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# Current Swedish discussion on housing in the CPI

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Presentation at Ottawa Group Meeting  
Ottawa, October 2007



# Dynamic approach to OOH: Consumer's utility

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Model where consumer's utility is a function of:

- Consumption of other products
- Housing in rented dwelling
- Owned dwelling at period start
- Owned dwelling at period end
- Financial assets & debts, per. end

# Dynamic approach to OOH: Consumer's budget

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## *Income components:*

- Labour income
- Capital income
- Net savings withdrawals
- Net new loans

## *Income is to cover:*

- Cost for other consumption (than housing)
- Cost for rents
- Cost for repairs / maintenance
- Cost for loan interest
- Cost for new construction, extensions etc.

# Dynamic approach to OOH: Components concerned

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## *Present approach*

- *Interest cost*
- *Depreciation*
- *Repairs, goods*
- *Repairs, services ( – year 2000)*

## *New approach*

- *Interest cost – new form*
- *Repairs – new form*
- *New construction*

# Dynamic approach to OOH: Utility function

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$$U(\mathbf{q}, q_h^0 + \lambda q_m, q_h, q_r, g_A(A), g_M(M))$$

**with** 
$$g_M(M) = \frac{M}{p_h q_h} = \tilde{M}$$

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## Role of loan amount ( $M$ ) in utility:

- **Disutility of higher future risk**
- **Disutility of stronger restriction on future consumption**

# Dynamic approach to OOH: Interest cost alternatives

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- **A – At constant nominal loan**
- **B – At constant real loan**
- **C – At constant duration of ownership & constant loan share**



# Dynamic approach to OOH: Interest cost term

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➤ **Alt. A** –  $r_M^t \times M^B$

➤ **Alt. B** –  $r_M^t p_h^t \times q_h^B \times \frac{M^B}{p_h^t q_h^B}$

➤ **Alt. C** –  $r_M^t p_h^{t-L} \times q_h^B \times \frac{M^B}{p_h^{t-L} q_h^B}$



# Dynamic approach to OOH: Interest cost units

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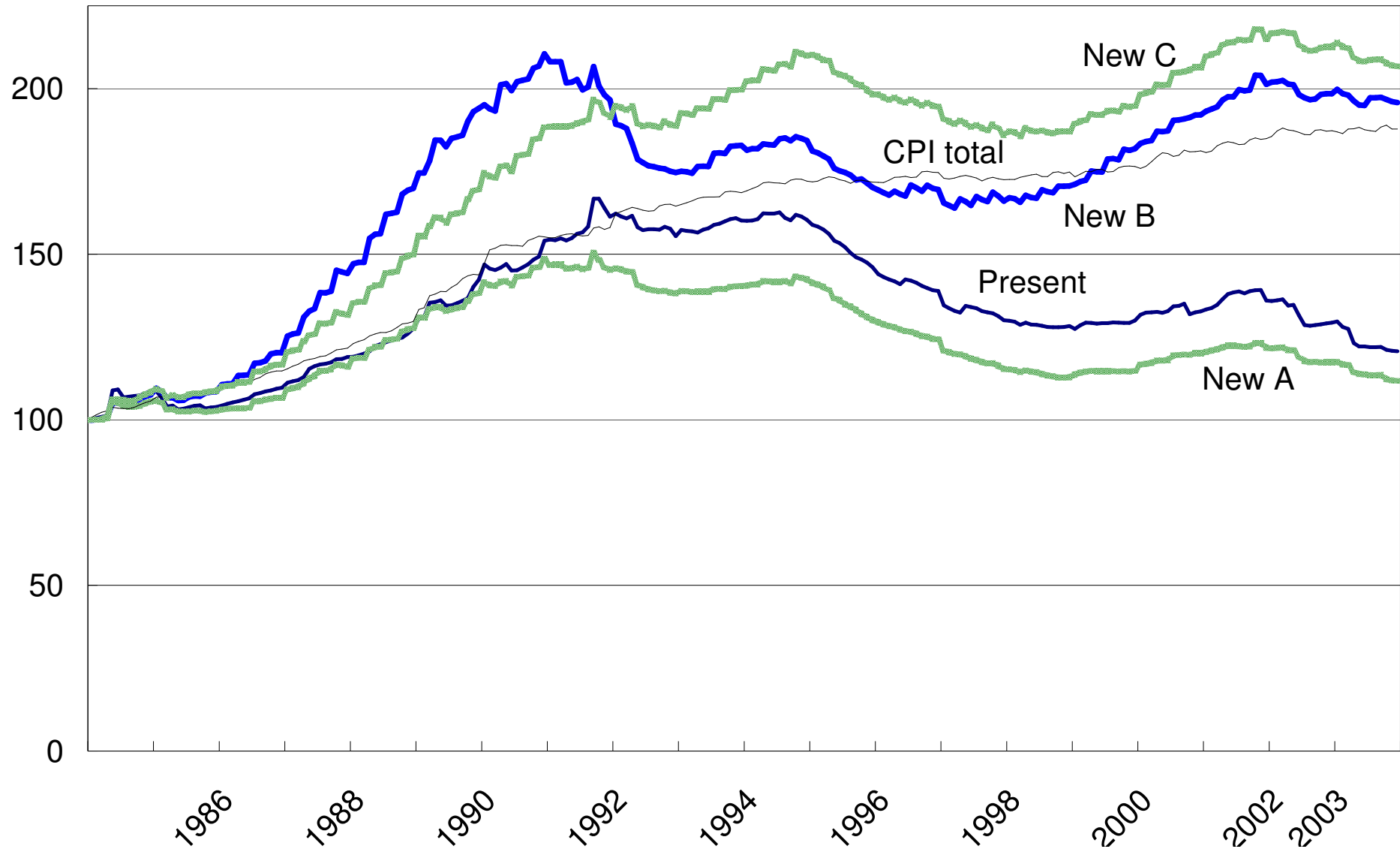
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- **A – \$ interest per \$ loan**
- **B – \$ interest per house unit with current value covered by loan**
- **C – \$ interest per house unit with purchase value covered by loan**





# Dynamic approach to OOH: Outcome (dec 1984 = 100)



# Dynamic approach to OOH: Inflation rate at real interest

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$$(3) \quad \pi_{\text{real}}^t \approx \frac{\pi_{\text{nom}}^t + \pi_{\text{real}}^{t-1} \frac{M^0}{\mu_{\text{nom}}^0(\mathbf{Q})}}{1 + \frac{M^0}{\mu_{\text{nom}}^0(\mathbf{Q})}} .$$



# Dynamic approach to OOH: Consumption & mortgages

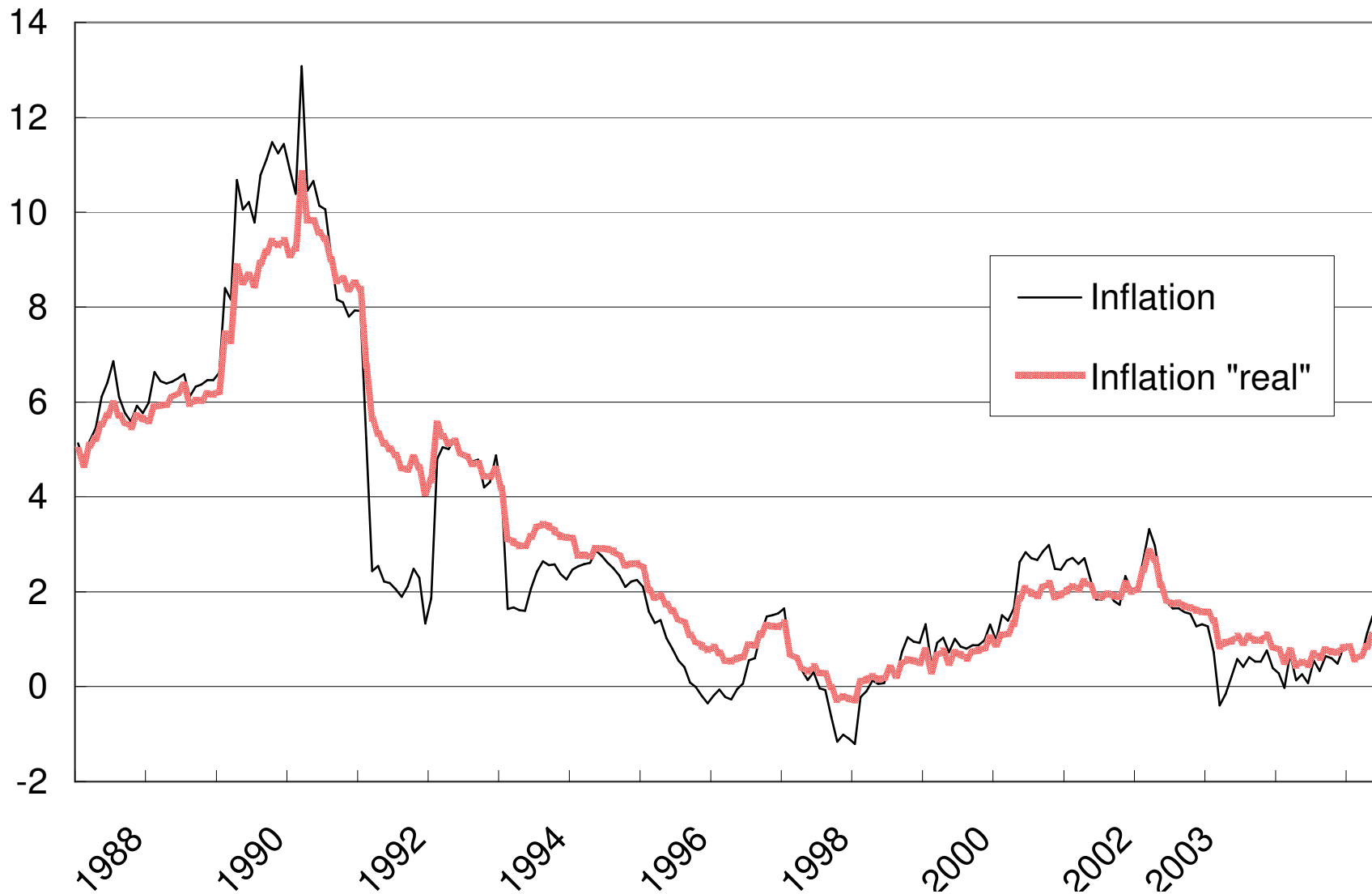


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År	Konsumtion Mkr	Huslåneskuld Mkr	Relation %
1985	417 737	266 458	64
1987	507 960	308 882	61
1989	595 108	382 017	64
1991	706 755	422 646	60
1993	744 040	473 454	64
1995	804 739	466 929	58
1997	864 104	468 722	54
1999	926 011	526 535	57
2000	935 078	529 361	57
2002	1 029 923	644 121	63
2003	1 075 935	673 972	63
2004	1 102 984	774 111	70

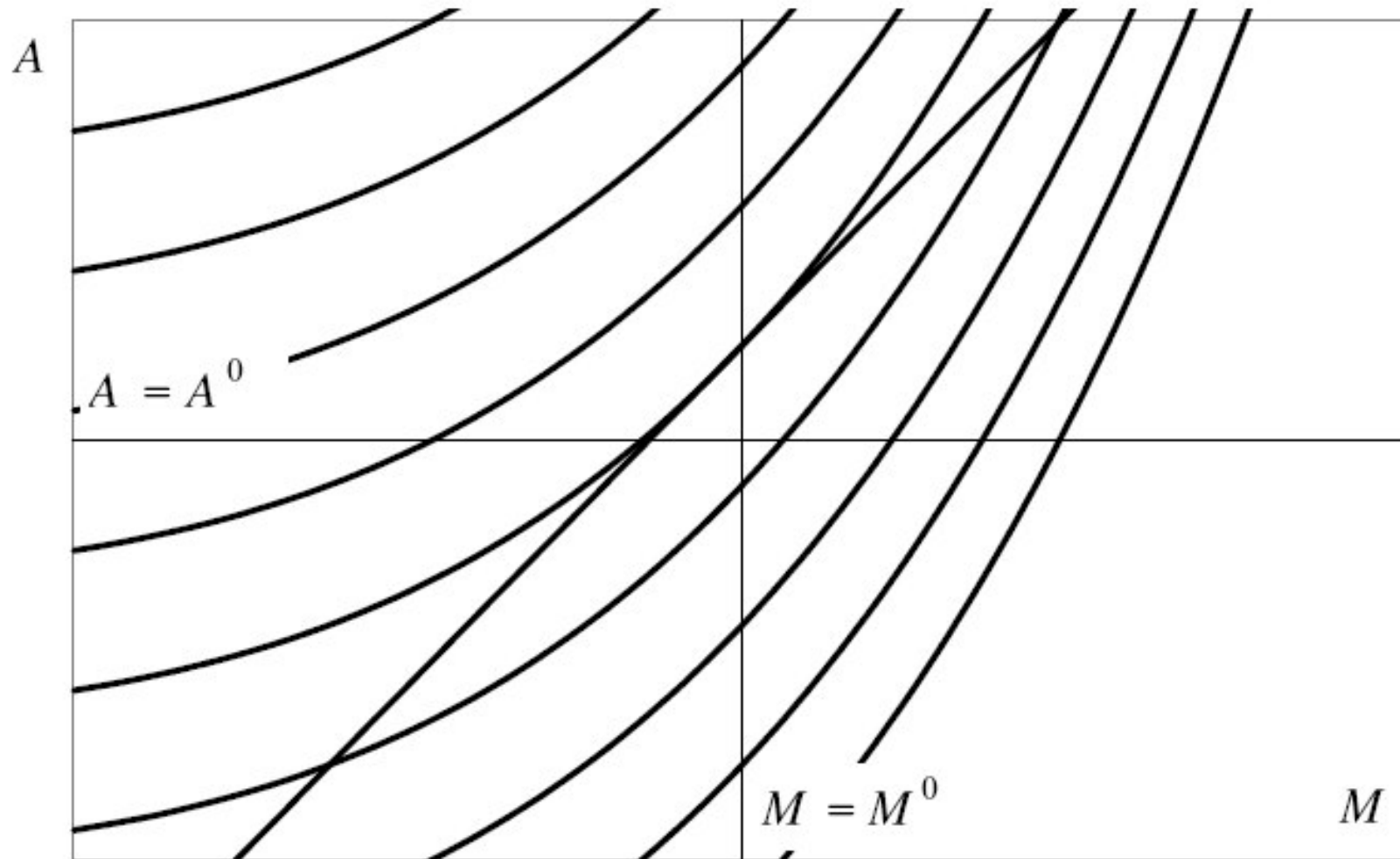
# Dynamic approach to OOH: Inflation rate at real interest

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# Dynamic approach to OOH: Indifference curves

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# Dynamic approach to OOH: Operative index computation

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$$\begin{aligned}
 I^{0,1} = & \frac{V_{\text{rest}}^B}{V_{\text{rest}}^B + V_m^B + (1 - \tau^B) V_M^B + V_h^B} I_{\text{rest}}^{0,1} + \\
 & + \frac{V_m^B}{V_{\text{rest}}^B + V_m^B + (1 - \tau^B) V_M^B + V_h^B} I_m^{0,1} \\
 & + \frac{(1 - \tau^B) V_M^B}{V_{\text{rest}}^B + V_m^B + (1 - \tau^B) V_M^B + V_h^B} I_{r_M}^{0,1} I_M^{0,1} \\
 & + \frac{V_h^B}{V_{\text{rest}}^B + V_m^B + (1 - \tau^B) V_M^B + V_h^B} I_h^{0,1} ,
 \end{aligned}$$

