

# *Productivity and age*

## *March 2014*

### **1. Key points**

- Someone's age bears no relation to their ability or capability to perform the vast majority of jobs.
- The evidence shows either a lack of relationship between productivity and age, or that older workers are at least as productive as their younger colleagues. Even in physically demanding situations, for example on a factory production line, age is no barrier to working productively.
- Measuring individual productivity is challenging for researchers. Older studies, which often suggest older workers are less productive, frequently rely on outdated assumptions about ageing and health, or fail to account for a myriad of other factors. More recent studies, which often find older workers are at least as productive as younger workers, are better able to account for these.
- As people age some cognitive and physical abilities do change – however, this does not make older workers better or worse than younger colleagues. There is no evidence of a substantive decline in ability in most people until well past the end of a typical working life. Ageing affects everyone differently, and it is not possible to make predictions about any one individual's capability.
- The interaction between skills, knowledge and experience means that many tasks can in fact be performed better as people age, and raises challenges for employers about how best to utilise individuals' skills and abilities.
- Recognising the challenges faced by older workers and offering solutions to mitigate them, for example flexible working to help people meet caring responsibilities, can help enhance individual productivity.
- In light of all the evidence considered in this literature review, employers need to reconsider their existing workforce and HR strategies, and to develop more effective retirement policies that place the wellbeing of their older employees at the heart of the process. This will deliver a mutual benefit for both parties.

## **2. Introduction**

A common misconception is that people become less productive in the workplace as they age. For many years this view has driven both employer and government policies towards the 50+ cohort – however, a growing evidence base increasingly proves this view as erroneous.

The ageing workforce may bring challenges to policy makers, employers and workers themselves, but it is also a significant opportunity. To fully grasp this, we must put aside outdated assumptions and recognise the skills and value that this cohort can bring.

Overall, the evidence comes down heavily against the argument that older workers are less productive than younger workers. The majority of research finds either a lack of relationship between productivity and age, or that older workers are at least as productive as their younger colleagues. Even in physically demanding situations, for example on a factory production line, older workers are often found to be just as productive.

We also consider the impact that more effective management could have on productivity. For example, age discrimination is rife in the labour market, with 40 per cent of older workers believing they have been discriminated against because of their age;<sup>1</sup> also many older workers report improved productivity with flexible working, but opportunities to vary working patterns are still limited (and often restricted to professional occupations).<sup>2</sup> Considering this throws open an entirely new line of inquiry.

This briefing provides an overview of the evidence on older workers and productivity. It is based on a review of the literature on perceptions of older workers undertaken by the University of Essex for Age UK in 2013, and also utilises a wider evidence base looking specifically at ageing in relation to workplace productivity and occupational health. There has also been a recent special issue of Labour Economics focussing examining new research into age and productivity – much of this research is included too, and the briefing is supplemented with various other studies.

## **3. An overview of ageing and capability**

A wealth of evidence on the impact of ageing on physical and mental health has been gathered over the past 30 years, and this briefing relays an overview of the key findings. These show beyond doubt that for a typical person in a typical occupation, ageing does not have a negative effect on capability in the workplace. This section deals with the medical evidence on ageing and work: in Section 4 we look directly at productivity.

For detailed information on the medical impact of ageing in relation to work, two existing literature reviews are essential reading. Firstly, Meadows (2003) in her review of the evidence underpinning the Default Retirement Age, covers some aspects<sup>3</sup>; while the Health and Safety Executive (2011) is focusses entirely on this topic.<sup>4</sup> Both also touch on productivity.

As we age there are, of course, physical and cognitive changes that occur.<sup>5</sup> However, even recognising this, research tends to show that the effects of the ageing process have been over-estimated and that any declines in performance are highly individual.<sup>6</sup>

### 3.1 Physical impact

There is a substantial degree of variation between individuals – in fact there is more variation in health and capability within an age group than between age groups.<sup>7</sup>

The Health and Safety Laboratory, concludes that ageing is associated with an increased prevalence of musculoskeletal disorders (MSDs) and cardiovascular disease, however:

*“The existence of illnesses does not necessarily hinder the employee at work and may have only minimal effects on productivity.”<sup>8</sup>*

It is often possible for employers to make adjustments to the workplace to facilitate improved productivity, as will be discussed later in this briefing. However, in practice few employers do this and so a lack of proactive health management could exacerbate health-related problems and contribute to common perceptions of age and productivity.

While some studies have found a decline in performance in jobs with a high physical demand and low job control,<sup>9</sup> this has been offset by other research showing that actually older workers are physically capable of performing almost all essential job tasks perfectly well.<sup>10</sup> This contradiction demonstrates the difficulty of reaching a firm conclusion on this particular issue, which immediately casts doubt on the common perception of declining productivity without even looking at the direct evidence.

To compound this, the increasing proportion of jobs in the service sector is changing the nature of work (see section 3.3), while making adjustments to the working environment can alleviate many of those problems which do arise (section 4).

### 3.2 Cognitive impact

While some cognitive skills do decline with age, very few jobs are impacted in any meaningful way.<sup>11</sup> This is partly due to the nature of productivity being dependent, in practice, on a complex web of factors that extends far beyond examining isolated aspects of cognitive functioning; and also because decreases are often offset by gains from experience and other behavioural changes.<sup>12</sup>

There are also studies that show an increase in many aspects of mental functioning with age<sup>13</sup>, while others demonstrate positive psychological changes.<sup>14</sup>

Any declines in cognitive ability are at least counteracted by the improvements.

One recent study<sup>15</sup> compares cognitive performance between age groups on a day-to-day basis, finding that older workers had less variation in performance. It argues this is because of learnt strategies to cope with the troughs in performance that everybody suffers, thereby counteracting the stereotype that older workers have more ‘senior moments’.

#### *Education and cognitive decline*

Cognitive skills are affected by educational attainment, and because the current cohort of older workers are less well educated than the younger generation there is an impact upon cognitive test scores. There’s a need to control for education when conducting such research, which is rarely done in practice.<sup>16</sup>

Meadows (2003) describes the International Adult Literacy Survey by the OECD,<sup>17</sup> which measured changes in literacy and cognitive skills over a 40 year age span. It found a small decline in performance across generations, but that this can entirely be attributed to education. This makes it very difficult to accurately compare one generation with another.

Recent analysis of this survey and the 2013 follow-up<sup>18</sup> confirms this to be the case, while another study demonstrates that investing in education and health of older workers can indeed improve the quality of the workforce and hence productivity.<sup>19</sup>

## **4. Productivity and age**

This section looks at the evidence that directly analyses age and productivity or performance, finding that older workers are at least as productive as younger workers.

Most reviews and studies of work performance have failed to establish a link between decreasing job performance and increasing age. Griffiths (1997)<sup>20</sup> concludes that most reviews and meta-analyses on this issue suggest that there is little consistency in the relationship between ageing and work performance, bringing us back to the point that there is more variation within an age group than between groups.

Cleveland and Lim's (2007)<sup>21</sup> study found no decline in performance, while other research claims it may even improve.<sup>22,23</sup> These findings are borne out by a growing evidence base from elsewhere, some of which is covered in this briefing.

It is appropriate to conclude that there is only a limited connection between productivity and age, and when there is a connection it is likely to be an 'age-positive' one.

Silverstein (2008)<sup>24</sup> suggests three reasons for this weak link:

1. Most jobs do not require working at full capacity
2. There is a lot of variation in capability, and ageing has a different effect on everyone
3. Older workers are often able to compensate for any declines that do occur

Other more specific studies also find an absence of a relationship – Gobel and Zwick (2011) conclude this to be the case,<sup>25</sup> while Salthouse (2012) finds that there is little or no consequence of age-related cognitive decline, exploring in more detail about the interaction between fluid and crystalline intelligence as the individual ages.<sup>26</sup>

To reinforce this, several pieces of research based on production lines – a working environment that should, in theory, disadvantage older workers most – found that older workers performed to as high or a higher level of productivity than younger workers (see section 3.1).

Warr (1994)<sup>27</sup> concludes that performance – not necessarily synonymous with productivity – is unrelated to age in most circumstances, and that only high-end cognitive or physical work is likely to be impacted by ageing in a typical person (however even this last point is contradicted by Griffiths (1997) mentioned above). Warr constructs a four-type framework for analysing job tasks, and only one of the four groups is affected by ageing (see Section 3.2) – jobs that fall under this category tend to require high-end cognitive processing (e.g. fighter pilot) or a high level of physical strength (e.g. coal mining).

### **4.1 Productivity does not decline with age – research evidence**

Much of the recent evidence on this issue comes directly from German car manufacturers. It is particularly interesting to use a manufacturing setting to analyse productivity and age because it is associated with physical skills such as dexterity, strength and agility and less so with experience and knowledge, that tend to increase with age. Also the work environment allows for minimising the impact of other variables.

Börsch-Supan and Weiss (2013)<sup>28</sup> analysed workers on a Mercedes-Benz production line and uncovered 'striking' findings:

*“Due to the very large number of observations and our identification strategy, we are able to estimate rather precise age-productivity profiles at the individual level and at the level of a work team. There profiles do not show a decline in the relevant age range between 25 and 65 years of age. On the individual workers' level, our average productivity measure actually increases monotonically up to age 65.”*

They also measure the numbers of errors made, and conclude that older workers do make a higher number of errors, but these are less severe than those made by younger workers, ultimately costing the employer less.

This reinforced the findings of prior work by the same authors (2007)<sup>29</sup> at Daimler AG. The two studies infer that if productivity actually increases with age in the manufacturing sector, then in the service sector or other less physical occupations there is even more potential for it to do so.

BMW, at one of their Bavarian factories, staffed a production line with only over 45s and made some minor adjustments to the workplace. At the end of the first year, productivity had increased by seven per cent and was equal to the factory average.<sup>30</sup>

If car manufacturers overwhelmingly reach these conclusions, then there is every likelihood that the same would be found in other sectors.

In her literature review<sup>31</sup>, Meadows finds a wealth of evidence to reinforce the 'age neutral' argument:

*“Three major reviews of a large number of studies on the relationship between work performance and age all come to the same clear conclusion: there is little or no relationship between the performance of older and prime age workers who are doing the same job. Those under 25 consistently tend to have lower productivity than both groups. The age ranges studied have generally been from the late teens to the late 60s or early 70s. As few people work beyond the age of 70, very few studies based in the workplace have been able to include workers over that age. The studies have included skilled and semi-skilled factory work, piecework in leather and textiles, clerical work, insurance sales, typists, mail sorters and senior managers.”<sup>32</sup>*

Some studies find that older workers are more productive, especially in relation to younger workers; Mahlberg et al (2013) found that a firm having a higher than average number of older workers is not associated with lower productivity, while having a higher than average number of younger workers (under 30s) is. They do acknowledge that determining causal connections is difficult.

Gordo and Skirbekk (2013)<sup>33</sup> argue that contrary to previous evidence, older workers who have remained in the labour force are very good at learning new technologies and new tasks that require cognitive skills. This casts doubt on the stereotype of older workers as being unable to learn new skills – engaging older workers in training is crucial for their employment prospects.

#### **4.2 Different jobs mean different things**

Warr (1994)<sup>34</sup> developed a model of four different activity types in relation to their effect on ageing (Chart 1). In three of the four ageing is either neutral or has a positive impact. The

only negative category includes high performance occupations, for example a racing driver or fighter pilot.<sup>35</sup>

This is, of course, only a means of categorising workplace activities, and not a comment on ageing and productivity. It's also worth noting that few jobs rely entirely on one type of activity – most switch between different processes and have at least some variation of task.

Table 1: Summary of Warr's model, based on Warr (1994) and Meadows (2003)

	<b>Age-related declines affect performance</b>	<b>Experience enhances performance</b>	<b>Expected relationship with age</b>	<b>Illustrative job content</b>
Age-impaired activities	Yes	No	Negative	Paced data-processing, rapid learning, heavy lifting
Age-counteracted activities	Yes	Yes	Zero	Skilled manual or cognitive work
Age-neutral activities	No	No	Zero	Relatively undemanding activities
Age-enhanced activities	No	Yes	Positive	Knowledge-based judgements with no time pressure

There is also a theory that more productive workers are more likely to stay active in the labour market. This is possibly because those with health conditions are more likely to self-select into early retirement, as well as people who do not enjoy their job.<sup>36</sup>

### 4.3 Changing make-up of the economy

As already noted, ageing can have a differing impact on different occupations. However, there is no evidence that a typical older worker cannot do a typical job, even where this involves manual work.

Physically demanding jobs are on the decline, but where work does require these skills, fitness and health levels are more important than chronological age for sustaining performance.<sup>37, 38</sup> This once again emphasises the amount of variation within an age cohort – it's not that everyone is capable of doing such demanding work indefinitely, but that many people's ability is unaffected by their age.

Contextualised within the demands of the modern organisational environment, this suggests that there are relatively few jobs that require workers to exert their maximum physical capacity for extended periods of time.<sup>39</sup> As a result, even if there is some decline in physical performance, it is not of substantive importance in the majority of contemporary jobs work that place greater emphasis on cognitive skills. Cognitive skills can be a more useful indicator of productivity,<sup>40</sup> and as the evidence cited earlier showed, the link with age is irrelevant for most jobs.

To put it in Warr's categories, an increasing majority of jobs are primarily either 'age-counteracted', 'age-neutral' or 'age-enhanced'.

Gordo & Skirbekk (2013)<sup>41</sup> suggest that the tasks older workers are assigned often require a greater degree of cognitive abilities. Such tasks are usually produce higher levels of added

value, which are associated with higher pay – this helps provide further explanation for situations where older workers earn more than younger colleagues.

**4.4 Managers’ views**

The stereotype of declining productivity is often reflected by managers’ views (see section 5). This is to be expected with any stereotype as managers are, after all, members of the public themselves. However, even among managers there is sometimes a view that older workers are more productive as shown by a Dutch study of 796 managers,<sup>42</sup> as well as a survey from the UK carried out by the Chartered Institute of Personnel and Development and the Chartered Management Institute.<sup>43</sup>

**4.5 Wages**

A further stereotype is that older workers are overpaid in relation to their output.

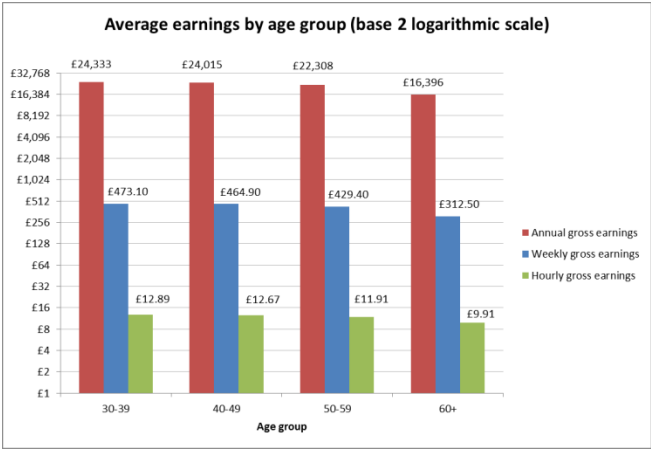
Under some models of employment, such as those proposed by the economist Edward Lazear in the 1970s and 80s, older workers are often seen as more expensive precisely because it is assumed that they are less productive. When this assumption is challenged it becomes clear that there is much more to determining wage-setting than simply seniority within an organisation and it that it is still important to examine the link between productivity and wages.

In the modern labour market, many organisations use performance-related pay systems, although in some instances seniority-based systems are still in operation (at least in part). The latter suggests that higher pay is undeserved – however, much of the research shows that older workers possess un-observed characteristics, for example loyalty, that is often what is reflected in seniority-based pay rises.

As a result, several studies have found no evidence that older workers are overpaid relative to their productivity, with many finding that wages and productivity are constant over the life-cycle<sup>44, 45, 46, 47</sup>

In relation to absolute wages, data from the UK’s Annual Survey of Hours and Earnings shows the age profile of earnings as being an inverted ‘u’ shape – median earnings per hour increase until middle age and then decline.

Chart 1: median annual, monthly and weekly earnings by age.<sup>48</sup>



However, it’s also been identified that the key to higher wages is remaining in full-time employment. The most recent version of analysis by Casanova (2013) finds that hourly

wages are flat for those in full-time employment, but decline for those who switch to part-time work.<sup>49</sup>

#### **4.6 Problems with measuring productivity**

In addition to the specific issues noted above, there are some general flaws with conducting research into individual productivity. These include:

- Laboratory studies do not even closely replicate real-world working environments<sup>50</sup>
- It is difficult to measure productivity on an individual level
- Older medical evidence is now outdated and much new evidence exists

In linking the theory with real workplaces, Silverstein (2008)<sup>51</sup> suggests there may be a number of reasons for the lack of relationship between ageing and productivity:

- Most jobs do not require full capacity although older workers are more likely to be working closer to their physical limits.
- Studies have found large inter-individual variations in declines in physical and cognitive capacities for older adults compared to younger adults. These illustrate the important point that each individual ages at a different rate and is affected (unaffected) in very different ways.
- Older workers are often able to employ strategies, skills, experience and expertise to compensate for any age-related declines.

Ng and Feldman (2008)<sup>52</sup> suggest that the reason for the lack of a consistent and strong relationship between age and job performance is that research has focussed on core task activities rather than looking at the much broader range of behaviours that comprise job performance.

In any case, determining causal connections of productivity can be difficult.<sup>53</sup>

### **5. What if...?**

Older workers are often disadvantaged in the workplace, for example by being subject to age discrimination, poor management, and through managers being unwilling to make simple adjustments to workplace design.

This begs the question: what if older workers had equal opportunities and were treated fairly?

#### **5.1 Reasonable adjustments**

The BMW research has already shown that making simple reasonable adjustments can significantly improve productivity. It is simply common sense to suggest that if someone is experiencing a decline in vision, for example, then providing a more appropriate computer screen will enable them to work more effectively.

Making such workplace adjustments not only has a benefit for older workers, but has “major spillover effects on the productivity of young employees”,<sup>54</sup> making such measures a good investment all round. This is reinforced by more recent research that replicating the original.<sup>55</sup>

#### **5.2 Age management**



Older workers are often treated differently because of their age, including through the inconsistent or non-application of performance management systems, restrictions on promotion opportunities, or through reduced access to training.<sup>56</sup>

In addition, improving job design and skills utilisation would help get the most out of each individual.

There are several good practice guides available for employers, but these are rarely used. If older workers were managed as effectively as younger employees it seems likely there would be gains to productivity.

### **5.3 Flexible working**

Many older workers want to work flexibly for a variety of reasons, including meeting caring responsibilities, managing a health condition or simply to improve work-life balance.<sup>57</sup> At present, however, too few older employees have the opportunity to work flexibly.

There is a strong evidence base to prove that when flexible working is offered, people show greater loyalty and work more productively.<sup>58, 59, 60, 61</sup>

Offering flexible working does not just benefit older workers, but is useful to people of all ages, as demonstrated by research finding across-the-board productivity rises when employees were allowed to reduce their working time when required.<sup>62</sup>

Employers can therefore raise productivity across their organisation by engaging fully with this agenda.

### **5.4 Mixed-age workforce**

Another strategy that can be used to raise productivity of older workers (and younger workers too) is employing a mixed-age workforce.

The best known study was commissioned by McDonalds, who found that customer satisfaction rates (which, according to the University of Lancaster, directly drive the bottom line in such a service-led industry) were 20 per cent higher in restaurants that employed workers aged over 60 than in those which didn't employ anyone aged over 50.<sup>63</sup> The thrust of this finding is borne out by other studies.<sup>64</sup>

## **6. The other side of the debate**

In spite of the wealth of evidence on productivity and age that confirms older workers are at least as productive as younger workers, there is also some evidence that refutes this.

### **6.1 Partial disagreement**

Vandenberghe (2013)<sup>65</sup> uncovered a significant gender difference in productivity. Having a greater share of older men in the workforce makes no difference to productivity, but with a large older female workforce productivity was reduced. A possible explanation for this is the additional caring responsibilities borne by women, who are more likely to care for a relative than men<sup>66</sup>. There are specific measures that could be taken to resolve this, for example increasing the availability of flexible working options and taking additional measures to assist employees with these responsibilities.

According to Andersson et al (2002), older workers with tertiary education are more productive than younger workers and those with only primary or secondary level education.<sup>67</sup> For those who remain in the labour market, this continues until much later in life. It does suggest that education is the overriding factor rather than age – as demonstrated by the OECD’s International Literature Surveys (see above).

## **6.2 Atypical situations**

Perhaps the most valid evidence against this briefing’s central argument is put forward by Lallemand and Rycx (2009). They examined differing workforce age balances among large firms in the Belgian private sector, and found that marginal productivity decreases when there is a higher proportion of older workers, most notably when IT is more prevalent within the organisation.<sup>68</sup> However, this is directly contradicted by a German study,<sup>69</sup> and IT issues could be attributed to other causes such as insufficient training opportunities. The findings are at odds with most modern research findings, as is their discovery that a higher proportion of younger workers (under 30) boosts productivity.

Bertoni, Brunello and Rocco (2013)<sup>70</sup> analysed productivity in professional chess players by age, concluding that peak productivity occurs aged 42. However, playing chess for a living does not relate well – if at all – to the vast majority of workplace situations.

Other factors such as teamwork, communications and ergonomics are not accounted for in chess, illustrating a common problem with analysing productivity across all of the research – it is simply not accurate to make generalisations about older workers based on performance in one particular area.

There are also other studies that examine specific occupations – with mixed findings. For example Sluiter’s (2006) work on firefighters found a six-fold difference in ability to perform certain tasks, both between and within age groups<sup>71</sup> suggesting some differentiation by age but also reinforcing the point that there is a significant amount of variation within age groups too. It should also be noted that firefighting is regarded as an occupation where high-level physical capability is essential and that even most other manual jobs do not come close to having such a high requirement.

## **6.3 Skirbekk literature review**

A literature review of individual productivity by Skirbekk (2003)<sup>72</sup> concludes that individual productivity declines from about age 50. However, deeper consideration of the evidence base consulted casts doubt on this conclusion.

The research includes studies based on manager perception of older workers, for example Waldman and Avolio (1986),<sup>73</sup> which found a slight negative effect of age on performance; and Remery et al. (2003)<sup>74</sup> finding that older employees in Dutch workplaces are more likely to be perceived negatively when the share of older workers is higher. Skirbekk concludes that these organisations are best placed to know this – but provides no evidence as to why – when the argument could easily be made the other way as all managers are subject to prejudice and subconscious bias against minority groups (as indeed are people generally).

Some of the research cited is very out-dated, such as a 1971 study by Dalton and Thompson<sup>75</sup> which found that ‘employees in their 30s put in the most effort and perform the most sophisticated technical work’ – this is clearly stereotyping.

Other research is cited to show that older workers in research occupations achieve lower output levels. For example, Oster and Hamermesh (1998)<sup>76</sup> find that older economists publish less in highly-regarded journals leading them to conclude that older economists are

less productive. This is in spite of the admission below, which makes one wonder why the research was undertaken at all:

*'Whether this relationship is due to natural declines in capacity or decreased incentives to produce is extremely difficult to discern... Without direct observation on how scholars' use of time changes as they age, we are unlikely to be able to distinguish between explanations of the declining age-productivity relationship in science'.*

Skirbekk also uses 'employer-employee matched dataset' evidence to attempt to achieve subjectivity. He admits that it is hard to disentangle age from the range of other variables at aggregate firm level, but finds some evidence in five out of seven studies that productivity decreases from about the age of 50 when using the firm's value-added rather than output levels. However, Hellerstein et al (1999) found that although this was the case under this method, when looking at output levels the over 55s in the study produced the most.<sup>77</sup>

Often, these techniques require researchers to make assumptions about health, skills and other aspects crucial to working life. In general, there is a growing body of more recent research showing that declines in health have minimal effect on the workplace.

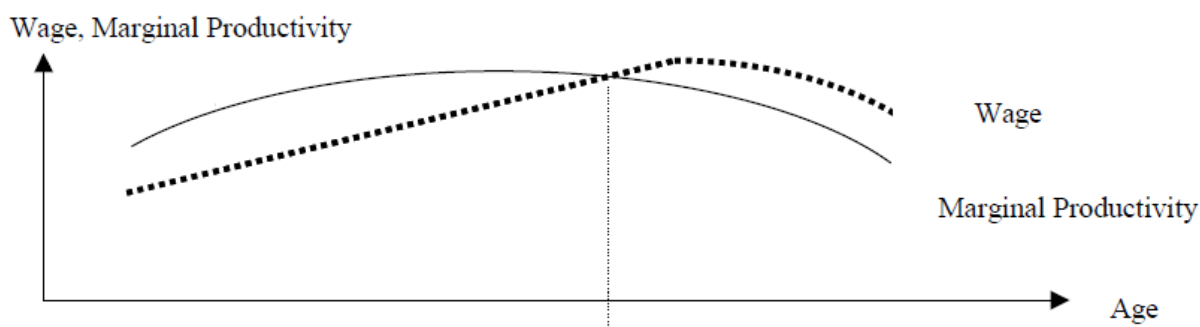
Other research cited elsewhere in this briefing, for example Börsch-Supan and Weiss (2013)<sup>78</sup> has attempted to deal in a much more sophisticated manner with evidence gathering problems, and finds either no or a positive relationship between age and individual productivity.

#### 6.4 Lazear and productivity

In 1979 Edward Lazear produced his hugely influential model of lifetime employment and mandatory retirement<sup>79</sup>, which remains so to this day in particular among classical economists, making it important to include this short section. This is not a dissection of Lazear's work, but is included only to highlight a few points of disagreement – Age UK believes that his work was very much of its time and has been superseded by changes to both the workplace and the medical evidence in which its assumptions are rooted.

Lazear argued that as workers aged, their pay increased by greater than their increases in productivity. In particular, among older workers marginal productivity became negative and thus older workers became overpaid and relatively less productive (see Chart 1). Hence mandatory retirement was necessary to retain employers' wage structures and career arrangements.

Chart 1, declining marginal productivity and age in relation to wage<sup>80</sup>



With a combination of contemporary employment knowledge and hindsight, we can see that this view is no longer correct for five principal reasons:

- 1) The medical evidence base on ageing has moved on substantially, contradicting Lazear's assumptions about the effect of ageing on work.
- 2) He fails to account for the complex interplay of factors that determine individual productivity. Research in this area has developed significantly since 1979.
- 3) There has been a significant move towards a service-orientated economy – any negative effects of ageing are less relevant, and most jobs place greater emphasis on the gain in skills than he gives credit for.
- 4) There is no such thing as a job for life – increasingly, people change jobs throughout their career (although older workers are more likely to spend longer with one employer), meaning that fewer people are reliant on such a scenario.
- 5) Seniority-based wage systems are becoming less common. Many organisations use sophisticated performance-related pay mechanisms that emphasise merit rather than length of service. Evidence from the UK suggests that employers do not tend to think their 50+ employees are more expensive.<sup>81</sup> In addition, using flexible working may reduce wage costs while retaining skills.

Gordo & Mertens provide an academic critique of Lazear's work, again finding that it does not translate from theory to reality.<sup>82</sup>

It's worth pointing out that based on existing knowledge and the assumptions he chose to make Lazear's findings were not necessarily incorrect, but as this shows his model simply does not hold up in the modern labour market.

Commenting on firms' likely reaction to the ageing workforce Lazear (1988)<sup>83</sup> said:

*“Like most economists, I am reluctant to predict the future since I am certain to be proven wrong. Unfortunately, the task is unavoidable if one is to discuss the way that institutions are likely to evolve. Thus, I defend what follows with the disclaimer that prediction is a dirty job, but someone has to do it.”*

We believe that this (probably accurate) statement can be equally applied to his work on mandatory retirement.

## **7. Conclusion**

We can therefore say with confidence the notion that older workers are less productive is an undeserved stereotype.

Suggestions that productivity does decline with age tend to come from older literature, which are usually based on incorrect assumptions about the effects of health.

More recent literature, which attempt to overcome biases of laboratory-based medical testing and find innovative ways of measuring individual productivity, almost always find that ageing does not have a negative effect, overwhelmingly refuting the common perception.

Employers therefore need to reconsider their existing workforce and HR strategies, and to develop more effective retirement policies that place the wellbeing of their older employees at the heart of the process. This will deliver a mutual benefit for both parties.

There is also a strong case emerging for improving skills utilisation and making sure older workers are in the jobs that most suit their knowledge and experience, as well as developing mechanisms for transferring skills from one generation to the next.

Government and employer representative organisations need to facilitate this process and ensure that employers are aware of the benefits older workers can bring and how best to manage this age cohort. There is a real opportunity to boost productivity across the board, making pursuing this an essential plank of policy on improving competitiveness in the modern global economy.

In short, there is lots of work to do before attitudes match the evidence.

*Christopher Brooks*  
*March 2014*

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<sup>1</sup> CIPD/CMI (2010), Managing an ageing workforce

<sup>2</sup> Age UK (2012), A means to many ends: older workers experiences of flexible working

<sup>3</sup> Meadows P (2003), Retirement ages in the UK: a review of the literature, Department for Trade & Industry

<sup>4</sup> Yeomans L (2011), An update of the literature on age and employment, Health & Safety Executive

<sup>5</sup> The Health and Safety Executive (2011) provide an overview of these changes

<sup>6</sup> Berlin G (2006), Implications for employers: functional decline and biases of the ageing

<sup>7</sup> Yeomans L (2011), An update of the literature on age and employment, Health & Safety Executive

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<sup>9</sup> Costa G and Sartori S (2007), Ageing, working hours and work ability. *Ergonomics*. Vol. 50. No. 11

<sup>10</sup> Parkhouse W and Gall B (2004), Task frequency as a function of age for the powerline technician trade. *Ergonomics*, Vol. 47, No.6

<sup>11</sup> See Health and Safety Executive (2011) for an overview

<sup>12</sup> Ilmarinen J (2001), Aging Workers. *Occupational and Environmental Medicine*. Vol. 58

<sup>13</sup> Hotopp U (2007), The Ageing Workforce: A Health Issue? *Economic & Labour Market Review* 2007;1(2)

<sup>14</sup> Crawford J, Graveling R, Cowie H, Dixon K, MacCalman L (2009), The Health, Safety and Health Promotion Needs of Older Workers, IOSH Research Committee

<sup>15</sup> Schmiedek F, Lövdén M, & Lindenberger U (2013). Keeping it steady: Older adults perform more consistently on cognitive tasks than younger adults. *Psychological Science*

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