

ECONOMICS WITH fe

Maitreesh Ghatak analyses the role and functioning of credit markets in developing countries, a subject that evokes much dispute among economists. Are firms credit-constrained? How does one best measure returns to firms: as return to ability of entrepreneur or return to capital stock?

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THERE are two types of development economists—those who see the world as a crummy place but argue that not much can be done about it, and those who see the world as a crummy place but feel, as the Obama campaign slogan goes, *Yes we can!* And there are also those who do not see the world as a crummy

place but as economics is supposed to be the dismal science, they are ignored.

Nowhere is this contrast sharper than in the context of how development economists think about the credit market. The role of capital (with a capital K and the honorific Das, if you like) in economic development and how it is allocated in a market economy remains as contested a terrain within mainstream economics as ever.

Until recently, mainstream economics did not pay much attention to the issue of economic advantages from being rich. Someone who has the skills and the drive but not the resources would be able to borrow, start a business, make profits, pay off the loan, and everyone will be better off.

Compared to someone who owned the resources, an individual who has to repay a loan will have a lower level of net earnings. However, through savings and bequests, such disparities will disappear over time. This is the convergence view due to Robert Solow: initial disparities will disappear over time and those that persist reflect differences in ability and preferences (for example, propensity to save, work hard).

Therefore, if the situation is one of equal opportunity or no entry barriers, someone with resources would have no extra advantages in the long-run. A well-functioning credit market plays a vital role in this argument. It allows those who have surplus savings to lend it to those who have skills, talents and ideas. In addition it allows those who are born poor to acquire skills through education and move up the economic ladder.

Contrast this with the opposite scenario: suppose for some reason credit markets do not exist. In that case unless someone inherits wealth, he or she cannot enter into professions or businesses or acquire skills that require large capital investments. Two individuals with identical preferences and abilities will end up with very different levels of income because of resource constraints. In this situation initial inequalities are likely to persist in the long-run even if everyone has the same preferences and abilities. This is the poverty trap view.

It is still possible for someone poor to keep saving until he or she (or some distant descendant) has the threshold level of wealth to enter these professions. But this is highly implausible. If a

Where is Credit Due?

Size of the credit market and per capita income across countries

Domestic credit to private sector over GDP/ Per capita income (US 1980\$)

Bangladesh	0.07	121	Costa Rica	0.26	2,155	Malaysia	0.48	1,683
Peru	0.11	842	South Africa	0.26	2,899	Finland	0.48	10,181
Colombia	0.14	1,150	Philippines	0.28	729	Korea	0.5	1,407
Turkey	0.14	1,081	Australia	0.28	9,866	Portugal	0.52	2,301
Morocco	0.16	807	Belgium	0.29	11,226	Jordan	0.54	1,109
Mexico	0.16	2,651	Zimbabwe	0.3	441	France	0.54	11,337
New Zealand	0.19	7,490	Venezuela	0.3	3,975	Singapore	0.57	4,661
Kenya	0.2	417	Norway	0.34	13,430	Netherlands	0.6	11,155
Sri Lanka	0.21	252	Chile	0.36	2,531	Israel	0.67	3,573
Egypt	0.21	563	Denmark	0.42	12,188	Spain	0.76	5,087
Brazil	0.23	1,650	Italy	0.42	6,460	Austria	0.77	9,554
India	0.24	240	Sweden	0.42	14,368	Germany	0.78	12,345
Pakistan	0.25	290	Greece	0.44	3,814	Japan	0.86	9,912
UK	0.25	9,600	Canada	0.45	10,486			

Note: From Raghuram Rajan and Luigi Zingales (1998): Financial dependence and growth, *American Economic Review*, vol 88, No 3, June, pp 559-586

subsistence level of consumption is to be ensured, the rate of saving will be lower for poorer households. In reality credit markets are unlikely to be either frictionless or completely absent.

But the poverty trap argument goes through so long as the poor face tougher terms in the credit market, whether it is the likelihood of getting a loan, the size of the loan, or the interest charges.

How does this square off with the fact that poorer borrowers are likely to be much more eager to borrow? Typically, customers who value something more are willing to outbid others for it. This has to do with the peculiar nature of credit as a commodity. When someone "buys" credit, unlike spot transactions such as buying an apple, all that the lender gets in exchange of giving out money is a promise (to pay back in the future). Richer borrowers can make this promise more credibly than poorer borrowers, since they can offer collateral.

The policy implications of these views are drastically different. The poverty-trap based view immediately implies that redistributive policies that relax borrowing constraints can be good for both efficiency and equity reasons. In contrast, the convergence-based view suggests the standard trade-off between equity and efficiency.

So the question is, are credit markets indeed imperfect? Even though it seems like a simple-minded question (as my mother would say, nothing in this world is perfect, son) and the answer

might seem self-evident (why try to prove something that a quick glance outside your office window would seem to settle), empirical micro-economists are a really hard-nosed and hard-to-convince bunch.

If you say that the size of the domestic credit

market is strongly positively correlated with per capita income across countries (as suggested by Table 1), they will say that the causality could be the other way round: richer countries have larger markets for everything, including credit. Also, both per capita income and size of the credit market could be driven by other factors, such as good government policies, so that this correlation does not necessarily suggest a causal relationship.

If you say, well, interest rates are very high in developing countries they will say that it reflects scarcity. If you say that there are big differences in interest rates that are not being equalised by arbitrage, they would say that is because the underlying risk-profiles of the borrowers and the costs of financial intermediation are different.

If you say that longitudinal data sets in the US and the UK that track individuals over a long period, show that those with more inherited wealth are more likely to become an entrepreneur, they will say factors that affect a family's ability to save and leave bequests to their children (for example, ability, work ethic) also affect the ability to become an entrepreneur.

You might say that rates of return to capital in firms estimated using data on firm earnings and capital stock are high, and exceed significantly the formal or informal interest rates available. If returns from capital significantly exceed its cost, firms should be expanding their capital stock, and if they aren't that means they are credit con-

strained. Not necessarily, they will say. The ability of entrepreneurs affect both the choice of the capital stock, and the rate of return (for example, smart guys need less capital and can generate more returns), and without controlling for it, these are biased estimates. In particular, we don't know whether we are measuring the returns to ability or to capital and whether the capital stock is optimally chosen given the entrepreneur's ability, or the firm is credit-constrained.

OK, since ability is notoriously hard to measure, you would think that this is the point at which economists would give up. No. Suresh de Mel of University of Peradeniya in Sri Lanka, Christopher Woodruff of the University of California at San Diego, and David McKenzie of the World Bank have come up with a direct and ingenious approach. 1: Why not take a random sample of firms and then randomly give some of them some extra capital and measure the difference with those who did not get it?

This is similar to randomised control trials in medicine where some patients are randomly chosen and given a treatment and others are given a placebo and the average difference in the outcome of the two groups is attributed to the treatment. These studies are becoming increasingly popular in development economics.

The authors randomly distributed small capital grants worth \$100 and \$200 to a sample of small enterprises (with less than \$1,000 in capital) in Sri Lanka. Since by design the grants were given randomly, both talented and not-so-talented entrepreneurs would get them. If we measure the effect of these grants, it will capture the average effect across all talent levels. In particular, we will not have to worry that the extra capital generated by the grant to a firm is correlated with the ability of its entrepreneur and so we will be measuring the effect of extra capital only.

Table 2 suggests that the treatment and control groups are roughly similar in all respects, starting with initial level of profits, initial capital stock, various characteristics of the entrepreneur (age, education) and the firm. This confirms the validity of their randomisation strategy.

The authors then estimate the effect of these two types of treatments on capital stock and profits. The difference between the capital stock and the profit levels of the treatment firms relative to the control firms are displayed in Table 3. They estimate the returns to capital to be around 4% per month, or 60% per year. This is substantially higher than market interest rates. This suggests the firms are indeed credit-constrained.

Credit is due to the authors for this innovative study, and to millions of small businesses in developing countries. What policies can achieve that? That is another story.

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DATA FROM The Economist

Overview

► China's economy is gradually slowing. GDP rose by 9% in the year to the third quarter, down from 10.1% in the year to the second quarter, and the weakest growth rate for five years. Consumer-price inflation fell further, from 4.9% to 4.6%, in September.

► Canada's central bank lowered its benchmark interest rate by 0.25 percentage points, to 2.25%, on October 21st. The cut came two weeks after it had reduced rates by half a percentage point in concert with other central banks. The bank said that "some further monetary stimulus" would probably be needed to prevent medium-term inflation from falling below its 2% target.

► The pound fell to a five-year low against the dollar, after the Bank of England's governor said that Britain was entering a recession. Fears of a deep downturn were raised by a gloomy survey from the Confederation of British Industry. Its measure of business optimism fell more in October than at any time since 1980.

► The Reserve Bank of India cut its main interest rate by one percentage point, to 8%, to ward off a booming slowdown. It was the first cut since 2004.

► Vietnam's central bank reduced its benchmark interest rate by one percentage point, to 13%.

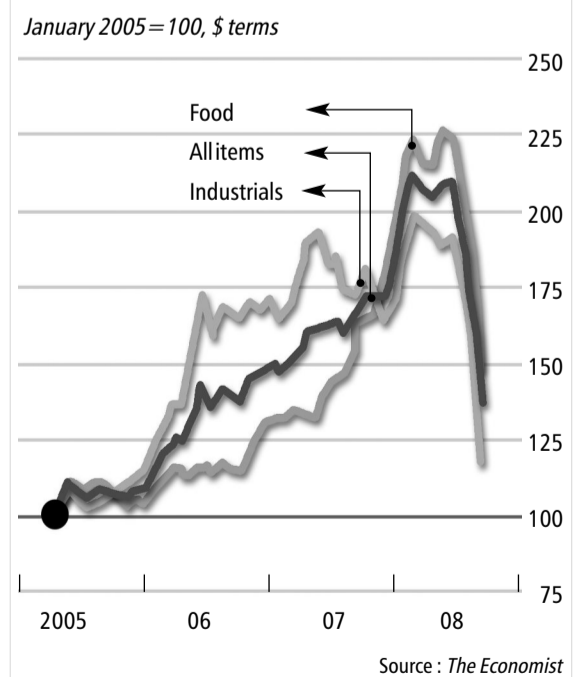
► Consumer-price inflation in Australia rose from 4.5% to 5.0% in the third quarter, the highest rate since 2001.

The Economist commodity-price index

2000=100

	Oct 14th	Oct 21st*	% change on one month	% change on one year
Dollar index				
All items	184.8	172.4	-23.7	-20.3
Food	189.9	184.0	-20.8	-5.3
Industrials				
All	178.3	157.5	-27.7	-35.7
Nfat†	142.2	139.9	-23.2	-18.1
Metals	198.0	167.2	-29.7	-41.4
Sterling index				
All items	159.8	154.2	-16.5	-3.7
Euro index				
All items	125.4	120.9	-14.8	-13.9
Gold				
per oz	838.40	773.55	-14.2	+2.2
West Texas Intermediate				
\$ per barrel	79.35	71.00	-34.4	-16.7

*Provisional †Non-food agriculturals



Impending recession and selling by speculators have snuffed out the boom in commodity prices. Our dollar all-items index, which excludes oil and precious metals, has plunged by 37% since the beginning of July. Metals have fared worst; prices have fallen by almost half since March. Indonesia is now cutting tin production and nickel mines in Canada are closing. Copper stocks in London Metal Exchange warehouses jumped by 62% in the third quarter. Food prices have also plunged. The world wheat harvest is forecast to be a record this season. America's agriculture department reckons that demand for maize as animal feed will fall and weaker petrol consumption will cut demand for biofuels.

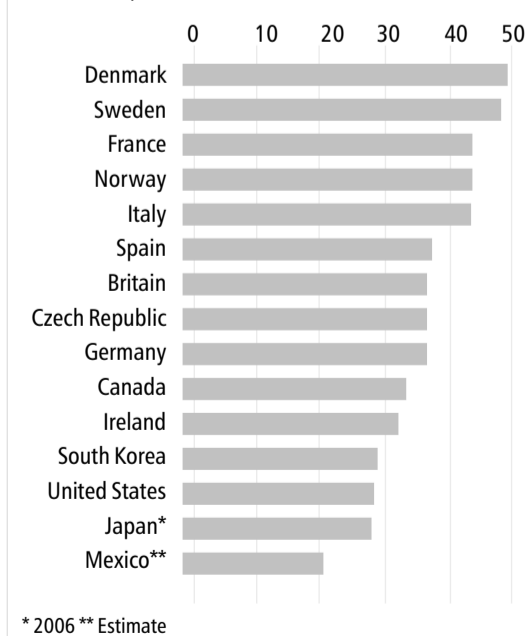
Trade, exchange rates, budget balances and interest rates

	Trade balance* latest 12 months, \$bn		Current-account balance latest 12 months, \$bn		% of GDP 2008†	Currency units, per \$		Budget balance % of GDP 2008†	Interest rates, %	
	Oct 22nd	year ago	Oct 22nd	year ago		3-month latest	10-year gov't bonds, latest			
United States	-848.0	Aug	-699.0	Q2	-4.7	-	-	-2.5	2.15	3.61
Japan	+77.9	Aug	+197.3	Aug	+3.9	98.9	114	-3.0	0.79	1.54
China	+258.0	Sep	+371.8	2007	+8.5	6.83	7.49	0.4	4.19	3.34
Britain	-188.9	Aug	-82.9	Q2	-3.1	0.61	0.49	-3.8	6.23	4.47
Canada	+50.8	Aug	+13.6	Q2	+1.1	1.25	0.97	0.2	1.90	3.68
Euro area	-26.4	Aug	-38.5	Jul	-0.4	0.77	0.70	-0.9	4.94	3.79
Austria	-0.1	Jul	+14.5	Q2	+2.6	0.77	0.70	-0.8	4.94	4.19
Belgium	+3.3	Jul	-9.8	Jun	+1.6	0.77	0.70	-0.6	5.00	4.29
France	-76.9	Aug	-54.2	Aug	-1.8	0.77	0.70	-2.9	4.94	4.03
Germany	+279.8	Aug	+269.3	Aug	+6.5	0.77	0.70	1.1	4.94	3.78
Greece	-67.2	Jul	-50.8	Aug	-14.0	0.77	0.70	-3.3	4.94	4.78
Italy	-15.4	Aug	-71.1	Aug	-2.5	0.77	0.70	-2.6	4.94	4.61
Netherlands	+60.1	Aug	+62.5	Q2	+6.2	0.77	0.70	0.7	4.94	4.09
Spain	-154.1	Jul	-165.2	Jul	-9.8	0.77	0.70	-1.6	4.94	4.30
Czech Republic	+6.4	Aug	-4.3	Aug	-2.8	19.8	19.1	-1.9	4.23	4.55
Denmark	+6.4	Aug	+5.9	Aug	+1.3	5.77	5.24	3.8	5.95	4.31
Hungary	+0.5	Aug	-8.8	Q2	-5.5	2.14	1.77	-3.8	9.00	11.14
Norway	+83.2	Sep	+78.1	Q2	+17.3	7.00	5.46	17.7	6.79	4.18
Poland	-22.2	Aug	-26.3	Aug	-4.9	2.93	2.57	-1.9	6.81	7.48
Russia	+200.3	Aug	+104.3	Q2	+6.2	26.9	24.9	4.5	11.00	8.99
Sweden	+18.7	Aug	+38.6	Q2	+7.6	7.78	6.49	2.4	3.40	3.55
Switzerland	+17.3	Sep	+60.2	Q2	+13.0	1.16	1.17	0.9	2.98	2.76
Turkey	-76.0	Aug	-48.7	Aug	-6.4	1.65	1.22	-1.8	20.08	10.39‡
Australia	-15.6	Aug	-61.1	Q2	-5.1	1.48	1.11	1.3	5.85	5.12
Hong Kong	-26.1	Sep	+27.5	Q2	+10.8	7.75	7.75	0.7	3.14	2.26
India	-100.3	Aug	-21.9	Q2	-2.9	49.3	39.6	-4.3	8.66	8.10
Indonesia	+19.0	Sep	+6.3	Q2	+2.8	9,900	9,178	-2.0	12.11	15.35
Malaysia	+41.0	Aug	+35.3	Q2	+14.4	3.55	3.37	-3.1	3.67	5.81‡
Pakistan	-22.5	Sep	-14.0	Q2	-7.2	81.4	60.7	-6.7	14.39	25.95‡
Singapore	+22.9	Sep	+32.8	Q2	+18.6	1.50	1.46	1.0	1.16	2.70
South Korea	-11.7	Sep	-7.1	Aug	-3.3	1,363	918	1.1	6.12	5.37
Taiwan	+6.9	Sep	+32.6	Q2	+4.6	33.0	32.6	-1.8	2.60	2.18
Thailand	+5.4	Aug	+7.8	Aug	+1.1	34.6	34.1	-2.9	3.85	3.99
Argentina	+13.2	Aug	+6.0	Q2	+3.1	3.22	3.18	0.7	17.13	na
Brazil	+28.8	Sep	-21.9	Aug	-1.6	2.37	1.80	-1.6	13.66	6.16‡
Chile	+16.1	Sep	+1.0	Q2	-0.5	645	505	6.5	9.36	5.34‡
Colombia	+1.8	Jul	-4.9	Q2	-2.6	2,340	2,022	-1.0	10.03	10.50‡
Mexico	-9.4	Aug	-5.3	Q2	-0.8	13.5	10.08	-0.1	7.58	10.45
Venezuela	+41.9	Q2	+37.8	Q2	+14.8	5.38	4.23§	1.6	17.00	6.55‡
Egypt	-23.4	Q2	+0.9	Q2	+0.2	5.59	5.52	-7.1	12.86	7.20‡
Israel	-13.1	Aug	+3.5	Q2	+0.9	3.86	4.04	-0.8	3.40	5.06
Saudi Arabia	+150.8	2007	+95.0	2007	+33.1	3.75	3.74	13.3	4.62	na
South Africa	-10.3	Aug	-22.5	Q2	-7.7	11.1	6.66	0.2	12.35	9.85

*Merchandise trade only. †The Economist poll or Economist Intelligence Unit forecast. ‡Dollar-denominated bonds. §Unofficial exchange rate. Sources: National statistics offices and central banks, Thomson Datastream, Reuters, JP Morgan, Bank Leumi le-Israel, Centre for Monitoring Indian Economy, Danske Bank, Hong Kong Monetary Authority, Standard Bank Group, UBS, Westpac

Total tax revenue

As % of GDP, 2007



Tax revenues have risen as a share of GDP across the OECD over the past 30 years. In 2007 Denmark's government collected nearly half its GDP as taxes, making it the most heavily taxed among all the rich countries. The Danes narrowly edged out Sweden, the previous year's most heavily taxed country. France, Norway and Italy also have tax revenues of more than 40% of GDP. At the other end of the spectrum, America and South Korea are relatively lightly taxed, with ratios of under 30%. However they are not as lightly taxed as Mexico, where the government's tax revenues are barely a fifth of GDP. In general Europe is the most heavily taxed region in the OECD and taxes are lowest in the Americas.