THOMAS E. McCurdy JEP'81 pp.

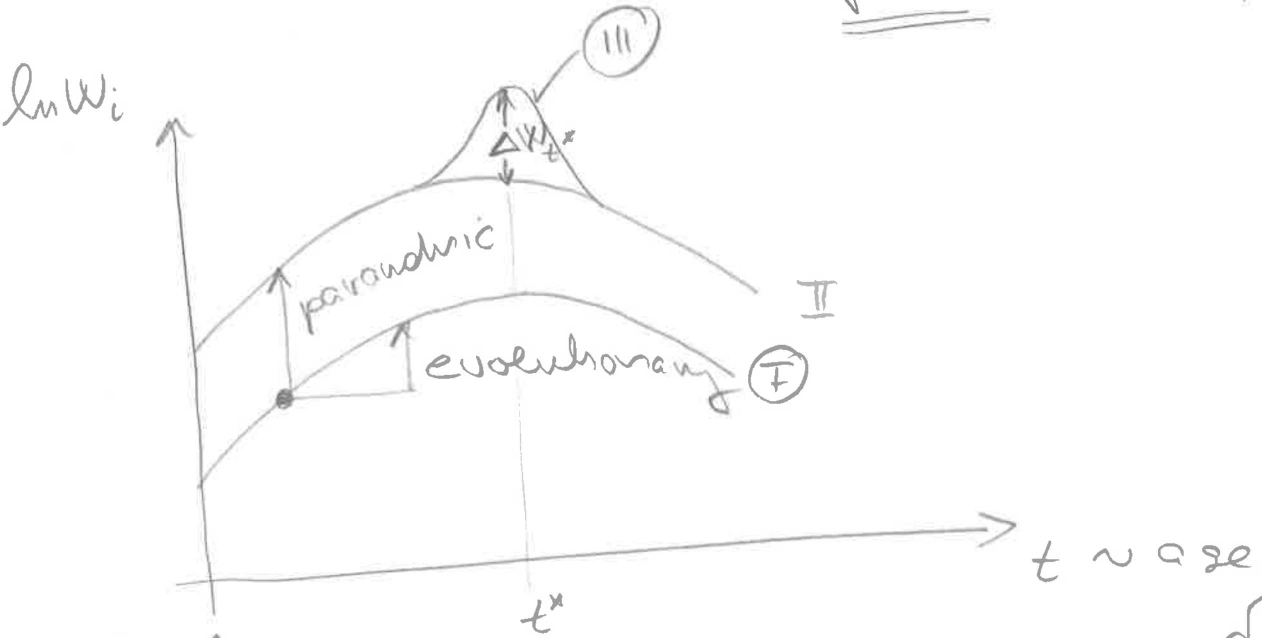
$$\ln N_i(t) = F_i + bt + \delta \ln w_i(t) + u_i(t) \quad (13)$$

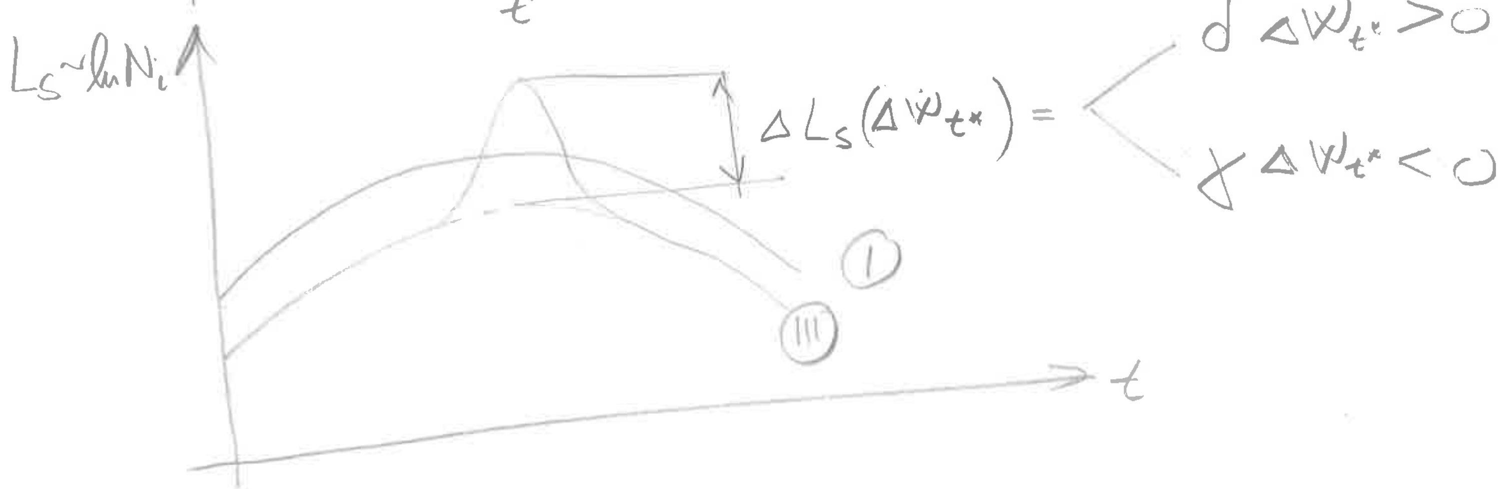
- $\ln N_i(t)$ → L_s
- F_i → indiv. specific
- bt → minor
- $\delta \ln w_i(t)$ → evolutionary effect

$$F_i = f\left(\sum_t w_i(t)\right)$$

~ wealth (12') life-cycle (14) effect (19)

$\gamma < 0$





λ-constant Labor supply fcion.

$$\ln N_i(t) = F_i + bt + \delta \ln W_i(t) + u_i(t) \quad (\#13)$$

where: $F_i = [1/(\omega_2 - 1)](\ln \lambda_i - \sigma_i - \ln \omega_2) \sim$ const

$\delta = 1/(\omega_2 - 1)$; $u_i(t) = \delta u_i''(t)$, $b = \delta(\rho - r)$

intertemp el. of subst > 0

assuming: $\ln[1 + r(t)] \approx r(t)$ & $\ln(1+\rho) \approx \rho$

$r(0) = \rho$ & $r(t) = r$ for $t > 0$

$F_i \sim$ time invariant $\equiv$ fixed effect

contains λ_i

λ_i: solution of implicit fc. #8

- depends on all variables for $\forall$ periods
- is endogenous in #13 $\Rightarrow$ OLS bias

Estimate #13 in 1st differences (or mean deviation)

$$\Delta \ln N_i(t) \equiv \ln N_i(t) - \ln N_i(t-1) = b + \delta[W_i(t) - W_i(t-1)] + \Delta u_i(t)$$

observed -> no need to extrapol.

$\hookrightarrow \hat{F}_i = \overline{\ln N_i} - b\bar{t} - \delta \overline{\ln W_i}$

empirical specification for individual effects

Specification of F_i: no analytical solution of #8 despite shape of U-function

: complicated function of

$\forall w(t)$, $A(0)$, r, ρ, shifters

empirical spec not feasible

⇓

app.

$$F_i = z_i\phi + \sum_{t=0}^{T^*} \gamma(t) \ln w_i(t) + A_i(0)\theta + a_i \quad \#14$$

→ we need wages out of survey periods → problem to get ⇓ extrapolate

z_i ~ observables (time inv.)

ϕ; $\gamma(t)\ \forall t$; θ ~ parameter

$\gamma(t) < 0$, $\theta < 0$ from theory

Life-time wage path - in wages

$$\ln W_i(t) = \Pi_{0i} + t\Pi_{1i} + t^2\Pi_{2i} + V_i(t)$$

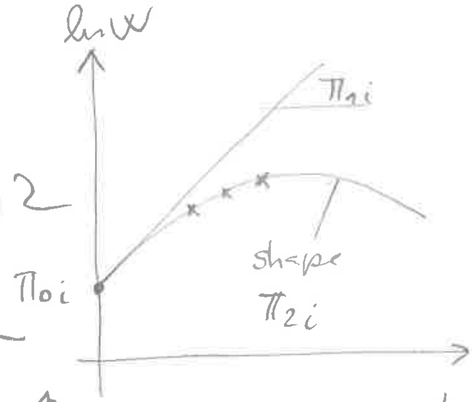
$\Pi_{0i} = M_i g_0$

$\Pi_{1i} = M_i g_1$

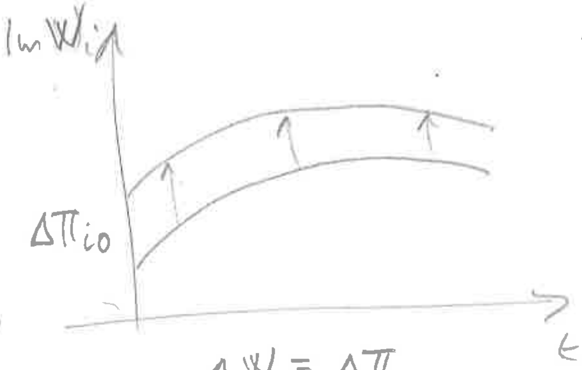
$\Pi_{2i} = M_i g_2$

$\Pi_{ji} = M_i g_j \quad j = 0, 1, 2$

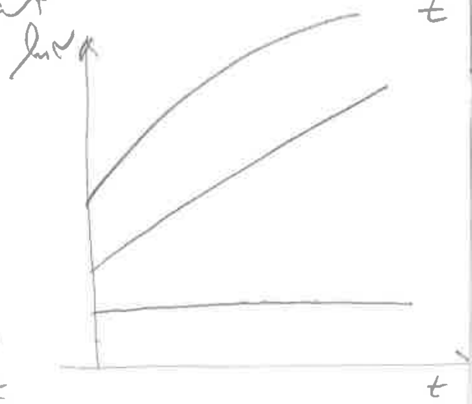
M_i could be education + etc ≈ time invariant



$\Delta w \leftarrow \Delta\Pi_{i1}, \Delta\Pi_{i2}$



$\Delta W = \Delta\Pi_{i0}$



Initial wealth: $A(0)$ - shortage of data

$Y_i(t) = A_i(t) r$

Y ~ flow of generated money from savings and property

r ~ interest

$Y_i(t) = \alpha_{0i} + t\alpha_{1i} + t^2\alpha_{2i} + \nu_i(t)$

↑ approximate

Since $Y_i(t)$ is in data survey we can compute (estimate) $\hat{\alpha}_{0i} = Y_i(t=0) = A(0) r$

So estimate $\phi, \bar{\gamma}_0, \bar{\gamma}_1, \bar{\gamma}_2, \bar{\theta}$

Interpretation of parameters

① Parametric change in w = change in wage profile
= difference accross indiv

② Evolutionary change in w = along profile

Aging → $N_i(t)$ - response to evolutionary wage change ≡ move labor when ↑w

- No wealth effect due to perfect forsight
- given log $\underline{\delta}>0$ intertemporal subst. elasticity

Two people: II & III

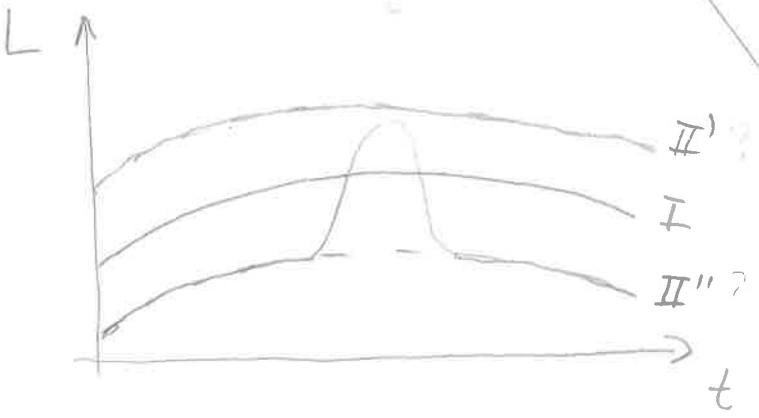
Δ ~ parametric wage change

↳ 2 effects (II) & (III)

① ↑Δ → ↓F_i (wealthier)

$F_{III} < F_{II} \Rightarrow \Delta F = \gamma(t')$ see #14

② ↑Δ → $\delta \cdot \Delta$ (in #13)



$\Delta N = \ln N_{III} - \ln N_{II} = \Delta\left[\delta + \gamma(t')\right]$

$\delta > 0$, $\gamma(t') < 0$?

(I) & (II): $\Delta \Pi_0 \to F_i \searrow$ through γ_0 in (19)
↳ $L_s \searrow$
$\Delta \Pi_0 \to \delta \Delta \Pi_0 \nearrow$ } $\bar{\gamma}_0 + \delta \gtrless 2$