"Credit Frictions and Optimal Monetary Policy"
by Vasco Cúrdia and Michael Woodford

Discussion by Miles Kimball

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Six Conclusions of the Paper

1. Financial frictions and financial shocks can be assimilated smoothly into the Basic New Keynesian Model. (A major accomplishment. More intuition?)

2 and 3. The main focus should be on the vector of interest rates, not monetary or credit aggregates.

4. There may be a failure of Ricardian equivalence because government borrowing has smaller credit frictions than private borrowing….

5. To a large extent, a weighted average of interest rates takes on the role of the single interest rate in simpler models. Thus, an interest rate rule for any interest rate other than this average should adjust for credit spreads. (But should not target credit spreads!)

6. Flexible inflation targeting is still optimal.

Key Issues for Discussion—
All Broader than this Paper

- Investment and other durables
- Long-term versus short-term interest rates
- The relative weight of inflation stabilization and output gap stabilization.

Given Half a Chance, Investment and Other Durables do the Heavy Lifting in Business Cycle Models

- Traditional view of business cycles: consumption are a bigger share of the level, but I and durable fluctuations are a big share of the fluctuations of output. (Romer: 65.2% of recession fall in Y)

- Investment is central to Real Business Cycle models. (I/Y and N)

- Barsky-House-Kimball (June 2007 AER): monetary neutrality if investment and durable prices are not sticky, regardless of sticky prices for nondurables.

- Credit frictions and investment.

What Difference Would Investment and Durables Make to Cúrdia-Woodford?

- Because much borrowing is for investment and durables, the elasticity of intertemporal substitution for borrowers will be much higher than for savers.

- Thus, the appropriate weighted average of interest rates to focus on is close to the borrowing rate for investment and durables. This makes reducing the Fed Funds rate 1 for 1 with the credit spread look better.

Why are Investment and Durables in the Background in *Interest and Prices* and in Cúrdia-Woodford?

1. Infinite capital adjustment cost limit
2. High, but finite adjustment costs mean investment can be treated like consumption.
3. Desire to block strong redirection of investment between firms with different sticky prices.

The Low-Adjustment-Cost Benchmark (Neomonetarist Model)

- Very high responsiveness of investment and durables to interest rates.

- The economic structure of investment and durables dominates the behavior of the economy, regardless of the economic structure for nondurables.

- *Short-term gap* between R-δ and r governs fluctuations via the delay condition, *not long-term interest rates.* (This implies that one of the few cogent arguments for interest-rate smoothing goes away.)

- The counterpart to the IS curve (the KE curve) is upward-sloping. This means the monetary policy rule must raise r with Y for stability.

The KE (Net Rental Rate) Curve
(No Investment Smoothing Case)

$$r=[\alpha/(1-\alpha)](WN/K)-\delta$$

Derivation:

$r=R-\delta$ **(no investment smoothing)**

$RK/WN=\alpha/(1-\alpha)$ **(constant cost shares)**

$N=Y^{1/\gamma(1-\alpha)}K^{-\alpha/(1-\alpha)}Z^{-1}$ **(IRTS Cobb Douglas production function)**
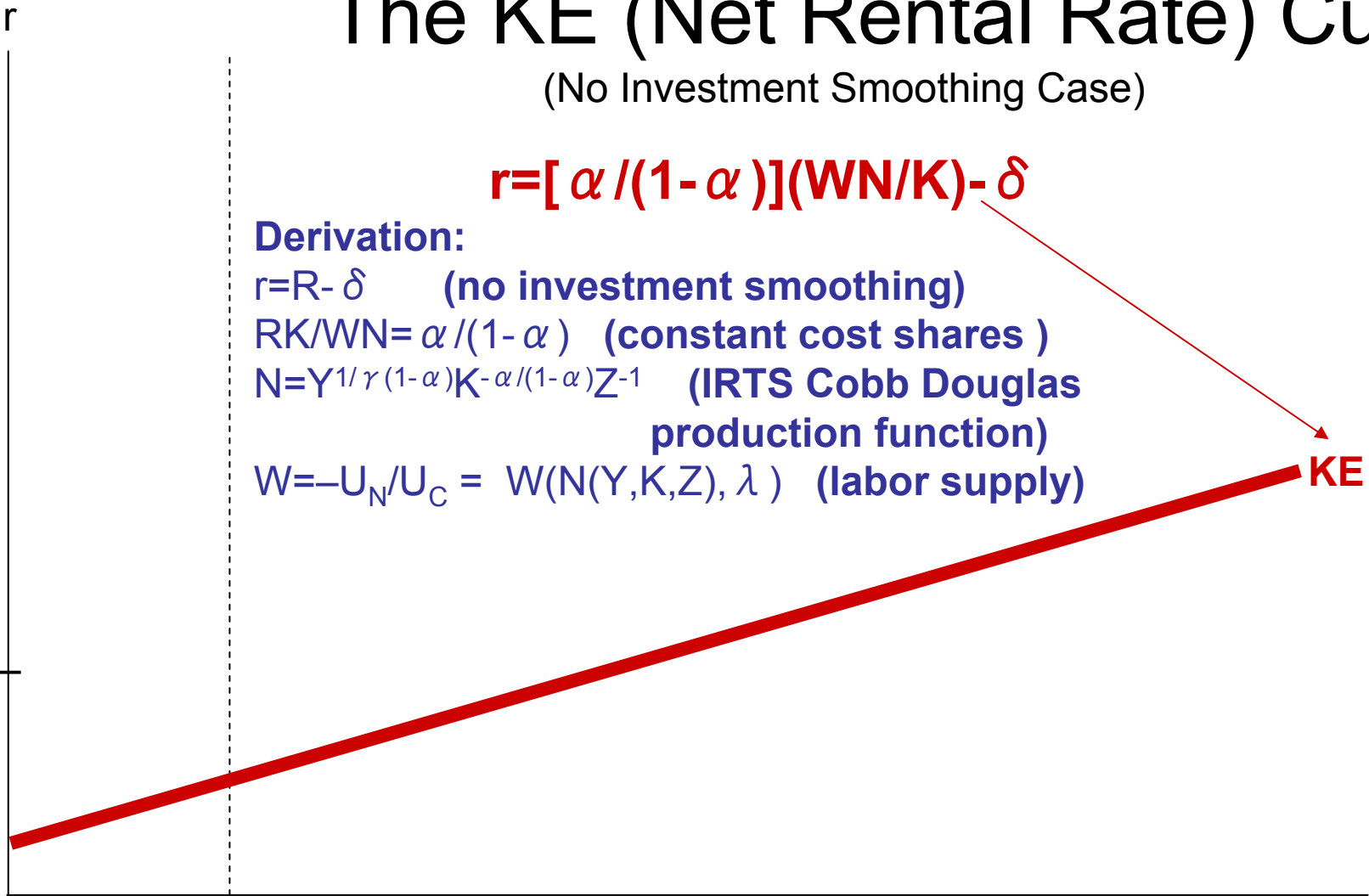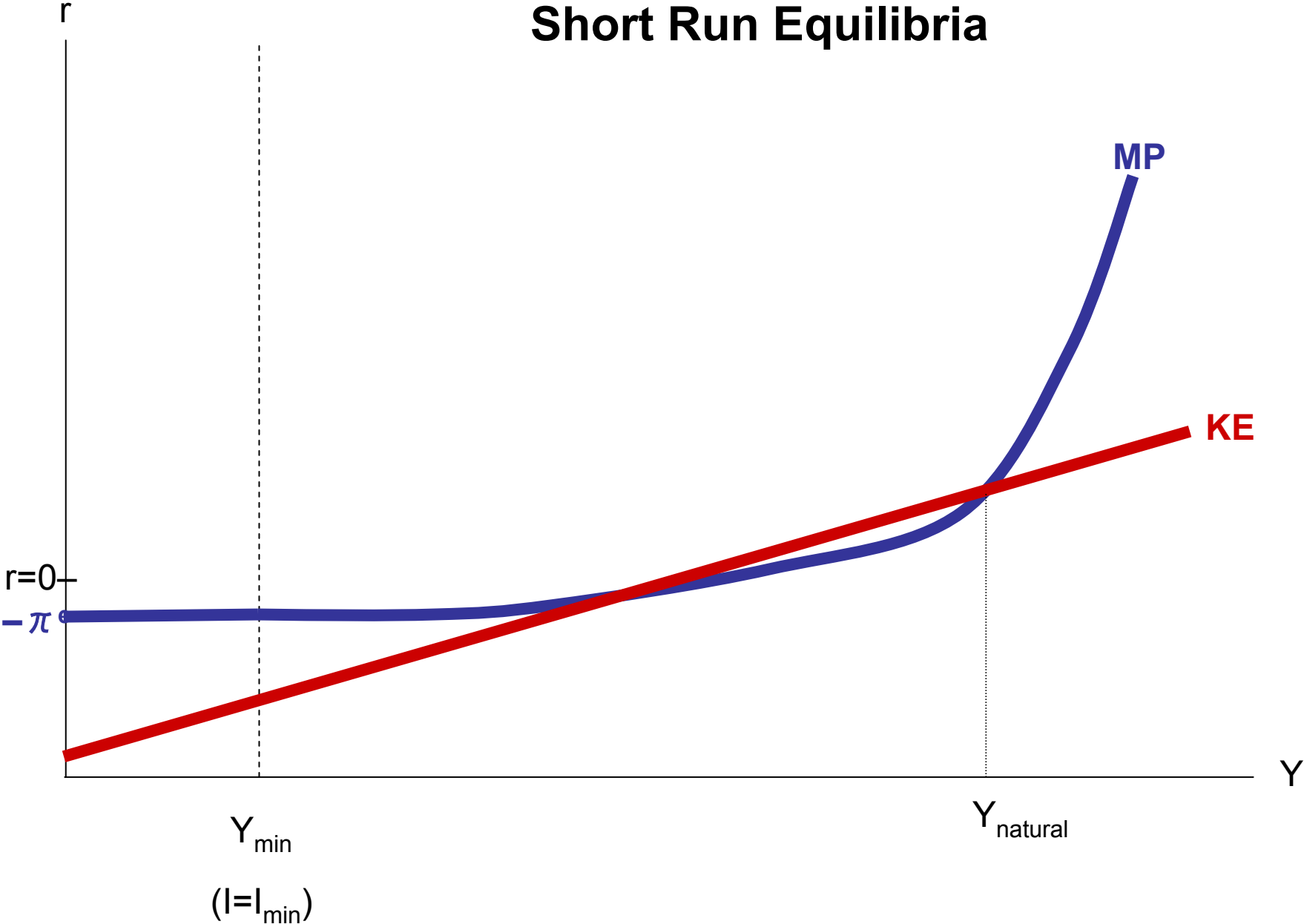
$W=-U_N/U_C = W(N(Y,K,Z),\lambda)$ **(labor supply)**

KE

r

r=0

Y

Y_{min}

$(I=I_{min})$

Short Run Equilibria

r

MP

KE

r=0

−π

Y_min

(I=I_min)

Y_natural

Y

How High are Adjustment Costs?

- Probably right in the middle, exactly where the dramatic transition between the intuition of the two benchmark cases is taking place. We need to know.
- Time-to-build, time-to-plan, planning adjustment costs, lumpy investment and sticky information all can contribute to the appearance of adjustment costs, but have different implications than Q-theory-type capital adjustment costs. (cf. Jonathan Millar)
- Thus, not simple to calibrate. It deserves a serious research agenda.

Modeling tasks to bring durable varieties into sticky-price models

- Standard treatment of durables or investment in sticky price models can only be justified if the varieties are nondurable before aggregation into the durable.

- Durable varieties mean that the fixed costs behind increasing returns to scale cannot be flow fixed costs.

- Durable goods monopoly problem.

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In general, putting investment and durables into the model changes everything, unless adjustment costs are high.

Output Gap Stabilization vs. Inflation Stabilization

- Presumably, the strong weight on inflation stabilization in the approximate quadratic objective function comes from a high price elasticity of demand for each variety.
  - Implies huge fluctuations in relative quantities of the different varieties if aggregate (and therefore relative) prices move much.
- The often-used Basu-Fernald markup ratio estimate of 1.1, implying a price elasticity of demand equal to 11, is by a methodology that yields .6 for some sectors.
  - Worst factors used last.
  - OK for some purposes, but not for identifying the price elasticity of demand.
  - 1.1+.4 = 1.5 → price elasticity of demand = 3.
- Quite plausible that the short-run price elasticity of demand < longer run price elasticity of the markup.

Bottom Line

- Skillful, smooth addition of financial frictions to the New Keynesian Model.

- Other than the need to focus on something close to the borrowing rate for investment and durables, the results are reassuringly familiar.

- Talking about financial frictions points to the huge issue of investment and durables in sticky price models. It is the right time to pursue that research agenda.

- The research agenda of studying investment and durables in sticky price models (over the full range of possible parameter values) is worthy of the best minds in business cycle theory, including Cúrdia and Woodford.