

Discussion of Boz and Mendoza's Paper NBER/CRIW conference @ FRB

Matteo Iacoviello
Federal Reserve Board

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Timely, Well-Written and Ambitious Paper

Basic message is that **never-seen-before financing innovation** caused the credit boom and bust of the last decade.

1997, June 8: First time the word subprime appeared in the NYT

Special
Markets
Real Estate Offerings

The New York Times
Real Estate
Monday, June 8, 1997
Section 9

Giving Credit Where Credit Was Denied

New Moves
The Forms of Title
The way to obtain a loan is almost invariably to buy more than one parcel, call them partial and master deed mortgages. By Joe Benincosa 3

Statistics Overview
From House to Co-op
A couple wants to buy a house, but their credit record is poor. Instead, they are considering the idea of buying a co-op. By David S. Rose 4

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New Construction in the East Village
A shortage of building materials and financing has slowed the building of new high-rise towers in the city. By David S. Rose 5

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The Upper East Side
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An effort to build a marina in the city's Upper East Side is being opposed by the city's residents. By David S. Rose 7

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James White and his daughter, Jennifer, in a small house in the city's Upper East Side. Mr. White is a member of the mortgage company's board of directors. He said the mortgage company's board of directors is willing to lend to people who have had credit problems.



Putting a Benchmark
Number of loans in billions

Year	Number of loans in billions
1980	100
1981	105
1982	110
1983	115
1984	120
1985	125
1986	130
1987	135
1988	140
1989	145
1990	150
1991	155
1992	160
1993	165
1994	170
1995	175
1996	180

Source: Mortgage Bankers Association



Giving Credit Where Credit Was Denied
Lee Wolf said to Mr. White, give a mortgage despite a bankruptcy 2 1/2 years ago.

Mortgage lenders are now going after those they used to shun.
By David S. Rose

The mortgage industry is now going after those who were once considered too risky to lend to. In the past, lenders have been reluctant to lend to people with a history of bankruptcy, divorce, or other financial problems. But now, as the industry faces a shortage of borrowers, many lenders are willing to lend to people who have had credit problems in the past.

One of the most prominent examples of this trend is the case of James White, a man who filed for bankruptcy in 1994. Despite his credit record, White was able to obtain a mortgage from a lender who was willing to overlook his past financial problems. White said that the lender was willing to lend to him because he had a good job and a stable income.

White's experience is not unique. Many other people who have had credit problems in the past are now able to obtain mortgages. This is due to a number of factors, including a decline in the number of people who file for bankruptcy, a decline in the number of people who get divorced, and a decline in the number of people who have other financial problems.

One of the reasons for this decline is that many people who have had credit problems in the past are now able to rebuild their credit. This is often done by paying off their debts, getting a new credit card, and making regular payments on their new credit card. As a result, many people who have had credit problems in the past are now able to obtain mortgages from lenders who are willing to lend to people with good credit.

Another reason for this decline is that many lenders are now willing to lend to people who have had credit problems in the past. This is often done by offering higher interest rates and requiring larger down payments. While these terms are less favorable than those offered to people with good credit, they are still better than the terms offered to people who have had credit problems in the past.

Overall, the mortgage industry is now going after those who were once considered too risky to lend to. This is due to a number of factors, including a decline in the number of people who file for bankruptcy, a decline in the number of people who get divorced, and a decline in the number of people who have other financial problems. As a result, many people who have had credit problems in the past are now able to obtain mortgages from lenders who are willing to lend to people with good credit.

The Core of the Model

Small open economy model, representative agent, R fixed

$$\max \sum \beta^t u(c_t)$$
$$c_t = z_t g(l_{t-1}) - q_t(l_t - l_{t-1}) + \frac{d_t}{R} - d_{t-1}$$
$$\frac{d_t}{R} \leq \kappa_t q_t l_t$$

κ_t is a two state Markov process

As they see κ_t , agents learn about it using Bayesian methods

The Model Workings

1. If κ shocks are **purely transitory**
Changes in κ **do not** affect debt and asset prices much, because agents are afraid these changes might be reversed
2. If κ shocks are **permanent**
Changes in κ **have larger** effects on debt and asset prices, since agents expect the new state to persist forever.
To convey this intuition, it would be nice to provide impulse responses or to show some transitional dynamics

The Authors' Experiment

1. Economy is in steady state with low κ . Debt and asset prices are low. True process for κ is persistent shocks, not transitory, not permanent. Agents ignore true process for κ , and form beliefs over it.
2. 1997: κ jumps, agents initially are cautious, since they believe these changes are transitory and might be reversed
3. 1998 onwards: as κ stays high, optimism builds up, agents believe change in κ is quasi-permanent, and debt and asset prices overshoot
4. 2007: Reality sinks in, κ falls, boom is reversed

The Model Quantitative Findings

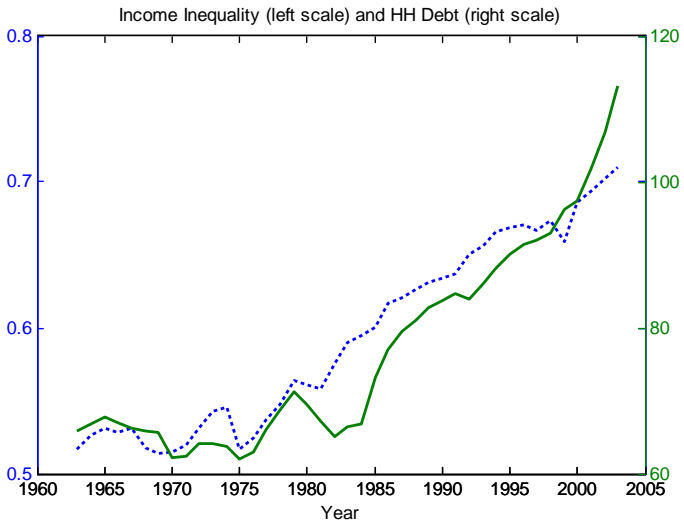
	Debt/GDP			Asset Prices/GDP		
	Data	Model	RE Mod.	Data	Model	RE Mod.
1996-2006	+0.35	+0.26	+0.08	+0.28	+0.15	-0.02
2006-2008	-0.02	-0.28	-0.12	-0.15	-0.15	0.01

- 1996 to 2006: Model captures the rise in debt, half of the rise in asset prices
- 2007 to 2008: Model overpredicts the fall in debt, captures the drop in asset prices

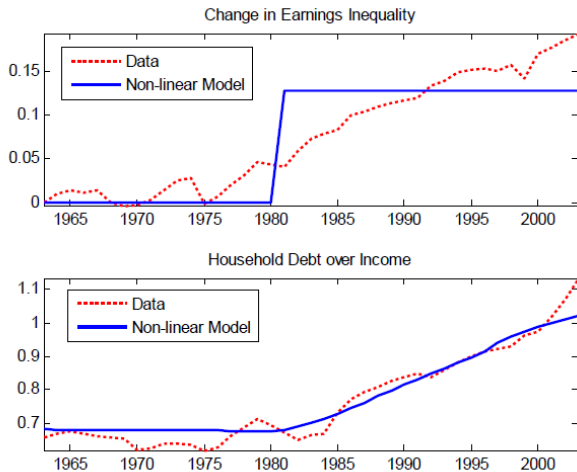
Comment 1: The debt and housing boom and alternative stories (aka "one minute of shameless self-promotion")

1. Here: debt/housing boom was the outcome of financial innovation coupled with gradual learning
2. Alternative views (well, my views): Rise in debt reflects increased demand for credit market access, rather than a supply-driven boom (JMCB, 2008)
Rise in house prices reflects a collective shift in preferences towards housing goods (AEJ Macro 2010)

The rise in debt (data)



The rise in debt (my JMCB story)



The rise in asset prices (my AEJ Macro story plus NYT evidence)

is well worth it.

Ms. White, along with 6-year-old Jasmine, lived in a Queens high-rise complex with her parents after moving back to New York from Columbus, Ohio, three years ago. "I had always rented," she said.

But in Columbus she watched a friend transform "flat land into a finished house" and realized, "that's what I want for my daughter."

"Apartment living is not conducive for a child with bikes and Barbie Beach Cruisers, those 5 miles-per-hour toy jeeps," Ms. White said. "Lugging those things down nine flights is not easy."

Eight years ago, after graduating from

Comment 2: Mapping Model to Data

The debt measure in the data is essentially gross household debt, but in the model it looks like external debt (net foreign liabilities)

1. Let b denote economy's financial liabilities (assets if negative), with cross-sectional distribution $f(b)$
If financial innovation is the key, it should account for:
 - rise in domestic gross debt $E(b|b > 0)$: in the data, it went from 0.35 to 0.7 of GDP b/w 1997 and 2006
 - rise in external debt $E(b)$: in the data, from 0.09 to 0.16 of GDPThe RA approach used here does not distinguish the two
2. Also would be useful to compare results with a model without learning but where financial liberalization occurs gradually.
3. It would be nice to plot transitions in the model against data. Looks like transition in the model occurs too fast

Comment 3: Domestic and Foreign Debt (aka "the paper the discussant wishes he/you had written")

A continuum of agents in a small open economy:

$$c_t + q_t (l_t - l_{t-1}) + Rb_{t-1} = b_t + a_t z_t g(l_{t-1})$$

$$b_t \leq \kappa_t q_t l_t$$

a aggregate shocks

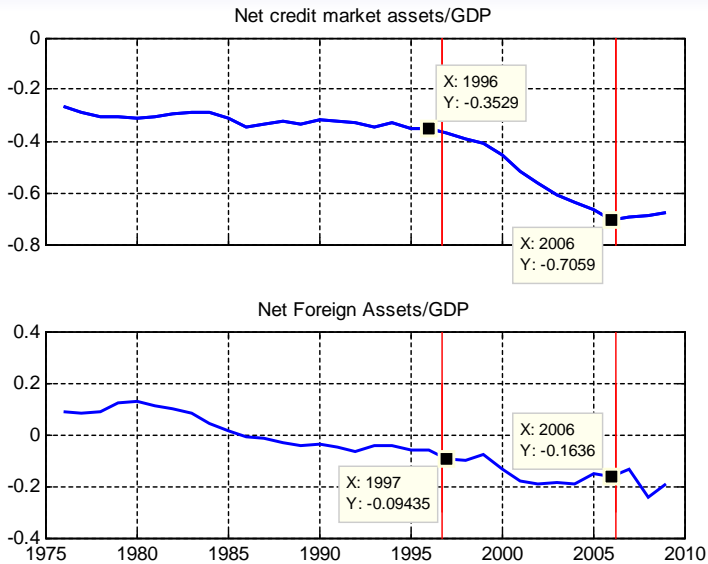
z could be idiosyncratic income shocks.

Relative to the representative agent setup of the paper, such a model could talk about domestic and foreign debt jointly (it would have a well-defined wealth distribution even if average assets were zero, e.g.

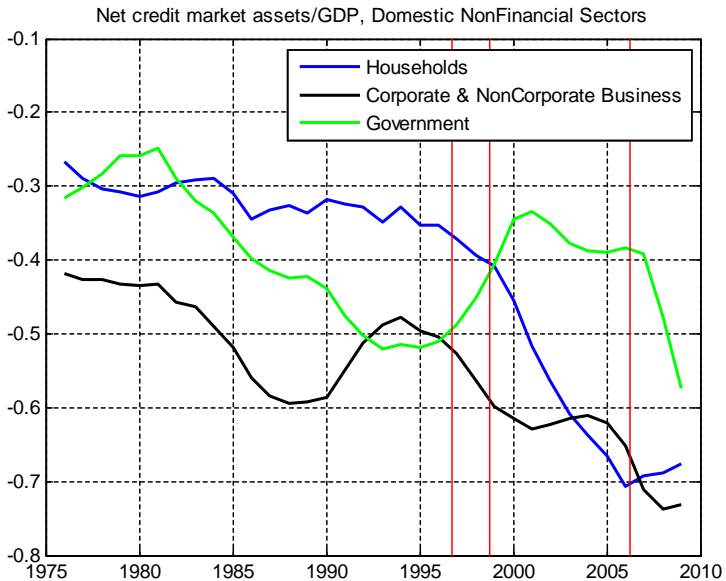
$E(b) = 0$).

Harder to solve, I know

It would get around the awkward issue where debt in the model looks like foreign debt, but is mapped to household debt in the calibration



Which debt?



Final Remarks

Great paper, nice and compelling story

1. Suggestion 1: improve mapping data–model, closed vs open economy and calibration of the κ shock.
2. Suggestion 2: cut the discussion on CDOs, Fannie-Mae and Freddie Mac, focus more on other measures of financial innovation for households which is what the paper is about