Discussion:
Gold Rush Fever in Business Cycles
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1 Gold Rush Fever in Business Cycles

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Punchline:

A large part of business cycle fluctuations in output and hours can be explained by 'gold rush fever'

Contributions:

1. (Re)document facts about business cycles

   – Large part of output volatility driven by transitory shocks that do not affect consumption

2. Model of market rushes

   – A new candidate shock that satisfies the above facts

3. Empirical support for market rush shocks:

   (a) Model fits the data well

   (b) Market rush shocks explain a large part of output variability

   (c) Contribution market rush shocks robust to including other shocks in the model

2 The model

- A standard RBC economy

  – Homogeneous consumption good

  – Production requires capital and labor

  – Consumers are infinitely lived and can smooth consumption by borrowing and lending capital

  – All markets are perfectly competitive

  – Balanced growth preferences

- A pie club

  – Each period a pie (of fixed size) drops out of the sky

  – The pie is distributed equally to members of the pie club

  – Membership of the pie club is restricted

3   The model: A 'pie rush'

- Pie rush shock: unusually large number of memberships being issued

- Pie club membership

- Increase in aggregate output, consumption does not respond

- Rent seeking

4 The model: A 'pie rush'

- Pie rush shock: unusually large number of memberships being issued

- Pie club membership

  – Each period, $\eta_t N_t$ new memberships are issued, where η_t is stochastic

  – A member is expelled with probability $\mu = E\eta_t$

  – To apply for a new membership, candidates must burn one unit of pie (which was produced in the RBC economy)

  – Lottery among applicants determines new members

  – Free entry into the *lottery*

$$1 = \rho_t V_t = \frac{\eta_t N_t}{S_t} V_t, \ \text{ where } V_t = \beta E_t \sum_{\tau=0}^{\infty} \frac{\beta^\tau (1-\mu)^\tau u'(c_{t+\tau+1})}{u'(c_t)} \frac{\tilde{\pi}_0}{N_{t+\tau+1}}$$

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- Increase in aggregate output, consumption does not respond

  (a) Non-members: $y =, \ c =$

  (b) Unsuccessful applicants: $y \uparrow, \ c =$

  (c) Successful applicants: $y \uparrow\uparrow, \ c \uparrow$

  (d) Old club members: $y \downarrow, \ c \downarrow$

- Rent seeking

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- Increase in aggregate output, consumption does not respond

- Rent seeking

  – High private benefits from applying to the club (restricted membership)

  – Socially wasteful: increased output is burned

7 Pie rush versus market rush

- BCP market rush = pie rush

  - Intermediate goods producers make positive profits

$$\Pi_t(j) = [P_t(j) - 1] X_t(j) = \frac{1 - \chi}{\chi} X_t$$

  - Exogenous restriction on free entry in intermediate goods market

  - No effect on value added of more varieties $\Rightarrow$ investments in new startups are wasteful

  - High private benefits are transfer from existing to new intermediate goods producers

$$\Pi_t(j) = \pi_0 \Theta_t N_t^{\frac{\xi - 1 + (1 - \alpha)/\chi}{\alpha}} h_t = \frac{\pi_0 \Theta_t h_t}{N_t}$$

  - No meaningful interaction between market rush and RBC economy

- Plausible?

- Consistent with the data?

8 Quantitative assessment

- Calibrate & estimate

- Evaluate credibility and quantitative importance market rush shocks

  – Test model fit

  – Evaluate contribution market rush shocks to volatility output

  – Compare to alternative shocks/models

9 Quantitative assessment

- Calibrate & estimate

  – Minimum distance estimator matches VAR impulse responses

  – Estimate: variances shocks and persistence shocks and model

  – Calibration likely to affect the (limited information) estimates

  – (Relative) size of the 'pie' seems crucial

  $$\Pi_t\left(j\right) = \frac{\pi_0 \Theta_t h_t}{N_t}, \text{ where } \pi_0 = \left(\frac{1-\chi}{\chi}\right)(\chi\left(1-\alpha\right))^{1/\alpha}$$
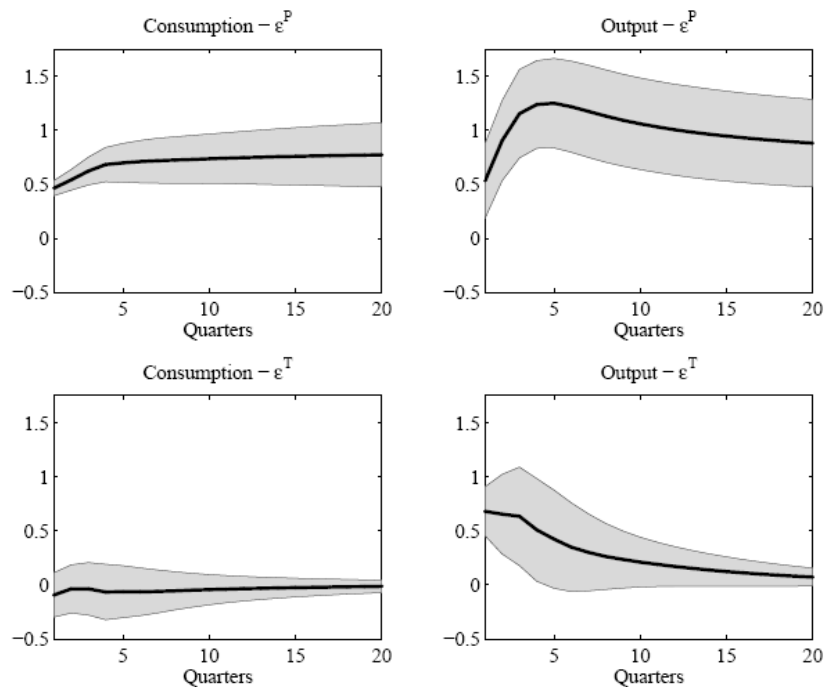
  – "We assume markups of 20%, so that $\chi = 0.833$."

- Evaluate credibility and quantitative importance market rush shocks

  – Test model fit

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    ∗ Three sets of overidentifying restrictions (Hansen J-test or by hand)

      (a) IRFs from VAR with SR restriction (versus LR restriction)
      (b) IRFs consumption (versus output)
      (c) Business cycle moments for investment, hours and labor productivity

  – Evaluate contribution market rush shocks to volatility output

  – Compare to alternative shocks/models

11 The data

Figure 1: Responses of Output and Consumption to ε^P and ε^T

- There are (components of) shocks that

   – do not affect consumption or long run output

   – introduce strong short run fluctuations in output (and hours)

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    ∗ Variance decomposition structural shocks

    ∗ Not all (candidate) shocks are included

    ∗ Reduced form estimates with identified shocks?

    ∗ How can (wasteful) market rush shocks explain 57% of the volatility of hours in the LR? (LR restriction as in Gali would attribute to negative productivity shocks)

  – Compare to alternative shocks/models

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    * What does identification come from? Consumption!

    * Can combination of other shocks replicate consumption response?
      (transitory productivity shock + preference shock)

    * Government expenditure shocks?

    * Need additional testable predictions (overidentifying restrictions)
      "a set of properties that any good model of fluctuations should explain"

14 Concluding

- Very interesting and relevant research agenda

  – What type of shocks drive business cycle fluctuations?

- Plausible story with interesting implications

  – Output volatility may be partly driven by rent seeking

  – Implications for e.g. costs of the business cycle

- Empirical assessment careful but ultimately not completely convincing

  – Wider set of moments would help distinguish between competing explanations

  – Unexplored testable predictions for e.g. inequality

- Quantitative importance open question