A Post Keynesian model of demand, distribution, inflation and employment

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Overview

• Introduce a Post Keynesian model that covers similar ground as the (New Keynesian, mainstream) New Consensus and NAIRU models
  – A general NAIRU model
  – different closures: demand, NAIRU endogeneity

• Outline
  1. Goods market: demand formation
  2. Labour market. Short run: unemployment and inflation
  3. Labour market. Medium run. hysteresis
  4. Conclusion
NAIRU theory vs NAIRU story

• **NAIRU theory**: theory of the relation between inflation and unemployment
  - Wage bargaining
  - Employment determined by demand on goods market
  - Inflation as result of bargaining if unemployment \( \neq \) NAIRU
  - Different closures WRT demand, NAIRU endogeneity

• **NAIRU story**: the „mainstream“ NAIRU explanation of European unemployment
  - Actual unemployment is determined by the NAIRU
  - The NAIRU is determined exogenously by labor market institutions (LMI)
  - The rise of unemployment in Europe is due to changes in LMI („overgenerous welfare states"

=> Cut the unemployment benefits …
Literature and qualifications

• Based on

• This 'a', not 'the', PK model (neo-Kaleckian)

• Presuppose labor markets, class divisions ...
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I. demand

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PK goods market: basic multiplier

- Standard Keynesian multiplier
  - \( C = c_1.Y + c_0 \)
  - \( Y = C + I_0 \)
  - \( Y^* = \frac{1}{1-c_1}.(C_0+I_0) \)
• Different consumption propensities for profit income and wage income

• \( C = c_W \cdot W + C_R \cdot R \)

• \( C = c_W \cdot (1-\pi) \cdot Y + c_R \cdot \pi \cdot Y \)

• \( Y = c_W \cdot (1-\pi) \cdot Y + c_R \cdot \pi \cdot Y + c_0 + I_0 \)

• \( Y^* = \frac{1}{(1 - c_W + \pi [c_W - c_R])} \cdot (c_0 + I_0) \)

• Wealth effect? Or credit effect?
PK goods market, cont’d

- $I = I(I_0, Y, i-p, \pi, D/P)$
  - Animal spirits $I_0$
  - $Y$ income, $i$.. Interest rate, $\pi$..profit share, $D$..debt, $P$.. price level, $p$..inflation

- **Changes in the interest rate**
  - Standard negative effect on investment
  - Distributional effects
    - Different consumption propensities
PK goods market: distribution

- Wage-led versus profit-led growth
- \( Y = C + I + NX \)
- \( Y = C(Y, \pi) + I(Y, i, \pi, D/P) + NX(Y, \pi; Y^W, \text{ex}) \)
  - \( Y \) income, \( i \). Interest rate, \( \pi \).profit share, \( D \).debt, \( Y^W \).world GDP, \( \text{ex} \).exchange rate, \( P \). price level, \( p \).inflation

- \( \frac{dY^*/d\pi} = \frac{h_1}{h_2} \)
- \( h_2 = \frac{dC}{dY} + \frac{dl}{dY} + \frac{dNX}{dY} \)
- \( h_1 = \frac{dC}{d\pi} + \frac{dl}{d\pi} + \frac{dNX}{d\pi} \)
- neg + pos + pos = ?
  - Sign not determined a priori
  - If \( h1 > 0 \) profit-led demand
  - If \( h1 < 0 \) wage-led demand
PK goods market: prices

- Inflation: wage and price inflation
- Expected vs unexpected inflation
- Expected ex-ante real interest rate: $i^e = i_n - p^e$
- Changes in inflation have distributional consequences: unexpected inflation will redistribute income from rentiers to capital (and labour)
- Unexpected inflation will alleviate the real debt burden and thereby have an *expansionary* effect
CB and interest rates

• Base rate set by central bank (CB)
• Loan rates are base rates plus a mark up
  – Keynes, Minsky: this mark up (liquidity preference) may be subject to violent shifts in times of financial crisis
• CB could follow a Taylor Rule
• \( i^{CB} = i_0 + i_1(Y-Y^v) + i_2(p - p^{CB}) \)
Will the IS be downward sloping?

- Will the IS be downward sloping in $Y, p$ space?
- Private IS vs private ($Y^{IS}$) + CB reaction IS ($Y^{IS-CB}$)
- $d Y^{IS}/dP > 0$
- $d Y^{IS-CB}/dP < 0$ if
  - CB reacts sufficiently strongly to inflation
  - (initial) interest rates are substantially above zero
  - Private investment reacts sufficiently strongly to interest rates
  - Private consumption does not counteract the change in investment
- $Y^{IS-CB}$ will be downward sloping in some regions (away from the zero-inflation bound), but not in others
- $Y^{IS}$ will in general be upward sloping (ignoring international trade)
\( Y^{IS} \) and \( Y^{IS-CB} \)

- Under inflationary conditions
- \( u^{IS-CB} \) determines demand

\[ Y^{IS}(\pi, i, D/P) \]

\[ Y^{IS-CB}(\pi, i, D/P) \]
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II. labour market in the short run

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Basics: Wage bargaining and the NAIRU framework

• Instead of an atomistic labour market there labour unions that bargain about wages and firms that set prices
  • Collective bargaining: bargaining position of unions will depend on unemployment
  • Efficiency wages: at higher employment levels, higher wages are necessary to elicit the same labor effort
  • Search models
  • …

• Actual employment is determined by demand on the goods market: e = e(Y)

• What happens if we are off-equilibrium?
  • Change in inflation
  • Does that affect employment? Not by itself! It depends on how the goods market reacts.
NAIRU model: labour market

- **Assume const labor productivity**

- Wage claims (WBC):  
  \[(1-\pi)^W = w_0 - w_1u\]

- Profit claims (PS):  
  \[\pi^R = \pi_0\]

- Actual wage share:  
  \[(1-\pi) = w_0 - w_1u - w_2p^U\]

- Actual profit share:  
  \[\pi = \pi_0 - \pi_2.w^U\]

- **Short run:** \(w_0\) and \(\pi_0\) given

- **Adaptive expectations:**  
  \[p^E = p_{t-1}, p^U = \Delta p\ [6]\]

- **For convenience assume a stable relation between \(\Delta p^U\) and \(\Delta w^U\)**
  - In fact the relation will depend on the shock and the ability of firms and unions to react to unexpected shocks
- **NAIRU**: inflation as result of conflict over income distribution, depending on the difference between NAIRU and actual unemployment
  - \( u = u_N - (\pi_2 + w_2)/w_1 \Delta p \)
    - **NAIRU**: \( u_N = (w_0 + \pi_0 - 1)/w_1 \)
  - **Phillips Curve**: \( \Delta p = (w_0 + \pi_0 - 1)/(\pi_2 + w_2) + w_1/(\pi_2 + w_2) \cdot u(y) \)
  - **PC**: \( p = p(u, u_N; p_{t-1}) \)
NAIRU model: Actual unemployment ($e^A$)

\[ W/P \]

\[ \Delta p \downarrow \quad \Delta p \uparrow \]

\[ e_N \quad e^A \]

\[ PS(.) \quad WBC(.) \]
NAIRU model: actual W/P (or WS)

\[ W/P = e_N \]

\[ W/P = e^A \]

\[ WBC(.) \]

\[ PS(.) \]

Actual W/P
notional labor demand in NAIRU and Walrasian model

\[ W/P \]

\[ e_N = 1 - \text{NAIRU} \]

\[ e^{FE} \]

\[ e, 1-u \]

WBC: bargaining power

\[ PS(.) \]

\[ L^D \]

\[ L^S \]
PC, $u^{IS}$, and $u^{IS-CB}$

- $u^{IS}$ is aggregate expenditure
- $u^{IS-CB}$ is aggregate expenditures and CB reaction function
- PC is the Phillips Curve derived from PS and WBC
A stable (short-run) NAIRU

- Assume a negative demand shock
- Under inflationary conditions
- $u^{IS-CB}$ determines demand

Diagram:
- $PC_0$ and $PC_1$ are two curves indicating the price level $P$ and unemployment $1-u$.
- $u^{IS-CB}(\cdot)$ represents the IS-CB determined unemployment.
- $u^{IS}(\cdot)$ represents the IS determined unemployment.
- The intersection points A and B indicate different scenarios.
- $e_N$ and $e_A$ are points on the axis indicating specific values for unemployment and price level.
An unstable (short-run) NAIRU

• Under deflationary conditions
• $u^\text{IS}$ determines demand
Summary short run

• NAIRU likely to be unstable in a private closed economy
  – Because of wage-led demand
  – Because of real debt effect

• May be stabilized by CB
  – If inflation is sufficiently high and ...
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III. labour market in the medium run

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PK NAIRU endogeneity

• Short run, autonomous income claims given
• Medium run: income claims endogenous

• $\pi_0 = f(Y, K, i)$
  - Capital stock: imperfect substitution
  - Capital stock: increased $K$ (for given $Y$) reduces price setting power of firms
  - Profit claims / mark up depends on (long-term) interest rate $\pi^R = \pi_0(i-p)$ (Hein 2008)

• $w_0 = f(LMI, w_{t-1})$
  - Endogenous wage aspirations: workers (and the unemployed) regard wage of other workers as "normal" and/or get used to current wage level

\[ ^\wedge(1-\pi)^W = v.[(1-\pi) - (1-\pi)^W] \Rightarrow u_N = f(u_{t-1}) \]
  - Not weak wage effects of long-term unemployed, but a shift of the reference wages ("normal wage") (Skott 2005)
NAIRU endogeneity

\[ W/P \]

\[ WBC(.) \] \[ WBC_2(.) \]

Actual W/P

\[ e, 1-u \]

\[ e_N \] \[ e_A \]

PS(.)
NAIRU model: hysteresis

- Even if the IS curve is well behave…
- The NAIRU itself may shift due to the temporarily high level of employment
Summary medium run

• Endogeneity of the NAIRU
• Because of wage norms
• And supply side effects of capital investment
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IV. policy and empirics

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## NK, PK and Mx closures

<table>
<thead>
<tr>
<th></th>
<th>Demand closure</th>
<th>NAIRU closure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$y_1 (=dY/dp)$</td>
<td>$y_2 (=dY/dWS)$</td>
</tr>
<tr>
<td><strong>NK</strong></td>
<td>Negative (b/e of CB?)</td>
<td></td>
</tr>
<tr>
<td><strong>PK</strong></td>
<td>positive (without CB)</td>
<td>Positive (wage-led D)</td>
</tr>
<tr>
<td><strong>Mx</strong></td>
<td></td>
<td>Negative (profit-led D)</td>
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</table>
A Post Keynesian NAIRU

- A wage cut may have contractionary effects (in particular in relatively closed economies)
- An increase in inflation will have expansionary effects that may be counteracted by the CB (if inflation and interest rates are high enough)
- At any point in time there is a well defined NAIRU
- ... but it is neither exogenous
- ... nor is it strong attractor
- NAIRU: as much an outcome as a determinant of macroeconomic performance.
- Empirically: Eu unemployment due to lack of demand (private investment, gov‘t, monetary policy)
Standard NAIRU story

Demand \((y)\) (goods markets)

\[ \Delta p \]

Actual Unemployment \((u)\)

NAIRU \((U_N)\)

LMI
A post-Keynesian approach
Why did accumulation slow down?

- Capital accumulation ($\Delta K$)
  - Demand ($y$)
    - (goods markets)
  - WS
  - Financialization
    - Interest rates ($i^{CB}$)
    - Shareholder value orientation
    - Financial uncertainty & volatility
    - "animal spirits"
  - Liberal fiscal policy regimes
Economic policy conclusions

• Full employment as policy goal: demand policy

• Wage policy can’t cure unemployment:
  • wage cuts are counterproductive: Danger of deflationary spiral
  • consumption propensity out of wages is higher than out of profits.

• Productivity oriented-wage policy
  • No normative theory of income distribution

• Fiscal policy as key tool for stabilization

• Monetary policy
  • Distributional aspects
  • Interest rates below growth rate
PK demand closure

- **Demand closure:** $y^{IS} = y_0 + y_3\pi + y_4(Debt-p); y_3 < 0$
  - Feedback from inflation to demand not negative
  - Distribution affects demand: wage-led demand (Kalecki)

- **With CB reaction function**
  - $y^{IS-CB} = y_0 + y_2(i^{CB}-p) + y_3\pi + y_4(Debt-p)$
  - CB ability to stabilize is asymmetric because of lower bound of nominal interest rates!
Stable and unstable PK NAIRUs
PK: conflict inflation

- $\Delta p = (w_0 - w_1u + \pi_0 + \pi_1z^{-1})/w_2$
- Different from cost-push inflation (?)
- No presumption that distributional aspirations are exogenous or stable
- Positive theory of aspirations?
- No feedback from inflation to output or positive feedback (Fisher debt deflation)
- Little empirical work (Setterfield and Lovejoy)
- Mostly interpreted as theory of inflation, not of unemployment
Summary

• NAIRU model: wage bargaining and Phillips curve
• NAIRU theory can be given a NK, PK and Mx interpretation
• NAIRU story:
  • Exogenous NAIRU
  • Actual $u$ is determined by NAIRU
  • $E_u u$ driven by LMI
• Empirical claim consistent with Mon, NK
  • Rejected by PK, Mx; some NK
Keynes

• “The theory can be summed up by saying given the psychology of the public, the level of output and employment as a whole depends on the amount of investment.”

• Keynes 1937 (QJE), 221
Keynes’ approach

Demand (y) (goods markets)

Δp
WS

Actual Unemployment (u)

Interest rates

Capital accumulation (ΔK)

„animal spirits“
Wage bargaining

• Instead of LS there is a wage bargaining curve (WBC)
  • Collective bargaining: bargaining position of unions will depend on unemployment
  • Efficiency wages: at higher employment levels, higher wages are necessary to elicit the same labor effort
  • Search models
  • …

• Note: an increase in unemployment benefits, will shift the WBC, whereas it would cut off the LS curve

• Note: what happens if we’re off-equilibrium?
  • Change in inflation
  • Does that change employment? No! That depends on how the goods market reacts!
Walrasian labour market

$W/P$

$L^S$: preferences

$L^D = MPL$: technology

$w/p \uparrow$

$w/p \downarrow$

$e^{FE}$

$e, 1-u$
PC: $p(u, u_N, p_{t-1})$

- PC will shift upward if inflation is higher than expected.
NAIRU model: demand side

- Demand: $y = y_0 + y_2 p + y_3 \pi$  \[8\]
  - $y = y_0 + y_2 (\Delta p + p_{t-1}) + y_3 \pi$

- Employment: $u = n - y$  \[7\]

- \[8\] in \[7\]: $u^{lS} = u(\Delta p, \pi)$
**IS-curve: \( u^{IS} = u(p, \pi) \)**

- \( u^{IS} \) denotes the employment level given the equilibrium in the goods market.
- If the IS curve is downward sloping, we’ll get back *towards* the NAIRU.

**Graph:**

- **PC\(_1\)**
- **PC\(_0\)**
- **A**
- **B**
- **\( u^{IS}(p, \pi) \)**
- **\( e_N = 1 - \text{NAIRU} \)**
- **\( e, 1-u \)**
NAIRU model: IS-curve

- A priori the slope of the curve can be positive or negative
- Negative: (standard) real balance effect
- Positive: real debt effect
NAIRU model: hysteresis

- Even if the IS curve is well behave...
- The NAIRU itself may shift due to the temporarily high level of employment
NAIRU model closures

• What demand function is assumed? $u^{IS} = u(p, \pi)$
  • How does $\Delta p$ affect demand?
  • How does $\Delta \pi$ affect demand?

• What does $u_N$ depend on?
  • Is it exogenous or endogenous?
  • NAIRU: $\hat{u}_N = \lambda(u - u_N)$. $\lambda=0$?

• What are the policy conclusions?
New Keynesian NAIRU closures

• **Demand closure**: $y_{IS} = y_0 + y_2(i-p); \ y_1<0$
  - Exogenous money supply (Layard, Nickell & Jackman 1991)
  - *or*
  - CB reaction function (Taylor Rule) $i_{CB} = i_0 + i_2(p-t)$
    - *No economic automatism!*
  - Only works if inflation is non-trivially positive
  - $Y_{IS-CB} = y_0 + y_1(i_0 + i_2(p-t_p) -p); \ y_1<0; \ dy/dp<0$

• **NAIRU closure**
  - Hysteresis: different wage elasticities for short-term unemployed and long-term unemployed ($u^{LT}$)
  - (if $u^{LT} = u_{t-1}$) effectively a partial adjustment process with endogenous short-run NAIRU and exogenous long-run NAIRU
  - Quasi-exogenous NAIRU
New Keynesian NAIRU

• In SR fiscal or monetary policy can manipulate output and employment, but only at the cost of unexpected inflation.
  • If $u \neq NAIRU$ gov’t can speed up adjustment

• In LR inflation will erode demand and $u$ goes back to NAIRU.
  • NAIRU a strong attractor in the long run

• What caused increased unemployment?
  • Disagreement: LMI (Nickell et al 2005, IMF 2003, OECD 2006) or policy (Ball 1999)
NK: hysteresis

• See Nickell (1998)
• Hysteresis: \( (1-\pi)^W = w_0 - w_1(u_t - h.u_{t-1}) \)
• Long run effect only if \( h=1 \)
  • \( (1-\pi)^W = w_0 - w_1 \Delta u_t \)
• If \( h < 1 \):
  • \( u_t = (w_0 + \pi_0 -1) + w_2.h/w_1.u_{t-1} - w_2/w_1 \Delta p \)
  • \( u_t = (w_0 + \pi_0 -1)/w_1 - (\pi_2+ w_2)/w_1 \Delta p +h.u_{t-1} \)
  • LR: \( u_t = u_{t-1} \) and \( \Delta p=0 \)
  • \( u = (w_0 + \pi_0 -1) + w_2.h/w_1.u_{t-1} - w_2/w_1 \Delta p \)
• \( u_{LR-NAIRU} = (w_0 + \pi_0 -1)/(w_1.(1-h)) \)
Standard NAIRU model

\[ WBC_{SR}(u_{t-1}, \text{LMI}) \]

\[ \Delta p \uparrow \text{ becomes smaller} \]

\[ WBC_{(\text{LMI})} \]

\[ e[y(p)] \]
New Keynesian policies

- If $u_N = f(LMI)$, then NAIRU story (cut unemployment benefits) (Nickell)
- If hysteresis: economic policy becomes very effective (Ball)
- Empirical issue whether LMI did in fact „worsen“
Why?

• “broad movements in unemployment across the OECD can be explained by shifts in labour market institutions” (Nickell et al EJ 2005, 1).

• „high unemployment in many industrial nations is an unintended byproduct of their redistributionist welfare states“ (Krugman 1994, 51)
Standard story: high u and high W/P

\[
\text{WBC(\textit{inflex LMI})}
\]

\[
\text{WBC(LMI)}
\]

\[
\text{PS}
\]

\[
\text{1-u, e}
\]

\[
\text{e}_N = 1-\text{NAIRU}
\]
Real unit labor costs (2000 = 100), EU15
Stylized facts: high $u$ and low $W/P$
Mainstream

• (marginally) changing targets of the mainstream
  • In 80s: unions too strong & wages too high
  • 90s: labor market rigidities
  • wage spread too low, flexicurity, PMR interactions

• empirical work on the NAIRU:
  • (ex post) reconstructing the NAIRU via Kalman filter
  • (ex ante) explaining actual unemployment by NAIRU determinants controlling for changes in inflation: panel u=f(LMI, MS)
    • OECD 1994: Jobs Study
    • IMF 2003, EC
    • OECD Employment Outlook 2006
    • Variations: interactions Blanchard & Wolfers 2000
## Classification of the Literature

<table>
<thead>
<tr>
<th></th>
<th>Econometric approach</th>
<th>LMI controlled for</th>
<th>Macro shocks controlled for</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TS</td>
<td>Dyn.P</td>
<td>Sta.P</td>
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<tr>
<td>Nickell 1997</td>
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<td>Blanchard &amp; Wolfers 2000</td>
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<td>Bassanini &amp; Duval 2006</td>
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<td>Nickell et al 2007</td>
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<tr>
<td>Baccaro &amp; Rei 2007</td>
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<td>Stockhammer 2004</td>
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<td>Palacio-Vera et al 2006</td>
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<td>Arestis et al 2007</td>
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### Table 6.3. Four different regimes of labour market functioning\(^a\)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>OECD unweighted average</th>
<th>High employment outcomes</th>
<th>Low employment outcomes</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>English-speaking countries, mainly(^b)</td>
<td>North European countries, mainly(^c)</td>
</tr>
<tr>
<td>Employment protection legislation</td>
<td>2.01</td>
<td>1.38</td>
<td>2.13</td>
</tr>
<tr>
<td>Generosity of unemployment benefit system(^f)</td>
<td>27.81</td>
<td>18.23</td>
<td>39.86</td>
</tr>
<tr>
<td>Active labour market programmes(^g)</td>
<td>29.25</td>
<td>15.76</td>
<td>64.14</td>
</tr>
<tr>
<td>Tax wedge(^h)</td>
<td>27.10</td>
<td>18.54</td>
<td>27.42</td>
</tr>
<tr>
<td>Union coverage</td>
<td>59.96</td>
<td>30.75</td>
<td>83.33</td>
</tr>
<tr>
<td>Union co-ordination</td>
<td>2.88</td>
<td>1.88</td>
<td>3.92</td>
</tr>
<tr>
<td>Product market regulation</td>
<td>1.42</td>
<td>1.20</td>
<td>1.28</td>
</tr>
<tr>
<td>Employment rate</td>
<td>67.11</td>
<td>70.92</td>
<td>71.91</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>7.47</td>
<td>5.30</td>
<td>4.79</td>
</tr>
<tr>
<td>Total LMP expenditures(^f)</td>
<td>1.86</td>
<td>0.98</td>
<td>2.68</td>
</tr>
<tr>
<td>of which: ALMP expenditures(^f)</td>
<td>0.76</td>
<td>0.39</td>
<td>1.31</td>
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<tr>
<td>Income Inequalities (Gini Index)(^k)</td>
<td>29.35</td>
<td>31.50</td>
<td>25.58</td>
</tr>
<tr>
<td>Relative poverty rate(^l)</td>
<td>9.64</td>
<td>11.78</td>
<td>7.77</td>
</tr>
</tbody>
</table>

\(^a\) This country classification is derived from a Principal Component Analysis (see Annex 6.A1), a simple statistical technique which helps to identify existing combinations of policy settings and to highlight similarities and differences across countries. However, some countries are barely representative of the group of countries to which they belong, being close to the frontier between two regimes of labour market functioning. This is for instance the case for Austria, Finland, Germany, Ireland, Japan, Korea, Portugal, Sweden and Switzerland, as shown in the Annex 6.A1.

\(^b\) This group of countries includes Australia, Canada, Japan, Korea, New Zealand, Switzerland, the United Kingdom and the United States.

\(^c\) This group of countries includes Austria, Denmark, Ireland, the Netherlands, Norway and Sweden.

\(^d\) This group of countries includes Belgium, Finland, France, Germany, Italy, Portugal and Spain.

\(^e\) This group of countries includes the Czech Republic, Poland and the Slovak Republic.
OECD 2006

• “on average, extremely different degrees of “interventionism” in almost each selected policy area (with the exception of product market regulation) may lead to very similar employment and unemployment rates. This suggests that there is not a single road for achieving good employment performance.” 192
It's not labor market institutions!

"While labor market institutions can potentially explain cross-country differences today, they do not appear able to explain the general evolution of unemployment over time."

- Blanchard & Wolfers 2000, *EJ*, p. 2

"the Layard and Nickell model seems unable to explain the increase in European unemployment"


"Simple, cross-country comparisons suggest that EPL has little or no effect on overall unemployment."

- *OECD Employment Outlook* 1999, 50

“labor market policies are not important causes of the unemployment successes and failures since 1985."

- Ball 1999, *Brookings Papers ..*, 191
LMI, cont’d

- “no meaningful relationship between [the] OECD measure of labor market deregulation and shifts in the NAIRU.”
  - Baker et al 2005, 107

- „We find no systematic support for the deregulatory view. Indeed, employment protection, benefit replacement rates, and tax wedge do not seem to have a significant impact on unemployment. At the same time, we find a robust positive association between union density and unemployment.“
  - Baccaro and Rei 2007, 563

- Careful replications of mainstream studies and check of robustness
- Conclude that 5-year averages is most reliable
Fiscal policy

• There is surprisingly little on the effects of fiscal policy
• Mainstream doesn‘t do research on the multiplier any more
  • Hemming et al (2002): exp mulitplier close to 1
  • Recent OECD Economic Outlook: close to 1
• Not many estimates by Post Keynesians
  • Hein and Truger (2005): PDR on GDP growth 0.24
• None of these calculates or estimates effects on employment
Monetary policy

• If you look carefully, it’s in the mainstream studies,
  • but it’s ignored when discussing policy

• Baccaro & Rei, Baker et al

• Ball 1994, 1997: episode analysis of effects of monetary policy during recession on unemployment and OECD-NAWRU 5 years later (update: Stockhammer & Sturn 2008)
Capital accumulation

- Almost entirely ignored by mainstream
- Alexiou and Pitelis 2003: panel of 13 OECD countries, annual data, various macro variables and K
- Stockhammer 2004: 5 OECD countries, annual data, time series analysis, some LMI, K
- Arestis & Co 2007: VECMs for 9 OECD countries, quarterly data, unemployment and wage equations, UB, strike, K
Capital accumulation and the NAIRU

\[ \Delta p \]

\[ \text{Actual Unemployment (u)} \]

\[ \text{NAIRU (U_N)} \]

\[ \text{Capital accumulation (\(\Delta K\))} \]

\[ \text{Interest rates (i}^\text{CB}) \]

\[ \text{LMI} \]
Review of the empirical literature

• **Large mainstream literature on LMI and unemployment**

• **Two principal Keynesian criticisms:**
  • LMI explanation does not actually work empirically (Howell et al 2007), Baccaro and Rei (2007)
    • Demand (and hysteresis)
    • Limited substitutability (Rowthorn 1999)

• **Usually not both elements in the same study**
  • But: time-series = only limited LMI set, small range of countries
## Classification of the Literature

<table>
<thead>
<tr>
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<th>Macro shocks controlled for</th>
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Econometric Model & Data

- $u_{\text{NAIRU}} = f(LMI, MS, \Delta K)$
- panel least squares regression

**DATA**
- Bassanini & Duval 1982-2003
  - most up-to-date OECD dataset
  - Basis of OECD Empl Outlook 2006
  - Updated and revised version of Nickell & Nunziata LMI-DB
- $u$, $K$, CPI: EU AMECO
  - Capital stock or investment?
- 20 Countries (all Western OECD and JP, without LU and GR)

- All data transformed into non-overlapping 5-yr-avgs
## Regression results (BD 83-03 dataset)

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White period standard errors & covariance (d.f. corrected); no weights (except variant 4: cross section weights). *, **, *** denote significance at the 10, 5, and 1% level, respectively.
Regression results based on Baker et al dataset (1960-99)

Table 2: Unemployment effects of Institutions, macro shocks, and capital accumulation

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Contributions to unemployment in %pts relative to 1960-64 for 'mean country' (BGHS dataset)
Net Effects: $\Delta Y/\Delta WS$

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<td>Domestic sector</td>
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