much less access to bank financing than larger firms. Only 17 to 31 percent of the two smallest





[4] A credit extended by a supplier is the debt of the borrower. For example, a credit used by a small business will show up as a debt in the firm's books. Debt and credit are used interchangeably in the discussion.
[5] The six kinds of traditional loans are line of credit, mortgage, vehicle, equipment, leasing, and other loans. Loans from owner(s) and credit cards (business and personal) are considered non-traditional sources of finance.

DMW (cont'd)

Other economic literature on imperfect capital markets

Loans against collateral

Recall Romer textbook & Bernanke/Gertler/Gilchrist:

- sometimes borrower can't repay loan
- might pretend he can't repay loan
- asymmetric information: lender can't see actual revenue/return to capital

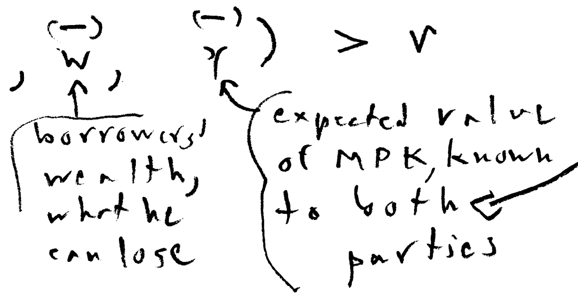
("moral hazard" not "adverse selection")

result:

- loan against collateral
- $\gamma = 1 + r + A(\overset{+}{c}, \overset{+}{r}, \overset{(-)}{W}, \overset{(-)}{\gamma}) > r$

γ: 1+MPK

c: cost to lender of foreclosure "state verification"



Loans without collateral

To prevent cheating by borrower, he must lose <u>something</u> if he defaults

- access to future credit (repeated game)
- punishment through <u>social</u> <u>norms</u>

e.g. peers, business associates, village group responsibility for loans "social collateral"

(In US, "credit rating")

DMW

Other literature... (cont.)

History & institutions

Lending against collateral requires
- clear property rights over collateral assets
- govt. will enforce contract, take everything from borrower if he defaults.

Land & dwellings: important collateral asset in modern western economies.

In past & in some economies today, property rights over land & dwellings unclear or untransferrable.

Often, govts refuse to enforce contract (e.g., foreclosure moratorium)

Social norms to punish defaulters

Some societies will punish (e.g. Germany)
others won't (e.g. Ireland)