

Inequities in How Wealth Shapes Healthy and Work-free Later Life

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Abstract

This study examines the relationship between wealth and the quality of longevity, measured by years lived after age 65 with or without disability or work. By comparing cohorts turning 65 in 1996 and 2006, we find a steepening wealth gradient in disability-free years and work participation, and a persistent gradient in work-free retirement years. Our contributions are threefold. First, wealthier individuals gain additional years primarily in disability-free, healthy states. Second, the return to wealth in achieving these years has increased over time for all but the least wealthy quartile. Third, wealthier individuals experience both more years of work and the longest work-free retirement periods, further exacerbating wealth inequality. Notably, individuals' subjective expectations about life expectancy gains appear misaligned with empirical findings. These insights highlight the growing disparity in longevity experiences and challenge assumptions about aging, retirement, and social security program progressivity.

Keywords: wealth, longevity, disability-free years, labor force participation, inequality, retirement

JEL codes: I14, J14, D31, H55, J26

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Retirement is often envisioned as a time of financial security and personal fulfillment, yet in reality, the experience of later life is increasingly shaped by economic disparities. While rising life expectancy is often framed as a sign of societal progress, the benefits of longer lives are not shared equally. This chapter examines the intersection of wealth and the quality of longevity in retirement, focusing on disparities in disability-free and work-free life expectancy. Drawing on nationally representative data from the Health and Retirement Study (HRS), we explore how financial resources influence the structure of retirement, particularly the extent to which individuals can spend these additional years both disability-free and free from work.

As pension systems and labor markets adapt to an aging population, these wealth-driven differences have implications for retirement security. If financial resources increasingly dictate when and how individuals exit the workforce and the number of years they remain disability-free, then existing retirement structures may not be providing equitable support across socioeconomic groups. By analyzing long-term trends in working life and disability-free longevity, this chapter sheds light on the growing link between wealth and post-retirement well-being. In doing so, we offer insights into policy measures that can help promote more sustainable retirement outcomes.

The connection between economic status and longevity is well documented, with evidence showing that individuals in the highest income brackets now outlive those in the lowest by well over a decade (Chetty et al. 2016). These gaps have widened over time, reflecting differences in access to healthcare, exposure to chronic disease, and financial stability in later life. Some retirees enjoy extended years of good health and economic independence, while others face rising health risks and must remain in the workforce longer than expected. Across countries, economic status

has emerged as a powerful determinant of who can retire securely and who must continue working despite declining health.

While much attention has been given to disparities in total life expectancy, less is known about how additional years are distributed between work and retirement or between health and disability. Not all extra years of life are the same—some are characterized by financial independence and good health, while others involve workforce participation well into old age or prolonged periods of illness. This chapter shifts the focus from overall longevity to how individuals experience later life. It examines the extent to which wealth determines whether post-retirement years are spent in good health or with disability, whether individuals can afford to leave the workforce or must remain employed, and how these relationships have evolved. The chapter also examines how individuals' own morbidity and mortality risk assessments may differ from observed patterns.

Using nationally representative data, we compare two cohorts of individuals who reached age 65 in 1996 and 2006. Our approach provides insight into whether financial resources have become an even stronger determinant of retirement outcomes over time. The analysis follows individuals over time, integrating survey data with actuarial life tables to estimate the number of years expected to be lived with and without disability, as well as working versus work-free years. By construction, the sum of disability-free and disabled years equals total life expectancy, as does the sum of work-free and working years. Wealth is measured in quartiles based on net total wealth at age 65, separately for men and women, to capture patterns across different financial statuses while accounting for differences in wealth accumulation. The results reveal that wealth plays an increasingly central role in shaping the quality of later life.¹ In both cohorts, individuals in the highest wealth quartile experience significantly more years without disability than those in the

lowest quartile. Over time, this disparity has widened. Among wealthier individuals, the number of disability-free years increased, while among those with the least wealth, it stagnated or even declined. These patterns suggest that improvements in longevity have not translated into equal gains in health, disproportionately favoring those with greater financial resources.

A similar pattern emerges in work-free life expectancy. While wealthier individuals in both cohorts spent more years in retirement than their lower-wealth counterparts, the comparison across cohorts reveals a shift: those in the highest wealth quartile in 2006 worked longer past 65 than their counterparts in 1996, reducing their work-free years. This change likely reflects a growing preference or incentive for high-wealth individuals to extend their careers, rather than financial necessity. In contrast, lower-wealth individuals often work longer out of necessity, yet their higher rates of disability limit their ability to remain employed, increasing their risk of financial insecurity in later life.

We also use response data from the HRS to estimate subjective life expectancy and subjective morbidity expectations, applying the same methodology as for disability and work. Our subjective findings suggest that while individuals recognize the wealth gradient in life expectancy to some extent, the poorest individuals perceive changes in their mortality risk that are not supported by empirical data. In terms of subjective morbidity, the wealthiest individuals acknowledge some of their reduced morbidity risk, whereas the poorest perceive no change. There are also gaps between observed patterns of work after 65 and subjective beliefs about doing so. These subjective results offer insight into the mismatch between empirical observations and individual beliefs, which may have implications for how people manage longevity risk.

These findings underscore the increasing role of wealth in determining who can enjoy a secure and healthy retirement. While gains in life expectancy are often assumed to lead to longer,

more financially stable retirements, the evidence suggests that these benefits are accruing disproportionately to those with greater economic resources. As pension systems and labor policies adapt to an aging workforce, expanding access to phased retirement, improving workplace accommodations, and strengthening disability protections will be critical for ensuring that extended working lives remain sustainable for all. Traditional retirement structures, designed under the assumption of uniform gains in life expectancy, may need to be reconsidered in light of the increasing divergence in who benefits from longer careers and healthier retirements. Addressing these disparities will require policies that explicitly acknowledge both economic and health inequalities.

Prior Literature

Disparities in Life Expectancy and the Role of Wealth. Extensive research has established a strong link between socioeconomic status and life expectancy, with wealth emerging as a critical determinant of longevity. Studies utilizing US data, particularly from the Health and Retirement Study (HRS), consistently demonstrate that individuals with greater financial resources tend to live longer than their less affluent counterparts.

A seminal study by Chetty et al. (2016) revealed significant disparities in life expectancy across income levels, indicating that men in the top 1 percent of earnings outlive those in the bottom 1 percent by approximately 15 years. Moreover, these longevity gains have predominantly benefited higher-income individuals over time, exacerbating existing inequalities. Similarly, Hudomiet et al. (2021) project that mortality gaps will continue to widen as economic advantages confer better access to healthcare and healthier lifestyles. While much of this literature focuses on total life expectancy, recent work emphasizes the importance of distinguishing between years spent

in good health versus those with disability. This study builds upon previous research by examining how wealth influences both disability-free life expectancy (DFLE) and work-free life expectancy (WFLE).

As wealth increasingly determines who experiences extended healthy years, some have called for a shift in focus from simply understanding longevity trends to developing strategies that enhance individuals' ability to maintain good health and financial well-being throughout their lives. Kolluri (2024) argues that "longevity literacy"—awareness of the financial and health implications of longer lives—is insufficient without "longevity fitness," or active preparation through financial planning, lifelong learning, and proactive health management. This perspective reinforces the need to assess not just how long people live but also how prepared they are to sustain financial and physical well-being in extended old age.

The question of how financial stability responds to changes in life expectancy has also gained increasing attention. Lusardi et al. (2020) highlight the financial vulnerability of many older Americans, showing that near-retirees in recent cohorts have accumulated more debt than previous generations, often due to increased housing costs and smaller down payments. These financial burdens, combined with longer life expectancies, raise concerns about whether extended work lives are driven by choice or necessity. In addition, wealth not only affects health outcomes but also mitigates the economic risks associated with disability. Deshpande and Lockwood (2022) emphasize that disability brings both health and financial instability, disproportionately affecting lower-income individuals who lack adequate financial buffers.

Trends in Disability and Disability-Free Life Expectancy (DFLE). Socioeconomic status not only affects overall lifespan but also the quality of those years, particularly regarding the prevalence of disability. DFLE, which estimates the number of years an individual can expect to

live without a disabling condition, has generally increased due to medical advancements. These improvements, however, have not been uniformly distributed across different wealth strata.

Cutler et al. (2014) found that DFLE among Medicare beneficiaries increased by 1.6 years over two decades, with more pronounced gains observed among white individuals compared to non-white individuals. Crimmins et al. (2009) further noted that DFLE gains have resulted from both a decreased incidence of disability and improved recovery rates, rather than merely extending the lifespan of those already living with disabilities. Chernew et al. (2017) reported an increase of 1.8 years in DFLE between 1992 and 2008, largely attributed to better health outcomes for individuals with cardiovascular diseases and vision impairments. While these studies highlight the role of medical progress, they do not explicitly address how wealth disparities influence these patterns. The current analysis extends this literature by investigating the relationship between DFLE and wealth, and how this association has evolved over time.

Cross-national evidence also underscores the role of wealth in shaping disability-free years. Bennett et al. (2021) demonstrated that in England, DFLE gains among individuals with multiple chronic conditions were primarily observed in the most affluent groups. Similarly, Zaninotto et al. (2020) compared DFLE trends in the US and England, revealing a strong wealth gradient in both countries, with wealthier individuals enjoying significantly longer periods free from disability.

Working Life Expectancy and Labor Force Participation at Older Ages. The relationship between wealth and retirement timing is complex, as individuals' ability to leave the workforce depends on both financial security and health status. While some people extend their careers by choice—enjoying the benefits of work-related engagement and additional income—others remain employed out of necessity, lacking sufficient savings to retire comfortably.

Prior studies suggest that working life expectancy (WLY), or the number of years spent in paid employment after a given age, has been increasing in many advanced economies. Using US data, Dudel and Myrskylä (2017) find that working life expectancy rose after the Great Recession, though these trends varied significantly by race and socioeconomic background. Their analysis also highlights the volatility of later-life work patterns, suggesting that older workers are more likely to experience fluctuations in employment due to economic conditions, job availability, and health constraints.

Other research has examined the shifting nature of work among older adults, particularly in the context of the changing labor market. Mullen (2021) shows that the rise of gig work has contributed to income volatility among older workers, while Abraham et al. (2021) and Haider and Loughran (2010) document that older individuals are increasingly employed in part-time or flexible jobs, rather than full-time positions.

International evidence similarly underscores the role of economic security in shaping later-life work patterns. Loichinger and Weber (2016) find that working life expectancy at age 50 has risen across Europe, with men experiencing larger increases than women. Their analysis also reveals that healthy life expectancy is a stronger predictor of workforce participation than total life expectancy, reinforcing the connection between disability and employment outcomes. In the UK, Parker et al. (2020a) show that many older individuals remain in the workforce longer than they would prefer, largely to meet pension eligibility requirements—a pattern that is also relevant in the US, where Social Security benefits require a minimum of 40 quarters (10 years) of employment.

Despite these important contributions, the literature on working life expectancy remains incomplete. Parker et al. (2020b) note that few studies provide reliable estimates of the number of

years individuals remain both healthy and employed, limiting policymakers' ability to design effective retirement policies. Our analysis helps fill this gap by analyzing how net total wealth influences working and work-free years at older ages, using two cohorts of individuals who turned 65 in 1996 and 2006. By linking DFLE and WFLE to wealth status, this study offers a broader perspective on how financial resources shape not only the duration of life but also its composition in terms of health and work participation.

Subjective Mortality and Morbidity. In addition to objective findings related to mortality and morbidity, we look at subjective expectations to assess how much people “know” about the wealth-related gradients. There is a large literature related to these expectations, particularly around life expectancy. A foundational contribution to this field is work that formally examines subjective expectations, revealing that an individual's perception of their own life expectancy may be influenced by the mortality experiences of their relatives (Hameross 1985). Additionally, this research has shown that the subjective mortality curve tends to be flatter than an actuarial curve. This “flatness bias” refers to the tendency for individuals to overestimate their likelihood of living to very old ages while underestimating their chances of survival in earlier elderly years. More recent studies using data from the HRS have confirmed this phenomenon (Elder 2013). Interestingly, Hurwitz et al. (2022) show that explaining longevity in a survey can fix some of this misalignment, which in turn increases respondents' interest in saving and longevity insurance.

There has been considerable debate regarding the predictive accuracy of subjective mortality estimates compared to actuarial tables. Some research using HRS data has found that subjective mortality estimates align with updates to the Social Security Administration's (SSA) mortality tables (Perozek 2008). Other studies have provided evidence that subjective expectations can be predictive in in-sample evaluations (Hurd and McGarry 2002). Furthermore, recent work

has even suggested that subjective survival estimates may be more predictive than actuarial tables (Gan et al. 2015). Elder (2013), however, presents contrasting evidence, arguing that subjective mortality estimates have little predictive value.

Additionally, research has examined how individuals respond to framing effects in subjective life expectancy assessments. Findings from Payne et al. (2013) suggest that people are sensitive to how questions are framed—whether they focus on “living to” or “dying by” a certain age. Comerford and Robinson (2017) also provide evidence that beliefs about life expectancy can be constructed based on framing effects.

Beyond these general discussions on the use of subjective HRS data, studies have shown that subjective mortality beliefs are influenced by personal health experiences. For example, panel data has demonstrated that the death of one's parents affects subjective life expectancy estimates (Hurd and McGarry 2002). Socioeconomic status also plays a role, with individuals in higher socioeconomic brackets tending to provide higher subjective mortality estimates (Hurd and McGarry 1995). Mittal et al. (2020) further find that people from lower-income backgrounds are more likely to report shorter subjective life expectancies and that their estimates may be particularly sensitive to stress-inducing events.

These insights contribute to a broader stream of research investigating the real-world implications of subjective life expectancy beliefs. Specifically, subjective mortality expectations have been linked to several financial and retirement-related behaviors. Studies have explored how these expectations influence (1) retirement savings decisions, particularly regarding annuities and tontines (Chen et al. 2020), (2) the purchase of long-term care insurance (Mittal et al. 2020), (3) the tendency to under-save for retirement due to inaccurate life expectancy assumptions (Mittal et al. 2020), and (4) the realization that most bequests are unintentional (Hurd 1989). Our study

contributes to this space by providing objective DFLE and WFLE measures next to subjective assessments of mortality and morbidity risk, along with the chances of working in old age.

Data

This study utilizes data from the HRS, a nationally representative longitudinal survey of Americans aged 50 and older. Conducted biennially, the HRS provides rich information on respondents' demographic characteristics, economic circumstances, health status, and employment history. To examine retirement patterns, we focus on individuals observed between the ages of 64 and 66 in the 1996 and 2006 survey waves. This allows us to compare two cohorts that reached traditional retirement age a decade apart, capturing potential shifts in work and retirement behavior over time.

The primary variables of interest include wealth, work status, and disability status. We measure total household wealth using a net wealth variable constructed from the sum of assets (e.g., home value, financial accounts, retirement savings) minus debts (e.g., mortgages, loans). Following prior research, we divide the sample into cohort- and gender-specific wealth quartiles to account for wealth disparities across demographic groups. Work status is measured as a binary indicator of whether the respondent reports being employed at the time of the survey, while disability status is based on self-reported limitations in activities of daily living (ADLs), such as difficulty bathing, dressing, or walking across a room.

Summary statistics from the sample highlight important trends in wealth and work patterns. Between the 1996 and 2006 cohorts, median wealth (adjusted for inflation) increased significantly—by 44 percent for men and 16 percent for women. At the same time, labor force participation at older ages became more prevalent, with the share of men working between ages

64 and 76 rising from 50 to 57 percent, and for women from 35 to 42 percent. These trends reflect broader shifts in retirement timing and financial preparedness. Racial and ethnic composition remained stable across cohorts, though the share of Hispanic respondents increased slightly.

Methodology

We examine how wealth influences work-free and disability-free longevity, using a cohort comparison approach with data from the 1996 and 2006 cohorts of the HRS. Our goal is to quantify how the relationship between wealth and these retirement outcomes has evolved over time.

Measuring Work-Free and Disability-Free Longevity. We calculate two key outcomes:

- Work-Free Life Expectancy (WFLE): The number of years an individual can expect to live after age 65 without participating in paid work.
- Disability-Free Life Expectancy (DFLE): The number of years an individual can expect to live after age 65 without experiencing a disability.

We follow the procedures outlined in Chetty et al. (2016) and Chernew et al. (2017) to estimate these measures. First, we calculate total life expectancy at age 65. Then, we decompose it into years spent working vs. work-free and disabled vs. disability-free. Following standard demographic methods, life expectancy at age 65 is estimated using survival probabilities as follows:

$$LE(a) = \sum_{s=1}^S \{\Pr[Survive\ to\ a+s \mid Alive\ at\ a] + 0.5 * \Pr[Die\ at\ a+s \mid Alive\ at\ a]\} \quad (1)$$

where:

- a is age 65, the starting point for retirement analysis;
- and s represents the number of additional years an individual is expected to live.

The first term represents the probability of surviving beyond a given age, and the second term accounts for the probability of dying within a given year. From this, we estimate DFLE, which represents the number of expected life years (measured at age 65) without disability:

$$DFLE(a) = \sum_{s=1}^S \{ \Pr[Not\ Disabled\ at\ a+s \mid Alive\ at\ a+s] * \Pr[Survive\ to\ a+s] + \\ 0.5 * \Pr[Not\ Disabled\ at\ a+s \mid Die\ at\ a+s] * \Pr\{Die\ at\ a+s\} \} \quad (2)$$

A similar formula is used to compute work-free life expectancy (WFLE) by replacing disability status with work participation.

Regression Approach. We use a linear probability regression framework to estimate the probability of being disabled or working at each age as a function of wealth. The primary equation for disability (and analogously for work and the subjective assessments) is:

$$Disability_{i,t} = \alpha + \sum_{j=2}^4 \beta_j WealthQ_i + \gamma Demographics_{i,t} + \varepsilon_{i,t} \quad (3)$$

where:

- i represents an individual, and t represents the survey wave;
- β_j (coefficients of interest) captures how much more or less likely individuals in wealth quartiles Q2, Q3, and Q4 are to experience disability (compared to Q1, the reference group);
- and $Demographics_{i,t}$ includes controls such as age, race/ethnicity, and proximity to death.

To assess whether the relationship between wealth and these outcomes has changed over time, we introduce cohort interactions:

$$\begin{aligned} Disability_{i,t} = \alpha + \sum_{j=2}^4 \theta_{j,1996} WealthQ_i + \delta Cohort2006_i + \sum_{j=2}^4 \theta_{j,2006} WealthQ_i \times \\ Cohort2006_i + \gamma Demographics_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (4)$$

Here, the coefficients of interest are:

- $\theta_{j,1996}$, which measures the wealth gradient in disability-free life expectancy within the 1996 cohort;
- and $\theta_{j,2006}$, which measures how the wealth gradient changed in the 2006 cohort relative to 1996.

The fixed effect for the 2006 cohort captures how outcomes for the lowest wealth quartile in 2006 compare to those for the 1996 cohort. To assess changes for individuals in higher wealth quartiles, the sum of the 2006 cohort coefficient and the interaction terms between cohort and wealth quartiles reflects how outcomes evolved across the wealth distribution between the two cohorts. The same model is estimated to calculate work-free life expectancy (WFLE), replacing disability status with work participation, and for the subjective assessments. By comparing the 1996 and 2006 cohorts, we assess whether wealth has become a stronger determinant of WFLE and DFLE. If the cohort interaction terms ($\theta_{j,2006}$) are statistically significant, this indicates that wealth disparities in post-retirement life have widened over time.

Results

This section presents the main findings on how work-free life expectancy (WFLE) and disability-free life expectancy (DFLE) evolved across wealth groups for individuals turning 65 in 1996 and 2006. The analysis, summarized in Table 1, highlights the growing disparities in both

disability and work outcomes, revealing that the wealth gradient in DFLE has intensified over time while the WFLE gradient persists despite more work for the wealthiest. Figures 1, 2, and 3 further illustrate how wealth has become an increasingly strong determinant of both working life years (WLY) and the number of years lived free from disability. We now describe these results in more detail.

Within-Cohort Wealth Gradients in Disability and Work (Figure 1, Table 1). Figure 1 presents the relationship between wealth and four key outcomes at age 65, for just the 1996 cohort: disabled life years, disability-free life years, working life years, and work-free life years. Since total life expectancy at age 65 is the sum of disabled and disability-free years, the values in panels (a) and (b) can be combined to estimate life expectancy across wealth quartiles. Similarly, total life expectancy can be partitioned into working and work-free years, as shown in panels (c) and (d).

Panel (a) illustrates the expected number of years lived with a disability after age 65, broken down by wealth quartile. Among the least wealthy (Q1), individuals experience approximately 4.5 years of disability, while those in the highest wealth quartile (Q4) experience 3.5 years. The wealth gradient appears relatively linear, with higher wealth associated with fewer years spent with disability.

Panel (b) highlights disability-free life years at age 65, showing a strong positive relationship between wealth and the number of years lived without disability. Among the least wealthy, individuals can expect 11 years of disability-free life, while those in the highest wealth quartile experience more than 18 years. These results demonstrate a clear within-cohort wealth gradient, where higher wealth is associated with fewer years of disability and more years of healthy life.

Panels (c) and (d) shift the focus to working life expectancy and the number of years lived free from paid work. Panel (c) reveals that wealthier individuals tend to remain in the workforce longer. Among the least wealthy, individuals work for an average of 1.9 years beyond age 65, while those in the highest wealth quartile work for 3.3 years. Panel (d) presents work-free life expectancy, or the expected number of years lived without paid work after age 65. Among the least wealthy, individuals can expect 13.4 years of work-free life, while those in the highest quartile experience nearly 18.3 years.

[Figure 1 here]

Taken together, these results illustrate a strong wealth gradient in both disability and work at older ages. Wealthier individuals experience more years in good health, longer working lives, and more years of retirement, while those with fewer financial resources face shorter healthy life expectancy, fewer years of work-free retirement, and a greater burden of disability. These disparities highlight how financial resources shape both the length and quality of later-life experiences. These static patterns for the 1996 are confirmed via the first four rows of Table 1, where the negative coefficients in column (1) indicate that wealthier individuals are less likely to report a disability, while the positive coefficients in column (2) suggest they are more likely to be working after 65.

[Table 1 here]

Between-Cohort Changes in DFLE and Disabled Life Years. The shifts in DFLE and disabled life years (DLY) between 1996 and 2006 are shown in Figure 2. Panel (a) reveals that DFLE increased for the highest wealth quartiles but stagnated for the least wealthy. The underlying driver of these patterns is evident in panel (b), which tracks DLY. Among the least wealthy, years lived with disability increased substantially, whereas for the wealthiest, DLY remained relatively stable.

These trends indicate that while longevity has increased across the board, gains in healthy life expectancy have been concentrated among the wealthiest individuals, while lower-wealth groups are experiencing a growing burden of disability.

These patterns are further reinforced by taking the entirety of Table 1, where the interaction terms in column (1) indicate that the wealth gradient in disability prevalence widened in 2006 compared to 1996. The increasing inequality in DFLE over time is thus driven primarily by disparities in years lived with disability rather than differences in total life expectancy.

[Figure 2 here]

Between-Cohort Changes in WFLE and Working Life Years. The trends in WFLE and WLY across cohorts are illustrated in Figure 3. Panel (a) shows that WFLE decreased slightly for the wealthiest and increased slightly for the least wealthy, a pattern mirrored in Table 1, where the interaction terms in column (2) indicate that the wealthiest individuals gained the most in work propensity over time. However, panel (b) of Figure 3 highlights that WLY increased across all wealth groups, with the largest gains concentrated among the wealthiest individuals. This suggests that all groups are working longer over time. The wealthiest individuals, though, are able to work substantially more while still retaining more of their life without work (and without disability).

[Figure 3 here]

The Expanding Wealth Gradient in Retirement Outcomes. The findings from Table 1 and Figures 1–3 reveal an increasingly polarized retirement landscape. Wealthier individuals are gaining both in terms of disability-free life expectancy and the ability to work more while protecting a significantly larger portion of their life without having to do any work, while lower-wealth individuals face a growing set of constraints in later life. Compared to a decade earlier, individuals turning 65 in 2006 saw stronger links between wealth, work, and disability status,

meaning that financial resources are playing an even greater role in determining who can retire and under what conditions.

As wealth disparities in retirement timing and health outcomes widen, pension systems and labor market policies must confront a shifting reality. Traditionally, retirement policies have been structured around the assumption that increasing life expectancy allows all individuals to extend their careers and still enjoy long retirements. The evidence presented here, however, suggests that this assumption no longer holds across socioeconomic groups. For some, longer lives translate into longer careers and longer retirements; for others, they mean extended years of work and worsening health.

Subjective Beliefs. In addition to studying the relationship of wealth to work and disability prevalence over time, we also study the relationship of wealth to subjective beliefs about morbidity, mortality, and working. Using Equation 4, we simply replace disability and work with subjective responses to the following three HRS questions, the first two of which assess subjective life expectancy while the third assess chances of working in old age: (1) What do you think are the chances that you will live to be 75 or more? (2) What do you think are the chances that you will live to be 80-100? and (3) What about the chances that you work full time after age 65? Each respondent offers a value, from 0-100, of those outcomes occurring. We turn that into a variable between 0 and 1 and then regress that on the same independent variables as we have used in the disability and work specifications.

Table 2 provides the results. For the subjective life expectancy questions, we see in columns 1 and 2, with regard to the least wealthy quartile, each wealthier quartile feels they have a (statistically) significantly greater chance of living to age 75 or age 80-100. These are the static-type results for 1996. Thus, there is some evidence that people recognize the wealth gradient in

life expectancy. Over time, the first wealth quartile, interestingly, believes it has seen a decrease in subjective life expectancy from 1996 to 2006, though the coefficient is significant only for living to 80-100. This is partly consistent with our empirical finding, that there was no gain for the first wealth quartile in the probability of living to age 75 from 1996 to 2006. Of note is that the three wealthier quartiles see statistically insignificant changes in coefficients from 1996 to 2006 (via an F-test), though those groups all experienced increased probabilities of living to age 75 empirically.

[Table 2 here]

In column 3, we can better understand what people view as their chances of working full time after age 65. Interestingly, there is a notable wealth gradient among the 1996 cohort, which is inconsistent with our static findings in Figure 1. Over time, the least wealthy experience a significant (economically and statistically) decrease in the chance they will work full-time after age 65. This is inconsistent with our results in Figure 3. Over time, though, the wealthier individuals tend to disagree with that large reduction in the chance of working for the least wealthy, though the combination of the 2006 cohort effect and the interacted cohort-wealth effects suggest that wealthier individuals perceive little change over time in their chances of working after 65, which is inconsistent with our objective patterns from Figure 3.

With regard to subjective morbidity, we focus on a different question in the HRS data: What about the chances that your health will limit your work activity during the next 10 years? This question was not asked consistently for the 1996 and 2006 cohorts of our analysis, so we compare 1992 and 2002 cohorts instead. Table 3 provides the results. We see that there is no meaningfully recognized difference in the chances of having a work-limiting health condition in the next 10 years among the wealth quartiles statically within the 1992 cohort. This could be due to optimism regarding this outcome in the lowest quartiles or pessimism in the higher quartiles.

Over time, we see only statistically significant decreases for the third and fourth wealth quartiles, with none that are recognizable for the first and second wealth quartiles. Therefore, we provide some evidence that the wealthiest individuals perceive decreases in the chances of being disabled over time, while the least wealthy do not perceive changes to their morbidity risk despite objective patterns suggesting worsening morbidity risk over time.

[Table 3 here]

Conclusions

This chapter highlights the growing importance of wealth in shaping retirement outcomes, particularly the quality of longevity in terms of years spent free from work and disability. Using nationally representative data from the HRS, our analysis reveals that working life years increased across all wealth groups, but the wealthiest individuals experienced the largest gains. At the same time, disability-free life expectancy expanded most for high-wealth groups, allowing them to work longer in good health and still enjoy extended years in retirement, living more years without work or disability. In contrast, lower-wealth individuals did not share in these gains, leading to a widening gap in retirement quality.

A key takeaway is that the wealth gradient in disability-free life expectancy has intensified over time. While individuals across all wealth levels are working longer, the reasons for and consequences of extended work lives differ dramatically by financial status. Wealthier individuals have gained both longer working lives and more years in good health, meaning they are increasingly choosing to work longer while still enjoying longer retirements. In contrast, lower-wealth individuals may be working longer out of necessity and experiencing fewer healthy years as a result, reinforcing economic disparities in later life.

The policy implications of these findings are significant. Most notably, retirement security is becoming increasingly unequal. As wealth becomes a stronger determinant of who can retire comfortably, policymakers must consider targeted interventions such as expanding access to retirement savings programs, strengthening social security, and improving disability benefits. Without such measures, economic disparities will continue to dictate retirement outcomes, disproportionately disadvantaging lower-income workers. This is especially true as longer working lives for the wealthiest (i.e., years spent working at potentially the highest earnings, thus affecting the social security benefit formula) mixed with healthier retirements and longer lives in general serve to counteract the intended progressivity of the social security system.

These findings challenge traditional assumptions about retirement age and longevity gains. A pension system that assumes uniform retirement patterns across socioeconomic groups no longer reflects reality. If these trends persist, disparities in retirement timing, financial security, and health will deepen, making it essential to rethink how pension policies, labor market regulations, and social insurance programs address the growing divide in work-free and disability-free longevity. As the US population ages, these findings underscore the urgency of ensuring that longer lives translate into better retirement security for all—not just the wealthiest. Policymakers must adopt a framework that recognizes both the economic and health dimensions of retirement, ensuring that extended work lives are sustainable and that retirement remains accessible across all wealth levels.

References

Abraham, K. G., B. Hershbein, and S. N. Houseman (2021). ‘Contract work at older ages.’ *Journal of Pension Economics & Finance* 20(3): 426–447.

Bavafa, H., A. Mukherjee, and T.Q. Welch (2023). ‘Inequality in the golden years: Wealth gradients in disability-free and work-free longevity in the United States.’ *Journal of Health Economics* 92: 102820.

Bennett, H. Q., A. Kingston, I. Lourida, L. Robinson, L. Corner, C. E. Brayne, F. E. Matthews, and C. Jagger (2021). ‘The contribution of multiple long-term conditions to widening inequalities in disability-free life expectancy over two decades: Longitudinal analysis of two cohorts using the Cognitive Function and Ageing Studies.’ *EClinicalMedicine* 39: 101041.

Chen, A., P. Hieber, and M. Rach (2021). ‘Optimal retirement products under subjective mortality beliefs.’ *Insurance: Mathematics and Economics* 101(A): 55-69.

Chernew, M., D. M. Cutler, K. Ghosh, and M. B. Landrum (2017). ‘Understanding the Improvement in Disability Free Life Expectancy in the U.S. Elderly Population.’ In D.A. Wise, ed., *Insights in the Economics of Aging*. Chicago, IL: University of Chicago Press, pp. 161-201.

Chetty, R., M. Stepner, S. Abraham, S. Lin, B. Scuderi, N. Turner, A. Bergeron, and D. Cutler (2016). ‘The Association Between Income and Life Expectancy in the United States, 2001–2014.’ *Journal of the American Medical Association* 315(16): 1750–1766.

Comerford, D.A. and J. Robinson (2017). ‘Die-by Framing both Lengthens and Shortens Life: Further Evidence on Constructed Beliefs in Life Expectancy.’ *Journal of Behavioral Decision Making* 30: 1104-1112.

Crimmins, E. M., M. D. Hayward, A. Hagedorn, Y. Saito, and N. Brouard (2009). 'Change in Disability-Free Life Expectancy for Americans 70 Years Old and Older.' *Demography* 46(3): 627–646.

Cutler, D. M., K. Ghosh, and M. B. Landrum (2014). 'Evidence for Significant Compression of Morbidity in the Elderly U.S. Population.' In D.A. Wise, ed., *Discoveries in the Economics of Aging*. Chicago, IL: University of Chicago Press, pp. 21–51.

Deshpande, M. and L.M. Lockwood (2022). 'Beyond health: Nonhealth risk and the value of disability insurance.' *Econometrica*, 90(4): 1781-1810.

Dudel, C. and M. Myrskylä (2017). 'Working Life Expectancy at Age 50 in the United States and the Impact of the Great Recession.' *Demography* 54: 2101–2123.

Elder, T.E. (2013). 'The Predictive Validity of Subjective Mortality Expectations: Evidence from the Health and Retirement Study.' *Demography* 50: 569-589.

Gan, L., G. Gong, M. Hurd, and D. McFadden (2015). 'Subjective mortality risk and bequests.' *Journal of Econometrics* 188: 514-525.

Haider, S. J. and D. S. Loughran (2010). 'Elderly Labor Supply: Work or Play?' In K. Christensen and B. Schneider, eds., *Workplace Flexibility: Realigning 20th Century Jobs to 21st Century Workers*. Ithaca, NY: Cornell University Press, pp. 110–127.

Hamermesh, D.S. (1985). 'Expectations, Life Expectancy, and Economic Behavior.' *Quarterly Journal of Economics* 100(2): 389-408.

Hudomiet, P., M. D. Hurd, and S. Rohwedder (2021). 'Forecasting mortality inequalities in the U.S. based on trends in midlife health.' *Journal of Health Economics* 80: 102540.

Hurd, M.D. (1989). 'Mortality Risk and Bequests.' *Econometrica* 57(4): 779-813.

Hurd, M.D. and K. McGarry (1995). 'Evaluation of the Subjective Probabilities of Survival in the Health and Retirement Study.' *Journal of Human Resources* 30: S268-S292.

Hurd, M.D. and K. McGarry (2002). 'The Predictive Validity of Subjective Probabilities of Survival.' *The Economic Journal* 112: 966-985.

Hurwitz, A., Mitchell, O. S., & Sade, O. (2022). Testing methods to enhance longevity awareness. *Journal of Economic Behavior & Organization*, 204, 466-475.

Kolluri, S. (2024). *From longevity literacy to longevity fitness*. New York, NY: TIAA Institute.

Loichinger, E. and D. Weber (2016). 'Trends in Working Life Expectancy in Europe.' *Journal of Aging and Health* 28(7): 1194–1213.

Lusardi, A., O.S. Mitchell, and N. Oggero (2020). 'Debt Close to Retirement and its Implications for Retirement Well-being.' In O.S. Mitchell and A. Lusardi, eds., *Remaking Retirement: Debt in an Aging Economy*. Oxford, UK: Oxford University Press, pp. 15-34.

Mittal, C., V. Griskevicius, and K.L. Haws (2020). 'From Cradle to Grave: How Childhood and Current Environments Impact Consumers' Subjective Life Expectancy and Decision-Making.' *Journal of Consumer Research* 47: 350-372.

Mullen, K. J. (2021). 'Using the Health and Retirement Study for Research on the Impact of the Working Conditions on the Individual Life Course.' *Prepared for the HRS Data Monitoring Committee*.

Parker, M., M. Bucknall, C. Jagger, and R. Wilkie (2020a). 'Population-based estimates of healthy working life expectancy in England at age 50 years: analysis of data from the English Longitudinal Study of Ageing.' *Lancet Public Health* 5(7): e395–e403.

Parker, M., M. Bucknall, C. Jagger, and R. Wilkie (2020b). 'Extending Working Lives: A Systematic Review of Healthy Working Life Expectancy at Age 50.' *Social Indicators Research* 150: 337–350.

Payne, J.W., N. Sagara, S.B. Shu, K.C. Appelt, and E.J. Johnson (2013). 'Life expectancy as a constructed belief: Evidence of a live-to or die-by framing effect.' *Journal of Risk and Uncertainty* 46: 27-50.

Perozek, M. (2008). 'Using Subjective Expectations to Forecast Longevity: Do Survey Respondents Know Something We Don't Know?' *Demography* 45(1): 95-113.

Zaninotto, P., G. D. Batty, S. Stenholm, I. Kawachi, M. Hyde, M. Goldberg, H. Westerlund, J. Vahtera, and J. Head (2020). 'Socioeconomic Inequalities in Disability-free Life Expectancy in Older People from England and the United States: A Cross-national Population-Based Study.' *Journals of Gerontology - Series A Biological Sciences and Medical Sciences* 75(5): 906–913.

Figures

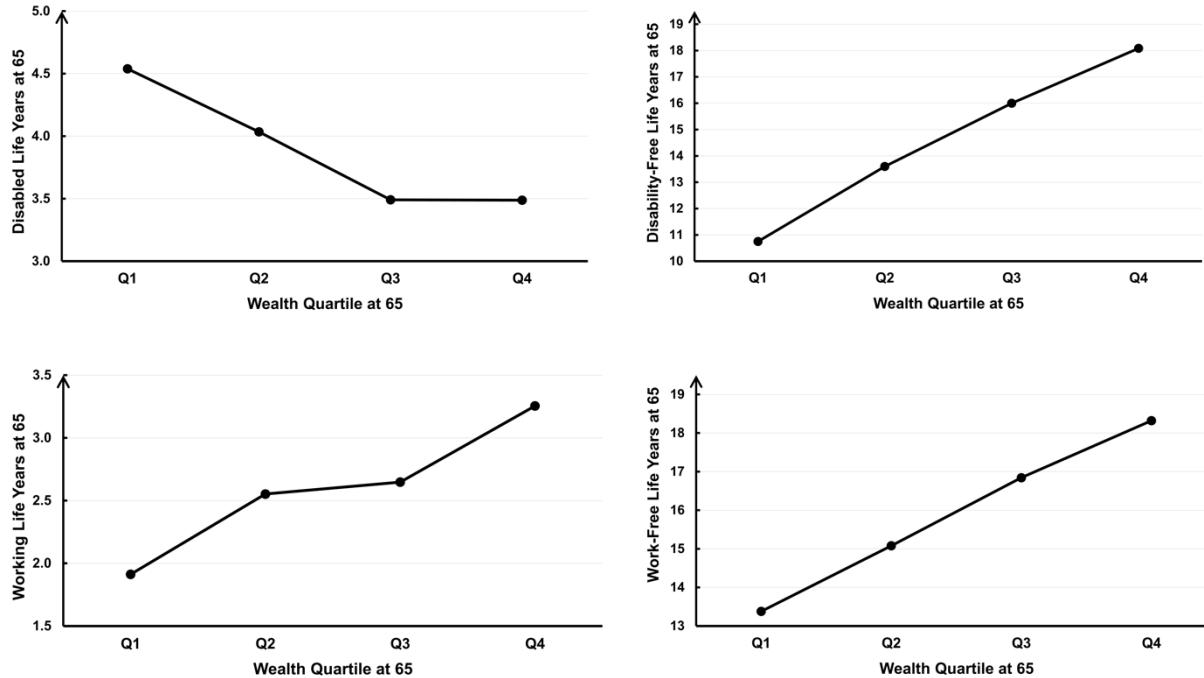


Figure 1. Trends in Life Years With and Without Disability and Work, 1996 Cohort.

Note: Figures show the outcome labeled on the vertical axis for HRS respondents aged 64-66 in 1996. The horizontal axes are wealth quartiles calculated at age 65. The analog visuals broken down by sex are in Figure 1 of Bavafa et al. (2023).

Source: Authors' calculations using the HRS, 1996-2018.

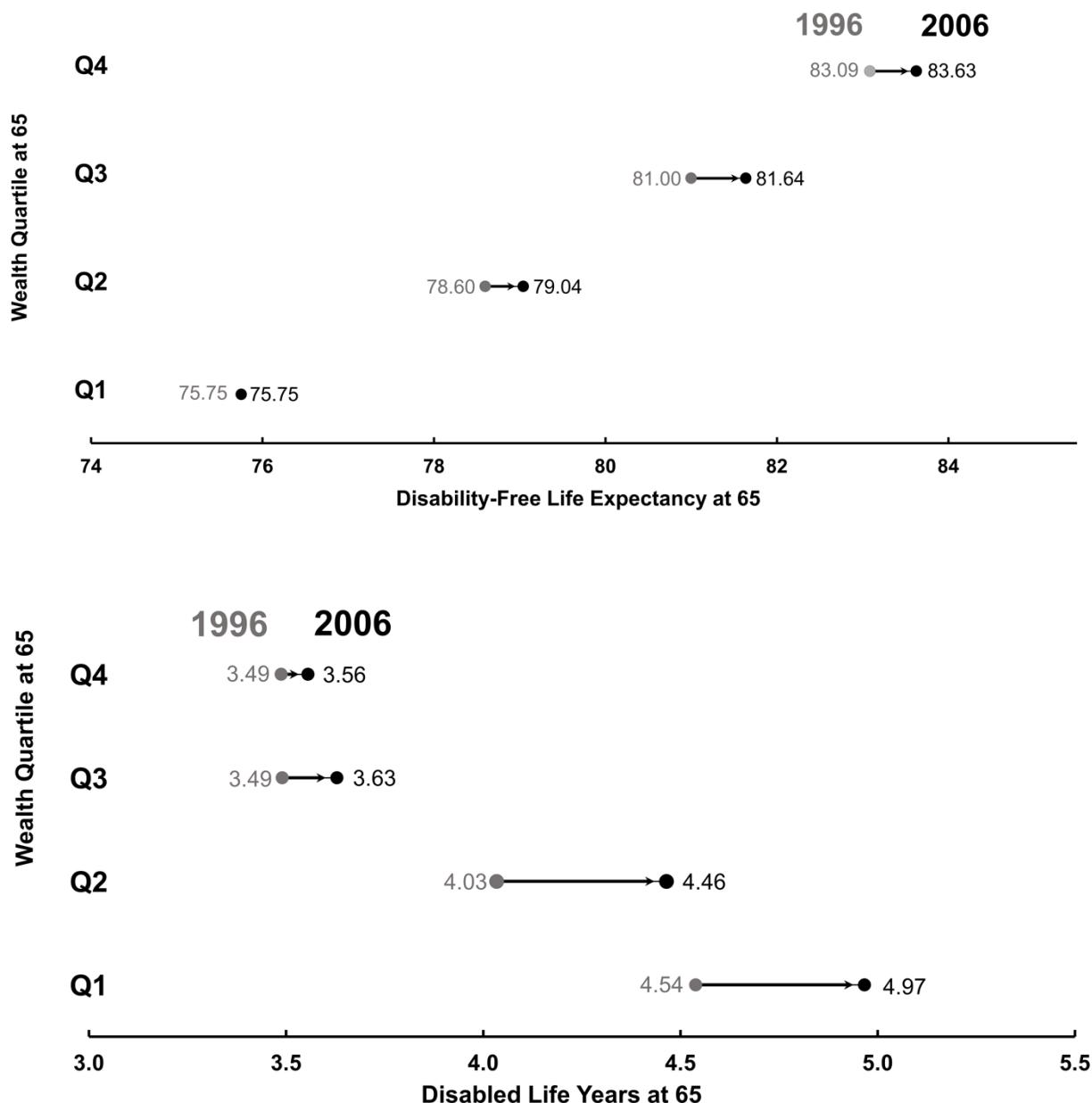


Figure 2. Changes in Disability-Free Life Expectancy and Disabled Life Years.

Note: Figures show the outcome labeled on the horizontal axes for HRS respondents aged 64-66 in 1996 and 2006. The vertical axes are wealth quartiles calculated at age 65. The analog visuals broken down by sex are in Figure 2 of Bavafa et al. (2023).

Source: Authors' calculations using the HRS, 1996-2018, and data from SSA and the National Center of Health Statistics.

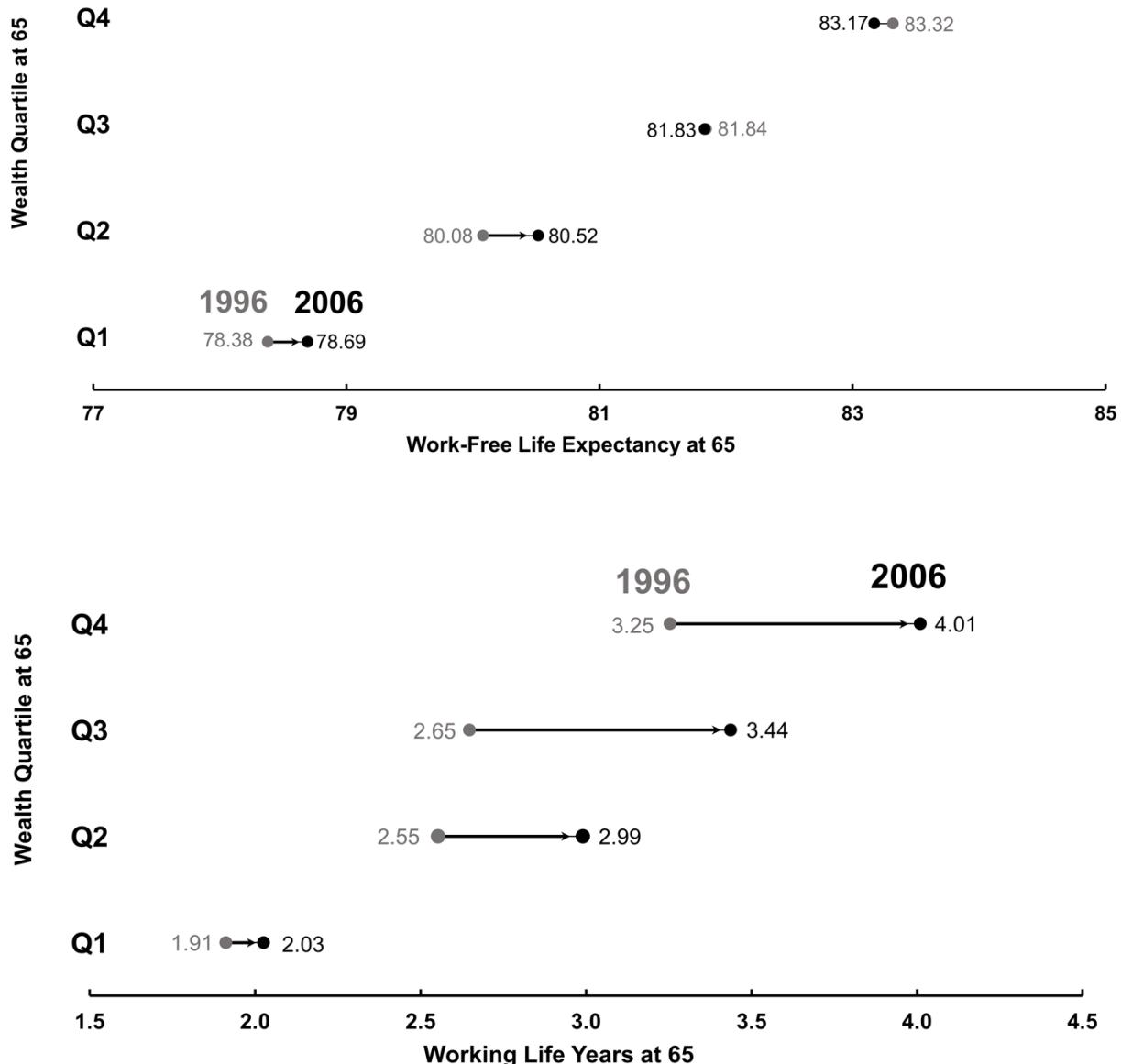


Figure 3. Changes in Work-Free Life Expectancy and Working Life Years.

Note: Figures show the outcome labeled on the horizontal axes for HRS respondents aged 64-66 in 1996 and 2006. The vertical axes are wealth quartiles calculated at age 65. The analog visuals broken down by sex are in Figure 3 of Bavafa et al. (2023).

Source: Authors' calculations using the HRS, 1996-2018, and data from SSA and the National Center of Health Statistics.

Tables

Table 1. Regression results for propensity to be disabled, working

	(1) Disabled	(2) Working
Wealth Quartile 2	-0.063*** (0.012)	0.028** (0.011)
Wealth Quartile 3	-0.106*** (0.011)	0.006 (0.011)
Wealth Quartile 4	-0.124*** (0.011)	0.038*** (0.011)
2006 Cohort	0.030** (0.012)	0.012 (0.012)
Wealth Quartile 2, 2006	-0.014 (0.016)	0.042*** (0.016)
Wealth Quartile 3, 2006	-0.039*** (0.014)	0.079*** (0.016)
Wealth Quartile 4, 2006	-0.042*** (0.014)	0.082*** (0.015)
Race/ethnicity indicators	✓	✓
Age/gender indicators	✓	✓
Died next wave	✓	✓
Reference Group Mean	0.565	0.442
Observations	30,426	30,398
<i>R</i> ²	0.067	0.188

Notes: This table, reproduced from Bavafa et al. (2023), shows regression results with the dependent variable indicated by the column heading. Regressions use Equation 4 and are linear probability models that apply individual HRS weights. The reference group is the first wealth quartile in 1996. Standard errors are in parentheses. Individuals aged 64-66 in 1996 and 2006 are included. Significance is given by: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. \

Source: HRS, 1996-2018.

Table 2. Subjective mortality and predictions about work

	(1) Live to 75?	(2) Live to be 80-100?	(3) Work Full-Time After 65?
Wealth Quartile 2	0.067*** (0.018)	0.041** (0.021)	-0.037 (0.036)
Wealth Quartile 3	0.118*** (0.017)	0.052*** (0.020)	-0.073** (0.036)
Wealth Quartile 4	0.164*** (0.017)	0.101*** (0.019)	-0.111*** (0.034)
2006 Cohort	-0.020 (0.022)	-0.096*** (0.025)	-0.118*** (0.033)
Wealth Quartile 2, 2006	0.026 (0.029)	0.045 (0.030)	0.062 (0.043)
Wealth Quartile 3, 2006	0.010 (0.027)	0.038 (0.028)	0.111*** (0.043)
Wealth Quartile 4, 2006	0.006 (0.026)	0.039 (0.027)	0.121*** (0.041)
Race/ethnicity indicators	✓	✓	✓
Age/gender indicators	✓	✓	✓
Died next wave	✓	✓	✓
Reference Group Mean	0.565	0.442	0.269
Observations	6,208	5,523	3,586
<i>R</i> ²	0.055	0.058	0.027

Notes: This table shows regression results with the dependent variable indicated by subjective responses to chances as to the questions in the column headings. Answers are originally given on a 0-100 scale and are then converted to be on a 0-1 scale. Regressions use Equation 4 and apply individual HRS weights. The reference group is the first wealth quartile in 1996. Standard errors are in parentheses. Individuals aged 60-65 in 1996 and 2006 are included. Significance is given by: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: HRS, 1996-2018.

Table 3. Subjective morbidity

1992 Cohort Wealth Quartiles	Coefficient (Standard Error)	2002 Cohort Wealth Quartiles	Coefficient (Standard Error)
1	Reference Group	1	-0.015 (0.023)
2	-0.021 (0.026)	2	-0.002 (0.030)
3	-0.007 (0.025)	3	-0.061** (0.029)
4	-0.031 (0.026)	4	-0.055* (0.029)
Race/ethnicity indicators	✓		
Age/gender indicators	✓		
Died next wave	✓		
Reference Group Mean	0.461		
Observations	5,905		
R^2	0.025		

Notes: This table shows regression results where the dependent variable is the self-reported chance of having a work-limiting health condition in the next 10 years. Answers are originally given on a 0-100 scale and are then converted to be on a 0-1 scale. Regression uses Equation 4 and applies individual HRS weights. The reference group is the first wealth quartile in 1992. Standard errors are in parentheses. Individuals aged 60-65 in 1992 and 2002 are included. Significance is given by: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: HRS, 1992-2018.

Endnotes

ⁱ This chapter is adapted in part from our recent study (Bavafa et al. 2023). The analyses related to wealth inequalities in subjective expectations on longevity, disability, and work are new to this chapter.