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CONSUMPTION, EMPLOYMENT UNCERTAINTY, AND CAPITAL LOSSES

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Introduction

From a household point of view the two major changes associated with the economic disruption of the last eighteen months are, first, that the unemployment rate and presumably the risk of unemployment have risen sharply, and secondly, that there have been large declines in asset prices. It is obviously not possible to say how far either of these changes is permanent, but there is a risk that steady state unemployment may increase, at least for a substantial period of time. Equally, given that asset prices in 2007 were unusually high, it seems most unlikely that they will rapidly recover to the levels of two years ago. This study explores the implications of these two changes for household behaviour.

The analysis is conducted using the National Institute Benefit and Tax Model (NIBAX) made available to the Department for Work and Pensions and HM Revenue and Customs. NIBAX is a simulation model of household behaviour, which operates on the assumption that households plan for the future. This planning is considered to take account of the framework of taxes and benefits that exists, in the light of practical considerations regarding the uncertainty of the future, and the importance of credit constraints. Thus the results tell us how people would behave if they did understand their economic environment and planed rationally for an uncertain future.

The structure of this paper is as follows. First, we provide an outline description of the NIBAX model. We then discuss the simulation framework and present simulation results. It turns out that the effects of capital losses depend very much on whether labour supply is exogenous and this is illustrated. Finally conclusions are drawn.

The NIBAX Model

The Model as a Whole

The core of the model is that households plan ahead, choosing their labour supply and their consumption to maximise the present discounted sum of future welfare, in the light of an uncertain future life-span. Households' decision-making is strongly influenced by the fact that current decisions affect welfare in future years. Very obviously, saving reduces current consumption and thus current utility but increases expected future utility. The consumption/saving decision reflects this balance between current and future enjoyment. Less obviously, but also importantly, we find that labour supply patterns can be understood only on the assumption that people's future earnings potential is affected by their current labour supply. Early in the working life (aged 20-35) it is difficult to understand why many people work full-time when their current wages are relatively low, without the assumption that labour supply today raises future earnings prospects and thus future consumption. Thus the work/leisure

decision that people make is assumed to be influenced by their assessment of the benefits, in terms of future earnings of current work as well as by the more obvious disutility associated with current work.

If the future implications of any particular choice were clear and certain then it would be a reasonably simple matter to calculate the optimal choice of each household at each point in time. But the most that can be identified is the random process driving wage income. People need to make their choices in recognition of their ignorance about what the future will bring both in terms of their earnings potential and with respect to the length of their life.

People's calculations are made on the assumption that they understand the tax and benefits system as it is at present, and that they are confident that current arrangements will, with suitable indexation, be maintained.

Given these assumptions, NIBAX is able to address the decision making problem by working backwards from an assumed maximum possible life-span of one hundred and ten years. Since it is assumed that people do not plan to leave legacies, consumers consume all of their income and wealth in the last possible year of their lives. In the year prior to their last possible year of life, they maximise their expected welfare over both the current and succeeding year, taking account of the fact that they may not survive to the last possible year of life. Working backwards again, at age one hundred and eight, people choose their consumption to maximise the discounted welfare that they derive from the current year, and from the possibilities open to them should they survive into the next year. Fortunately it is possible to address the problem recursively, considering only two adjacent years at a time, and for this reason the problem is tractable.

In old age people have to decide only on how much of their resources (wealth and income taken together) so consume in the current period and how much to save up for the future. While we assume that retirement is a choice people make in the face of the incentives to which they are subject, the reality is that very few people work beyond the age of seventy, and we treat that as a *de facto* compulsory retirement age. People younger than this, therefore, have to make choices about both labour supply and consumption. Nevertheless the same recursive approach can be adopted. In the light of their current circumstances, which include cumulated wealth and current earning power, people choose how much to consume, and whether to work full time, part time or not at all.

An important feature of NIBAX is that it simulates the behaviour of a large number of households (five thousand in our simulations) over their life courses and spread out over the income distribution. This means that it provides simulations for households at all points on the income distribution and at all ages. The overall impact of any disturbance to the economy can then be calculated by aggregating these individual

effects, taking due account of the number of households present by age in the actual population. Thus the model is both micro-economic and macro-economic. It allows us to explore both the distributional effects and the aggregate consequences of any changes. In this respect it has a substantial amount in common with conventional micro-simulation models (e.g. Immervoll *et al.* 2007). But unlike such models it represents people's responses to changes in their expectations regarding the future economic environment.

A detailed non-technical description of the model and some applications is provided by Van de Ven and Weale (2009). This provides full information on the choice of model parameters and the capacity of the model to match observed data. A more detailed technical account of an earlier version of the model is offered by Sefton, van de Ven and Weale (2008).

Unemployment

Models of this type focus on supply conditions and inevitably therefore do not reflect the sort of sharp down-turn in demand that economies such as the United Kingdom have experienced during the last year. In this modelling approach unemployment as a choice that people make; if the wage that they are offered is too low, then they will choose not to work. Nevertheless, it is possible to represent general labour market conditions and the impact of changes to general labour market conditions by assuming that there is a given exogenous chance that any one person will receive a wage offer that is sufficiently low to ensure that they will choose not to work. An exogenous increase in the chance of receiving such a low-wage offer then, represents the impact of a deterioration in economic conditions such as has recently been experienced.

In broad terms, we can identify the likely effects of a labour market deterioration by simulating a shock to the probability of a low-wage offer as described above. In this context, savings decisions are influenced by two factors. First, the increase in risk described by an increased probability of a low-wage offer provides an incentive for people to undertake more precautionary saving. Precautionary saving is a form of self insurance, where people put money aside for a "rainy day". In the behavioural framework upon which our simulations are based people balance the chance of needing resources for precautionary purposes, against the loss of welfare from giving up immediate consumption.

Secondly, people save to provide for their retirement (life-cycle saving). In contrast to the precautionary motive described above, the incentive to save for life-cycle purposes is reduced by an increase in the probability of a low wage offer, because this type of change to the economic environment reduces expected life-time income. The impact of this may be magnified if state retirement benefits are unchanged because life cycle saving is needed only to support the retirement spending that people want to undertake over and above what can be financed by state benefits. This motive is likely to depress saving more than in proportion to the coincident fall in life-time income.

A separate question, for which it is harder to come to clear *a priori* view, but which the simulations can identify, is the impact of an increased risk of unemployment on retirement choices. If people simply were poorer throughout their life-times as a result of an increased risk of unemployment, it is not clear that this would have any impact on retirement behaviour. But with reduced opportunities for work, it is possible that people may be keen to seize the opportunity to work when it appears, and thus extend their working lives so as to offset the impact of increased chance of low-wage job offers.

Capital Losses

As explained above, saving is motivated by both precautionary and life-cycle factors. Capital losses of the type experienced since the start of the financial crisis in the summer of 2007 will lead to increased saving and reduced consumption as people try to offset some of their losses. They will also lead to increased labour supply; in effect people respond to their losses by cutting back on consumption of leisure as well as consumption of goods as a response to their losses.

The effect of wealth and thus of capital losses on consumption is well documented at a macro-economic level (Lettau and Ludvigson, 2004, Davis and Barrell, 2007). But the impacts shown in such studies are the aggregates of the individual effects which NIBAX identifies. It is, of course, possible to aggregate the outcome shown in NIBAX and to compare this with the macro-economic evidence.

This increased labour supply is likely to be particularly noticeable among people towards the top of the wealth distribution. The retirement pattern is U-shaped as a function of wealth. People with low levels of income and wealth are able to retire early, relying on the Minimum Income Guarantee once they reach sixty and, before they are old enough to qualify for that, possibly on invalidity benefit functioning as a very early retirement scheme. People with high levels of wealth can afford not to work. It is those in the middle of the distribution who tend to retire later than those at either end of the income/wealth distribution.

Capital losses obviously have little impact on people with low levels of wealth. Their retirement behaviour is scarcely affected by such losses because they have almost no capital to lose. Otherwise we should expect to see some degree of postponed retirement as a result of capital losses. The impact of these losses on labour supply is likely to increase with the amount of those losses.

The Simulation Framework and Impact Effects

It is clear from the account above that people's responses to any disturbance will depend on their circumstances ahead of that disturbance and on their age at the time

that the disturbance occurs. We cannot, therefore, with a single simulation of NIBAX, identify the impact of a change in the risk of a low-wage offer or of unexpected capital losses. The behaviour of someone at age forty in an economy with a high risk of a low-wage job offer will depend on whether they have lived all their life in such an environment or on whether they had, up to the age of thirty-nine lived and expected to live in an economy with a low risk of a low-wage job offer.

So as to keep the number of simulations to manageable proportions, we carry out simulations at only a small number of different ages. We examine the effects of labour market shocks on people aged twenty, thirty, forty, fifty and sixty; we use these to calculate the macro-economic impact of these shocks by drawing on data from the 2008 Labour Force Survey showing the number of households classified by the age of the household head. We assume that the behaviour of the twenty-year old household represents that of households under twenty-five, the thirty-year old household represents the behaviour of household aged twenty-five to thirty-four and so on with the sixty-year old household representing the behaviour of households aged fifty-five to sixty-nine since everyone is assumed to have retired by age seventy.

These assumptions allow us to weight up the effects of the shock so as to identify the economy-wide average effect of the disturbance. It should be stressed that the aggregation is approximate but nevertheless it provides a valuable way of assessing the plausibility of the outcome.

The assessment of the effects of capital losses is similar. However, since people are assumed to start their working lives at age twenty with no savings, capital losses at this age have no effect. On the other hand retired people do have savings and their consumption is affected by capital losses. Thus when we look at capital losses we include an additional simulation for seventy-year olds; we assume this summarises the behaviour of all households with heads aged sixty-five and older, with the simulation for sixty-year olds representing only the behaviour of people between ages fifty-five and sixty-four.

The magnitudes of the shocks that we look at are to some extent arbitrary. The results are based on the simulation of a cohort of five thousand households. But once we look at particular ranges in the income and wealth distribution the results may be affected by random variations. This is particularly true once we look at old people, because the size of the cohort declines through simulated mortality. For this reason it is sensible to look at the impact of fairly large changes. We therefore look at the impact of an increase in the risk of a low-wage offer. For single people this rises from 27% in the base to 33% in the perturbed simulation. For couples this rises from nought in the

base to 6% in the perturbation[1]. We explore the effect of a uniform 35% loss applied to all gross assets owned by households, but not to their liabilities.

We focus our detailed analysis of the results on people at ages twenty, forty and sixty for the labour market disturbance and at ages forty and sixty for capital losses, looking at the implications for consumption, labour supply and wealth. For reasons of clarity we present figures only for the bottom, middle and top quintiles defined by ranking of aggregate disposable income earned prior to age sixty five in the base run. However, it should be stressed that these are only a small part of the full set of simulation results generated by the model and results for other variables or for the other ages at which we have produced simulations are also available. Despite the fact that we limit our detailed analysis to two or three ages, all five ages are used in the calculation of the macro-economic effects as indicated above.

Simulation Results

A Reduction to Employment Opportunities

The reduction in employment opportunities is modelled as a six percentage point increase in the chance of a low-wage offer. Households that receive a low-wage offer are assumed to choose not to work. Thus, this represents the impact of a six percentage point increase in involuntary unemployment. The analysis is conducted on the assumption that the shock was not anticipated prior to its occurrence, and was considered to be a permanent change to the labour market after it occurred.

The first, and most general point to recognise in interpreting the results, is that the six percentage point increase in the risk of a low-wage job offer does not mean an equal reduction in employment. Labour supply is assumed to be sensitive to people's preferences for leisure and consumption. Once people know that the risk of receiving an unfavourable employment offer has increased, they are more likely to work in those periods when they do not receive low wage offers. People react to reduced employment opportunities by making more of those opportunities that they do have. This has the consequence that people are more likely to choose full-time than part-time work when they do have jobs. We consequently examine both the change to the proportion of people employed, and the percentage change to labour input as a function of age.

The Macro-economic Impact

The macro-economic impact is summarised in table 1. We can see that, averaged over the whole population both the proportion of people employed and the input of labour

[1] People can be employed full time, part time or not at all. For couples there are six employment combinations. If the chance of an individual receiving a low-wage offer is 27%, the chance that both members of a couple receive such offers is 7%. Thus the enhancement of employment prospects for couples is not as great as the simple comparison between nought and 27% suggests.

time decline by about 6%. The reduction in net household income and in consumption is only about a quarter of this. This reflects the fact that labour supply rises as a natural response to reflect reduced opportunities. People make more of the opportunities that they do have. It also reflects the fact that labour income is not the only source of household income. Benefit receipts rise to compensate for the loss of labour income, and pension income and income from property are unaffected in the short term.

The fact that the income and consumption changes are almost exactly in balance is not the consequence of any constraint on our model. Indeed since people respond differently at different ages, it might not be observed if the population structure were very different from that shown in the Labour Force Survey.

Table 1 The Effect of a Six Per Cent Increase in the Risk of a Low Age Offer on Aggregate Employment, Income and Consumption

Change in Proportion of Population Employed	-6.05%
Change in Time Spent in Work	-5.47%
Effect on Aggregate Household Income	-1.42%
Effect on Aggregate Consumption	-1.42%

Impacts by Age and Welfare Quintile

In Figure 1 we see the effect on the proportion of people who are employed of reduced employment opportunities for the whole of people's working lives. We present results for three groups of people, the 20% of the population with the lowest life-time income in the base run (the bottom quintile), the 20% group in the middle of the life-time income ranking (the middle quintile), and the top 20% when ranked by life-time income (the top quintile). We can see that, up to the age of about fifty the proportion of the population employed declines roughly in line with the reduced labour market opportunities. The numbers are not exact because the model relies on simulation of a panel of households subject to random shocks; as a consequence random disturbances are present in the results. Figure 2 points to a larger reduction in employment time for the bottom quintile than for the other quintiles. But beyond the age of fifty the experiences of the three quintiles represented diverge sharply on both measures.

Fewer employment opportunities make the bottom quintile more likely to drop out of the labour market; this appears as a sharp reduction in the proportion of total time which they devote to employment. This is attributable to the influence that labour market experience has on wages earned. As experience tends to increase future wages, the overall labour market attachment of people on low incomes is weakened when the probability of involuntary unemployment rises. This reduced incentive to supply labour becomes most evident as households near retirement, particularly about the

time that they become eligible to the Guarantee Credit (age sixty). Only very late in working life, when very few people work anyway does this effect fade away.

By contrast people in the top quintile do not have the prospect of support from the Guarantee Credit, at least to finance the scale of consumption to which they have become accustomed. To make up for reduced employment opportunities earlier in life they increase their labour supply so as to reduce the impact of worsened labour market conditions on their capacity to save for retirement. At the very end of possible working life there is actually an increase in the proportion of time allocated to employment, although it has to be remembered that total employment time by this stage in life is very low. Not surprisingly the experience of the middle quintile is a balance of these two pressures and the proportion of people employed in this group lies between the other two.

Lower employment opportunities mean lower incomes and thus less consumption. At any given rate of return on savings, life-time household consumption depends only on labour and social security income. Social security payments are not affected by the labour market shock, except in the sense that people who receive low wage offers become entitled to state benefits. But over the life time benefits are a much more important component of total income for the bottom quintile than for the middle and top quintiles. Thus the consumption of this quintile is affected less than the other quintiles. This can be seen in Figure3.

The age profile of the fall in consumption shows a U shaped trend for all three population quintiles. Early in the working lifetime, this reflects a preference to put off suffering a fall in consumption until later ages. Toward the end of the lifetime, it reflects the fact that most households have spent all of their liquid wealth, and live year to year on the annual income they receive from their pension annuity and state retirement benefits. The general preference to put off the suffering a fall in consumption indicates that life-cycle motives tend to trump precautionary concerns. This result depends crucially upon the rates of return that are assumed to accrue to savings, the rate of time preference in consumption, and the age specific rates of mortality. Put another way, simulated households prefer to put off the fall in consumption that is implied by reduced lifetime incomes because they are impatient, and because falls in consumption later in life are mitigated by the possibility of early mortality.

Finally in Figure 4 we show the impact on total wealth. Not surprisingly, the wealth of the top quintile is most affected, for the simple and obvious reason that this quintile holds much more wealth than the other cohorts. But it is also noteworthy that early in life there are small but clearly noticeable increases in wealth. These represent increased precautionary saving as a response to the increased risk of unemployment. The effect is most marked with the bottom quintile. The reason is that the other quintiles save more as a matter of course and are able, after a fairly short period, to

draw on their liquid savings to meet precautionary demands. Since the bottom quintile saves very little, a substantially increased precautionary need can be met only out of increased saving and not out of existing saving.

We have limited ourselves to displaying a small number of the outputs from the model. However one item not displayed is worthy of attention. It was mentioned above that, because state benefits contribute to household income, and because supply of labour is endogenous, income does not change in line with employment opportunities *pari passu*. In the first five years of working life, for the bottom quintile net income declines by an average of 1.20% of base consumption, while consumption declines by 1.83%. Similar figures apply for the middle and top quintiles. This creates the margin by which young people increase their wealth holdings early in life and illustrates the difference between the change in the proportion employed and the change in income of any group of working age.

Figures 5 to 8 show similar outcomes, on the assumption that the labour market disturbance happens at age 40 and was unanticipated before then. The effect on the proportion of the population employed beyond the age of 40 is not very different from that if the disturbance occurred at the start of their working lives. But the impact on consumption is plainly more muted; the reason for this is easy to understand. People have saved up between ages 20 and 40 on the assumption that base case labour market conditions would continue for the rest of their lives. When labour market conditions worsen they have larger savings than they would have, had they spent their whole lives in the economy with fewer employment opportunities. Thus their natural response is to enjoy the benefits of this extra past saving. Since the disturbance is expected to be permanent, the natural thing is to allocate it across all of their remaining lives rather than fritter it away in the short term.

A consequence of finding that they have too much wealth at the age of 40 means that, although life has become riskier, there is no need for extra precautionary saving. Thus we do not see the initial extra saving which is present when the disturbance occurs at age 20.

These effects are more pronounced if we look at the effects of a disturbance occurring at age 60 shown in figures 9 to 12. Consumption is much less affected because labour income is a relatively unimportant source of finance for the remaining life-time consumption of 60-year olds. The impact on labour supply differs much less across quintiles than it does after disturbances earlier in life.

Figure 1 The Effect of Reduced Employment Opportunities at Age 20 on the Proportion of People Employed

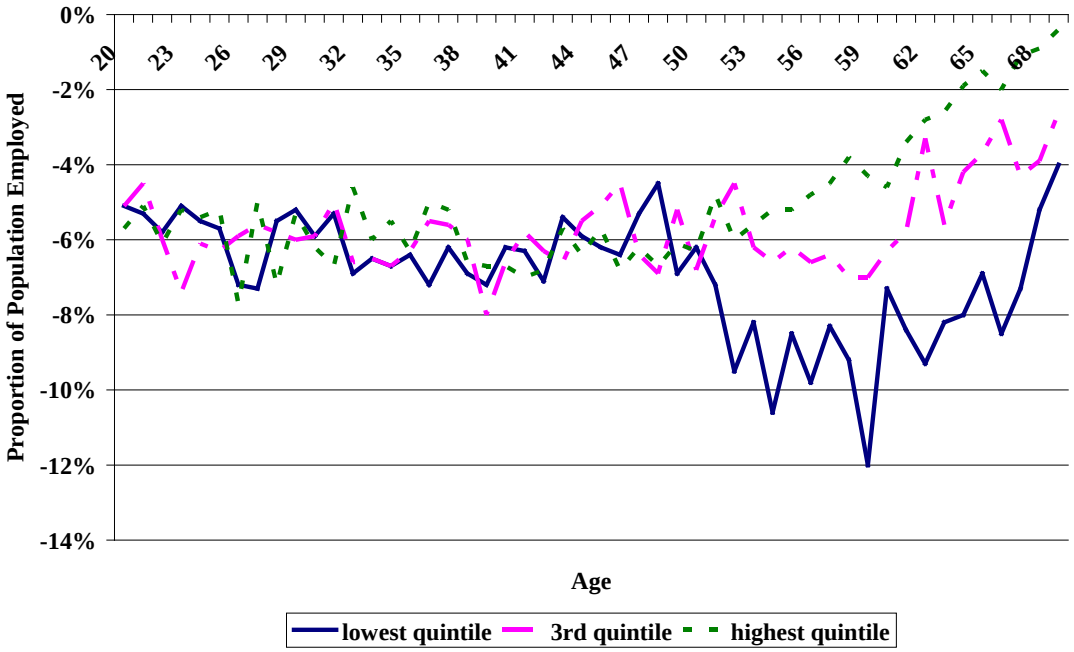


Figure 2 The Effect of Reduced Employment Opportunities at age 20 on Time Spent in Employemnt

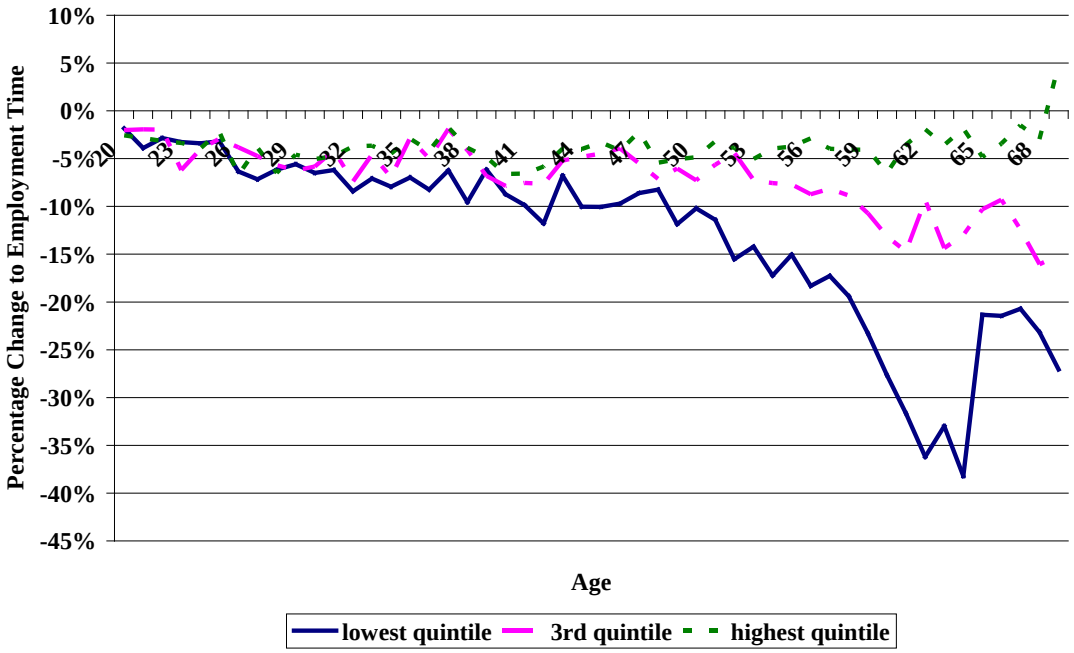


Figure 3 The Effect of Reduced Employment Opportunities at age 20 on Consumption

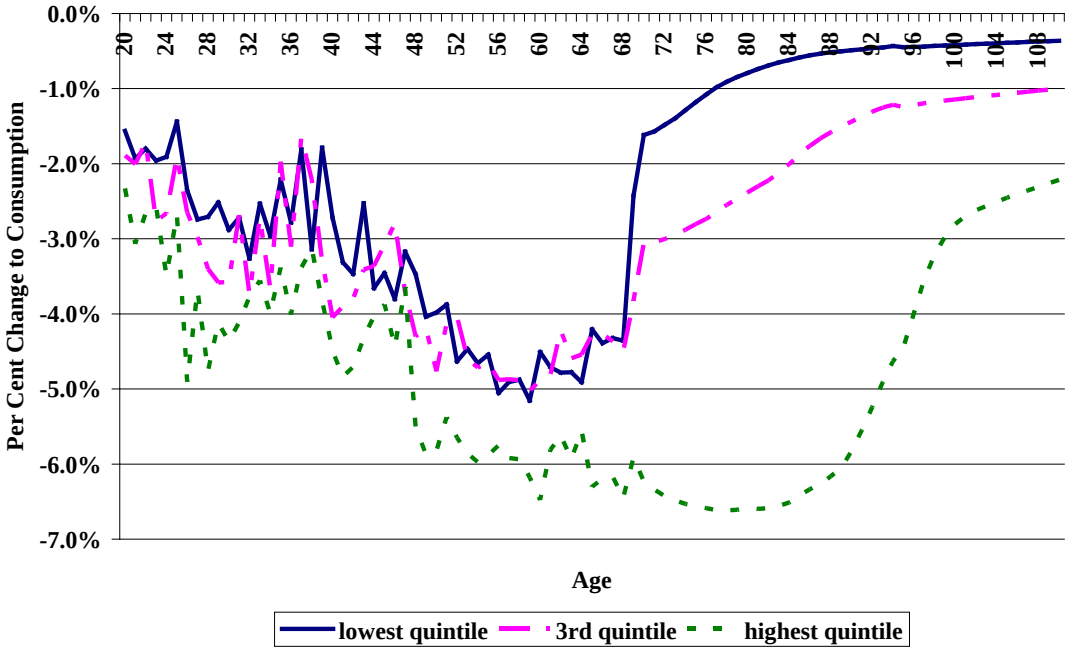


Figure 4 The Effect of Reduced Employment Opportunities at age 20 on Wealth

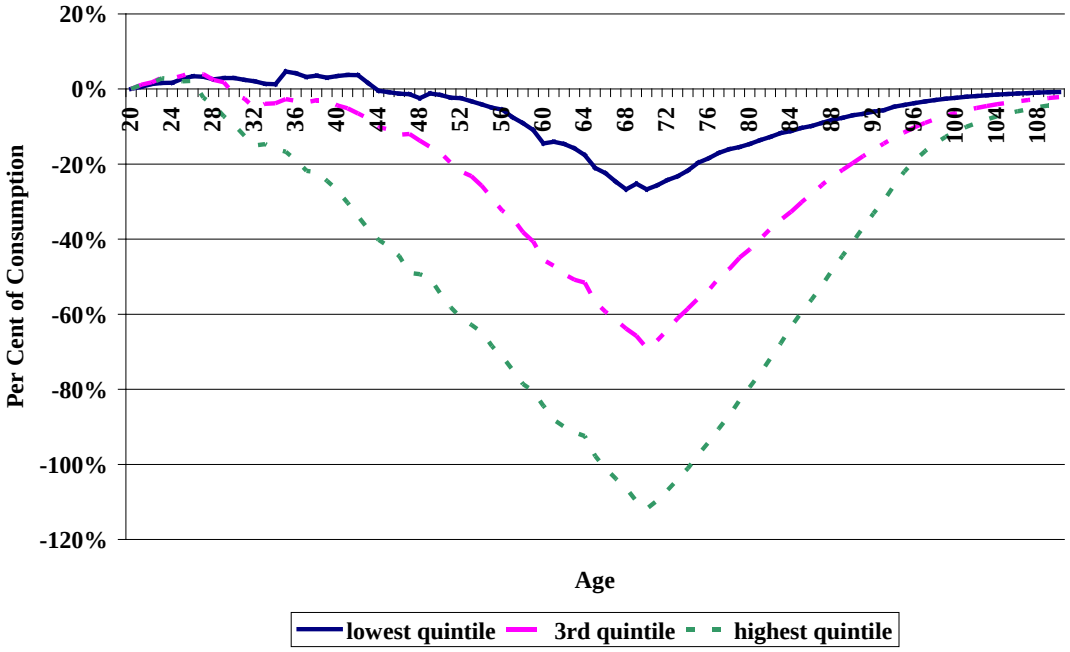


Figure 5 The Effect of Reduced Employment Opportunities at Age 40 on the Proportion of People Employed

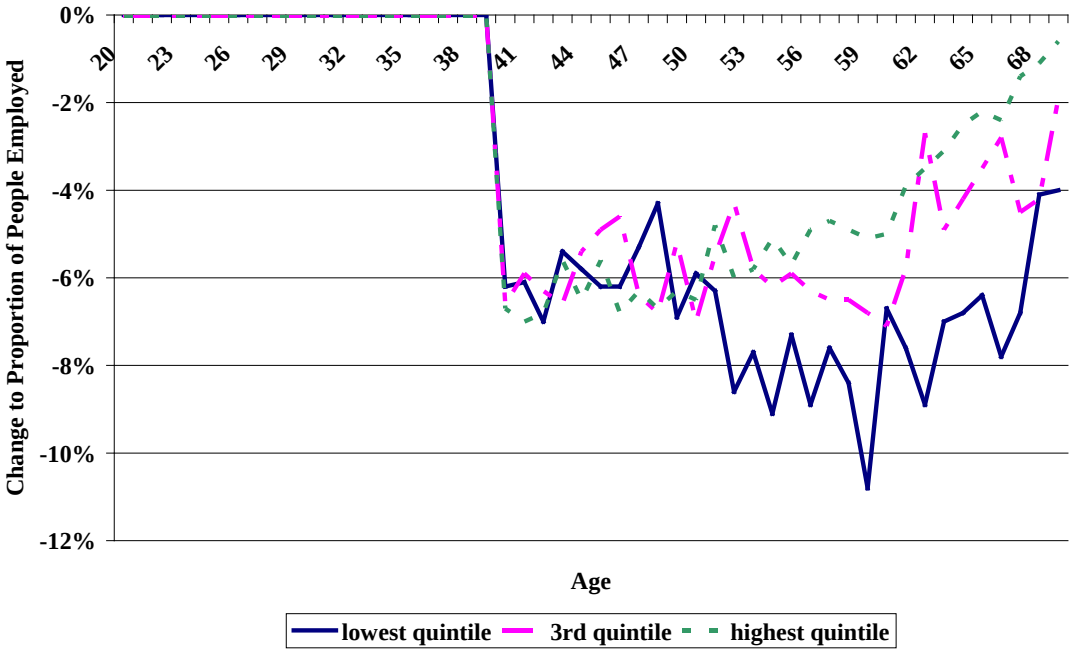


Figure 6 The Effect of Reduced Employment Opportunities at Age 40 on the Proportion of Total Time Allocated to Employment

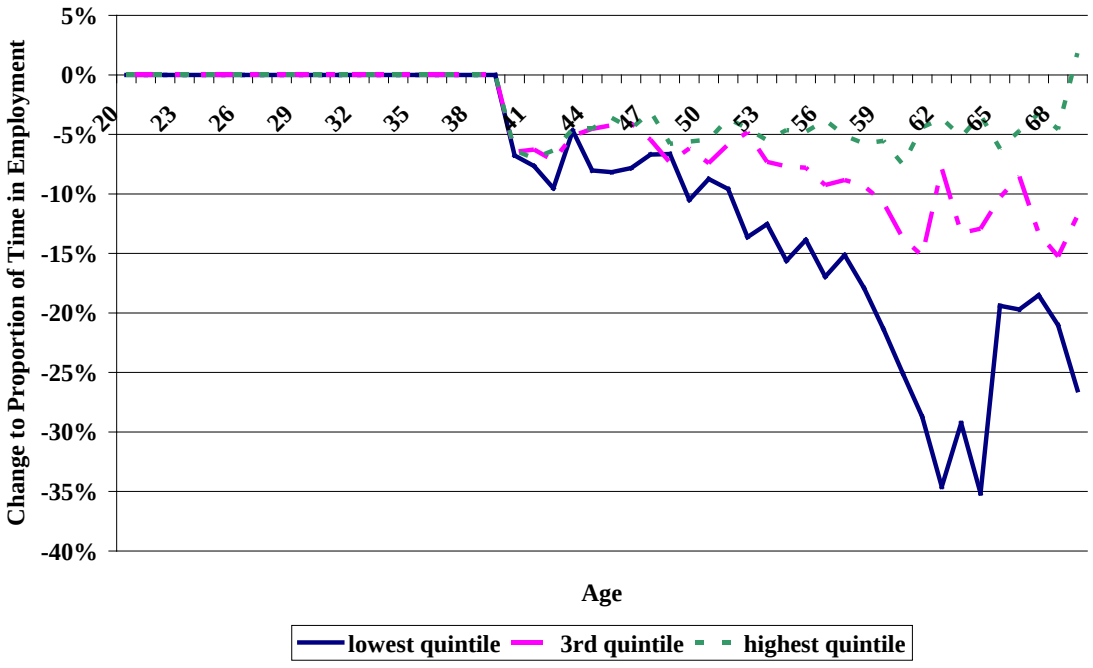


Figure 7 The Effect of Reduced Employment Opportunities at age 40 on Consumption

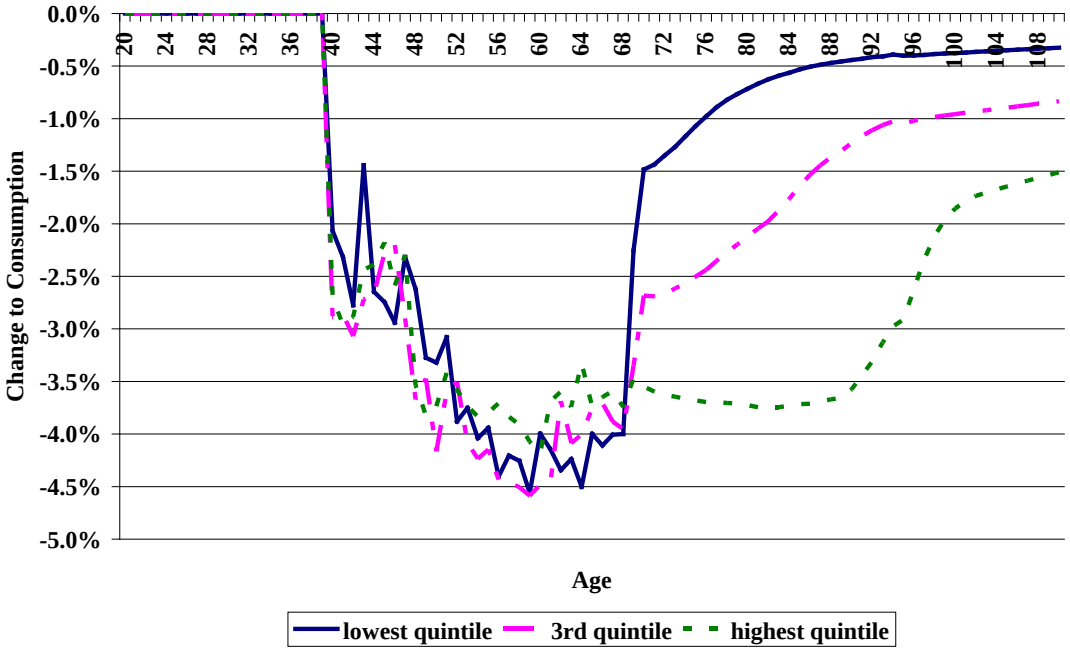


Figure 8 The Effect of Reduced Employment Opportunities at age 40 on Wealth

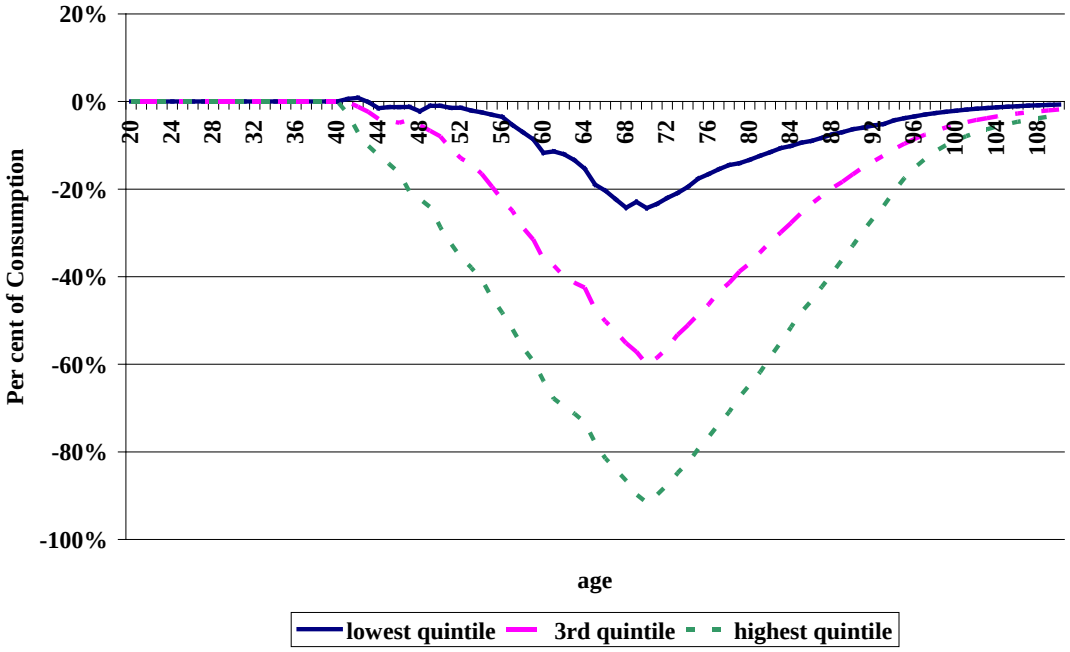


Figure 9 The Effect of Reduced Employment Opportunities at Age 60 on the Proportion of People Employed

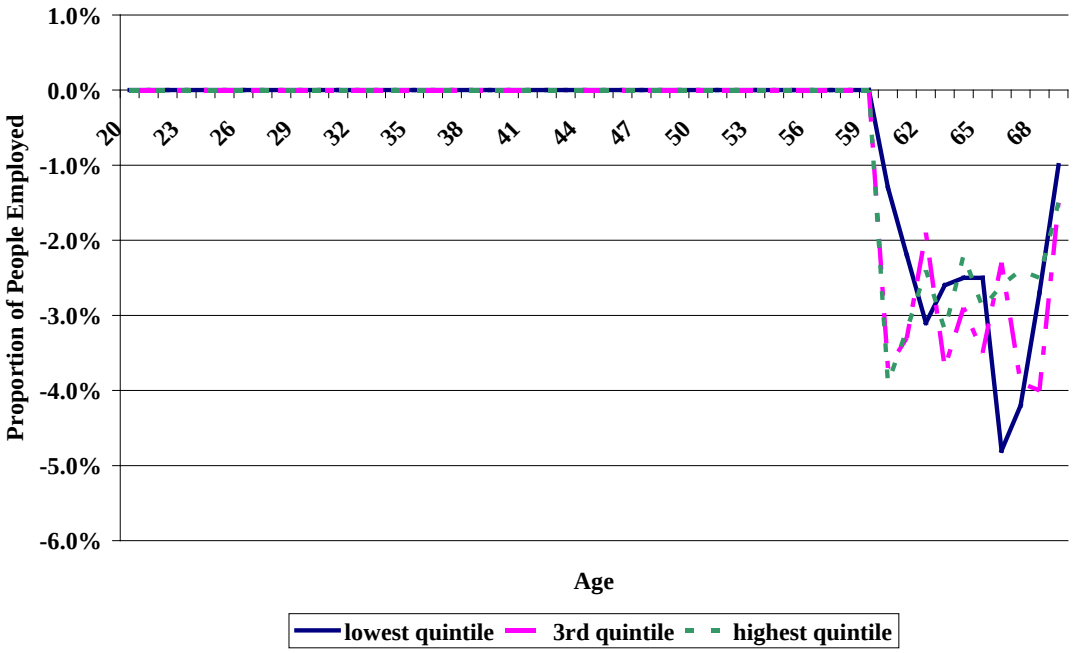


Figure 10: The Effect of Reduced Employment Opportunities at age 60 on Time in Employment

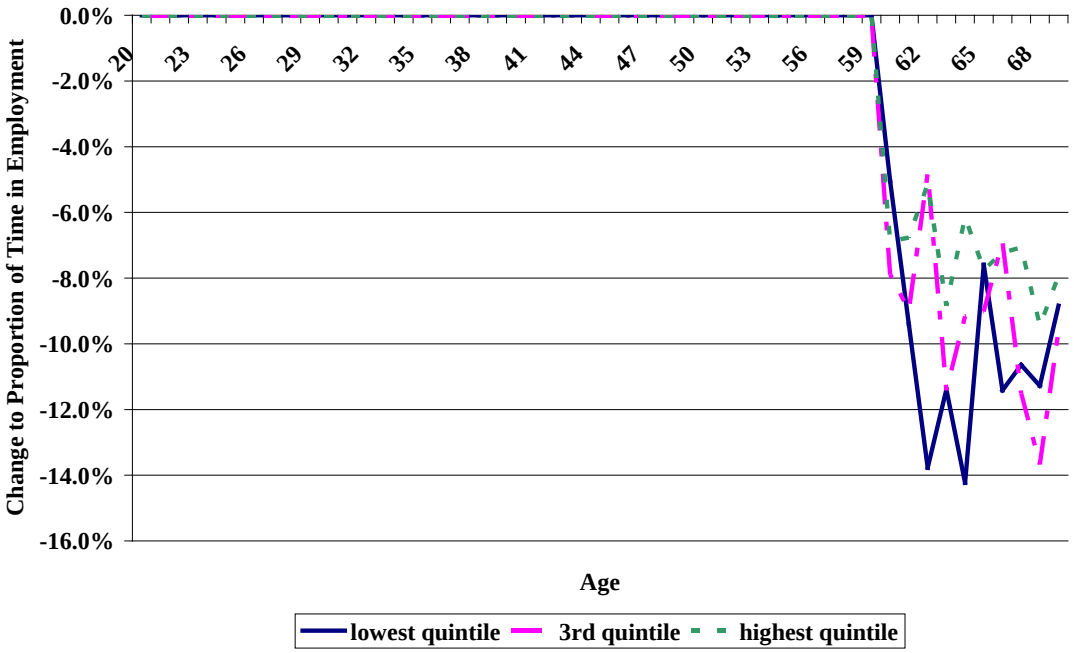


Figure 11 The Effect of Reduced Employment Opportunities at age 60 on Consumption

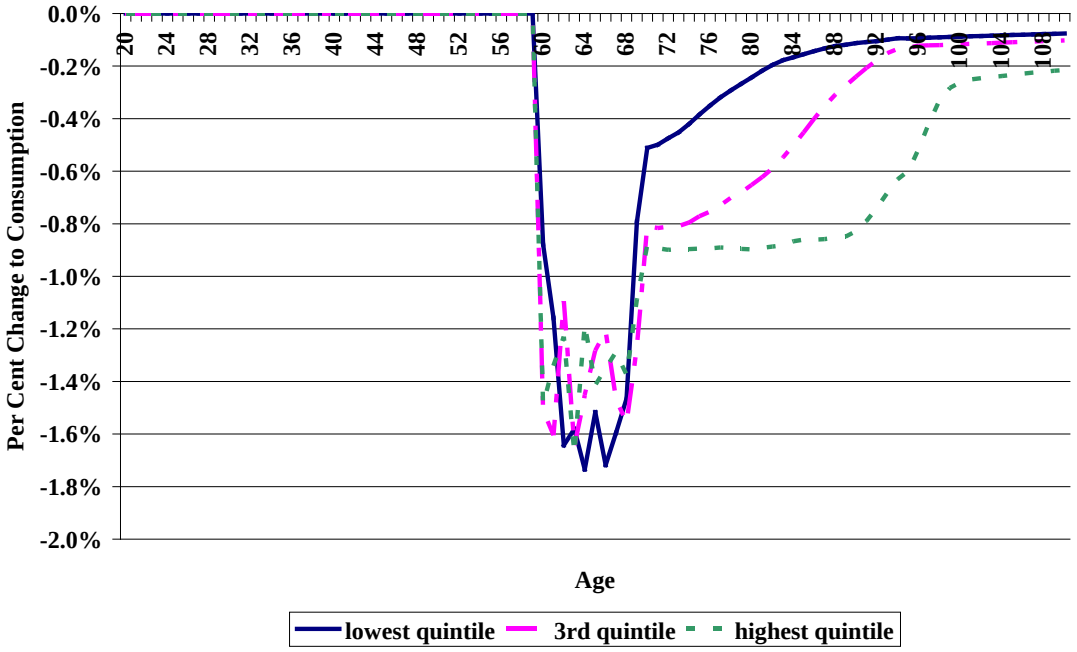
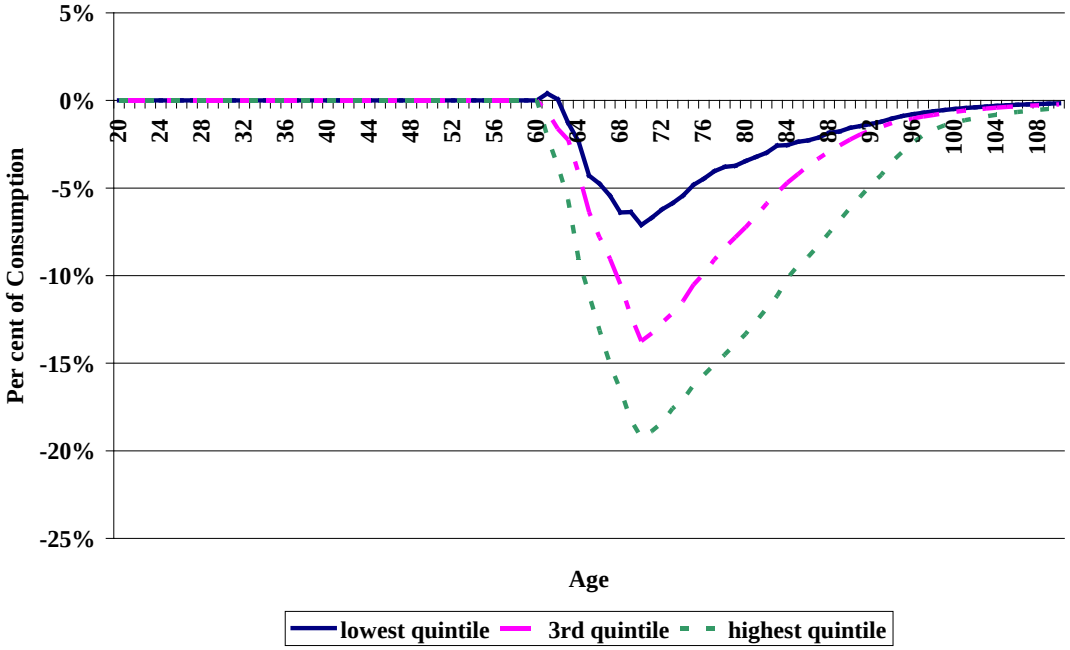


Figure 12 The Effect of Reduced Employment Opportunites at age 60 on Wealth



The Effects of Capital Losses

The core of any life-cycle model is that people save for their retirement. The resources from which they can finance life-time consumption are existing wealth and future non-property income. But in each period households are assumed to make a choice between more consumption goods and more leisure time; indeed this determines labour supply.

There are two key features of the model which underpin this. First, we assume that there is a degree of substitution between consumption and leisure, established mainly by examining the behaviour of people close to the retirement age. This substitution means that if labour supply is increased, then people are also likely to want to increase their consumption to compensate for the loss of leisure. Secondly, we assume that people cannot set their own hours of work but have to choose between working full-time, working part-time and not working at all. Full time workers earn more per hour than do part-time workers, but some people nevertheless prefer part-time work to full-time work. A desire to work more may result in people shifting from working less than they would like, in a part-time job, to working more than they would like in a full-time job. Since they cannot choose their own hours the question is which of these do they prefer.

The substitutability of leisure for consumption means that, if people work less than they would like – thereby consuming too much leisure – then they tend to compensate by spending less on goods and services. Conversely, if they work more than they would like, then they compensate for the lack of leisure by increasing their consumption on goods and services.

The implication of this is that any move towards increased labour supply is likely lead to an increase in consumption as fewer people have too much leisure and more people have too little leisure. Thus a capital loss which leads to an increased desire to work could easily be – and in our model is – associated with increased consumption of goods and services by people of working age. People who are retired obviously do not alter their labour supply so their consumption falls, as does the consumption of people close to retirement, for whom the pressure to save money as a result of the reduction in wealth is stronger than the desire to increase consumption to compensate for the excess loss of leisure.

Of course, to the extent that simulations might be expected to indicate a response to current circumstances, the overall state of the labour market may well mean that people cannot increase their labour supply at all. We address this point by providing two sets of simulations. The first shows the effects of the reduction to wealth on the assumption that the labour supply is fixed. People do not have any choice about how much they work, and therefore need to accommodate the entire impact of their reduced wealth by cutting back on consumption. The results of this exercise should be expected to bear some relation to a macro-economic analysis of the effects of a

reduction in wealth on consumption, based on a regression equation in which income enters separately.

The second set of simulations relax the constraint on labour supply, so that households are able to respond to the shock on their wealth on both the labour / leisure and consumption / savings margins. This exercise indicates what would happen if the economy were responsive to supply-side labour pressures. Comparing the two sets of simulations consequently helps to disaggregate the consumption and labour supply responses that are generated by our model.

As with the study of a shock to the labour market that is discussed in the preceding section, we carry out simulations to show the effects of a shock to wealth experienced at different ages. However there is no point in a simulation at age twenty because in our model no one has accumulated any wealth at that age and therefore cannot be affected by capital losses. On the other hand, while retired people are not affected by a reduction to employment opportunities they are affected by capital losses. We therefore carry out five simulations at ages thirty, forty, fifty, sixty and seventy, presenting results graphically at ages forty and sixty, but calculating our estimate of the macro-economic impact from all five simulations.

Macro-Economic Impact

Here we focus on the change in consumption as a proportion of the change in wealth. This short-term macro-economic propensity to consume out of wealth can be compared directly with macro-economic equations.

Table 2 The Macro-Economic Impact of a 35% Fall in Wealth: the Change to Consumption as a Proportion of the Change to Wealth

Labour Supply Fixed	3.8%
Labour Supply Endogenous	0.5%

The figure of 3.8% compares with a figure of 3.5% for housing wealth and 1.25% for financial wealth derived from the time-series regression model of Barrell and Davis (2007) (see Barrell and Liadze, 2009). Their figures relate to 2006 and weighting these together by the proportions of housing and other personal sector wealth results in combined figure of 2.5%.

The Effects of a Fall in Wealth with Labour Supply Fixed

We show in figures 13 and 14 the impact of the fall in wealth for forty-year olds. All three population quintiles reported in the respective figures tend to respond to the fall in wealth in a very similar way, albeit subject to different magnitudes of response. It is not very surprisingly that the largest responses should be observed for the top quintile, given that that population group suffers must substantially as a result of the shock to their circumstances.

Figure 13 indicates that households cut back on their consumption most substantially in the year following the negative shock to wealth. Households "rush" to recover the savings that they have lost, because the earlier that savings are accrued, the higher the consumption that can be financed in retirement (due to the compound return that is earned). As the lost savings experienced as the result of the shock are off-set by higher rates of saving following the shock, households find that they can relax as they approach retirement. A slight discontinuity in consumption behaviour about age 65 is evident for households in the lowest and middle quintiles, due to the interaction between credit constraints and reduced pension savings that these households experience (at age 65, households are considered to gain access to their pension savings).

Figures 15 and 16 show similar results for sixty-year olds. The fall to consumption is much sharper because, by this age, almost all of the wealth needed to finance retirement has been accrued. Relative to retirement consumption the loss is much greater.

Figure 13 The Change to Consumption after a 35% Fall in Wealth at Age 40. Labour Supply Fixed

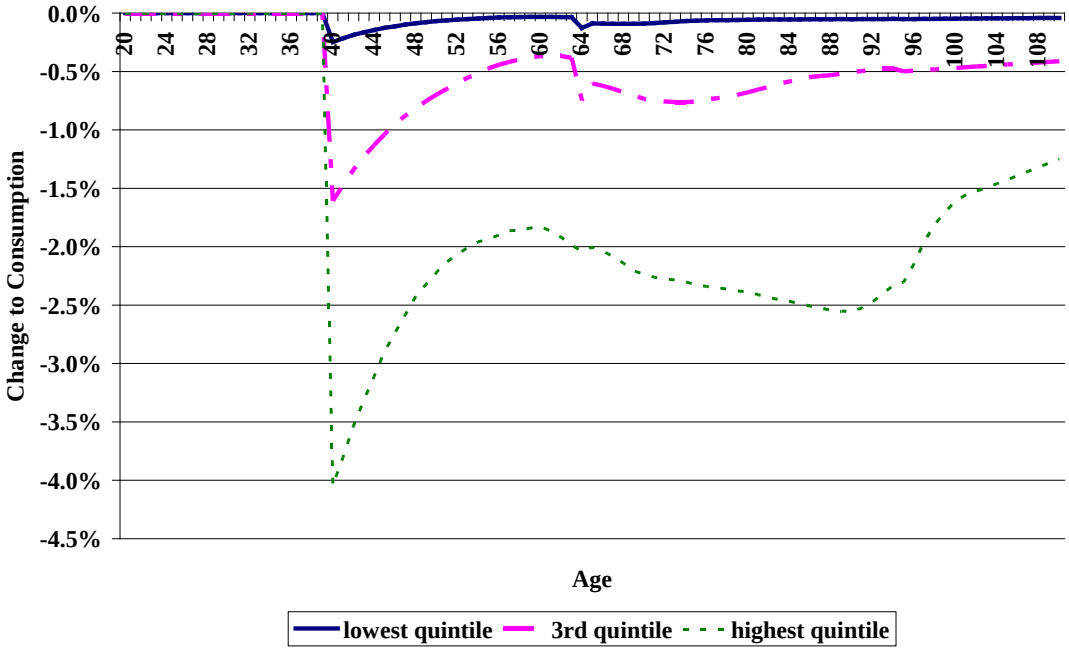


Figure 14 The Change to Wealth after a 35% Fall in Wealth at Age 40. Labour Supply Fixed

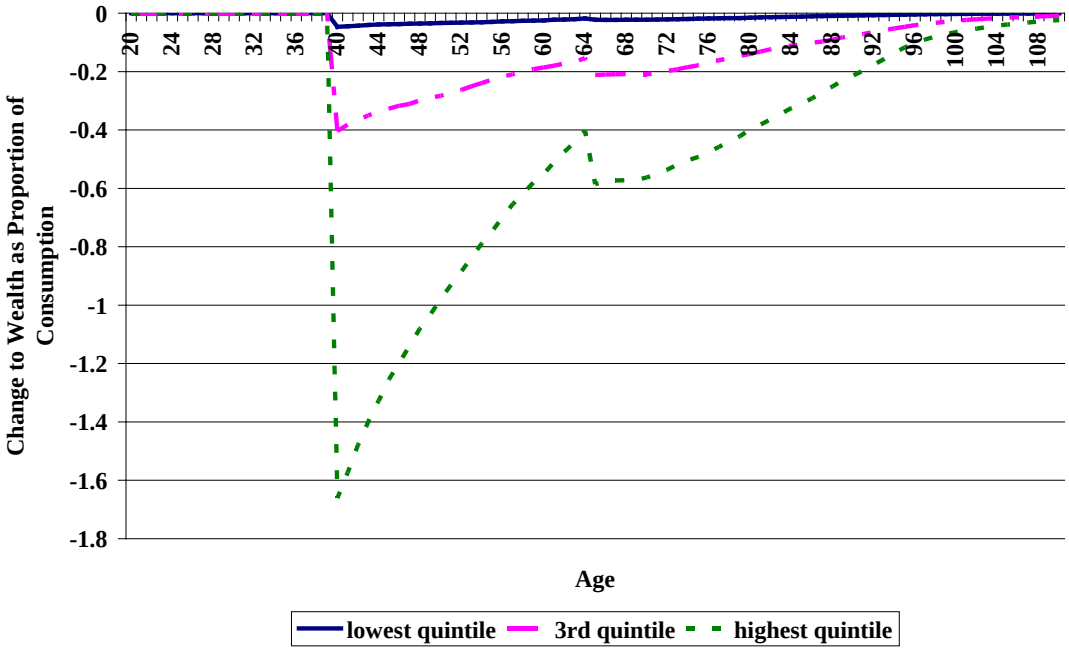


Figure 15 The Change to Consumption after a 35% Fall to Wealth at Age 60. Labour Supply Fixed

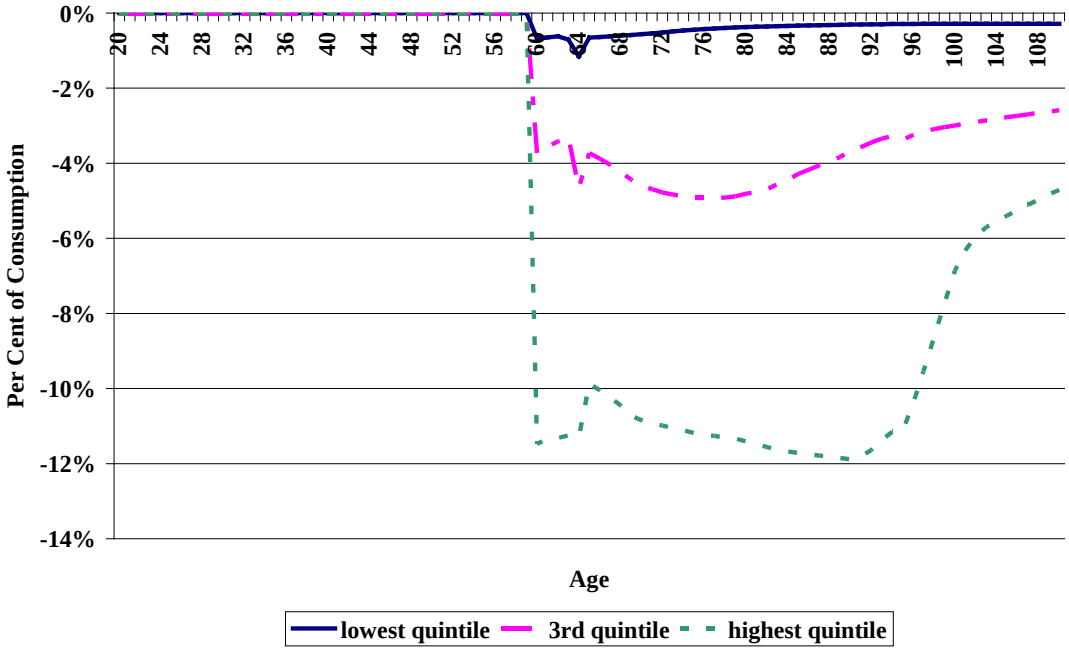
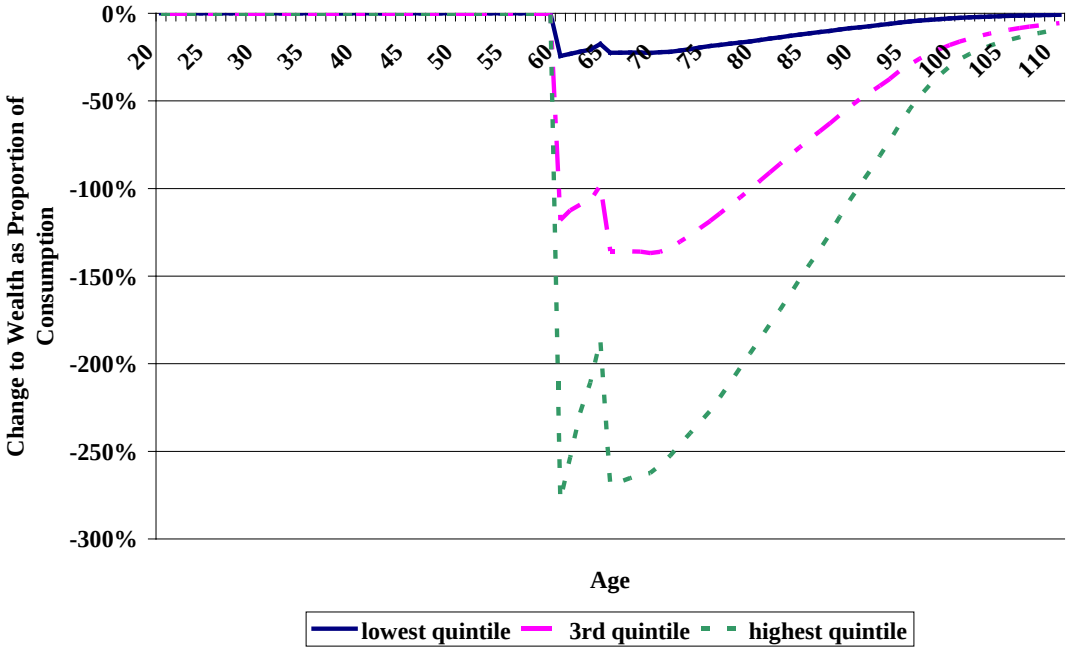


Figure 16 The Change to Wealth after a 35% Fall in Wealth at Age 60. Labour Supply Fixed



The Effects of a Fall to Wealth with Labour Supply Variable
As the earlier discussion has indicated, much of the effect of a fall to wealth for people who are neither retired nor close to retirement can be taken up by an adjustment to labour supply, and the fact that labour supply is not completely variable leads to a situation where consumption can actually increase after a fall to wealth. This is shown in figures 17-22.

For someone who is aged 40 at the time of the capital loss, the proportion of time spent in employment does increase and the consequence is that consumption increases rather than falls, although to top quintile does let its consumption dip after a few years. Once people reach retirement the fact that the reduction to wealth has made them worse off over the life-time shows clearly. Retirement consumption is reduced and the effect is most marked for the top quintile.

60-year olds also increase their labour input in response to a capital loss. But the impact on their remaining life-time consumption possibilities is much greater than is the capital loss at age forty. Thus, despite the labour supply effects mentioned earlier consumption falls. Comparison of Figure 20 with Figure 17 shows how much larger the impact is on the retirement consumption of sixty-year olds than of forty-year olds.

Figure 17 Consumption after a 35% Fall to Wealth at Age 40

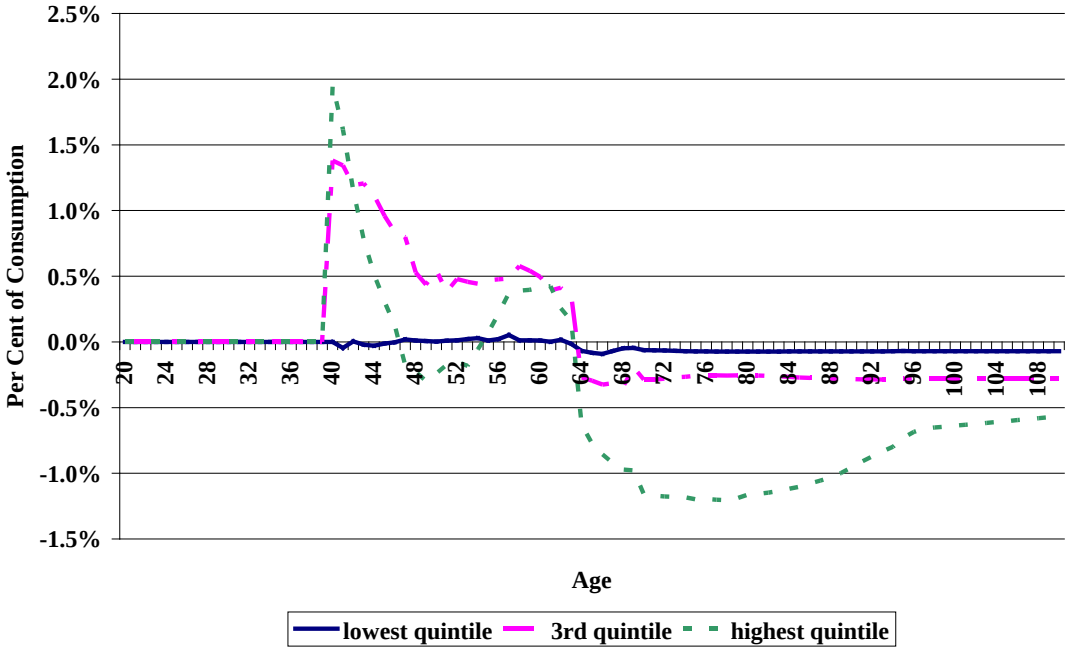


Figure 18 Increase in Proportion of Total Time Spent in Employment after a 35% Fall to Wealth at Age 40

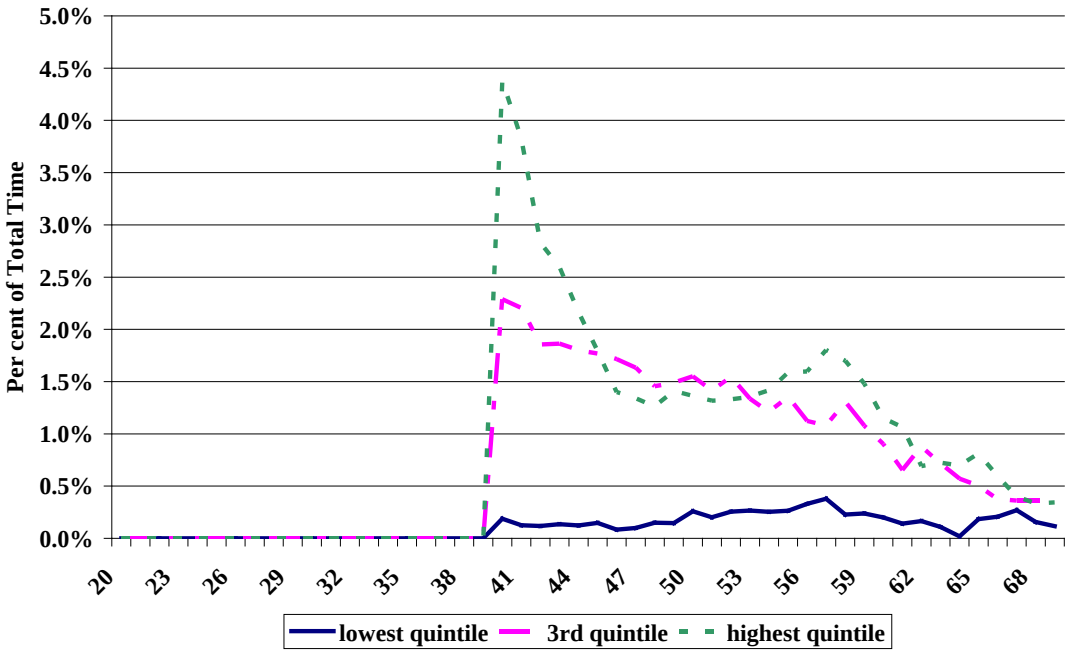


Figure 19 The Effect of a 35% Fall to Wealth at Age 40 on Wealth

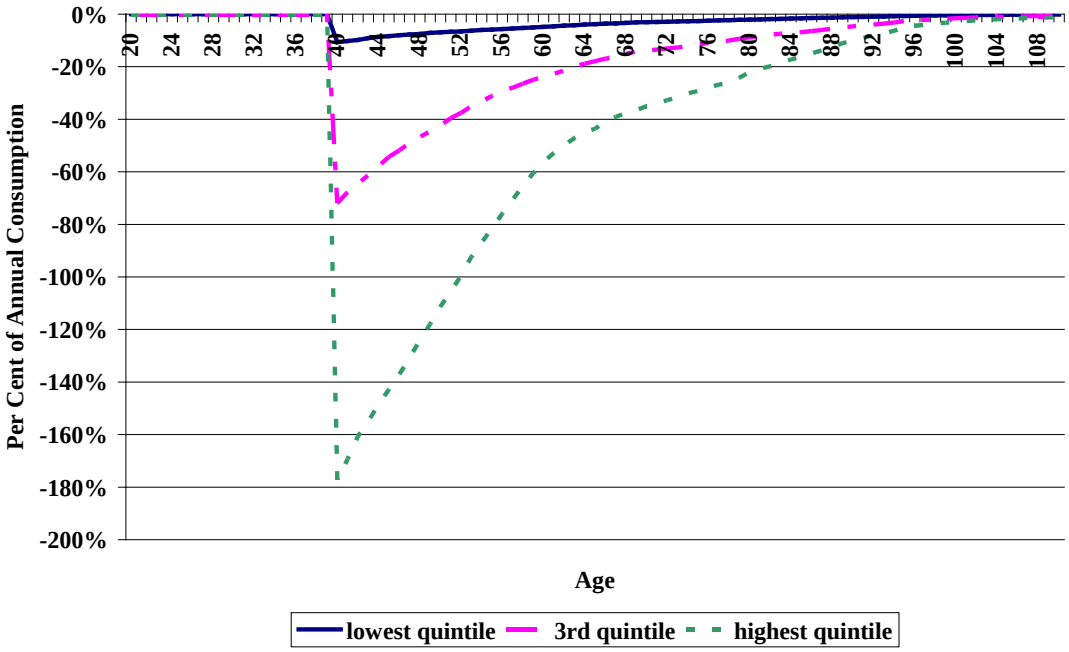


Figure 20 The Impact on Consumption of a 35% Fall to Wealth at Age 60

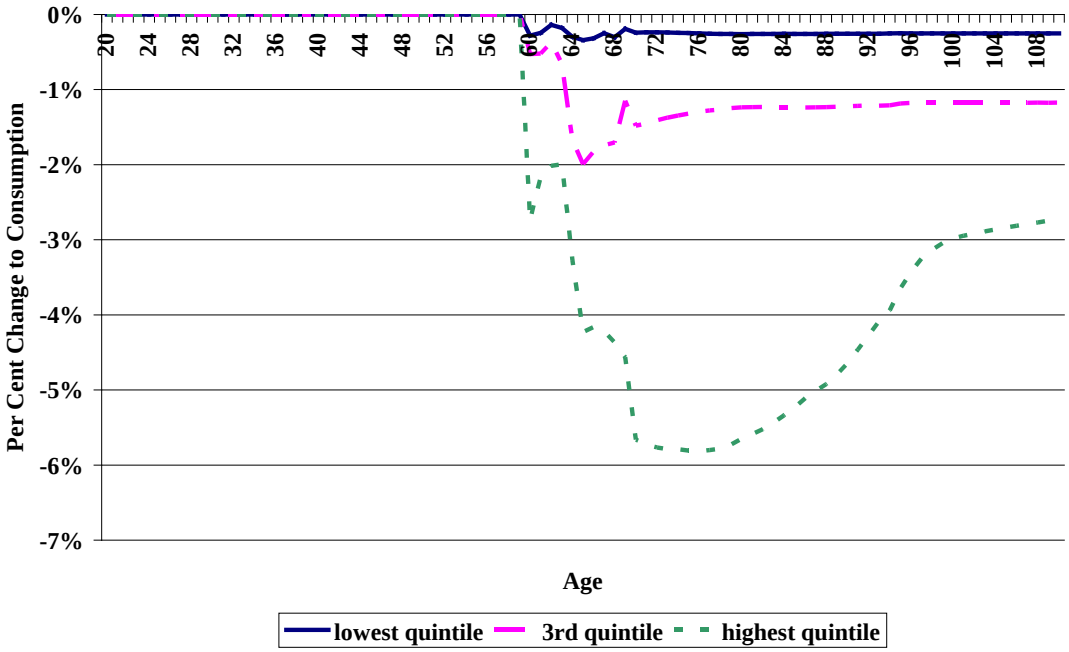


Figure 21 The Impact on Employment of a 35% Fall to Wealth at Age 60

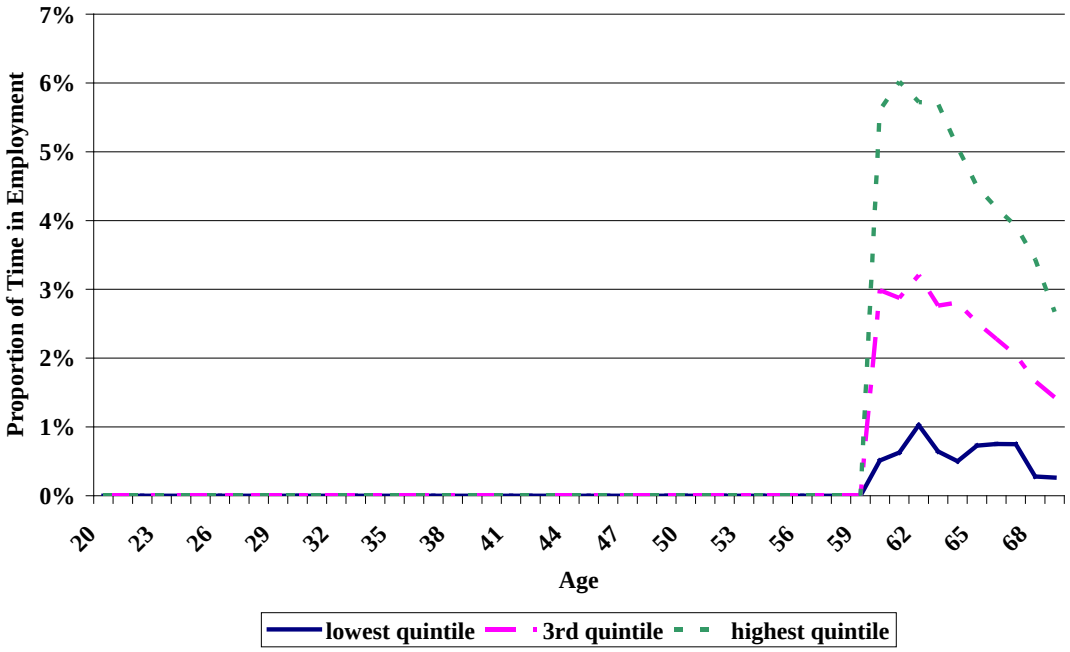
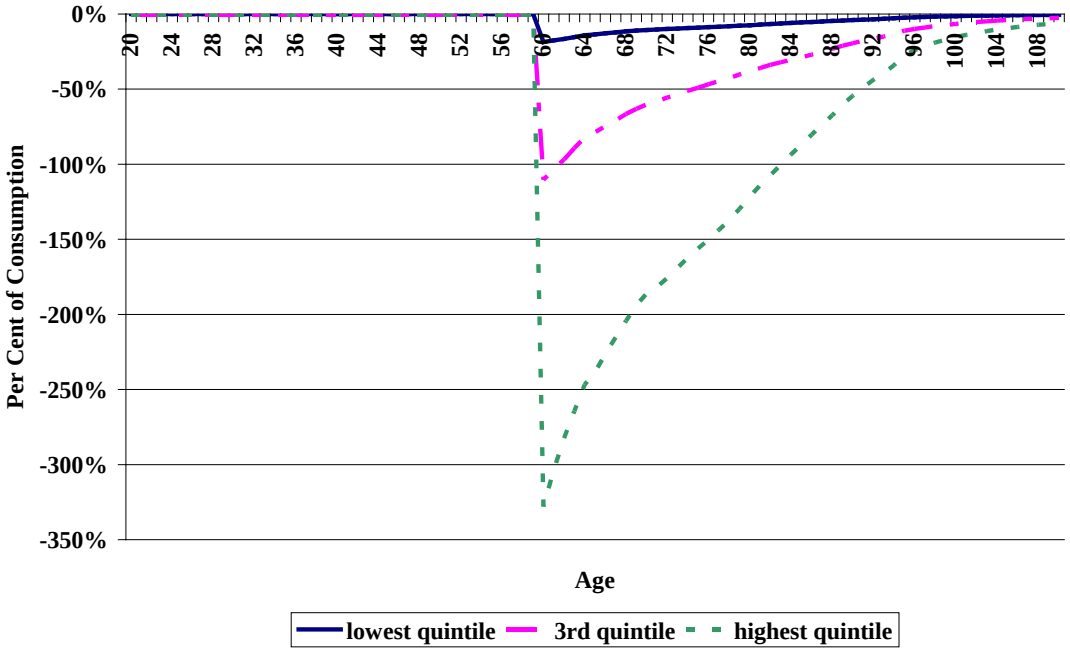


Figure 22 The Impact on Wealth of a 35% Fall to Wealth at Age 60



Conclusions

The analysis here shows how a simulation model can be used to explore the way in which macro-economic disturbances affect people of different ages and in different circumstances differently. A general reduction to employment opportunities reduces the proportion of people employed in the bottom quintile when aged fifty and over much more than it affects all younger people and even those over fifty in higher quintiles. This reflects the fact that people aged fifty and over in the bottom quintile derive relative little benefit from work as compared to relying on benefits such as invalidity benefit or, once over the age of sixty, on the minimum income guarantee.

Capital losses also affect old people much more than they affect young people, for the obvious reason that young people have not acquired much capital to lose. A striking finding is that the impact on consumption depends very much on whether labour supply is endogenous simply given. We show that, largely because some people of prime working age move from part-time work to full-time work, consumption of people in this age group may actually increase in response to a capital loss. But labour supply is not able to adjust, then consumption falls at all ages. Not surprisingly, the top quintile is affected more than the others.

This description might suggest that old people are affected more than young people by the economic disruption described here. That is true of the impact on wealth; the current old are adversely affected, but future old are affected much less so. Indeed, although it is not shown in our simulations, their consumption opportunities may even increase if the reduction to wealth is associated with an increase in yields. By contrast, the employment disruption affects current old people and future old people in much the same way. The impact on current forty-year olds for the rest of their lives is not very different from that on current twenty-year olds once they reach forty. This important difference between the two disturbances arises because the disturbance to employment opportunities is assumed to affect the whole of the future. The capital loss, by contrast is a loss which is never made good but which equally has no impact on people at the start of their working lives and their successors.

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