Discussion of Lagos-Rocheteau-Weill

OTC Markets

    many (most?) assets are traded bilaterally

    not in organized multilateral exchanges

    in these markets, trading takes time

    and the terms of trade are determined by bargaining

Dealers/brokers like large investment banks play a big role

    they try to match asset buyers and sellers

    the also buy and hold when there are many sellers

    this can be interpreted as providing liquidity

How does this provide liquidity?

    suppose many agents decide to buy something

    they try to sell their assets to raise the cash

    if no one wants to buy it is hard to raise cash

    they (agents or assets) are illiquid

    if dealers buy up assets, they become more liquid

Questions:

    how can we formally model OTC markets?

    what are the properties of equilibrium?

    what could government intervention do?

Possible gov't interventions

    inject capital to dealers – *whatever that means*

    buy up assets themselves

    LRW focus on latter (dealers have sufficient capital)

Modeling strategy

    obviously use a search-and-bargaining model

    put a in the utility function .... ???

    OK, assets are Lucas trees

    crisis is a long negative aggregate shock to taste of fruit

    kind of backwards, but gives motive to sell trees

Results

authors lay out a natural, albeit stylized, OTC model

that part was easy

then they solve it – very impressive

equil is not generally efficient: dealers may provide insufficient liquidity (buy too few assets) during transition

injecting capita won't help – gov't should buy assets

good idea – unless you are a taxpayer

Question: Should gov't step in whenever demand is low?

Sure - they can also buy my house in Philly, put me on CEA, and get the Contractions to play at White House.

Loner run sol'n: reduce dealers bargaining power

maybe the market can do this via entry?

or maybe not – this needs exploration.

might be a job for competing mechanism theory!

My overall Comments on Paper:

Obviously the search approach is natural.

The paper is *beautiful* and *ugly* at the same time.

It's a lot of work ... because they are very ambitious.

They want to analyze the transition path.

I want finance to have a search-and-bargaining foundation.

It worked well for monetary economics...
 which is just like finance, except rigorous.

My take on the literature:

There is an emerging body of work on *finance with frictions*.

This is part of what we call New Monetarist Economics.

Everyone should know this work.

But this paper is not the place to start.

I now present an alternative model to LRW

    it cannot do everything they want to do

    but maybe it can be a benchmark model

A NM Model of Asset Markets

CM: agents trade labor, goods and assets in frictionless market with payoff $W(a)$

DM: agents receive pref shocks and trade assets bilaterally with payoff $V(a)$

Compare with LRW...

$$W(a) = \max\{U(x) - h + \beta V(\hat{a})\}$$
$$x = h + \phi a - \phi \hat{a}$$

Implies $U'(X) = 1$, $\phi = \beta V'(\hat{a})$, and $W'(a) = \phi$.

Search and Bargaining for Assets:

$$V(a) = \pi_H \sigma [u_H(a + q) - p + W(a + q)]$$
$$+ \pi_H(1 - \sigma)[u_H(a) + W(a)]$$
$$+ \pi_L \sigma [u_L(a - q) + p + W(a - q)]$$
$$+ \pi_L(1 - \sigma)[u_L(a) + W(a)]$$

Bargaining:

$$\max S_H^{\theta} S_L^{1-\theta}$$

$$S_H = u_H(a + q) - u_H(a) - p + W(a + q) - W(a)$$
$$S_L = u_L(a - q) - u_L(a) + p + W(a - q) - W(a)$$

Note: p can simply be utils, or something fancy like a repo agreement; there are no liquidity constraints.

Because of linearity, $W'(a) = \phi$, bargaining is easy:

set $q = q^*$ to solve

$$u_H'(a + q) = u_L'(a - q)$$

and $p = p^*$ to solve

$$p^* = \phi q + (1 - \theta)[u_H(a + q) - u_H(a)] + \theta[u_L(a) - u_L(a - q)].$$

Plug this into $V(a)$, differentiate and use FOC $\phi = \beta V'(\hat{a})$ to get asset-pricing equations.

This is like a baby (pretty) version of LRW.

What is a liquidity crisis?

    $\triangle \pi < 0 \Rightarrow$ fall in aggregate asset demand
    makes it hard to sell assets in *two* senses

Introduce dealers

    they buy and sell but do not get utility from a
    they provide liquidity, but maybe not enough
    is there a role for government to trade $\hat{a}$?

Claim: This should be the benchmark model.

Question: Is there much new in search-based finance?

Only difference between above model and LW:

$$V(a) = \pi_H \sigma [u_H(a+q) - p + W(a+q)]$$
$$+\pi_L \sigma [u_L(a-q) + p + W(a-q)]$$
$$+ (1-\sigma)[\pi_H u_H(a) + \pi_L u_L(a) + W(a)]$$

$$V(a) = \alpha[u(x) + W(a-d)] + \alpha[-c(x) + W(a+d)]$$
$$+ (1-2\alpha)W(a)$$

plus the constraint $d \le a$, which generally binds.

It is almost just a change in notation – nothin' wrong with that.

A Bigger Problem: Is Nash bargaining really ok here?

I used to claim: "you can't use Nash in non-stationary models."

Blanchard corrected me; he said "sure you can."

Well, of course you can, but is it a good idea?

One reason people like Nash:

Stationary alternating offer (Rubinstein) game.

$\exists$! SPE where price is p^B or p^S depending on who ...

as $\Delta \to 0$, $p_b^B, p_s^S \to p^N$, where p^N is Nash sol'n.

Do the same exercise in nonstationary environment.

Then $p_t^B, p_t^S \to p_t$ where p_t solves

$$\dot{p}_t = f_t(p_t)$$

and $f_t(p)$ is the FOC from maximizing the Nash product.

If the model settles down to steady state $p_t \to p^N$.

But along the transition path $p_t \neq p^N$.

Setting $p_t = p^N \forall t$ is equivalent to agents playing strategic bargaining game with *myopic expectations*. Not too good for Nash, eh?

Possible out: *sometimes* w/ linear utility $p_t = p^N \forall t$ is ok.

Conclusion: great stuff!

It is (the asset-pricing) part of New Monetarist Economics.

That means we take seriously ideas like:

  it takes time to trade

  agents trade with each other, not merely against budget eqns

  the terms of trade are not necessarily Walrasian

  other frictions, like commitment and information problems, are also crucial

But LRW is very hard – it's an Econometrica-type paper

For more but easier work in New Monetarist Economics, see Williamson and Wright.