Moving Home: Non-Market Insurance and Labour Market Risk*

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Abstract

In 2023, more than half of renter households spent above 30% of their gross income on housing costs. This type of non-discretionary spending exacerbates consumption losses while unemployed. I use data from the Health and Retirement Study to show that workers use the option to move home as an insurance channel against labour market risk, and this channel is operative into middle age (up to age 40). To quantify this insurance mechanism, I estimate a structural lifecycle model of individuals who can insure against unemployment risk via saving or moving home. Agents exist in a directed search environment where they trade off future job market outcomes against job finding rates. I find that among workers who can move home, eliminating the option reduces average search duration by 8 weeks. Further, the move home option is equivalent in welfare terms to a 71% increase in the unemployment benefit for an ex ante consumer in an economy without co-residence.

Keywords: co-residence, shared housing, labour market risk, non-market insurance

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1 Introduction

Households of more than one adult generation have become common in the United States: in 2021, 18% of households had parents and adult children coresiding (Pew Research Center, 2022). One potential cause of this relationship is high housing costs: in 2023, more than half of renter households paid more than 30% of their gross income on housing (U.S. Census Bureau, 2024). An expensive housing market restricts disposable income and creates and environment where negative income shocks, such as unemployment, are more punishing for consumers. If an unemployed worker can avoid the cost of housing via a co-residence arrangement with parents, the welfare costs of unemployment fall and the choice to move home constitutes an insurance mechanism against labour market risk.

This paper documents a novel empirical trend in the share of adults entering co-residence with their parents and uses a quantitative model to estimate the welfare gain of the option to move home in the context of existing unemployment insurance. I find workers are approximately twice as likely to move home when they are moving from employment to unemployment relative to remaining employed. This trend is robust to both parent and child characteristics, and is observed into middle age for the children. Motivated by this finding, I estimate a structural model of job search and family co-residence to identify changes in search behaviour and welfare implications of the option to move home. Consumers with the option to co-reside search in submarkets that provide higher wages at the cost of longer search durations. For an ex ante consumer, the move home option is approximately equivalent in welfare terms to a seventy-percent increase in the UI benefit.

Existing work from Kaplan (2012) uses the National Longitudinal Survey of Youth (1997) to identify this insurance channel among young men. A major challenge in extending this understanding to older workers is disentangling the motives for young people moving home. Shared housing acts as an in-kind transfer from parents to their adult children by reducing housing costs and diminishing the impact of negative income shocks. However, co-residence can also represent an in-kind transfer from children to their parents if they provide household labour and especially eldercare that the parent would otherwise need to purchase on the market. The degree to which parental needs are a large concern and a confounding factor for identifying the labour market insurance mechanism is increasing in the ages of parents and children. Applying this insurance channel to a sample of workers into middle age requires controlling for the characteristics of aging

parents.

I leverage the Health and Retirement Study, a panel dataset of Americans over 50. The focus of the HRS is health and aging, making it an imperfect tool for analysis based around earnings risk and unemployment. However, the HRS has several key features that are essential for addressing the question of shared housing as labour market risk. First, it explicitly links parents and adult children, including when those children live away from their parents. Many datasets, administrative and otherwise, link parent and child record while they share a dwelling, but those links weaken or break as children move out. Second, it maintains these linkages over a period of approximately 20 years with a consistent set of observables. A comparable dataset with parent-child linkages is the NLSY97, which tracks parents and children beginning in 1997 to the present. While these two products cover similar timeframes, many of the linked variables such as co-residence are gradually dropped from the NLSY97 as the sample cohort ages. This makes the NLSY97 an obvious candidate for evaluating the co-residence flows and labour market outcomes among young adults, but rapidly loses it effectiveness as our population of interest increases in age.

Third and crucially, the HRS reports increasingly important parent characteristics as they age including current diagnoses, health history, limitations to work and to living independently. Further, it reports on characteristics of the child-side of this relationship via the child's assistance with various eldercare needs and stated intentions to help in the future as their parents continue to age. More traditional support in the form of direct financial support is also present in both directions – from parents to children and vice versa. Information on each child's physical proximity to their parent is also reported. With all of these characteristics combined, I can robustly estimate the effect of a child's Employed-to-Unemployed transition on the likelihood of them moving home with a parent.

I use these observations to estimate a quantitative model of piece-rate job search and co-residence. In this environment, consumers save and search for work when unemployed and can choose to live at home until age 40 regardless of employment state. The tradeoff to living at home with a parent is avoiding the cost of housing, which is particularly punishing during unemployment spells, at the cost of some forgone independence utility. When consumers have the option to move home, I find they select into submarkets with higher wages but a greater risk of a failed search and in turn, longer search durations. This is indicative of the labour market insurance mechanism influencing search behaviour as well as job market outcomes: for workers who can move home, removing that option reduces their average job search duration by approximately 8

weeks. Further, I evaluate the welfare implications of the move home option and find that for an ex ante consumer the opportunity to move home with a parent is worth a 71% increase in the unemployment benefit.

This paper contributes to a developing literature on co-residence between adult children and their parents. Empirically, evidence across multiple countries confirms the young adults use the option to move home with parents as a form of insurance (Acolin et al., 2024; Albanesi et al., 2022; García-Andrés et al., 2021). However, the co-residence motives of older children are unexamined. Through the Health and Retirement Study, I am able to control for parent health needs and child eldercare, allowing identification of the labour market insurance motive later into the lifecycle, regardless of gender, education, or other child characteristics.

Existing work in quantitative macroeconomics tends to take one of two approaches when modeling the co-residence choice among adult children. The first approach is to construct a strategic game between parents and children, and characterize the effects of economic characteristics on the sequential choices of both agents. Models of this kind can be considered as evaluating behaviour under a joint coresidence choice in static and dynamic settings (Kaplan, 2012; Zaber, 2018). In contrast, the second approach is to abstract from the strategic interaction between parents and children to evaluate the existence of the coresidence option on some other macroeconomic phenomenon, usually in a dynamic setting (Dyrda et al., 2024). This paper takes the second approach, extending existing work by endogenizing labour supply decisions over the lifecycle in a directed search environment. Further, I estimate the value associated with the option to move home in the context of existing unemployment insurance programs.

The rest of this paper proceeds as follows: section 2 provides an overview of the Health and Retirement Study, identification of the labour market co-residence motive, and compares the main empirical result in the HRS to analogous trends in the NLSY97. Section 3 outlines the theoretical model of job search and non-market co-residence and section 4 explains the model estimation. Section 5 discusses the model validation and results; section 6 concludes.

2 Empirical Motivation

A primary challenge to identifying this housing-based insurance mechanism is isolating motives for migration into co-residence. One can imagine many reasons for adult children and parents to co-reside, and they are not limited to unemployment risk. From the perspective of the adult child, moving home can be the response

to a divorce or separation, particularly when the outside option for housing is expensive. Considering aging parents, co-residence may arise as a response to growing complex health needs. To disentangle these factors from the labour market insurance motive I require data that reports these additional factors as well as links parents and children across a variety of ages.

2.1 Data

The Health and Retirement Study (HRS) is a panel of longitudinal survey data centered around aging adults and their families. It is maintained by the University of Michigan and the National Institute on Aging. The study surveys approximately 20,000 households every two years beginning in 1998. One relative strength of the HRS is repeated linkages between parents and children, particularly as the children age alongside their parents. Additionally, the survey reports a variety of non-standard parent characteristics such as health conditions, eldercare needs, and financial support to adult children. Using the health and eldercare information, I can isolate the motive among children to move home to be conditional on labour market outcomes exclusively. Identifying this insurance mechanism is the primary empirical contribution of this paper.

For convenience, I use the HRS Family File cleaned by the RAND Corporation which links the 20,000 parent households to 55,000 children up to 2018. This setting allows me to avoid the co-residence and employment impacts of the COVID-19 global pandemic. Additionally, I restrict the HRS sample to exclude post-secondary students as I assume they interact with the labour market and its risk distinctly from those seeking full-time employment. To further control health and eldercare motives for co-residence I restrict child ages from 20 to 40 years of age.

Given this analysis is based on flows around co-residence and employment, key observable characteristics are constructed from two subsequent survey waves. For a worker to have moved home, it is not sufficient for them to live with a parent in any given wave. Workers must first live independently, then in a subsequent wave be living with one or both parents. Similarly, to observe job separations I use a cross-wave variable for workers moving from employment to unemployment as well as employment to employment. The data on employment states is noisy and infrequent, so I cannot say who among the Employed-Unemployed group were separated voluntarily (i.e. quits) versus involuntarily (layoffs) or who among the Employed-Employed have stayed with a consistent employer and who have experienced a job separation between survey waves

but were able to find employment again. Since these observables depend on two waves for identification, I drop the first wave (1998) from the analysis.

Previous work on unemployment risk often leverages higher-frequency datasets such as the National Longitudinal Survey of Youth (1997 Cohort). HRS interviews are two years apart, however adult children are questioned on their co-residence status well into middle-age. This contrasts with existing work from the NLSY97, where parental co-residence is reported until 2009, when the oldest members of the cohort were 29. This longer series of co-residence information allows me identify that an insurance channel previously only examined for young men is present for all workers well into middle age.

2.2 Summary Statistics

Table 1 reports summary statistics for children in the HRS aged 20–40. Each panel covers a distinct area of child characteristics, and differences between the full sample of children, EU, and EE children are informative of the relative importance of child characteristics on employment transitions. Note that because of the simultaneous timing when these characteristics are observed (a common survey wave) it is unclear if child characteristics influence employment transitions or vice versa. These relationships are estimated more formally in section 2.3.

In the first two panels of demographics and co-residence, there is little variation in most characteristics between EU, EE, and all children. However, the share of children who move home is much larger among EU children – suggestive of the key empirical observation summarized in Figure 1. Children transitioning out of employment move home at a rate 2.9× larger than those who remain employed.

One feature of the HRS that is useful when evaluating parental support is direct financial transfers between parents and children. This type of direct support also interacts with employment transitions since it functions as an insurance mechanism similarly to co-residence. EU children are 43% more likely to receive a transfer from a parent and on average receive around $400 more than EE peers.

The final panel in Table 1 is informative of parent needs driving co-residence. It reports child assistance with activities of daily living and instrumental activities of daily living, as well as future intention to help. The former two are measures used by the National Institute of Health to summarize necessary capabilities for aging individuals to live independently. Activities of daily living refer to the most basic activities including feeding oneself, mobility within the household, and personal hygiene. Instrumental activities refer to more

Table 1: Summary Statistics for Children Aged 20–40 in the HRS

	All Children	EU Type	EE Type
Panel A: Demographics			
Age	32.1	31.9	33.2
Years of Education	13.6	13.0	12.2
Panel B: Co-residence			
Coresidence Share	.111	.155	.184
Move Home Share	.018	.057	.020
Panel C: Financial Transfers			
Share who Give to Parents	.018	.020	.015
Share who Receive from Parents	.215	.233	.163
Mean Transfer from Parents	$1905.44	$1671.21	$1292.77
Panel D: Eldercare			
Share who Help with ADLs	.006	.010	.015
Share who Help with IADLs	.009	.015	.021
Share who Intend to Help in Future	.329	.343	.345

Note: Panel A reports mean child age and years of education. Panel B shows the static co-residence share and share of children who move home. Panel C lists the share of children who give and receive a transfer from their parent(s) as well as the size of the average transfer from a parent to their child. Panel D summarizes the share of children who assist with activities of daily living, instrumental activities of daily living, and intention to help with eldercare in the future.

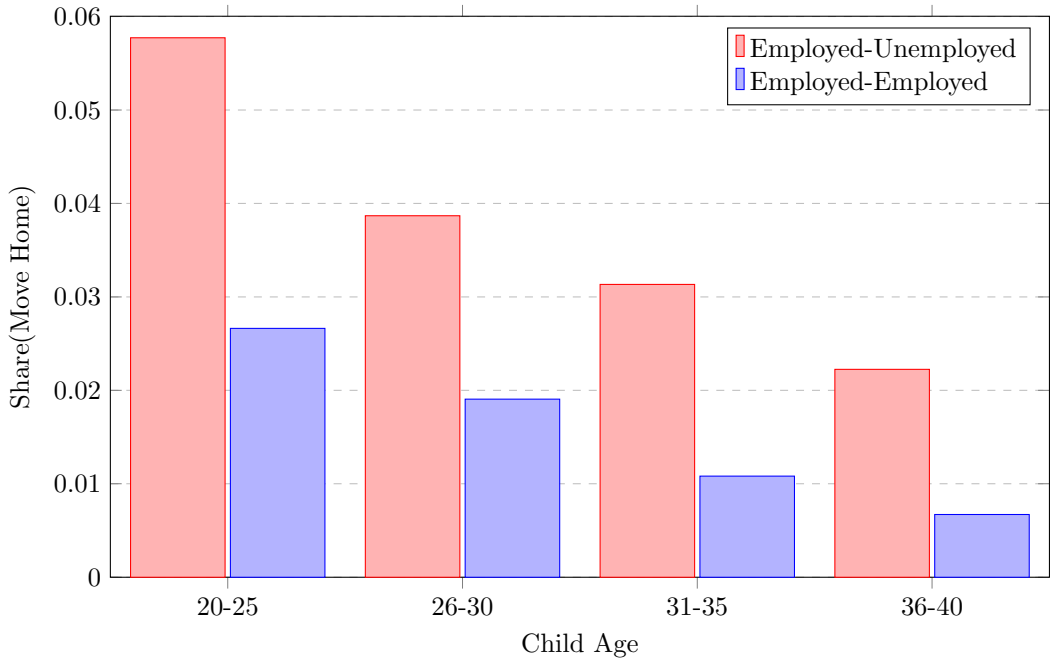
complex tasks such as transportation, managing finances, and meal preparation. Panel D shows there is little overlap between EU transitions and additional eldercare for parents: EE children are helping aging parents at higher rates than EU. The relative size of these shares are also small, peaking at around 2% of children aiding parents. This is suggestive of the age restriction on the sample of children filtering out most eldercare relationships while preserving co-residence as labour market insurance for children.

2.3 Labour Market Co-Residence Motive

The empirical contribution of this paper is centered around the observation that a larger share of adult children move home when experiencing a transition from employment to unemployment relative to peers who are persistently employed. This trend, shown in Figure 1, is representative of non-market insurance against labour market risk via in-kind housing services. Existing work from Kaplan (2012) identifies this mechanism for non-college men aged 17 to 22. In this section, I expand this understanding to all workers up to age 40 while controlling for parent and child characteristics.

To identify the existence of this labour market insurance channel via non-market housing arrangements,

Figure 1: Share who Move Home by Age and Employment Transition



Note: Adult children are more than twice as likely to move home when experiencing an EU transition relative to EE

I employ a probit regression of cross-wave employment flows on workers' move home choice. A worker is considered to have "moved home" if in one survey period they are living independently and in a subsequent period are living with a parent. The primary covariates are employment flows: specifically for workers who are employed through two subsequent periods ("EE") and those who separate from employment for any reason ("EU"). Additional controls include child characteristics such as income, education. marital status, and financial transfers from parents as well parent characteristics including assets, home values, education, and health conditions.[1]

Workers experiencing an E-U transition are 2.3× more likely to move home with a parent relative to an identical worker with an E-E transition. The likelihood of an adult child moving home is decreasing in their income and age, suggesting that workers in an E-U transition will self-insure via residual earnings from

[1]See appendix for a complete list of covariates and the full regression specificiation

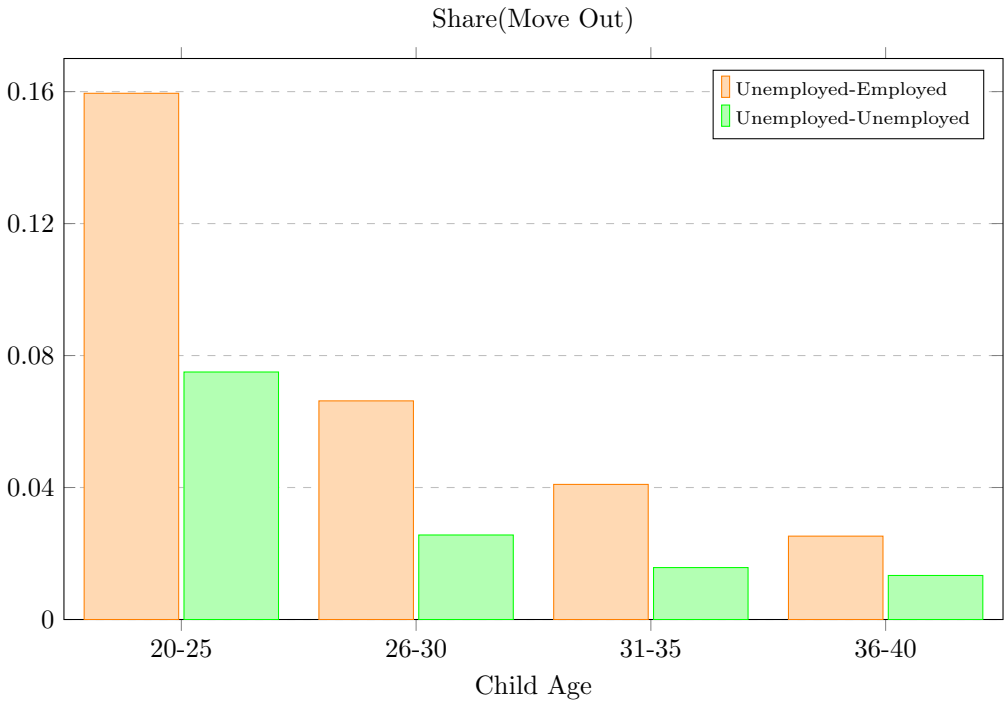
Table 2: Probit Predicting Move Home Likelihood

Independent Variable	AME	p-value
Child Employment Transition		
EE	*Base*	
EU	0.016	0.000
UE	0.004	0.040
UU	0.003	0.079
Child Income		
<10K	*Base*	
10–35K	−0.012	0.000
35–70K	−0.020	0.000
70–100K	−0.020	0.000
100K+	−0.024	0.000
Child Age		
20–25	*Base*	
26–30	−0.006	0.001
31–35	−0.008	0.000
36–40	−0.012	0.000
Parent Assets	-1.84×10^{-9}	0.021
Parent Home Value	3.86×10^{-9}	0.002
Parent Employment		
Not Working	*Base*	
Part-time Work	0.002	0.457
Full-time Work	0.003	0.008

Note: Average marginal effects are reported as relative changes from the mean (0.0076)

employment before they elect to move in with a parent.

Figure 2: Move Out Flows Conditional on Employment Transitions



Note: Flows out of the parental household among job-finders (unemployed-employed) and those who remain persistently unemployed. For each age group, children transitioning into employment (UE) are more likely to move out. This demonstrates the reverse case of the labour market insurance motive.

A straightforward counterfactual can confirm the reverse case of the labour market insurance motive. Instead of moving home when experiencing a job separation, children in the data also move out when they find a job. Specifically, workers in an Unemployed-Employed transition move out of co-residence at much higher rates than those who remain unemployed.

2.4 Non-Labour Market Co-Residence Motives

Extensive sub-sampling is done on the raw HRS Family File to identify (1) the direction of those who move home, and (2) rule out non-labour market motives for moving home. I will begin with the former: ensuring that when adult children enter into co-residence they are in fact moving back in with their parents instead

of hosting them in their own homes. This is related to the latter issue, the confounding nature of eldercare responsibilities on move home flows.

The first adjustment I make is to create a categorical variable for the inferred direction of co-residence based on home ownership. I assume that if, in the survey period when co-residence begins, the child is a homeowner and the parent is not, then the child is hosting the parent. In other words, co-residence happens because the parent has some need, financial, medical, or otherwise instead of the child relying on parents as labour market insurance. In contrast, if the parent is a homeowner and the child is not, I assume the child is moving home in the sense they are returning to living with their parents after some period of independence. This scheme results in approximately two thirds of observations where a child enters co-residence having an identifiable direction; those left unidentified are excluded from the sample.

The question of eldercare is addressed in two ways. First, children are sampled on age as to exclude most parents with extensive eldercare needs. Details of this transformation are shown in section 2.2. Second, I report average marginal effects from a probit estimation on the share of children who move home while controlling for eldercare and parent health characteristics in section 2.3.

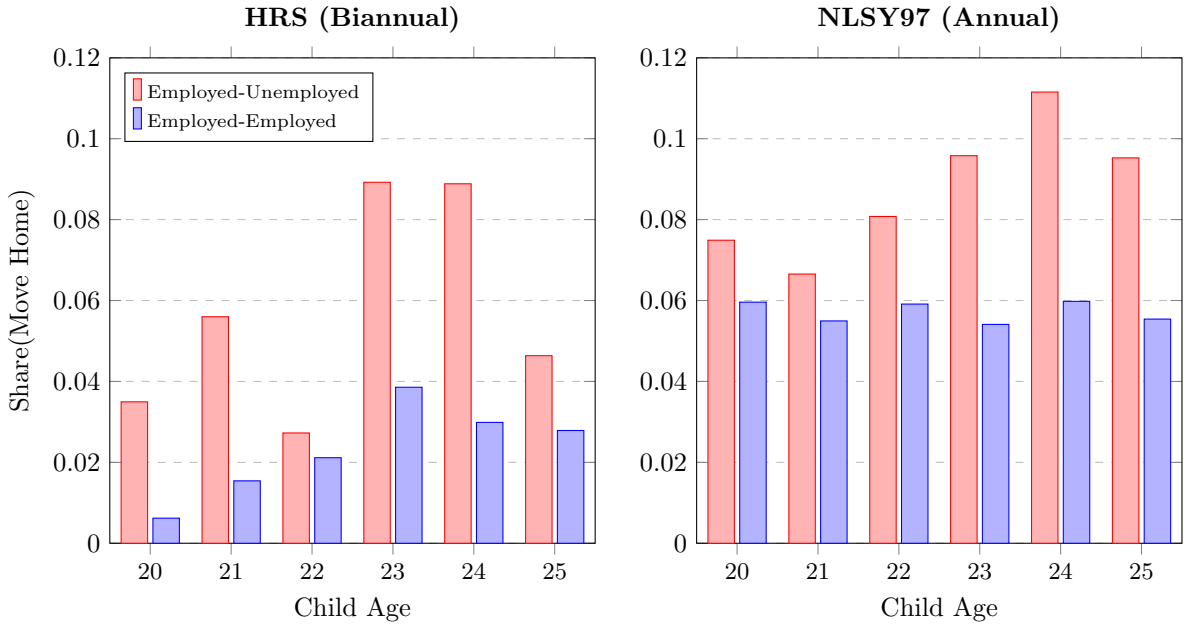
2.5 Robustness: HRS versus NLSY97

As an exercise to ensure the HRS conforms with previously reported results by Kaplan (2012) I plot the share of EU and EE children who move home for a set of ages where the two datasets align in Figure 3. The NLSY97 uses an annual sample of children and the HRS employs a biannual sample of aging adults. While these samples vary significantly, the key empirical trend of this paper holds. The share of workers who move home is much larger among those who experience a job separation relative to those who remain employed in two survey waves. This is true for a variety of ages and holds when the NLSY97 is transformed into biannual frequency to ensure greater comparability with the HRS.

3 Model

This paper leverages a lifecycle model of consumption, savings, and co-residence. The main novel feature is the option workers have to move home, dependent on age. Additionally, consumers choose a submarket in which to search and tradeoff against unemployment risk.

Figure 3: Comparison of Move Home Trends Among the HRS and NLSY97



Note: From ages 20-25, workers experiencing an EU transition are more likely to move home than those in an EE transition. This is a consistent finding between the HRS and NLSY97.

3.1 Consumers

Consumers are the primary decision-makers in this model. They choose allocations for consumption (c) and savings (a') at every age. During their working life and while unemployed, they choose a submarket in which to search indexed by piece-rate (ϕ) and their individual-specific productivity (ϵ). If matched, they earn an after-tax piece-rate of output as their wage; if unmatched, they receive a government-financed unemployment benefit b. When they retire, they receive a similiarly funded pension benefit S.

All consumers in this environment are considered to be adult children in the context of multigenerational co-residence. This means that for each consumer there is some unmodelled agent, a parent, who is older than the child and provides non-market housing while they are able. When choosing where to live, consumers face a trade-off between independence utility (χ) and the cost of rental housing (κ_h). If they live at home ($d_h = 0$), they can avoid the cost of housing but forgo the utility benefits of living independently ($d_h = 1$). This decision is subject to a Type-I extreme value taste shock (ξ^c, ξ^i).

$$U(a, \epsilon, \phi, a', d_h) = \frac{c^{1-\sigma}}{1-\sigma} + d_h \chi \tag{1}$$

subject to

$$c + a' = (1-\tau)\phi\epsilon + (1+r)a - d_h \kappa_h$$

when employed, and

$$c + a' = b + (1+r)a - d_h \kappa_h$$

when unemployed.

The problem for a worker can then be split into three cases: employed, unemployed, and searching for work. Workers without a match search first, followed by choices conditional on their employment state. When searching, workers choose piece-rate which along with their age and individual-specific productivity determines a submarket (j, ϵ, ϕ). The value of search is a comprised of the values of employment and unemployment, weighted by the job finding probability $f(j, \epsilon, \phi)$.

$$V_s(j, a, \epsilon) = \max_{\phi} \left\{ f(\theta(j, a, \epsilon)) V_u(j, a, \epsilon) + [1 - f(\theta(j, \epsilon, \phi))] V_e(j, a, \epsilon, \phi) \right\} \tag{2}$$

Whether employed or unemployed, the consumer chooses savings and whether or not to live at home until age 40. After age 40, they live independently[2] with certainty. Those with the option to move out face extreme value Type-I shocks on each option, co-residence and living independently, drawn from a common distribution. The value of unemployment prior to the realization of the shock is:

$$V_u(j, a, \epsilon) = \max \mathbf{E}_{\xi^c, \xi^i} \left\{ V_u^{cores}(j, a, \epsilon) + \xi^c, V_u^{indep}(j, a, \epsilon) + \xi^i \right\} \tag{3}$$

The probability of a consumer choosing to live independently (h_u) will depend on the relative values of V_u^{cores} and V_u^{indep} as well as the EV scale parameter η which determines the variance of the shock process.

[2]This restriction allows parents to face mortality risk without creating "orphaned" children

$$Pr(d_h = 1|u) = h_u(j, a, \epsilon) = \frac{\exp\left(\eta V_u^{indep}(j, a, \epsilon)\right)}{\exp\left(\eta V_u^{indep}(j, a, \epsilon)\right) + \exp\left(\eta V_u^{cores}(j, a, \epsilon)\right)} \tag{4}$$

Following the realization of the shocks, the unemployed consumer chooses saving for the current period before re-entering the search process next period. This choice is summarized by a value function for each housing choice: co-residence and living independently. For an unemployed consumer who lives at home:

$$V_u^{cores}(j, a, \epsilon) = \max_{a' \geq 0} \left\{ \frac{c^{1-\sigma}}{1-\sigma} + \beta V_s(j+1, a', \epsilon) \right\} \tag{5}$$

subject to

$$c + a' = b + (1 + r)a$$

When the unemployed worker lives independently, their problem is summarized as:

$$V_u^{indep}(j, a, \epsilon) = \max_{a' \geq 0} \left\{ \frac{c^{1-\sigma}}{1-\sigma} + \chi + \beta V_s(j+1, a', \epsilon) \right\} \tag{6}$$

subject to

$$c + a' = b + (1 + r)a - \kappa_h$$

The problem for an employed consumer is defined similarly. The consumer makes a discrete choice between co-residence and living on their own subject to extreme value shocks and their own age. The probability of such a consumer living independently is:

$$Pr(d_h = 1|e) = h_e(j, a, \epsilon, \phi) = \frac{\exp\left(\eta V_e^{indep}(j, a, \epsilon, \phi)\right)}{\exp\left(\eta V_e^{indep}(j, a, \epsilon, \phi)\right) + \exp\left(\eta V_e^{cores}(j, a, \epsilon, \phi)\right)} \tag{7}$$

where the discrete choice is given by:

$$V_e(j, a, \epsilon, \phi) = \max \mathbf{E}_{\xi^c, \xi^i} \left\{ V_e^{cores}(j, a, \epsilon, \phi) + \xi^c, V_e^{indep}(j, a, \epsilon, \phi) + \xi^i \right\} \tag{8}$$

After observing the co-residence shocks, the employed worker chooses their savings before facing a job destruction shock δ. If they are subject to the shock, they become unmatched and must search again in the following period. If they instead stay matched, the enter into employment next period without engaging in

the search process. When an employed worker lives at home their value is:

$$V_e^{cores}(j,a,\epsilon,\phi) = \max_{a' \geq 0} \left\{ \frac{c^{1-\sigma}}{1-\sigma} + \beta[(1-\delta)V_e(j+1,a',\epsilon,\phi) + \delta V_u(j+1,a',\epsilon)] \right\} \tag{9}$$

subject to

$$c + a' = (1-\tau)\epsilon\phi + (1+r)a$$

As before, when living independently the employed worker's problem becomes:

$$V_e^{indep}(j,a,\epsilon,\phi) = \max_{a' \geq 0} \left\{ \frac{c^{1-\sigma}}{1-\sigma} + \chi + \beta[(1-\delta)V_e(j+1,a',\epsilon,\phi) + \delta V_u(j+1,a',\epsilon)] \right\} \tag{10}$$

subject to

$$c + a' = (1-\tau)\epsilon\phi + (1+r)a - \kappa_h$$

When consumers reach age 65, they enter retirement and receive a constant pension benefit S. Each period they make a savings decision and face an age-dependent mortality risk ψ_j. The problem of retirees can be expressed as:

$$V_r(j,a) = \max_{a' \geq 0} \left\{ \frac{[S + (1+r)a - a']1 - \sigma}{1-\sigma} + \beta\psi_j V_r(j+1,a') \right\} \tag{11}$$

3.2 Firms

A representative firm chooses whether or not to post in each submarket at a common cost κ_p, indexed by a required productivity for workers and a piece-rate of output that constitutes the wage. Additionally, the firm takes the worker's age into account when making the posting decision as it influences expectations of future output flows. Once a match is formed, it persists until a job destruction shock is received with probability delta or the worker reaches retirement age. All else equal, younger workers are more desirable to firms because they can produce longer before they retire. The firm's value can be expressed as:

$$V_f(j,\epsilon,\phi) = (1-\tau)\epsilon(1-\phi) + \beta[(1-\delta)V_f(j+1,\epsilon,\phi) + \delta V_p(j+1,\epsilon,\phi)] \tag{12}$$

Where $q(\theta(j,\epsilon,\phi))$ is the firm's job filling probability determined by the search process. Matching in this

environment follows the tradition set by Den Haan et al (2000), where the matching function is defined by:

$$M(u,v) = \frac{uv}{(u^\alpha + v^\alpha)^{1/\alpha}},\ \theta = \frac{v}{u}$$

where job filling and finding probabilities are:

$$q(\theta(j,\epsilon,\phi)) = \frac{M(u,v)}{v} = \left[\frac{1}{1+\theta^\alpha}\right]^{1/\alpha}$$
$$f(\theta(j,\epsilon,\phi)) = \frac{M(u,v)}{u} = \left[\frac{1}{1+(1/\theta)^\alpha}\right]^{1/\alpha}$$

A submarket will have vacancies posted as long as there are non-negative expected profits from operating. On other words, the firm must produce enough to cover the cost of posting. This free entry condition can be expressed as:

$$V_p(j,\epsilon,\phi) = \max\{q(\theta(j,\epsilon,a))V_f(j,\epsilon,\phi) - \kappa_p, 0\} \tag{13}$$

Given the production market is competitive, profits in equilibrium will be zero and $V_p(j,\epsilon,\phi) = 0 \forall\ (j,\epsilon,\phi)$ submarkets where the firm posts.

3.3 Equilibrium

Definition 1. Given state vectors $s_u = (j,a,\epsilon)$, $s_e = (j,a,\epsilon,\phi)$, $s_r = (j,a)$ and an exogenous interest rate r, an equilibrium in this model is characterized by policy functions $c_u(s_u), c_e(s_e), c_r(s_r), h_u(s_u), h_e(s_e)$, $a'_u(s_u), a'_e(s_e), a'_r(s_r), \phi(s_u)$ and stationary distributions of consumers $\omega_u(s_u), \omega_e(s_e), \omega_r(s_r)$ such that:

1. The policy function $\phi(s_u)$ solves the problem of the searcher given in (2)
2. The policy functions $c_u(s_u), a'_u(s_u), h_u(s_u)$ solve the problem of the unemployed consumer given in (3)
3. The policy functions $c_e(s_e), a'_e(s_e), h_e(s_e)$ solve the problem of the employed consumer given in (8)
4. The policy functions $c_r(s_r), a'_r(s_r)$ solve the problem or the retired consumer given in (11)
5. A firm posts in each submarket where there is positive profit, subject to the free entry condition (13)

6. The government sets a proportional tax on labour income (τ) which satisfies their budget constraint

$$\int \tau \epsilon \phi \; d\omega_e(j, a, \epsilon, \phi) = \int b \; d\omega_u(j, a, \epsilon) + \int S \; d\omega_r(j, a) \tag{14}$$

4 Calibration

The two main externally estimated parameters for this model are the match elasticity (α), taken from the seminal paper by Den Haan et al. (2000) and the job destruction rate (δ) taken from the HRS as an annualized estimate for Employment-Unemployment flows. Consumer risk aversion (σ), discount factor (β), and interest rate (r) are taken at values standard from the literature. Series for survival probabilities are taken from the Social Security Administration in Bell and Miller (2005) life tables and the age profile of earnings is estimated in Raveendranathan and Stefanidis (2025) using the Panel Study of Income Dynamics.

Table 3: External Parameters

Parameter		Value	Source
Panel A: Housing			
κ_h	Rent to income ratio	0.05	
η	EV distribution scale	1.000	
Panel B: Labour Market			
α	Match elasticity	1.27	Den Haan et al. (2000)
δ	Job destruction rate	0.02	EU share (HRS)
ν	Age profile of earnings		Panel Study of Income Dynamics
Panel C: Lifecycle			
σ	Risk aversion	2.00	
β	Discount factor	0.96	
r	Interest rate	0.04	
ψ	Survival probabilities		Social Security Administration

A summary of the internal parameter estimates can be found in Table 3. The most important estimate from the perspective of the co-residence-based insurance is the independence utility, χ, which is targeted to match the share of E-U workers who move home in the HRS. The labour market is this model is identified by the cost of posting, κ_p, targeted to the unemployment share and the standard deviation of productivity, σ_ϵ, targeted to the standard deviation of log earnings for workers aged 26 to 30. The fiscal system is estimated via unemployment insurance (b) and pension benefits (S), which are targeted to aggregate spending on UI

and pensions, respectively.

Table 4: Internal Parameters

Parameter		Value	Target	Model	Data
χ	Independence utility	4.703	EU move home share	*.0413*	*.0413*
κ_p	Cost of posting	.0034	Unemployment share[a]	*.0478*	*.0420*
b	UI benefit	.2454	UI exp. to income ratio[b]	*.0042*	*.0042*
S	Social security benefit	.7537	SS exp. to income ratio[c]	*.0525*	*.0525*
σ_ϵ	St. dev. productivity	.8868	SD log earnings (age 26-30)[d]	*.9000*	*.9000*

[a] U.S. Bureau of Labor Statistics (2025)
[b,c] U.S. Bureau of Economic Analysis (2024c)
[d] Kuhn, Ríos-Rull, et al. (2016)

5 Results

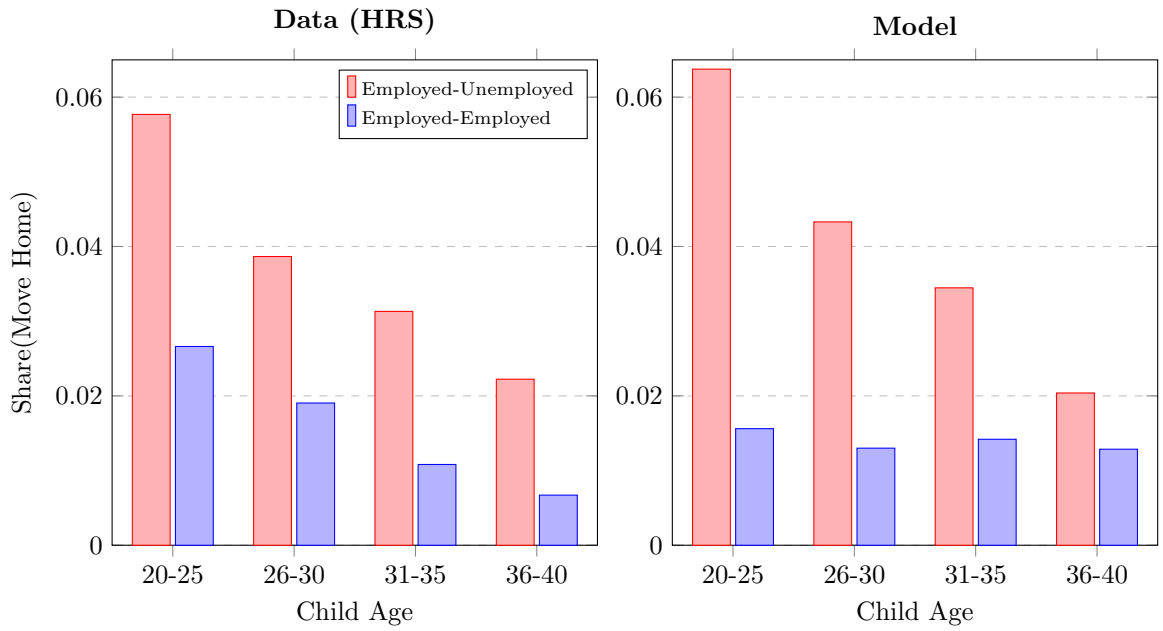
This section evaluates the quantitative model's performance against the empirical trend of EU workers moving home in greater proportions than EE. Further, it outlines positive and normative results concerning job search behaviour, model aggregates, welfare in terms of unemployment insurance benefits, and heterogeneity in welfare by age.

5.1 Model Validation

The quantitative model is able to match two key features observed in the Health and Retirement Study, shown in Figure 4. First, workers experiencing an EU transition are significantly more likely to move home than peers in an EE transition. This is indicative of moving home acting as an insurance mechanism against these labour market transitions and associated earnings risk.

Second, the magnitude of this effect is decreasing in the worker's age, at least for the EU type. This has several implications. As workers age, they are more able to self-insure in their household through saving rather than coresiding. If living independently is sufficiently rewarding, EU workers will dissave before they move home. Another reason age interacts with the move home choice among workers is because it interacts with incomes via individual-specific productivity. As workers age, they become richer as their productivity rises, but relatively poorer as they approach retirement and have fewer opportunities to match with a firm

Figure 4: Comparison of Move Home Flows Between Model and Data



Note: Move home flows are larger for EU consumers and are decreasing in age

and earn income. Based on the declining nature of move home flows by age, it appears as though the increasing productivity effects outweigh the decreasing work duration effects.

5.2 Job Search Behaviour and Model Aggregates

Consumers who have access to the option to live at home search in submarkets with higher piece-rates and lower job finding probabilities, (see Figure 5). This is because unemployment is much less damaging in terms of individual utility when the cost of housing is avoidable by moving home with a parent. In this environment the worker can adjust their risk of unemployment by choosing a submarket in which to search.

Table 5 details the impacts of individual-level choices on the full sample of workers aged 20 to 40. Constructing an environment where everyone must purchase housing increases employment through the job finding rate. This additional employment however does not lead to significantly increased asset accumulation or consumption – suggesting any financial gains from employment are absorbed by the mandatory cost of

Table 5: Model Aggregates with and without the Move Home Option

	Baseline	**No Co-Residence**	**Relative Δ (%)**
Employment Share	0.95322	0.95623	+0.316
Average Job Finding Rate	0.36288	0.38735	+6.743
Tax Rate	0.06525	0.06492	–0.505
Average Assets	3.60543	3.60159	–0.107
Average Consumption	2.03555	2.03407	–0.073

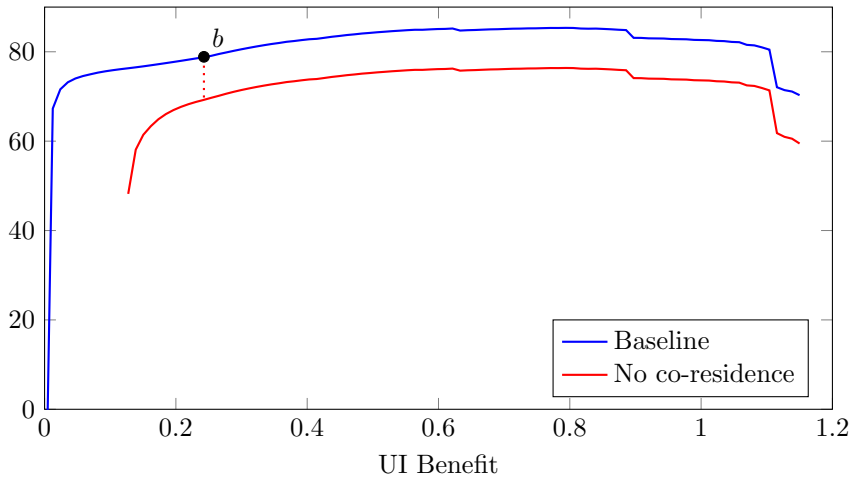
Note: Computed among workers aged 20-40 to control for the ability to move home. Restricting the move home option results in higher employment and job finding rates as well as lower taxes, assets, and consumption

housing.

The most notable result is the over 2 percentage point increase in the job finding rate. The submarket choice, alongside savings, is the main mechanism consumers can control to influence their risk of and consumption loss from unemployment. The increase in the job finding rate in the absence of co-residence is equivalent to .1525 model periods (years) or approximately 8 additional weeks of search before a match.

5.3 Welfare from Co-Residence

Figure 5: Lifetime Expected Utility Conditional on UI Benefit



Note: The welfare associated with the move home benefit is largest when UI benefits are small. Note that the red line is not well-defined for $b \leq \kappa_h$

The vertical distance between the two plotted curves in Figure 6 is an estimate of the welfare from the co-residence option. To evaluate this welfare in the context of an existing UI benefit, I measure the vertical distance ($\sim$9 utils) in terms of how much of a reduction in UI would induce the same utility reduction in an environment without co-residence. I find that ex ante the welfare from the option to move home is equivalent to a 71% increase in current UI benefits.

The relative welfare benefit of the move home option is largest at low levels of UI. For example, the vertical distance between the two curves is much larger below b, the calibrated UI benefit, than above. This relationship implies that unemployment insurance and the move home option are complementary insurance mechanisms against labour market risk. In an environment with a generous UI system, non-market insurance through shared housing is relatively less important for the welfare of workers. In contrast, when unemployment is more punishing through reduced benefits the welfare implications of moving home are significant.

5.4 Welfare Across the Lifecycle

In Section 2.2, I showed that co-residence as labour market insurance is operative for workers into middle age. In addition to this finding, the welfare benefits are also significant for older workers. Table 6 reports that the value of the move home option is large among all age groups, notably the oldest workers aged 36-40. This is additionally interesting when paired with the results from Figure 4, which shows that move home flows are declining in age in both model and data. It would appear as if older workers value the option to co-reside highly, but do not exercise it as often as younger workers. One reason that the move home option is exercised relatively less as workers age is because they become better able to insure without co-residence.

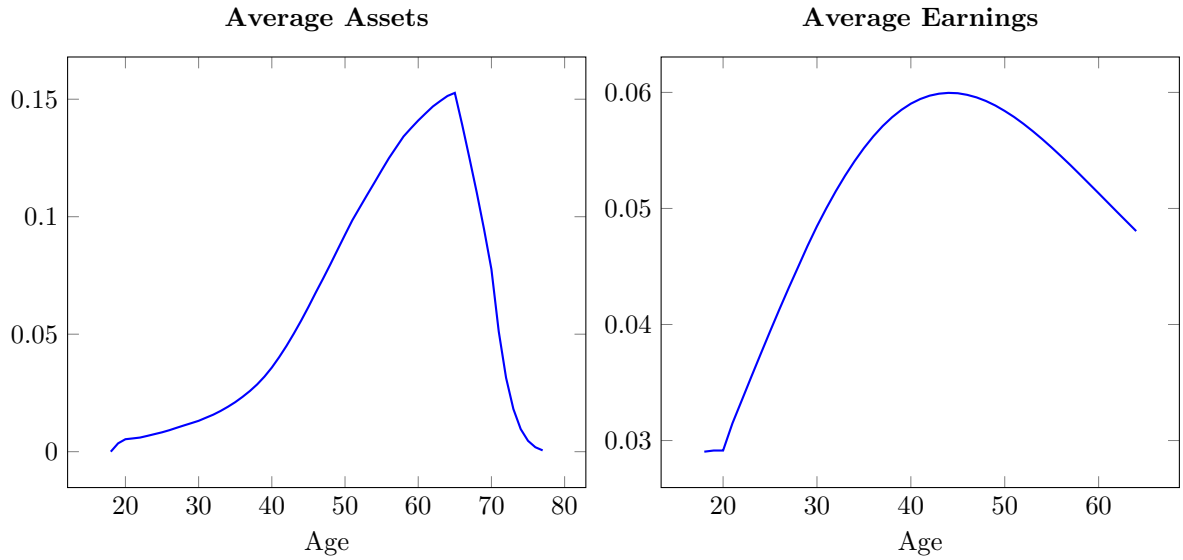
Table 6: Welfare by Age in Terms of UI Benefits

Age	**Equivalent UI Benefit**	**Relative Δ (%)**
20-25	0.13383	83.76
26-30	0.12741	93.02
31-35	0.12613	95.00
36-40	0.13768	78.62

Note: Estimates for welfare converted into an implied UI benefit. Column 2 presents the UI benefit that would make each age group indifferent between having the move home option versus being unable to move home in an economy with the baseline UI benefit (.245921). Column 3 shows the relative increase in the UI benefit that would provide equivalent welfare to allowing adult children to move home with their parents.

As workers age, they are on average better off in the current period. This is for two reasons: first, as shown in the first panel of Figure X they accumulate assets each period in which they work, and only begin to dissave when entering retirement. Second, the model includes an age component of individual-specific productivity to account for on-the-job experience. This age component of labour income can be seen in the second panel of Figure X, where earnings are increasing into middle age but declining as retirement approaches. Falling wages later in life, however, are less damaging in welfare terms relative to early in life due to higher average assets.

Figure 6: Assets and Earnings by Age



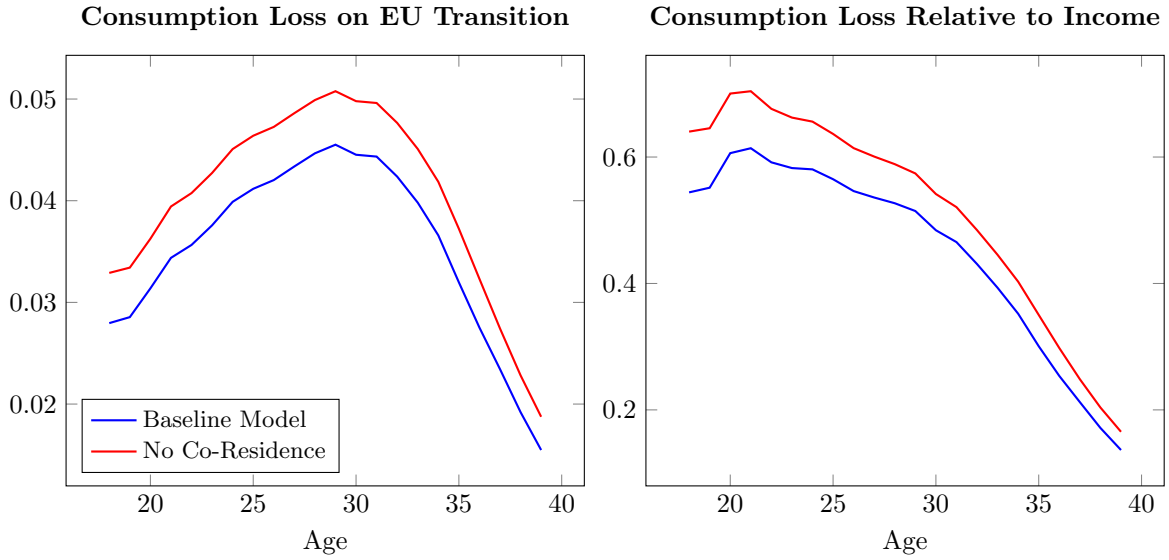
Note: Age profile of assets and earnings at the mean. Assets accumulate throughout the worker's life until they choose to dissave rapidly in retirement. Earnings are computed as after-tax labour income among the employed. Earnings rise early in life but decline as workers approach retirement for two reasons. First, the age component of productivity is sharply increasing at young ages before leveling off in late-middle age and declining slightly before retirement. Second, wages are partially determined via a posting decision by firms. Since age is both observable and relevant for future earnings flows, firms will naturally offer higher wages (piece-rates) to younger workers in expectation of output in future periods in the absence of a job destruction shock.

However, this is not true when accounting for future expectations of workers. Since this model environment features a finite horizon lifecycle, the present expected utility of an individual is declining as they age and approach mortality. This is additionally true because in the absence of savings, retirement will result in a large consumption loss relative to working periods. The potential negative effects of retirement

on consumption create an environment where aging is ambiguous in welfare terms. Older agents can save more and have higher wages, however they have fewer additional years of work where they can accumulate assets and enjoy those heightened wages.

This explanation of the age dynamics of worker welfare is important for understanding Figure X, which shows the consumption loss associated with an Employed-to-Unemployed transition. When controlling for differences in income (Panel 2), consumption losses on unemployment are lowest among older workers, who in turn have the highest assets among those aged 20-40. Further, the option to move home results in lower consumption losses at all ages. This suggests that workers use the option to move home in order to shield consumption when wages fall on job separation.

Figure 7: Consumption Losses on Job Separation



Note: One way to examine the value of an insurance mechanism is to evaluate behaviour following a negative income shock (unemployment). In the first, panel, high consumption losses when young are driven by a desire for asset accumulation. As workers age and become wealthier, they increasingly substitute assets to offset potential declines in consumption. When controlling for difference in income, it is clear that consumption losses on an unemployment shock are monotonically declining in age. However, there are still insurance benefits to coresidence at all ages. This can be seen through the vertical distance between consumption losses in the baseline model and in the counterfactual with no option to co-reside.

When I look only at workers who move home on an EU transition, in that they live independently when employed and live at home when unemployed, I find further evidence of the move home option being used as

a consumption smoothing mechanism. As shown in Table X, an EU transition among older workers leads to a consumption loss, whereas for younger workers consumption still increases slightly. This is due to differences in future expectation of higher-wage periods that are declining in age. Among all ages, consumption while unemployed is higher in a model economy with the option to move home relative to a counterfactual where everyone lives independently. This indicates that the option to move home provides consumption insurance not just in the aggregate, but among those children who intend to move home on an EU transition.

Table 7: Consumption Change on EU Transition

Age	**Baseline Model (%Δ)**	**No Co-Residence (%Δ)**
31	+14.9	-14.9
32	+8.9	-19.4
33	+5.4	-22.0
34	+3.4	-23.5
35	0	-26.0
36	-3.6	-28.7
37	-5.5	-30.1

Note: Consumption losses conditional on an EU transition in the baseline and no co-residence model environments. At some ages (< 35), consumption rises as workers age regardless of employment status. This is due to positive expectations of future wages and differences in future opportunities to work based on time endowments. For older workers, a job separation is associated with consumption losses relative to the previous period. However, in an environment without the co-residence option all workers reduce consumption during an EU transition. At ages where consumption falls in both the baseline and counterfactual scenarios, losses are larger in the economy without the option to move home.

6 Conclusion

This paper extends our understanding of co-residence as labour market insurance in a few crucial ways. First, I confirm that this insurance mechanism is present across all workers into middle age. Additionally, it is robust to a variety of parent and child characteristics including health and eldercare. This provides further evidence of the move home motive coming from labour market outcomes and not other factors like aging or family formation. Second, I use a quantitative model to evaluate the existence of the move home option in terms of search behaviour and welfare. I find that among workers who can move home, eliminating that option shortens job search duration by 8 weeks. The welfare results are also significant: for a newly created consumer with no prior assumptions, allowing them to move home and avoid housing costs is equivalent to a 71% increase in the unemployment benefit. Even among the oldest workers in my model economy, welfare gains from the option to move home are large and comparable to the young.

My findings have several implications for policy, both in the context unemployment insurance and elsewhere. On unemployment insurance, subsidies for shared housing may provide an alternative lever for policy makers as long as those subsidies can be structured more efficiently than direct cash transfers. As I have shown, co-residence between parents and children has significant implications for job search and match formation. Encouraging co-residence through subsidies, tax credits, or other public mechanisms will alter the job-finding environment. Further work is needed to evaluate the quality of matches emerging from search while co-residing to understand the tradeoffs associated with this mechanism.

7 Appendix

Table 7 reports the full probit introduced in section 2.2. Individual observations correspond to pairs of parents and children. Standard errors are clustered at the pair-level and the McFadden's R^2 is 0.1307. A joint Wald test of significance on all coefficients rejects the null hypothesis with extreme confidence. The formal specification is:

$$Pr(MoveHome) = \alpha_0 + \boldsymbol{\alpha}\ Year + \boldsymbol{\beta}\ \boldsymbol{X^c} + \boldsymbol{\gamma}\ \boldsymbol{X^p} + \boldsymbol{\delta}\ \boldsymbol{X^h} + \boldsymbol{\eta}\ \boldsymbol{X^e} + \epsilon$$

The vectors of characteristics are as follows:

- Child characteristics: $\boldsymbol{X^c}$ = {Income, Education, Age, Gender, Employment Transition, Marital Status, Parental Status}
- Parent characteristics: $\boldsymbol{X^p}$ = {Income, Assets, Primary Residence Value, Education, Employment}
- Parent health characteristics: $\boldsymbol{X^h}$ = {High Blood Pressure, Diabetes, Lung Disease, Heart Disease, Ever Had Stroke, Ever Had Cancer}
- Eldercare characteristics: $\boldsymbol{X^e}$ = {Child Helps with ADLs, Child Helps with IADLs, Child Intends to Help in Future}

Table 8: Pr(Move Home) Probit: Full Estimation

Independent Variable	**AME**	**p-value**
Year		
2000	*Base*	
2002	0.00246	0.182
2004	0.00483	0.023
2006	0.00024	0.898
2008	0.00738	0.001
2010	0.00369	0.076
2012	0.00466	0.016
2014	0.00504	0.020
2016	0.00782	0.000

Continued on next page

Table 8: Average Marginal Effects on Pr(Move Home) (continued)

Independent Variable	**AME**	**p-value**
2018	0.01095	0.000
Child Income		
<10K	*Base*	
10–35K	−0.01155	0.000
35–70K	−0.02003	0.000
70–100K	−0.02035	0.000
100K+	−0.02411	0.000
Child Education		
Less Than High School	*Base*	
High School Graduate	−0.00433	0.193
Partial College Completion	0.00203	0.563
College and Above	−0.00141	0.669
Child Age		
20–25	*Base*	
26–30	−0.00629	0.001
31–35	−0.00837	0.000
36–40	−0.01244	0.000
Child Employment Transition		
E–E	*Base*	
E–U	0.01588	0.000
U–E	0.00353	0.040
U–U	0.00331	0.079
Child Gender (Female)	−0.00338	0.000
Child Marital Status	−0.02618	0.000
Child Parental Status	0.00034	0.790
Child Helps w/ ADLs	0.01627	0.007
Child Helps w/ IADLs	0.01269	0.007
Child Intends to Help in Future	0.01125	0.000
Parent Income	6.22×10^{-10}	0.802
Parent Assets	-1.84×10^{-9}	0.021
Parent Home Value	3.86×10^{-9}	0.002
Parent Education		
Less Than High School	*Base*	
GED	−0.00300	0.263
High School Graduate	0.00412	0.028
Partial College Completion	0.00276	0.135
College and Above	0.00397	0.037
Parent Employment		

Continued on next page

Table 8: Average Marginal Effects on Pr(Move Home) (continued)

Independent Variable	**AME**	**p-value**
Not Working	*Base*	
Part-time Work	0.00160	0.457
Full-time Work	0.00318	0.008
Parent has High Blood Pressure	−0.00091	0.435
Parent has Diabetes	−0.00007	0.960
Parent has ever had Cancer	−0.00107	0.464
Parent has Lung Disease	0.00067	0.689
Parent has Heart Disease	0.00069	0.583
Parent has ever had a Stroke	0.00518	0.005

Note: Average marginal effects are expressed in relative deviations from the mean share of children who move home (0.007518). McFadden's R^2: 0.1307; Wald χ^2: 1236.79

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