Human Capital in the Digital Economy

August 6, 2013
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Human capital is a key asset that planners manage as they strive to maximize consumption throughout clients' lives. Human capital, or lifetime income, often peaks in value early in their careers. Moreover, today's digital economy means human capital is more volatile and less predictable than in the past, and that carries important implications for financial planners.

Human capital provides protection against investment losses. But how much protection?

The question is important because lifetime income is not guaranteed and there are knotty problems of measurement. When human capital finds its way into the planning process, it is usually represented in a way that assumes the client will maintain one occupation. While this may have been reasonable in the world that was, we're quickly moving into a different world – one of disruptive change in a digitizing economy. One must be more concerned about the certainty of lifetime income.

Why should financial planners be concerned with valuing human capital? This is not an easy question to answer. It provides an important perspective, and concerns about what to do about human capital in a digitizing economy are going to increase.

I'll look at what the digitizing economy means – on a practical level – for clients' asset allocations. But first, let's look at the dramatic changes taking place in the U.S. labor force and how the nature of your clients' employment will change in the coming decades.

The consequences of the digital revolution in the labor market

Our economy is in the throes of a significant change regarding what, how and where work gets done. The driving force is computer power, which early on replaced the rules-based work that dominated businesses.

Early successes and the growth of software that supported the computer revolution laid the groundwork for the Internet and World-Wide Web. This, in turn, prompted applications that connect users to those networks, which are now the focal point of much of what goes on in the economy.
More recently, big data entered the fray. The digitization of information combined with the expanded use of sensors, such as radio-frequency identification chips that can track the movement of products through the supply chain, has enabled us to seek better ways of doing things.

Most of those developments have substituted capital – computer power – for labor, leading to job losses. Such substitutions, however, bring productivity that increases incomes, thereby inducing more production and more jobs. Jobs are also created when the automated operations are put in place.

But many of the displaced have yet to be put back to work.

Labor market adjustments to technological progress have never come easily. But, history tells us that they will happen again and again. That said, it’s harder this time around, because digitization has greatly increased the pace of technological change. What we’re doing now goes well beyond simple pattern recognition and rules-based activity. We’re now into as advanced pattern recognition and complex communication. The networks now evolving combined with the growing use of big data analytics are rapidly increasing the automation that’s under way.

Much of this progress is reflected in the story of Watson, the IBM machine put together to compete in the game show *Jeopardy* with two very smart humans. Watson annihilated those fellows. What was important about the game, however, was not so much that Watson won it, but that it demonstrated the power of artificial intelligence. Medical diagnosis is now fertile ground for technologies like Watson’s. Computer algorithms could also assist in legal research and assembling evidence. Given the productivity gains that will accompany such activity, what lies before us is the possibility of a very bright future.

But if it is a future that destroys jobs, will it provide something that’s equally good if not better?

**Markets and the displaced**

We are not short of commentary about where our digital technologies are likely to take us. There are voices of optimism that argue the future looks good because these technologies are filled with exponential growth possibilities. Digitization, electronic connections and relationships enabled by technology give rise to ideas that can lead to exponential growth activity.

Digital output – bytes of information – doesn’t disappear with use, while human output eventually disappears. Permanence is not important for its own sake, but it allows information to be used again and again. As information proliferates, the possibilities increase exponentially, as do ideas from which commercial applications can come.

This happened with the development of computer software, which resulted in the emergence of such companies as Apple, Google, Amazon and Facebook.

But is this all to the good?

A great deal of digitization involves the Internet, where much information use is free. Problems
generating revenue will not be far behind.

Another weakness is the work-generating power of technology activity. The evidence is in simple comparisons of the employment figures of top companies before and after the digital revolution. When Kodak led the photographic industry with a market capitalization of more than $28 billion, it employed roughly 140,000 workers. Instagram, the leader now, was recently sold to Facebook for $1 billion and had a work force of 13 employees. Clearly, the labor market faces problems no matter how much activity the digital revolution generates.

Finally, there’s the question of the benefits of this revolution. To many, the gains have been flowing to relatively few individuals. This exacerbates the problem of income inequality, which economists generally believe negatively impacts the nation’s growth rate.

What can be made of all this?

There are two questions here: Is the problem a big one? If it is, will the market be able to replace the jobs that have been displaced?

The quick answers are yes and no. On the basis of what has happened in the past couple years, computer algorithms will continue to rapidly develop and big-data analytics will give us artificial intelligence does a lot more of what’s now being done with human intelligence. There will be an ever-growing role for computer power in the economy. The work force will be under pressure from the uncompromising threat of automation.

What about those individuals concerned with their financial future? What kind of jobs will be available in what is likely to be a seller’s market?

Careers of the future

Two or three decades ago, medicine, law, engineering, accounting or even symphony conducting were among the best careers. Focusing on such occupations was a sensible career path, and ample information to make that choice was available.

Now one must think otherwise. Very few skilled professionals will be performing the same jobs in 20 or 30 years as they do now, assuming those jobs are still around.

There’s nothing new about jobs changing with the times. However, throughout much of the 20th century, much of the change was incremental, and what we did didn’t change dramatically.

Now we’re living with a digital revolution that has obliterated that comfortable pace of change. Many semi-skilled jobs are gone and those that remain are vulnerable. Computer power will move up the skill set, taking over jobs where the knowledge requirements are more demanding.

To illustrate the problem, consider the world of ground-based transportation. It’s a pretty good bet that driverless vehicles are coming. Suppose this technology takes off. This spells bad news for drivers of
trucks, taxis, buses and limos. Ultimately, the change would extend to traffic police and traffic court workers, to name a few.

Who would benefit? Suppose the current ownership of vehicles shifts to companies that provide on-demand transportation services. What would emerge is a business devoted to storing and dispatching cars, trucks and buses as needed. Given the magnitude of the job, there would undoubtedly be a need for some very creative computer engineering. Given the magnitude and complexity of the job, there will be some learning-by-doing that will give rise to new skills. But given the growth of artificial intelligence, there will be questions of how much should be done by humans.

Then there’s the matter of unexpected spin-offs that can come from explosive technological change. Such was the case when the mass-produced steel that emerged in the 19th century led to the birth of the automobile industry in the early 20th century.

Entrepreneurship will become increasingly important. Given that digital technologies will continue to expand rapidly, new businesses will have a big cauldron from which many ideas will surface, and more than a few of these could be converted into successful commercial applications.

The digital revolution will flourish in a dynamic market economy in which innovation lies at the heart of competition. Much of that future innovation will be about disruption — ideas aimed at obliterating the competition. Success requires someone with a vision that will lead to successful commercial activity — someone who can bring together the pieces of a puzzle, work it through and bring it to a conclusion, despite the risk of failure. Entrepreneurial talent must be at the helm. And in the business world that’s emerging, there will be a lot of such folks.

Creativity in a company will be more spread out, with connections that are not always visible. Electronic connections tie things together in ways that enable individuals, much more so than in the past, to make creative contributions and foster entrepreneurship.

Put somewhat differently, workers are going to be much more involved in the success or failure of businesses than were their parents, which will lead to more variability in their lifetime incomes.

**Implications for financial planners**

This implies a future in which the distinctions between many occupations will lose their usefulness to financial planners.

Human capital matters to those pursuing a career that pushes them up the income ladder, because human capital is needed to make the climb. It’s also the asset that affects the risk exposure of the financial portfolio they accumulate in their quest for maximum life cycle consumption. If one has a job in an occupation with a history of income stability, they’d could view their lifetime income as a low-risk investment that would allow for higher risk assets in their financial portfolio.

The digital revolution poses problems to such a strategy. Technological developments creatively destroy a lot of jobs without providing a reliable forecast of what will replace them. We are less certain
about our lifetime income. Even in those instances where one has a handle on a career, that work will have us playing the role of entrepreneur to some degree. Indeed, to the extent we’re becoming a society of entrepreneurs, our income will be more volatile.

Human capital may be abundant early in one’s career, but rather than adopting an equity-centric asset allocation, a better strategy is to invest in lower-risk assets.

If this possibility doesn’t enter the conversation, it could turn out to be a costly omission. One must be aware of key trends in the economy and incorporate a realistic assessment of one’s human capital into financial plans.

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