Secular joblessness

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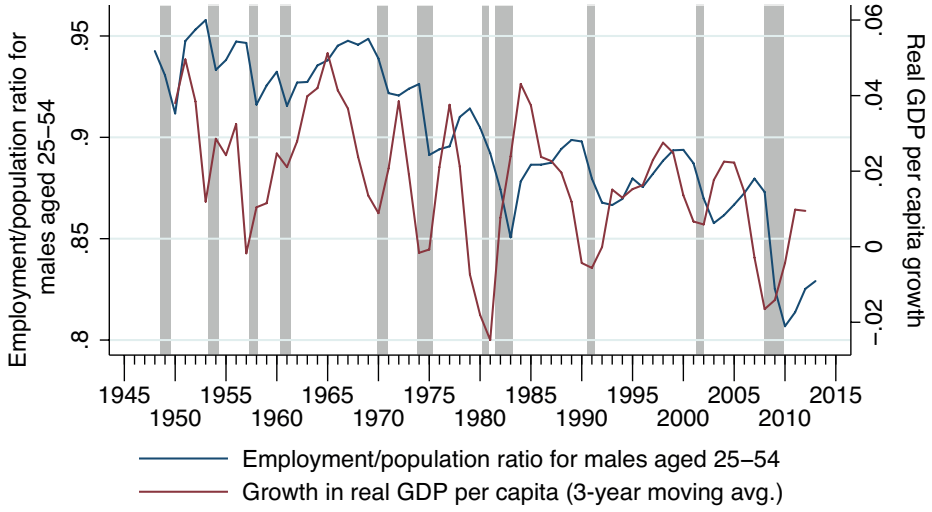
The wonders of the internet age cast doubt on the idea that technological progress is stagnating. Worryingly, however, some fraction of US job losses has become permanent after almost every recession since 1970. This chapter argues that persistent joblessness is unlikely to be a purely macroeconomic phenomenon. Although the US welfare system remains less generous than many European ones, it has become substantially more generous over time. Alongside targeted investments in education and training, radical structural reforms to America's safety net are needed to ensure it does less to discourage employment.

US investment and innovation – the most standard ingredients in long-run economic growth – are not declining. The technological world that surrounds us is anything but stagnant. Yet we can have little confidence that the continuing flow of new ideas will solve the US's most worrying social trend: the 40-year secular rise in the number and share of jobless adults. Past history suggests that such joblessness will persist, even during the most robust recovery, unless there are serious structural reforms involving the social safety net and the formation of human capital.

Figure 1 GDP growth rates and male employment, 1947-2012



Notes: Shaded areas indicate US recessions.

Source: Bureau of Economic Analysis, Bureau of Labor Statistics and US Census.

Figure 1 shows the time series of the growth in real GDP per capita and the non-employment rate for males aged 25 to 54. The figure illustrates that GDP growth has indeed been quite sluggish since 2006, which makes the secular stagnation hypothesis credible. The recession was awful and the recovery has been weak. Moreover, the recent decline in growth rates seems to fit a larger downward trend; real per capita growth averaged about 2.5% between 1947 and 1969 and has averaged less than 2% since then.

Yet it is hard to know whether the past painful eight years represent the trend or the cycle. Things looked far worse in 1938 and pretty bleak in 1982, but if you had predicted permanent stagnation at either time, you would have been woefully wrong. I don't mean to suggest that the GDP numbers alone rule out the possibility of permanent stagnation – but rather that the time periods are short and full of confounding forces.

Moreover, when we turn to the ingredients that theoretically determine longer-term growth, including innovation and investment, there seems to be little cause for concern. A decade ago, the US granted 187,000 patents, which was then a historical high. In

2013, the number of patents granted passed 300,000. Perhaps, modern patents are less important. Perhaps, the patent office has become more permissive, but that isn't what the world feels like to me.

During the first ten years of my life (1967-1977), the only major technological innovation that I observed entering our apartment was colour TV, and that TV broadcast roughly the same set of channels over the decade. How can such a world possibly be compared with innovations of the past decade?

The giants of the internet age – Amazon, Facebook and Google – were either far smaller or non-existent in 2004. Apple had introduced the iPod in 2001, but not the iPhone (2007) or the iPad (2010). Skype was first released in 2003. My 2005 Subaru has neither a GPS system, nor Bluetooth, nor any sensors that tell me when I'm about to ding a neighbouring car. Robotics have continued to improve, sometimes with life-saving impacts in surgery.

Indeed, this proliferation of inventions should make us quite nervous about the price indices used to compute GDP figures. The theory of price indices is that an individual should be indifferent between living today and living in the past with the same real income. How many people would really be indifferent between earning $23,000 in 1984 and earning $50,000 in 2014? You could surely buy the same amount of most basic commodities in 1984, but you would forgo the use of thousands of significant innovations, some of which improve life expectancy and others which are just fun.

The beneficiaries of innovation

While it seems almost absurd to argue that human inventiveness has stalled, there are serious questions over which inventions bring widespread benefits. For much of human history, per capita incomes were relatively stagnant, despite frequent bursts of imagination. Perhaps, we are just experiencing an era in which innovation benefits the few rather than the many.

Since almost all of us are both consumers and producers, technological change can impact most of us in both capacities, positively or negatively. One can reasonably argue that many of the innovations prior to 1750, and most global trade, was targeted towards Europe's most elite consumers. For example, when the Conquistadors discovered red cochineal dye being used in the Aztec court, this innovation may have brightened the clothes of Europe's aristocracy but it did little for common people (unless they were dyers). Before the printing press, literary innovations necessarily had a small, elite consumer base and employed even fewer writers. Painting may have reached a broader audience, but it still seems unlikely that even monumental artistic innovations, such as Masaccio's use of linear perspective in Renaissance Florence, provided widespread consumption benefits during their own age.

The 17th century Dutch trade empire initially specialised in providing goods demanded by the wealthy, such as spices, yet that innovative empire eventually benefited the people of the Netherlands as producers. According to the Maddison data (Bolt and van Zanden 2013), the Netherlands was the wealthiest nation on the planet during the 1600s. Similarly, innovations in the global luxury goods trade today, like the Hermes Birkin bag, benefit only a modest number of consumers, but if Hermes' press is to be believed, the labour demanded by such items can be considerable.

At its best, the industrial revolution generated innovations that benefitted masses of ordinary people as both consumers and producers. Henry Ford's Model T provided inexpensive transport for millions of ordinary Americans and $5 a day wages for his workers. The earlier innovations in Lancashire's cotton mills were associated with often horrific working conditions, but eventually demand for English labour appears to have boosted earnings dramatically (Clark 2010)

Figure 2 presents a two-by-two box that categorises the beneficiaries of different forms of innovations. It is hard to think of any innovations before the modern age that increased demand for the most skilled workers while providing consumer benefits for the masses. Indeed, for such a thing to occur, one must imagine a world in which highly

paid elite workers toil for the benefit of services that will be used by the poor. Could such a thing be imaginable in pre-revolutionary France or in Ming China? Yet that is exactly what happens at Google or Facebook. Highly paid workers work constantly to improve a service that is provided freely to hundreds of millions of poorer users.

Figure 2 A Categorisation of the beneficiaries of innovation

	The skilled benefit as producers	Widespread benefit as producers
Elite consumer benefits	Pre-modern artistic innovations Medieval fancy dyes	Dutch Trade Empire Labour-intensive luxury goods
Widespread consumer benefits	Facebook Google	Model T Cars Industrial Revolution generally

This inversion of the traditional nature of innovations represents the rise of superstar-like technologies (Rosen 1981) that enable the highly competent to provide their services as almost a public good, with no congestion in use. The most natural precursor to this modern inversion was well-paid artists, such as writers and movie stars, who entertained the masses. The inversion also happened when Fred Astaire and Ginger Rogers danced for depression-era movie audiences.

The essentially zero marginal cost of providing internet-related services means that they are often monetised through the advertising of goods with a positive marginal cost. It is free to use Google, but their search engine will nudge users towards their advertisers. The free nature of these services has meant a democratisation of access to information; a fact that is rarely considered in attempts to measure inequality.

Innovation seems unrelenting, at least to me, and I believe that such innovation is the stuff of longer-term economic growth (Romer 1986). Therefore, I cannot help but think that stagnation is likely to be temporary. I also believe that the benefits of future innovation will continue to flow to a wide swath of humanity, at least in their capacity

as consumers, because the internet seems to strongly favour free – or low cost – delivery of services and content.

Yet I do not think that all is well. The dysfunction in the labour market is real and serious, and seems unlikely to be solved by any obvious economic trend.

Eurosclerosis in the US

Figure 1 shows the rise in joblessness among males between the ages of 25 and 54, which includes both unemployment and being out of the labour market for other reasons. I focus on men because non-employment for women is more complicated and far more likely to be related to childrearing. I do not mean to suggest that chronic joblessness among women cannot also be a major problem.

Until the end of the 1960s, this figure was relatively steady, averaging approximately 5% in good times and 8% during downturns. There was no trend. After the upward bursts of a recession, joblessness fell back to normal.

After 1970, however, there has been an irregular but strongly positive trend. Joblessness has typically soared during recessions, but unlike the earlier post-war period, those rises were not fully reversed during recoveries. Some fraction of the recessionary joblessness rise has become permanent after almost every post-1970 downturn.

The 2007 recession was particularly severe and at its peak, prime-aged male joblessness rose to almost 20%. Today, the rate has fallen to 16.6%. It seems reasonable to believe that the rate will continue to fall somewhat, but if past recoveries provide any guide, a greater share of prime-aged males will be jobless at the end of the recovery than at the beginning of the recession.

The consequences of so much long-term joblessness seem terrible for both the individuals concerned and society as a whole. Human capital depreciates off-the-job, so talent is lost. For decades, researchers have documented a profound connection

between unhappiness and unemployment (Clark and Oswald 1994), perhaps because of the social isolation and self-doubt associated with joblessness (Hetschko et al. 2014). Extreme joblessness may be only one aspect of increased inequality, but it is among the most troubling features of a more unequal world. If one in five adults is disconnected from the productive side of the economy, what will this mean for their voting behaviour, or their sense of connection with the country's larger economic goals? Can this lead to a self-reinforcing process where this group votes regularly for larger jobless benefits which in turn increase the level of joblessness? We are, unfortunately, just beginning to understand the potential impact of the sea change in American life.

Why did joblessness rise in the US? The explanation that seems to fit the time series best is the interaction between institutions and labour demand shocks proposed by Blanchard and Wolfers (2000). Over time, less skilled American workers have been hit by a series of adverse labour demand shocks, like workers in many other wealthy countries. These shocks may well have increased joblessness even if America's social safety net had not evolved since 1960, but their impact was exacerbated because of institutional changes that made joblessness less painful and increased the incentives to stay out of work.

While the US social welfare system remains less generous than many European safety nets, it has become substantially more generous over time. The US has a bevy of social programmes – including Medicaid, the Supplemental Nutrition Assistance Program (food stamps), Temporary Aid to Needy Family, Section 8 Housing vouchers and insurance for both disability and unemployment – that have generally increased in generosity over time, often for quite laudable reasons. These programmes also sharply reduce the incentives to work, often by directly taxing earnings (both food stamps and Section 8 vouchers carry an independent 30% tax on earnings) and by making joblessness less miserable.

Perhaps the most important programme connected to long-term joblessness is disability insurance. In 2010, 16.6% of Americans between 21 and 64 reported being disabled, and

11.4% reported a severe disability (Brault 2012). In 1970, 1.5 million Americans were receiving Federal disability insurance; in 2013, 8.9 million Americans received such aid (Social Security Administration 2014). This increase in disability is particularly startling given the general increase in US health over the same time period, and surely institutional changes, including those meant to reduce unemployment, have played some role in this dramatic increase (Autor and Duggan 2003).

Another way of looking at the secular rise in joblessness is that it represents a failure of entrepreneurial imagination. Why haven't smart innovators figured out ways to make money by employing the jobless? One explanation is that current technological trends just don't favour products made with less skilled labour. The second explanation is that the safety net has just made this labour too expensive relative to more mechanised alternatives. I now turn to policies that might mitigate the secular rise in joblessness.

Public policy and joblessness

If the problem is perceived as secular stagnation, then policy thoughts move towards macroeconomic interventions aimed at improving the US's overall economic mojo, such as investing in infrastructure or reducing corporate taxes. If the problem is perceived as a vast increase in the share of out-of-work Americans that has persisted through good times and bad, then such macroeconomic interventions seem poorly targeted.

The time series path shows that the jobless rate for prime-aged males has never fallen below 10% during the entire post-1980 time period. Despite the roaring Reagan recovery and the successful Clinton years, joblessness remained stubbornly high. That fact should make us wonder whether any macroeconomic policy can solve the problem of persistently high joblessness. Interventions targeted at less prosperous Americans seem more likely to be successful.

The cross-sectional relationship between education and unemployment is so strong that it is hard not to focus on America's troubled education system. As of June 2014, 72.7%

of college graduates over the age of 25 were employed, while only 39.4% of high school dropouts had a job (Bureau of Labor Statistics 2014). This extraordinary cross-sectional gap doesn't prove causality, but the hundreds of studies attempting to estimate the casual impact of education on earnings and employment have generally confirmed at least some positive effect.

The US's school systems may have once been the best in the world (Goldin and Katz 2009), but at this point, the country's scores are middling. On maths scores, US students perform far below students in European countries like Germany and the Netherlands, which in turn are outperformed by Asian competitors like South Korea and Singapore (Hanushek et al. 2010). Moreover, while US test scores are improving, they are not improving relative to the world's higher performers.

This chapter cannot dwell on the possible approaches to education reform in the US Charter schools have often been effective, but it is hard to imagine that they can completely replace conventional schools. There is a long literature documenting the importance of teacher quality, but it is hard to hire good teachers or fire bad teachers. Electronic learning may come to play a critical role in teaching the underprivileged. The key point is that improving America's education, especially for the less successful half of the population, seems critical.

It is perhaps also appropriate to do more to emulate the German apprenticeship programmes and to improve vocational training within the US. Grafting foreign institutions into US labour markets is not easy, however, and we surely need more experiments before embracing any system-wide reform.

Education cannot fix the problem single-handedly, especially if we refuse to write off the current generations of adults. One possibility is that targeted demand-side interventions, such as infrastructure investments, can employ these workers and thereby rebuild their human capital. Perhaps this will be the case, but there are reasons to be sceptical. Much infrastructure investment is now capital intensive. America's infrastructure programmes

have often been criticised for waste and inefficiency. Better research and, again, more experiments are surely needed to make the case for such interventions.

Finally, it is surely necessary to rethink the structure of the US's social safety net and to ensure that it does less to discourage work. David Autor and Mark Duggan (2010) have made an interesting proposal suggesting that disabled people be allowed to work. The idea of combining social welfare programmes to eliminate overlapping anti-work incentives also seems sensible.

The Earned Income Tax Credit represents a reasonably successful intervention aimed at making work pay. More can be done in this area. Instead of raising the minimum wage, which risks deterring future job openings, the wage can be boosted by a federal subsidy. Social security taxes can be eliminated for workers at the low end of the earnings distribution. Structural reforms are surely necessary to ensure that the US makes work more attractive for the jobless.

The massive secular trend in joblessness is a terrible social problem for the US, and one that the country must try to address. I do not believe that this is a macroeconomic problem that can be solved with more investment or tax cuts alone. The US needs targeted investments in education and workforce training, and the country needs to radically improve the incentives to work.

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