

The Creative Destruction of Labor Policy

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Abstract

While the consumer benefits from the new products and improved processes due to creative destruction, the major downside to creative destruction is technological unemployment. However, policies adopted by the government and by labor can reduce the downside. Governments can lessen the barriers to entrepreneurial activity and reduce the volatility of the macro-economy. A government safety net is also considered. Labor can become more resilient in attitude and frugal in spending; and can invest in more diversified and enduring human capital. The family can provide a private safety net. The process of creative destruction is not a zero-sum game.

Schumpeter is right that creative destruction makes life better, and that the innovative entrepreneur is the agent of creative destruction (Diamond 2012a). If so, then a summary filter for judging government policy is to examine which policies enable productive innovative entrepreneurship. I say “productive” entrepreneurship because if an entrepreneur is one who gets things done, then Baumol is right (1990) that some entrepreneurs get good things done (the productive entrepreneurs), some get neutral things done (the unproductive entrepreneurs) and some get bad things done (the destructive entrepreneurs).

Steve Jobs was one of the great innovative entrepreneurs of our, or any, time. During key moments in his entrepreneurial projects, the success of the project depended on his being able to fire workers based on his intuition of who would make 'genius' contributions. Even in the hamburger business, Ray Kroc argued (1977, pp. 91-92) that a good entrepreneur has developed intuitions about which workers will be able to do a good job, and which not. In the case of Steve Jobs, biographer Walter Isaacson shows (2011) that Jobs' being able to act on his intuition was crucial to his quickly and efficiently building and keeping a team of “A” players from whom much was expected. Sometimes another type of firing was required, as at Pixar. Jobs had bought Pixar for \$5 million, and before it became profitable he invested an additional \$50 million. At Pixar, the survival of the project once required even the firing of some “A” players, to reduce costs (Price p. 116). The firings were unpopular but Price says they were necessary for the firm to survive and for the innovation of *Toy Story* to enter the world.

Part of Jobs' success was that he usually made quick intuitive decisions that

often enough, but not always, were right. But these decisions were not easy to articulate when innovating at the far edge of 'the adjacent possible' (Steven Johnson 2010). Both the firings to maintain an "A" quality team, and those to reduce costs, were important for the success of the projects that Jobs was seeking to get done. The firings were possible because of the policy in the United States of "at-will employment."

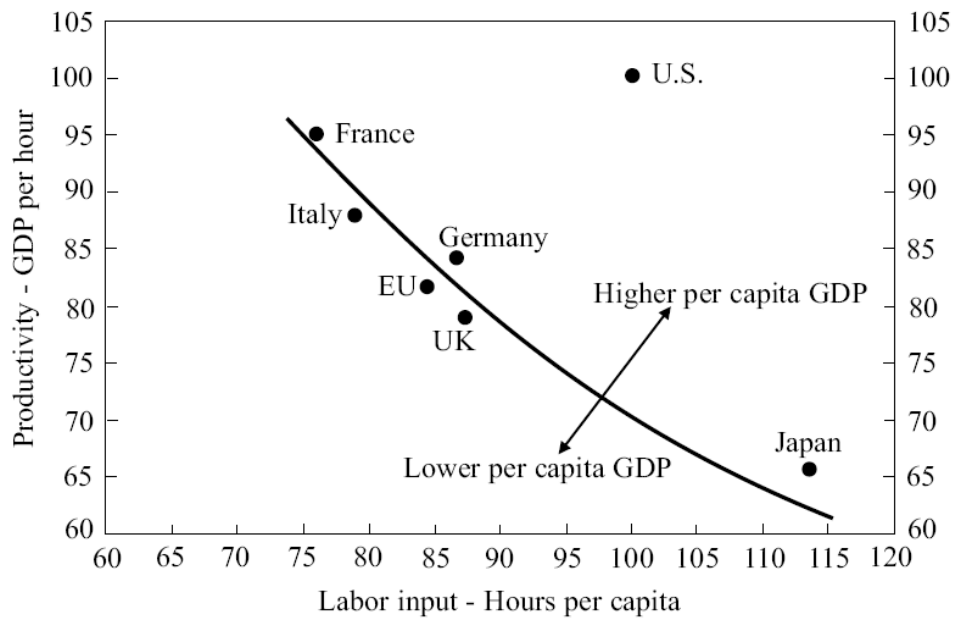
Tracy Kidder in *The Soul of the New Machine* (1981) describes how Data General worked long and intense hours for months in order to develop one of the first minicomputers. The project might not have succeeded, or even been tried, if there had been regulations mandating vacations, or setting maximum work hours.

Labor market regulations often emerge from good intentions. The main cost of creative destruction is job loss when a new technology replaces an old one. In response to job loss due to creative destruction and other causes, governments often regulate how firms fire workers. Other regulations aim to improve the condition of workers. These may consist of minimum wages, maximum hours, required vacation days, required retirement age, mandatory unionization, to name a few examples. The larger the number of such regulations, the more rigid, or sclerotic, the labor market. The fewer, the more flexible.

One of the key ways in which an economy can be open to creative destruction is to have a flexible labor market.

Consider Martin Neil Baily's graph (Figure 1 below) in which the United States has greater labor productivity than would be expected, compared to Europe and Japan. He attributes this to a combination of different preference for leisure and openness to

creative destruction. Rogerson (2008, p. 256) and Dhnot and Heylen (2008) have shown that higher income tax rates leads Europeans to devote more time to household production, and less to labor market participation, so it is unlikely that different preferences for leisure play much of a role.¹



Source: The Conference Board.

Figure 1: Explaining the Outlier: Openness to Creative Destruction. Quantities in graph are “indexed to US equals 100.” Source: Baily 2001, p. 220.

Although labor market regulations have grown in the United States, they remain less rigid there than in most European countries. This is true for a wide variety of

regulations. A study in 2008, for instance found that the United States was the only “advanced country” that does not legally mandate that companies provide workers with a paid vacation (Ray and Schmitt 2007). The United States also has less rigid rules for parental leave than many other countries (Ray, Gornick and Schmitt 2010).

At the macro level, labor market rigidity slows the reallocation of labor to more productive uses. Caballero has argued (Caballero and Hammour 2001; Caballero 2007) that the restructuring of the microeconomy through reallocation is a major driver of economic growth that needs to be incorporated in macroeconomic models.

Specifically: “In Western Europe, the heavy weight of labor market regulation has caused In Western Europe, the heavy weight of labor market regulation has caused persistently high unemployment and sclerosis” (Caballero 2007, p. 4). In the *Wall Street Journal* Editorial Board member commentator Holman Jenkins (2006) has gone so far as to say that the Europeans have a “pathological revulsion” to the “disorder” in the economy caused by such agents of creative destruction as Apple. The source of such revulsion is not clear. Botero et al show (2004) that leftist political power and non-common-law legal origins increase the extent of labor market regulations. Surprisingly, of the two, non-common-law legal origins matter more.

In contrast, “. . . , the greatest single asset that the American economy has always had is the flexibility and mobility of its labor force and labor laws” according to Harvard economist Robert Lawrence (as paraphrased by Thomas Friedman 2005, pp. 284-285). Cox and Alm have illustrated (1992, p. 5) the point by noting that in 1900 about 40 in 100 workers in the United States were employed in producing food, while in 1992 only three in 100 were needed. If rigid government labor market policy had

“protected” the 40 jobs in 1900, labor would not have been freed to produce all of the wonderful new products that made the 20th century exceptional.² Petra Moser suggests that the mobility of inventors moving from declining industries to expanding industries, is important in explaining the vitality of innovation in the United States (Rampell 2008).

Paradoxically, greater labor regulations cause higher unemployment, and lower labor force participation (Botero et al 2004), in both cases most strongly affecting the young. In France, laws limiting the work week to 35 hours were intended to increase employment, but did not do so (Chemin and Wasmer 2009). Within the United States, Texas has one of the most flexible labor markets. From June 2009 to June 2011, roughly half of the net new jobs created in the United States were created in Texas (Davidson 2011).

In the first part of this paper, I discuss some of the government policies that will make the labor market more flexible. Since the agent of creative destruction is the innovative entrepreneur, a primary concern will be how the flexibility helps make innovation possible. In the briefer second part of the paper I discuss some of the personal policies that workers can adopt for themselves that will enhance the innovative process of the economy and increase their own job satisfaction.

a. The Redundant Robustness of Freedom

What I mean by ‘redundancy’ can best be understood by an extended analogy. My understanding of the analogy derives mainly from an under-appreciated reporter

and commentator on entrepreneurial capitalism: George Gilder (in *Telecosm* 2002). Some aspects of the analogy are also discussed in Gleick's much acclaimed best seller: *The Information* (2011).³

The Ethernet is a preposterous technology that should not work. You take a message, disassemble it into many discrete packets, send them by different, unpredictable routes to their destination, and then re-assemble them. It would take a miracle for it to work. But it does work. And not by a miracle, by redundancy: if a packet does not make it through, it can be quickly re-sent.

Entrepreneurial capitalism can work this way. When one job is lost, another will come along. Davis, Haltiwanger and Schuh (1996) have shown that capitalism produces more jobs than it destroys. And Autor, Levy and Murnane (2003) have shown that on average the new jobs are better than the old ones. And workers can take actions to increase the odds that their new job will be better, and that they will find it quicker.

The redundancy of the labor market has implications beyond reducing the pain from creative destruction.⁴ One implication is that since jobs are more numerous and diverse in large cities, the redundancy is greater there, which explains in part why cities are particularly conducive to creative destruction.

Another implication is that workers have a greater hope of being paid what they deserve. Like many policy makers, Schwartz and Sharpe (2010, p. 181) assume that any defensible pay system will be based on a measurable algorithm---in the absence of which pay would depend on prejudice or affection or whimsy. And they plausibly assert that no measurable algorithm exists, or will exist, that results in workers being

paid what they deserve. Their cynical conclusion is that to be productive and innovative, workers must sometimes become “canny outlaws,” and at the very least must give up the expectation of being paid what is deserved.

But the stories of Steve Jobs and Ray Kroc illustrate that through experience and intuition, entrepreneurs and managers can develop a usually accurate sense of what pay a worker deserves. Human Resource (HR) departments and government regulators would be appalled at relying on such intuitions, because of the possibility of discrimination. But if the redundancy of the labor market provides an alternative to rigid rules as a protection against discrimination, then the market can take advantage of the informal knowledge of entrepreneurs, not only to make firms more productive and innovative, but also to make pay more accurately reflect what workers deserve.

A final implication is that redundancy helps reduce the costs of speaking freely. Consider economist Mark Blaug who as a young tutor at Queens College in New York, endorsed a student petition protesting the firing of a left-wing tenured professor for having refused to co-operate with the Un-American Activities Committee. Less than a day later, Blaug received a note from the President of Queens College, telling Blaug that his choice was either to resign or be fired. He resigned. Fortunately, he received a grant from the Social Science Research Council to complete his dissertation, after which, again seeking employment, he obtained a job interview at Yale. In Blaug’s own words:

In the course of the interview, I felt impelled to explain how I had lost my previous teaching position at Queens College. I always remember how Fellner

cut me off, saying: 'We don't want to hear about that. This is a private college and what transpired at a public university a few years ago is of no concern to us.' I never had a better demonstration of Milton Friedman's thesis that a free market, by multiplying the number of probable employers, is more likely to secure liberty for the individual than a socialist system in which the state is a monopsonist. (Blaug 2004, p. 77)

Milton Friedman states his thesis in *Free to Choose* (Friedman and Friedman 1980, p. 246).

b. Let Entrepreneurs Employ At-Will

For the innovative entrepreneur, flexible policies are better than rigid policies. Great example in entrepreneur Ray Kroc's autobiography where he explains an intuition he had that a certain manager could not do the job. Kroc allowed himself to be talked out of it, but eventually he was proven right (1977, pp. 91-92). In the meantime, the firm was less productive, and the manager delayed the day when he could find a job where his skills were a good match with what was needed. I argue elsewhere (Diamond 2012a) that innovative entrepreneurs often benefit from informal knowledge--knowledge that is real, often based on experience, but that cannot be quickly or easily put into words. An entrepreneur in a flexible labor market can act on such knowledge by employing-at-will. When workers' jobs are "protected" by government policies, the entrepreneur cannot act on such knowledge, and the firm is less productive and

innovative.

Case law and legislative statutes have restricted employment at-will in the United States, but the United States remains closer to having an employment at-will policy than countries in Europe. The approximate employment at-will policy has been identified by Epstein (1984) and by Posner (1995) as one of the primary reasons for the productivity of the United States economy. Martins (2009) finds that when the rules for firing are more flexible, workers work harder (and to some extent, more workers tend to be hired).

Alan Hyde (2003) has studied the labor market in Silicon Valley, which is arguably the epicenter of entrepreneurial activity in the United States over the past three decades. He concludes that labor mobility, furthered by the employment at-will policy has been a key feature of the Silicon Valley labor market. Virginia Postrel (2005) has made the case that in Silicon Valley frequent job changes may benefit both labor and firms.⁵ The labor benefits by acquiring a greater diversity of human capital, and possibly achieving a better match between the job and the worker's preferences. The firm benefits by the infusion of new ideas and skills. Notice that this example refutes the common belief that low unemployment corresponds to long job tenure. When there is frequent job-hopping, there can be both low unemployment, and short job tenure.

Steve Wozniak writes (Wozniak and Smith 2006) with regret of Apple's transition from the flexible processes of an entrepreneurial startup to the rigid processes of a mainstream corporation. One main evidence of the transition is the abandoning of employment at will. In writing of the pre-1983 management troubles at Apple, Wozniak highlights that large companies usually lose flexibility in hiring and firing.

Good managers who have tacit (or just insufficiently documented) judgment about who the best employees are, have limited ability to act on that knowledge. It is unclear how much of this transition is due to internal standards of what constitutes good corporate practice, and how much is due to a desire to comply with laws and regulations and avoid potentially costly lawsuits. How much of it is due to an inevitable disadvantage of size, or due to a doctrine learned in human resource courses in business schools, or due to other constraints from our laws, customs and institutions?

Wozniak describes (Wozniak and Smith 2006) how then-Apple-CEO Mike Scott fired a large number of engineers, and then was fired by the board without “a lot of backing and due process” (p. 231). Another leader of the company, Mike Markkula, told Wozniak that “Mike Scott had been making a lot of rash decisions” (p. 231). But Wozniak says that Mike Scott had researched which engineers had been working and which not, and that with Mike Scott running Apple, Wozniak “didn't see many things fall (p. 232) through the cracks” (pp. 231-232). Most importantly Wozniak, who was in a position to know, thought that Mike Scott “fired all the right ones. The laggards, I mean” (p. 231).

Bird and Knopf (2009) have looked at the effects of court limitations on the employment at-will doctrine. States differ in how many, and which, of three common exceptions to the doctrine they enforce (the public policy exception, the good-faith exception, and the implied-contract exception). Controlling for state economic conditions, they look at the effect of more exceptions on bank profitability, and find that the greater the exceptions to the employment at-will doctrine, the lower the profitability of banks.

In Europe, and most famously in France, laws and culture have made it harder for firms to fire workers. In 2009 workers for Caterpillar, Inc. in France held managers hostage after the managers had announced plan to fire some of the workers (Gauthier-Villars and Abboud 2009, p. B1). When 3,000 French firms were surveyed in 2004, 18 firms reported that managers had been held hostage by workers (Gauthier-Villars and Abboud 2009, p. B1). The situation in Europe has gone so far that Rob Grant has satirized it his novel *Incompetence* (2003) in which an organization modeled on the European Union (EU) passes a law to make it illegal to discriminate against the incompetent by firing them.

Gust and Marquez (2002 and 2004) have delved deeper into the effects of employment protection. Figure 2 illustrates a negative correlation between employment protection and IT expenditures. Figure 3 illustrates a positive correlation between IT expenditures and labor productivity growth. The causal chain suggested is that employment protection leads firms to invest less in IT, and less investment in IT leads to lower growth in labor productivity. Feldstein (2003) proposed a motivation behind the causal chain. One main source of benefit from personal computers is that they can substitute for some forms of routine labor (e.g., Levy and Murnane 2004a & 2004b). But if jobs are protected, these benefits cannot be realized. So if job protection forecloses the benefits from IT investment, entrepreneurs will invest less in IT.



Figure 2: “IT Expenditures and Employment Protection Legislation.” Source: Gust and Marquez 2002, p. 34. [checking whether similar graph is also in 2004 version of paper]

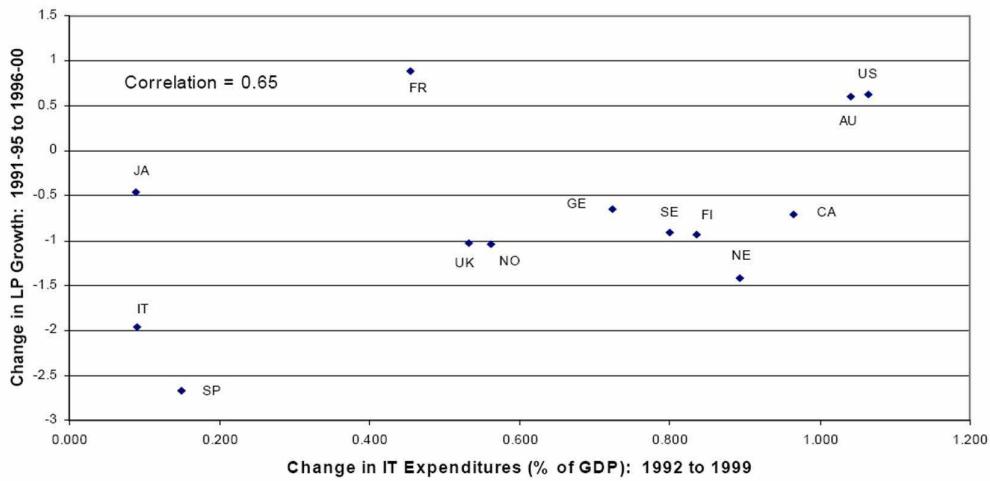


Figure 3: “IT Expenditures and Labor Productivity Growth.” Source: Gust and Marquez 2002, p. 34. [checking whether similar graph is also in 2004 version of paper]

In India government employees are protected against layoffs. When the government permitted competition with the government owned dairy, demand for government milk plummeted. The government sold off the milk delivery trucks, but the Indian law made it illegal to fire the truck drivers. So, as of 2008, each day roughly 300 truck drivers would show up to **not** deliver milk. One of them was D.T. Walkar:

Most days, he and his fellow drivers at the government dairy sign in, then move to the rest area. While others read the paper, nap or play rummy, Mr. Walkar likes to do the Sudoku puzzle in the Maharashtra Times, unless someone else has gotten to it first. He then wanders around the complex and talks to friends. The last delivery trucks were sold last year. "The trucks are all gone so we just sit around and talk," says Mr. Walkar, 50 years old. "We are bored." (Bellman 2008, p. A1)

c. Let Labor Market Be Flexible

To get their projects done, entrepreneurs make their best judgments about who to hire, how much offer them, what hours and environment of work, the kind and number of meetings to hold, and a host of other variables. Some process innovations consist mainly in trying new or unpopular ways of deploying, supervising and

rewarding labor. Wal-Mart, for instance, has been praised for the meetings in which associates communicate with each other about what items are selling well (e.g., Walton 1992, p. 222); and have executives traveling visit stores more frequently than competitors (Walton 1992, p. 224).⁶ Southwest Airlines developed deliberately unpretentious (sometimes silly) gatherings so that employees would not have too high a fear of those up the hierarchy (Freiberg and Freiberg 1996, pp. 202-215).⁷ When the government adds regulations to the labor market, they close off entrepreneurial options. They may thus keep some projects from getting done. Others will be done more slowly, or less well, or at greater cost.

Autor, Kerr and Kugler (2007) find lower productivity when there are more regulations protecting labor. Bird and Knopf (2005) show the same result for the banking industry. Hallward-Driemeier and Rijkers (2011) find that higher minimum wage laws (interpreted as labor market rigidity) resulted the exiting of the *more* productive firms.

Minimum wage laws induce entrepreneurs to use a more costly or less efficient mix of skilled and unskilled labor, and labor and machines. In weighing the pros and cons of the policy, these cons might be justified, if there were sufficient benefits for workers. Card and Krueger (1994) caused a substantial stir among economists by suggesting that minimum wage increases did not cause unemployment. But their conclusions have been credibly challenged, and most economists still believe that minimum wage increases hurt some of the poorest of those seeking entry to the labor force (Deere, Murphy and Welch 1995; Becker and Posner 2007; Newark and Washer 2008). To his credit, Mayor Daley of Chicago vetoed an increase in the minimum

wage on the grounds that it would increase unemployment (Hudson 2006).

d. Do Not Force Unions on Workers

Guilds and labor unions, at their worst, stop the efficient reallocation of labor that is part of the process of creative destruction. Patrick Alit (2002) suggests that labor union work rules provided significant and increasing constraints on productivity and efficiency during the Victorian era in Britain.⁸ Alit gives as a specific example the continued enforcement of work-rules from decades earlier in British ship-building facilities. Increasing union rigidities would be supporting evidence for McCloskey's defense (McCloskey and Sandberg 1971) of British Victorian entrepreneurs against the charge that their failings were the cause of the relative decline of industry in the Victorian Britain. If Alit is right, then the problem was not that British entrepreneurs failed, but rather that British entrepreneurs faced labor rigidity constraints that were absent in the United States.⁹

A second example of unions slowing the efficient reallocation of labor is the 'featherbedding' that required a coal shoveler be in every engine, even if the engine was a diesel that did not use coal. A third example, from Schmitz (2005), consists of his strong evidence that reduction in the power of unions would have increased labor market productivity in the Canadian iron ore industry. A fourth example would be how union conflicts with Walt Disney drained energy from his creative projects (Barrier 2007, pp. 169-174); Gabler 2006, pp. 360-361). As a result of the experience, Disney

reported that he was “thoroughly disgusted and would gladly quit and try to establish myself in another business if it were not for the loyal guys who believe in me-- . . . ” (Disney quoted by Barrier, p. 174). He took an extended trip to South America that he “was not so hot for” but that gave him “a chance to get away from this God awful nightmare . . . ” (Disney quoted by Gabler, p. 371).

A fifth example is the Long Island Railroad where a majority of long-term employees were retiring early and receiving disability payments (Bogdanich and Phillips 2008, p. A1). The federal Railroad Retirement Board, congressionally mandated to regulate disability claims, was approving 97% of the claims. When the President of the Long Island Railroad asked to attend the Board’s next meeting, she was told by Board employees that the Board “had not met formally in nearly two years, and no new meeting was scheduled” (p. A1).

A sixth example would be the National Labor Relations Board (NLRB) seeking to have a judge force Boeing to close its South Carolina plant and move the plant and jobs to Washington state (Greenhouse 2011). The NLRB claims that it is illegal for a company to move production to a state where strikes are less likely. The reality and risk of strikes increases an entrepreneur’s cost of doing business, and reduces her flexibility to move to where she can find the right mix of workers to get the project done. So if the law forbids a firm to move to locations where strikes are less likely, that law makes it harder for the innovative entrepreneur to succeed.

Unions not only restrict the jobs that workers can do, and increase benefits costs, they also impose wage rigidity. With wage rigidity entrepreneurs will face higher labor costs, which will reduce the chances that they will have enough funding to

successfully complete the project. Wage rigidity also reduces the entrepreneur's ability to respond to labor market changes and to incentivize workers by raising wages for the deserving and reducing wages for the undeserving. Using international data, Dickens and his co-authors find that union density is strongly and positively related to real wage rigidity (2007a, p. 213).¹⁰

In Italy, guilds have some of the same effects as unions. With the help of the government, they restrict who can practice an occupation, and they set rules increasing what their members are allowed or required to charge for various services. The costs have been experienced by Luciano Barbera, the owner and manager of the Carlo Barbera woolen mill: "For Mr. Barbera, as is true with every entrepreneur here, the prevalence and power of Italy's guilds explains much of what is driving up costs. He says he must overspend for accountants, lawyers, truckers and other members of guilds on a list that goes on and on: . . ." (Segal 2010, p. 7).

The principle of employment at-will is derived from the broader libertarian principle that associations between adults should be voluntary. The principle implies that entrepreneurs have the right to fire workers, but also implies that workers have the right to "fire" employers by quitting their jobs. It also implies that workers can form associations in the form of guilds or unions, to jointly negotiate with employers or consumers. But it does not imply that the unions can intimidate (through government regulation or raw physical force) the firms to employ only union members, or force non-union workers to join the union. The ultimate example of the use of such force may have been the murder of 21 nonunion pressmen and linotype operators in October 1910 as a result of the union bomb that blew up the *Los Angeles Times* building (Blum

2008; Waldie 2008).

e. Allow Immigration and Outsourcing

Elsewhere, I identify a substantial source of innovative entrepreneurs as being able outsiders. It is hard to leave one's family and culture and all that one is comfortable with, in order to move to a new country. As a result, immigrants are self-selected on the basis of initiative. And by the nature of their situation as immigrants, they are outsiders. So one way that the government can strengthen the labor market that entrepreneurs deal with, is to reduce regulations limiting the able to immigrate to the United States. Gilder has pointed out that the achievements of the United States in information technology were largely achieved by immigrants to the United States "from Hungary, Italy, Israel, and Japan" (Gilder 1990, p. 111).

Entrepreneurs such as Steve Jobs have outsourced manufacturing to workers in places like China, Thailand, and India. Doing so reduces the cost of innovative new products and increases the possibility that projects to create such products will succeed.

Research has shown that although most of the physical components of a product like the iPhone, are made abroad, the relative value of the foreign physical components pales when compared with the engineering, design, marketing and programming components that are mainly done by workers in the United States. A large part of the total value of the iPad is produced in the United States, so it would be accurate to say that mainly the iPad is "Made in the U.S." (Linden, et al 2009; Dedrick et al 2010;

Dedrick et al 2011; Linden et al 2011).

And both on the basis of pay and on the basis of the Maslovian hierarchy of skills discussed elsewhere (Diamond 2012b, Ch. 5) the jobs done within the United States are better jobs.

Some worry that if outsourcing is unregulated, all jobs will eventually migrate abroad. For those who know some economics, the Law of Comparative Advantage is a reassuring antidote to the worry. But even more reassuringly, Amar Bhidé has argued persuasively (2008, 2009) that it is very hard to outsource the entrepreneurial activities that integrate and apply new technologies into useful services. He further suggests that the United States' system of free market capitalism has proven especially robust in carrying out such activities.

Standard equilibrium economics also provides some reassurance. As demand for outsourced workers increases, the demand curve for them moves to the right, increasing their wage. As their wage rate increases, their appeal relative to American workers diminishes. This is not just a theoretical possibility. Many United States firms outsource tasks to Indian workers at Infosys. But now, partly due to rising wages in India, Infosys itself is outsourcing jobs to lower wage workers in Mexico (Giridharadas 2007, p. A14).

Governments can encourage entrepreneurship by resisting the political temptation to raise barriers to outsourcing. Allowing outsourcing will reduce the costs of innovative projects and speed the transition from bad jobs to good jobs.

f. Reduce “Creeping Credentialism”

The government increasingly interferes in the labor market by requiring or encouraging that a person have a certain set of credentials before they are allowed to be employed in a certain occupation, or set themselves up in a certain business. This can be done directly, but also indirectly. The indirect way occurs when the government makes entrepreneurs more vulnerable to charges of discrimination, wrongful firing and the like, if they cannot formally justify their actions. An easy form of justification is for the entrepreneur to cite to the government either credentials or lack of credentials as a justification.

Gilder (1993) discusses how cover-your-ass “credentialism” on the part of firms, reduces opportunity. To reduce the odds of lawsuits, the firms rely on credentialism rather than their real judgment of who could get the job done. Immigrants, poor blacks, dyslexics, felons, are less likely to have the credentials, and are thus less likely to get jobs or be able to set themselves up as free agent entrepreneurs.

Credentialism can take different forms. One form is to require the receipt of a particular higher education degree, or a particular degree with a particular major. Another is to require an occupational license. Occupational licensing makes it more costly for people to become free agent entrepreneurs by creating barriers to entry (Buchholz 2004, pp. 97-117; Kleiner 2000). For one particularly bizarre example, consider the California law saying that hairbraiders need to have a cosmetology license in order to legally braid hair (Postrel 1997). Other states require licenses for personal

trainers, florists, and tour guides (Simon 2011).

Credentialism increases the costs and reduces the flexibility of innovative entrepreneurs. Experience often makes it possible for innovative entrepreneurs to make bets on unusual combinations of inputs and unusual processes for workers to interact and create. One form of creativity involves hiring employees who others would shun. For example, Nucor hired rural workers without credentials, but with a culture of hard work (Collins 2001); Sam Walton thought that with the right management process, a wide range of workers, including the shy and unsophisticated, but friendly workers who were his base, could be very productive associates (Walton 1992, p. 138)¹¹; Southwest's process is summarized as "hire for attitude, train for skills" (Freiberg and Freiberg 1996, p. 64). Sometimes entrepreneurial firms that hire "risky" less-educated workers, and then offer more training, expect in compensation, to be able to pay lower salaries, or to otherwise ask more in terms of working conditions (e.g., Wal-Mart asking longer hours).

Several academics and intellectuals have observed that credentialism is on the rise. Apparently the phrase "creeping credentialism" is often used to describe the phenomenon.¹² Economist Richard Vedder describes it more colorfully as "credentialing gone amok" and suggests that, "In 20 years, you'll need a Ph.D. to be a janitor" (as quoted in Pappano 2011, p. 17). Dwight Garner, reviewing a book by "Professor X," dares to doubt that college is beneficial for everyone. He observes that college ". . . drives many young people into debt. Many others lack rudimentary study skills or any scholarly inclination. They want to get on with their lives, not be forced to analyze the meter in "King Lear" in night school in order to become a cop or a nurse's

aide” Garner 2011, p. C3).

Kleiner and Kudrle (2000) compared the performance of licensed and non-licensed dentists and found no difference. More generally, Kleiner (2006) concludes from the literature that there is not much evidence that licensing has any major effect on the quality of services provided by the licensed occupations. Licensing, however, raises the wage rate in licensed occupations by about 15% on average (Kleiner and Krueger 2010). According to Kleiner, those already practicing an occupation “. . . prefer to be licensed because they can restrict competition and obtain higher wages” (Kleiner as quoted by Simon 2011, pp. A1 & A16). And unlike unions, which have been diminishing over time, occupational licensing has been growing substantially (Kleiner and Krueger 2010). In 1950 only one in 5% of workers in the U.S. needed a license to practice their occupation; by 2008 the percent had more than quadrupled to 23% (Simon 2011, p. A16) The licensing of occupations adds at least \$116 billion every year to the costs of services in the U.S. (Kleiner as quoted by Simon 2011, p. A16).

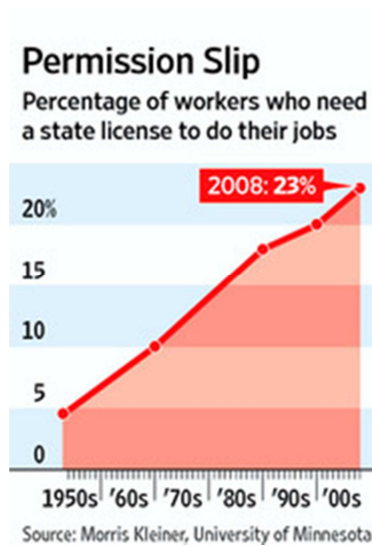


Figure 4: Growth of Occupations Where License is Required. Source: Simon 2011.

Many have described how the Crystal Palace in Victorian England was a symbol of hope for a bright future in which new technologies would make life better (Beaver 1986). (Walt Disney included a downsized replica of it in the Magic Kingdom as a sit-down dining location.) The breakthrough design took advantage of the strength of new building materials and was loved by visitors, in part because of the way it let in the light. Surprisingly, the designer of the building had no credentials in architecture:

. . . the risks were considerable and keenly felt, yet after only a few days of fretful hesitation the commissioners approved Paxton's plan. Nothing--really, absolutely nothing--says more about Victorian Britain and its capacity for brilliance than that the century's most daring and iconic building was entrusted to a gardener. Paxton's Crystal Palace required no bricks at all--indeed, no mortar, no cement, no foundations. It was just bolted together and sat on the

ground like a tent. This was not merely an ingenious solution to a monumental challenge but also a radical departure from anything that had ever been tried before. (Bryson 2010, pp. 10-11)

g. Try Vouchers

Government-run and subsidized educational institutions provide much of the structure for credentialing. If creeping credentialism is slowed, or even reversed, the credentialing demand for formal education will be reduced, but there will remain some demand based on formal education's role in providing useful human capital. Formal education has been one of the least innovative sectors over the last several decades. Daniel Pink, for example, has noted that when he visits public schools throughout the U.S. he is usually struck with a sense of *déjà vu* over how similar they are to the schools he attended in the 1970s (Pink 2001, p. 244). The problem is not lack of need, or lack of ideas for innovation, but rather perverse incentives, protected special interests, and other institutional constraints.

While reducing creeping credentialism, governments could also adopt policies to loosen the constraints for educational institutions to do better at providing useful human capital. For example, it would be desirable for government to encourage faster innovation in education by adopting Milton Friedman's voucher plan to expand the range of parental choice in education (1962, p. 89). Vouchers would decentralize power into the hands of parents, who usually have the best motivation and information

to act in their children's best interests. In Britain achievement scores have been higher for decentralized, autonomous schools than for their centralized counterparts (Clark 2009).

Innovation in education may be especially important for the education of future innovative entrepreneurs. Baumol (2005) has suggested that the current education systems may not be doing too bad a job of educating engineers and scientists preparing to join large incumbent firms with the aim of making incremental innovations to currently existing products. But he suggests that the current educational system is especially inadequate at educating those who might make the kind of breakthrough innovations that characterize creative destruction.¹³

Although my main policy filter is the enabling of innovative entrepreneurship, it may be worth noting that a bonus benefit of vouchers would be that they also hold promise of improving the currently woeful education of poor and minorities (Page 2008).

h. What Else Government Can Do (Or Refrain from Doing)

We tend to think of "finding" another job as the only appealing rebound from a job loss. But through entrepreneurship, a person can "create" their own job. So government policies discussed elsewhere in the book that benefit the consumer by encouraging entrepreneurship that creates innovative new products, also benefit the worker by creating appealing alternatives to standard employment for corporations.

These policies would include reducing government regulations (Klapper et al 2006), and putting limits on punitive tort damages (Stiglitz et al 2002; Buchholz 2004, pp. 119-154).

A less volatile macro-economic environment reduces job market risks, and the risks of entrepreneurship. Wise monetary policies from the Federal Reserve seem to have been effective in the last couple of decades, at reducing the volatility of unemployment by reducing the frequency and severity of downturns in the business cycle. (Maybe those who grew up in the Great Depression, often over-valued the permanence of a job, as a result of their experience.)

One form of government regulations that reduce job opportunity consists of zoning laws, which often function as a substantial barrier-to-entry. The absence of zoning laws in Houston, for example, has been related to Houston's appeal as a location of opportunity for entry level entrepreneurs.¹⁴

There is a potential for greater personal financial assets to smooth consumption during periods of unemployment, lowering the downside risks from entrepreneurship and free agency. George W. Bush and Daniel P. Moynihan's personal savings account proposal might be one such policy.¹⁵

Another would be to have lower personal income tax rates. Schumpeter himself thought the potential for entrepreneurs to achieve high income provided them an incentive to work the hours and bear the risks of being entrepreneurs. (see McCraw pp. 175-176) So he believed that there was a "cost" to high income tax rates. He also thought the "benefit" of high rates in terms of egalitarian redistribution were overstated. He suggested the thought experiment in which you would expropriate the high

earnings of the rich and distributed it to the proletariat. He concluded that if this were done, it would “hardly raise living standards at all.” (see McCraw 2007, p. 176).

Other considerations also support low income tax rates that would allow entrepreneurs to retain most of their gains. One of these are Nordhaus’ findings that Schumpeterian monopoly profits are not as large as assumed. Another is that wealthy entrepreneurs often invest a substantial part of their wealth in new ventures. Yet another is that when they consume, wealthy entrepreneurs often end up supporting the initial, high-cost, development stage of new technologies. Yet another final consideration is that wealth obtained through entrepreneurship in an economy open to creative destruction, will usually not be sustained for many generations. McCraw (2007, p. 178) notes that Schumpeter approvingly quotes the saying “Three generations from overalls to overalls.” (For some modest empirical support for Schumpeter’s view, see Nicholas 1999.)

Lower corporate tax rates would reduce the churn, by reducing firm costs, and allowing more firms to stay out of the red (Buchholz 2004, pp. 92-95).

Several different arguments and types of evidence can be adduced to support the proposition that health care in the United States is inefficiently provided. For example, the United States spends a higher percent of GDP for health care than France and Japan, but has lower life expectancy and higher infant mortality than France and Japan. Other explanations should be explored, but one salient hypothesis would be that the United States health care system is inefficient (see Lahart 2007).

One claim sometimes made, is that improvements in health care must come at increasingly higher costs. Christensen et al (2004) provide persuasive arguments and

examples to show that this need not be true if we permit the process of disruptive innovation in health care to thrive.

Another policy that government could adopt that would help labor to be more resilient to changes due to creative destruction would be to end the government incentives for home ownership.

One of the main ways that the government can reduce labor pains is to avoid policies that delay or discourage promising new technologies (like the internet). For example, a plausible case has been made that the government's forcing the baby Bells to allow competitors to make use of their infrastructure, at nominal charges, delayed and reduced investment in infrastructure by baby Bells, most notably slowing the roll-out of DSL to homeowners. The widely advocated, "net neutrality" regulation would have a similar effect by reducing company incentives to provide valuable, innovative, but infrastructure intensive, services, such as high quality streaming video.

Recent information technology has reduced the costs of finding new jobs and retooling human capital, and hence reduced the costs to labor of the destructive part of creative destruction (e.g., Pink 2001; Brynjolffson et al 1994). The internet has resulted in faster, and closer matching of workers to jobs, as exemplified, for example, by the online job site, Monster.com (see: Kuhn and Skuterud 2004). The larger the market, the quicker, and better the match between jobs and workers. Monster.com, and other internet job tools, make for quicker and better rebounds, thus reducing the destruction side of creative destruction. The internet may even have enabled a long-term reduction of the steady-state level of unemployment.

More broadly, Pink (2001) has discussed how information technology, enables

free agents to provide for themselves office functions, that previously would have required an office staff. Brynjolfsson, et al (1994), also provide argument and evidence that suggests that information technology may have differentially increased the productivity of small work units. And even within large firms, leapfrogging information technology has had the effect of reducing hierarchy within the firm, which would presumably have the effect of moving job characteristics to better locations on the Maslow hierarchy (see: Bresnahan, Brynjolfsson, and Hitt 2002; and Brynjolfsson and Hitt 2000).

i. A Bigger Government Safety Net?

Thomas Friedman (2005) identifies the greatest threat to continued Schumpeterian growth to be obstacles to creative destruction due to workers who fear that the process will make their skills obsolete, and that they will end up with a worse job, or no job at all, or too painful a transition. This threat leads Friedman to advocate a larger safety net for workers, in order to earn worker's buy-in to an unimpeded process of creative destruction. Other advocates of creative destruction who also support a larger safety net, include Gene Sperling (2005a; 2005b) and Robert Reich (2007).¹⁶

Hayek argued (pp. 122-124; see also pp. 207-208), to the contrary, that the more generous the worker safety net, the more slowly workers will acquire new skills, and move to new jobs, and the more slowly the economy will grow. This is perhaps

the main difference between government “safety nets” and the private safety nets that were discussed earlier---the government nets provide workers with incentives to delay taking the steps necessary to transition to new jobs.

Concerns similar to Hayek’s have been expressed by Polish economic reformer Leszek Balcerowicz, famous for his shock therapy for transforming the Polish economy from Communism to free markets. He had pondered human psychology and concluded: "People are more likely to change their attitudes and their behavior if they are faced with radical changes in their environment, which they consider irreversible, than if those changes are only gradual" (Balcerowicz as quoted by Yergin and Stanislaw 1998, p. 271). A similar view has been expressed by Michael Mandelbaum, Professor of Foreign Affairs at Johns Hopkins: "People don't change when you tell them there is a better option. They change when they conclude that they have no other option" (Mandelbaum as quoted by T. Friedman 2005, p. 462).

Baily (2001) and Feldstein (2003) have argued that countries with bigger safety nets, experience slower economic growth. An informative graph from Baily’s study appeared earlier as Figure 1. In that graph, the United States appears as an outlier in a graph related worker productivity to average hours of work per week. Baily’s explanation was that the United States had a greater openness to creative destruction, which implies that implies that the United States, more than Japan and the nations of “old” Europe, allows jobs to be destroyed. (A related cross-country comparison by Siems (2006) is presented in Figure 5.)

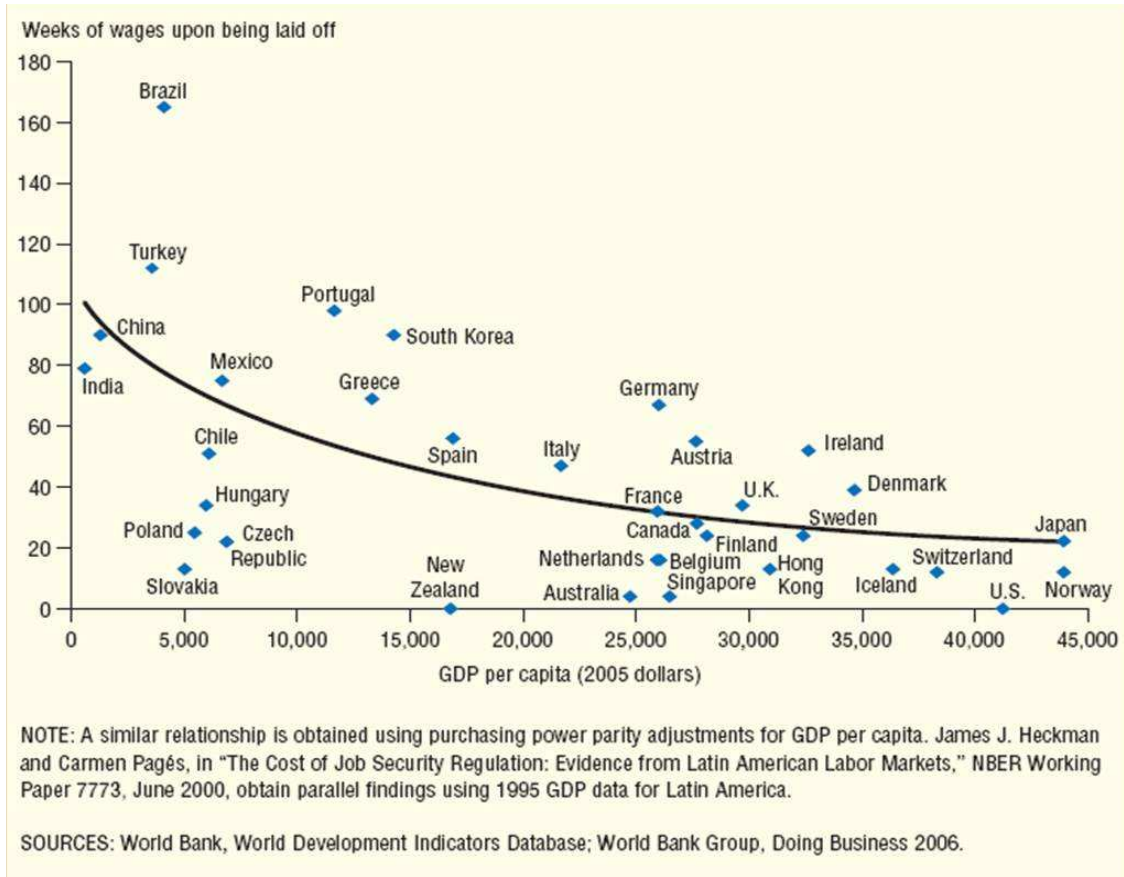


Figure 5: Inverse Relationship Between Labor Safety Net and GDP Per Capita. Source: Siems 2006, p. 4.

Also supporting the Hayek view is Edward Lazear (2006) who summarized his 1990 paper by saying “. . . I found that job security provisions were instrumental in limiting employment in developed countries.” More broadly and recently, other researchers have used cross-country comparisons to reach a similar conclusion (Botero et al 2004; Lafontaine and Sivadasan 2007).

Another consideration that should be mentioned is that increased job security for the less competent requires decreased upward mobility for the more competent.

In the end, a government safety net may be implemented, either out of a belief

in its economic desirability, or out of a belief in its politic necessity. It would then be useful to analyze what forms of a safety net would be least costly and most beneficial. The safety net proposal of Thomas Friedman (2005), for example, attempts to preserve the workers' incentive to seek new employment. And Rajan and Zingales (2003, p. 300) note that safety net payments should take the form of lump-sum side payments to workers, rather than the form of subsidies to firms. This would preserve the worker's incentive to seek new jobs; and would not slow the exit of dinosaur firms, and the growth of "sunrise" firms. This would ". . . prevent the victims of creative destruction from being transformed into human shields for special interests, . . ." (p. 300).

j. Workers Can Become More Entrepreneurial

In the earlier sections of the paper, I have focused on what policies the government should adopt to enable innovative entrepreneurs to carry out successful projects in an environment of creative destruction. In most of the following sections, I more briefly focus on some personal policies that labor itself can adopt in order to ease their pains, and enhance their gains from creative destruction.

One broad personal policy we can adopt as workers is for each of us to become more personally entrepreneurial. What does that mean? I argue elsewhere (Diamond 2012a) that entrepreneurs are willing to learn. When jobs are creatively destroyed, those who are willing to learn will bounce back sooner and at a higher wage than those who are less willing to learn. Another way to become more personally entrepreneurial

is to adopt an attitude of resilience.

One response to worries about job loss from creative destruction, might be termed the 'courage and resilience' answer. Yes, losing a job is painful, but the gains are great, and it is noble to display courage, strength, perseverance, and a long-term perspective. (If Shackleton could lead his men across Antarctic in physically horrendous conditions, shouldn't you be ashamed of worrying about a little labor market uncertainty?)¹⁷ And reasonable scholars, such as Deirdre McCloskey (2006), have made reasonable arguments that courage, strength, and perseverance are admirable virtues (though McCloskey does not consider them the most admirable virtues). Todd Buchholz (2004, pp. 177-179) is another who argues persuasively that Americans used to have more backbone, and that we would be better people, and better off, if we had more backbone again. Whether as cause or effect, some have related the lack of backbone to a growing reliance on the "Nanny State" where citizens view the government as their protector from all risks and harms (Harsanyi 2007).

One evidence of the growth of the Nanny State is the advocacy and adoption of the "Precautionary Principle" which says that no new technology can be adopted until it is proven to do no harm to either consumers or workers (Kelly 2010, p. 247). The Principle plays an insurmountable burden on the innovative entrepreneur because all technologies, whether new or even old, sometimes do some harm. And the harm may be higher for a while for new technologies, while the bugs are being worked out. The Principle fails because risks and harms are intrinsic to life---there are risks to doing something, but there are also risks to doing nothing. Cass Sunstein's comments on the Precautionary Principle are apt:

The regulation that the principle requires always gives rise to risks of its own—and hence the principle bans what it simultaneously mandates. I therefore aim to challenge the Precautionary Principle not because it leads in bad directions, but because read for all it is worth, it leads in no direction at all. The principle threatens to be paralyzing, . . . (Sunstein 2005, p. 14)

Consider . . . a 2003 survey of scientists, who were asked, “What are the most notable scientific, medical or technological discoveries and achievements that you believe would have been limited or prevented, if science at the time had been governed by the precautionary principle? Please list one or more.” The resulting list included airplanes, air conditioning, antibiotics, automobiles, chlorine, the measles vaccine, open-heart surgery, radio, refrigeration, the smallpox vaccine, and X-rays. A genetic statistician answered, “In their day, trains, planes, and antibiotics would have been prevented.” A senior research fellow at King’s College, London, responded, “For starters, X-rays; vaccination; blood transfusions; the Green Revolution.” A professor in plant molecular genetics offered “Pasteurization; immunization; the use of chemicals and irradiation in crop variety development.” (Sunstein 2005, p. 25)

Amanda Ripley has chronicled (2008) major unexpected disasters. Those who are used to taking initiative in ordinary life turn out to be the ones who respond most quickly and effectively to the inevitable unexpected disasters. Flight 93 was full of business people. They took the initiative to storm the cockpit. They got the job done. Taleb (2007); and Stanley and Danko (1996), suggest that entrepreneurs have schooled

themselves at dealing with the uncertainties of the world. If uncertainty is inevitable, it is better to have practice dealing with it, than to try to have the government insulate oneself from it. Because eventually a black swan will incapacitate the government, and then the insulated will find themselves especially unprepared to deal with the decisions that they have to make.

Key entrepreneurs have exemplified an attitude of perseverance. When Brunelleschi lost the sole right to design the Gates of Paradise, he bounced back by building the Duomo of Florence (see Ch. 4, Diamond 2012b); when Edison failed time-after-time to find a good filament for his light bulb, he kept trying (Nye 1991); and when Ford bankrupt two start-up auto companies, he used what he learned for his successful third try (Nye 1991).

Vice President Joe Biden in his autobiography (2007) encourages resilience in powerful personal terms:

My dad, Joseph Robinette Biden Sr., was a man of few words. What I learned from him. I learned from watching. He'd been knocked down hard as a young man, lost something he knew he could never get back. But he never stopped trying. He was the first one up in our house every morning, clean-shaven, elegantly dressed, putting on the coffee, getting ready to go to the car dealership, to a job he never really liked. My brother Jim said most mornings he could hear our dad singing in the kitchen. My dad had grace. He never, ever gave up, and he never complained. The world doesn't owe you a living,

Joey," he used to say, but without rancor. He had no time for self-pity. He didn't judge a man by how many times he got knocked down but by how fast he got up.

Get up! That was his phrase, and it has echoed through my life. The world dropped you on your head? My dad would say, *Get up!* You're lying in bed feeling sorry for yourself? *Get up!* You got knocked on your ass on the football field? *Get up!* Bad grade? *Get up!* The girl's parents won't let her go out with a Catholic boy? *Get up!* (Biden 2007, p. xxii; italics in original)

Masatoshi Shimi was a key developer of an early microprocessor chip, the 4004. Earlier in life, as a chemical engineering student, he had experimented with gunpowder in order to launch a small rocket. The gunpowder exploded, blowing off most of his right hand. The loss of most of his hand made it hard for him to function as a chemical engineer, so he switched to computer architecture and helped create personal computing. (Shima's story is told in Gilder 1990, pp. 104-105)

James Buchanan has written (2005) that sometimes some people seem to be afraid to be free. A few years after the fall of the Romanian dictator Ceaușescu, we had as a translator in Constanta, a professor (of English literature, I think) who looked back wistfully toward communism. He said that they didn't have as much goods, and they didn't have choices, but the lack of choices was good. He felt stress and anxiety at having to decide what to do with his life. There was peace of mind for him in having his life mapped out for him.

His comments call to mind the Robin Williams Russian émigré character in *Moscow on the Hudson* who is initially overwhelmed by the choices of different kinds

of coffee during his first visit to a grocery store in the United States. Decades ago Alvin Tofler worried (1970) about too much choice in his best-selling *Future Shock*. More recently Barry Schwartz made (2004) the same point. In an iconic marketing study (Iyengar and Lepper 2000) based on Iyengar's doctoral research, customers bought more jam when they had six choices than when they had 20 choices.

I speculate that the vast majority of people like to feel in control of their lives. Ideally that involves two parts. One is having choices. The other is being competent to make choices. The Robin Williams character and the Romanian literature professor had grown up in environments where they did not gain much experience making choices. When they suddenly transition to an environment rich in choices it is overwhelming for a while. But they learn, and when they learn, they prefer the choices. At the end of the movie, the Robin Williams character self-assuredly gives directions to a newly arrived émigré and shows no desire to return to Moscow. Similarly, my impression is [try to document this] that once employees experience being entrepreneurs, they rarely go back to being employees, they have learned to handle and to enjoy the choices and sense of control of entrepreneurship.

Even Iyengar, who was lead author of the jam study, has recently co-authored a follow-up study (Bertini, Wathieu, and Sethi-Iyengar 2012) showing that consumers with more choices tend to buy higher quality. Many years after *Future Shock* (1970) Alvin Tofler (writing in 2006 with wife Heidi) considers more choices to be good.

In the short run there may be fewer purchases in a more complex environment. But after thought and research, I speculate that in the long run there would tend to be more choices, as consumers are better able to match their diverse preferences with a

more varied set of products. Similarly with the job market. More choice may initially be overwhelming, but in the long-run, increase the probability of a happy match between worker and job.

And some may have been too traumatized to ever leave the fear behind. In a famous psychology experiment (Seligman and Maier 1967), dogs were given a painful electric shock whenever they tried to leave a box. After a long enough series of shocks, the dogs would no longer try to leave the box, even if the shocks were ended. Humans may also experience this “learned helplessness.”

Based on his long and extensive world-wide surveys, Inglehart has concluded (Inglehart and Welzel 2005, p. 288) that most people are more satisfied when they have a sense that they can choose their future. We are constantly barraged with the statistic that the risks of death are greater driving a mile than flying a mile. And yet having heard that, many of us still prefer to drive, probably because we prefer riskier situations where we have some choice of what happens, over less riskier situations where we have no choice.

The Post Office and higher education provide very protected work environments, and yet postal workers and those in higher education are often stressed and unhappy. Perhaps that is partly because each work environment provides workers with too little choice over what they do and how they do it?

Sometimes some of us take risks, either because something about the risks thrills us, or because we believe that some important projects or values make the risks worth

taking, e.g. in the service of some noble BHAG (Big Hairy Audacious Goal).¹⁸ It is paradoxical that in the spring of 2006, while some young Frenchmen were in the streets protesting the alleged “precariousness” of a labor market under Villepin’s proposed mild labor market reforms (Smith 2006), other young Frenchmen were seeking ever-more extreme ways to rapidly descend mountain slopes (Vinton 2006). People go to casinos for the excitement, and the chance to win big. But if they want excitement, and a chance to win big, they are better off in the labor market. In the casino, the odds are stacked in favor of the casino, and winning or losing is almost entirely a matter of luck. In the labor market, the odds are stacked in favor of the laborers, and labor can influence the outcome by its choices. Labor can accumulate human capital in the form of formal education, or in the form of experiences, and labor can accumulate savings, as a protection against bad luck.

Finally, the case for resilience is easier to make than it might at first seem, because usually workers do not have to be *too* resilient in order to thrive in a labor market characterized by creative destruction, and sound government macro policies. But the main reason that the case is stronger than we suppose, lies in the previously discussed redundant opportunities of entrepreneurial capitalism.

k. Frugality and Hard Work Can Reduce the Labor Pains

Besides the redundancy of the labor market, fortunately there are often actions that workers can take that reduce the amount of resilience they will need to do well.

Such actions can reduce the pain from the destructive side of creative destruction. Stanley and Danko (1996) have argued that most workers have it within their power to achieve significantly higher levels of financial security.¹⁹ The methods are not surprising. Primarily, the “secret” is frugality. This does not mean a life of stoic self-denial. One can live quite comfortably, with many material and psychic pleasures, but do it frugally. But to be frugal, you do need to forego some of the pleasures of conspicuous consumption, and expensive tastes. But isn't it in the end more satisfying and noble to pursue other pleasures anyway, such as the pleasures of pursuing meaningful projects, and of expanding the human capital of oneself and others?

There are a variety of ways to live frugally. You can forego new wardrobes every year or two. You can buy from discount and “club” stores. You can buy big-ticket items (e.g., cars) used rather than new. You can buy a somewhat more modest home, with a mortgage that you could afford to continue to pay during a period of lower earnings. Stanley and Danko provide many examples that those who live below, rather than above, their current means, achieve a level of savings that gives them a peace of mind, even in a changing environment.²⁰

They also show, that at given income levels, entrepreneurs are most likely to adopt habits of frugality, and to achieve correspondingly high levels of personal wealth and financial security. This is a significant finding, since entrepreneurs have chosen an occupation that makes them among the most vulnerable to the obsolescence that arises from creative destruction.

The family can serve as a form of unemployment insurance (Di Tella and MacCulloch 2002). One member can have a 'safe' standard job, while another can be

taking greater risks as a free-agent entrepreneur, or as the employee of a fragile start-up. Part time jobs can serve as a safety net, especially during the early start-up period for a free-agent entrepreneurial enterprise. A person's own personal savings can also serve as a resource (or safety net) for entrepreneurial activities. Apparently increasing numbers of retirees from standard corporate jobs are 'following their dreams' to open entrepreneurial ventures (Pink 2001; Olson 2006). So policies that increase the ability of individuals to save a 'nest egg' would increase their resilience.

Besides frugality, other policies that workers adopt can reduce the pain from creative destruction. The Nucor and Southwest Airlines examples discussed earlier, illustrate that work ethic and attitude may matter more than training in landing good jobs. Recall that that Nucor did well by locating in rural areas. They found that it was more important to have workers who showed up early and worked hard, than to have workers with high levels of relevant skill. (They knew how to train them for the skills; they didn't know how to induce them to have a work ethic.) Particular job skills may be made obsolete by creative destruction, but creative destruction will never make obsolete the value of showing up on time, working hard, and being willing to learn.

Malcolm Gladwell (2008) emphasizes that to get really good at something often seems to require spending about 10,000 hours working at it; a similar point is made in Colvin (2008). Collins (2001) emphasizes the slow constant pushing of the flywheel usually matters much more than the sudden epiphany or stroke of good luck. Charles Murray (2012) has recently presented evidence for the United States that only the well-off are practicing a work ethic and no one is preaching it. He turns the usual aphorism

on its head by advising that the well-off should preach what they practice.

Being more entrepreneurial means perfecting the character traits that make entrepreneurial success more likely: resilience, frugality, hard work. But it also means alertness to opportunities to become an entrepreneur, or to work at a job that permits great creativity and autonomy. Even under hard economic times, free agent entrepreneurs report higher levels of happiness than those in other occupations (Shellenbarger 2009).

I. Human Capital Investment

If parents anticipate that their children will live in an environment where creative destruction is common, they can give advice and make choices that will help their children acquire the human capital that will most help them in a changing environment. Pink (2001) and Peters (2003) each have chapters on education where they point out that the current Dewey-inspired educational systems are designed to turn children into obedient, static, organization men and women. Other forms of education are more likely to aid and abet budding entrepreneurs and free agents. Pink suggests that home-schooling is one constructive alternative. I believe that some versions of Montessori education provide another.²¹ Montessori education provides children with the opportunity to constructively make choices, and develop the skills and confidence that will allow them to better function as free agents. Resiliently educated children will as adults be better able to bounce-back from job-loss; and the bounce-back will be

faster, and higher.

At higher levels of education, Gary Becker has argued (1975, p. 190) for liberal education as a means to acquire the general human capital that consists of ‘learning how to learn.’ Such general human capital is less likely to depreciate through unpredictable changes in the job market.

As indicated elsewhere (Diamond 2012b, Ch. 5), since most episodes of obsolescence through creative destruction, happen gradually and with some advance warning. This gives some time for the alert to begin retooling in anticipation of their jobs becoming obsolete. To facilitate the retooling of specific human capital, Alan Greenspan has advocated an expanded role for community colleges. Also aiding worker retooling, are the growing offerings of within-company courses, and also the growing array of online learning tools (Christensen and Raynor 2003, pp. 244-246).

Formal education is not the only way to acquire skills and experiences that are useful as an employee or entrepreneur (Ellsberg 2011). Information technology entrepreneurs Sean Parker and especially Peter Thiel, have been urging high school graduates to forego college, and immediately try their hands at becoming entrepreneurs (Ellsberg 2012). Peter Thiel has gone so far as to set up a \$100,000 “scholarship” for young entrepreneurs who pledge NOT to attend college for two years (Miller 2011).

As mentioned in an earlier section, one unexpected form of human capital investment in the context of creative destruction may be job hopping (as observed especially in Silicon Valley).

m. Conclusions



Figure 6: A Zero Sum Game—What Capitalism Is Not. Source: http://www.zumapress.com/images/SIGMA/IMAGES312/20100711_zaf_d20_347.pre

What a beautiful picture for illustrating a zero-sum game. Football (or soccer) is a zero-sum game---Spain can only win, if the Netherlands lose. Capitalism is sometimes compared to sports, because both involve competition. In the short-run competition of capitalism, sometimes one "team" wins and another "team" loses. But in the longer run, the essential fact about capitalism is not competition, but innovation. And in the longer run triumph of innovation, all can win. Certainly, as consumers we win from the new products and process that creative destruction creates.

In the labor market, there will be short-run losers. But we can adopt government and personal policies to reduce the duration and severity of the short-run

losses. And most importantly, in the long-run the jobs destroyed by creative destruction are replaced by better jobs.

When Ghiberti and Brunelleschi competed to design the Gates of Paradise, Ghiberti ended up designing the Gates. But it would be a mistake to see him as the winner and Brunelleschi as the loser. Brunelleschi moved on to build the Duomo, and everyone won.

Footnotes

* Prepared for presentation to the International Schumpeter Society in Brisbane in July 2012. A much earlier version was presented to the 2012 Association of Private Enterprise Education (APEE) meetings.

¹ Dhont and Heylen (2008) find that besides income tax rates, government transfer expenditures also help explain lower work hours among Europeans (there is no explanatory power for differences in tastes for leisure). [confirm this summary]

² For evidence on how exceptional the 20th century was, see Brad DeLong's "Cornucopia" working paper (2000).

³ Besides the Ethernet, Gleick also describes (2011, pp. 13-15) the African talking drum language as working because its rich detail provide redundant paths to understanding the main message.

⁴ My old Wabash professor, Ben Rogge, used to describe another form of redundancy relevant to the case for the free market. He used to say that he firmly believed that the free market produced the wholesome bread and socialism produced the moldy bread. But, he would say, even if it were the other way around, and socialism produced the wholesome bread, and the free market produced the moldy bread, he would still favor the free market, because only in the free market do people interact with each other on the basis of free, voluntary choice. So the case for the free market is redundant (some philosophers might say "overdetermined") because it can be made either on the basis of the free market's greater creation of goods, or on the basis of the free market's greater morality.

⁵ Postrel bases her discussion largely on Fallick et al 2006.

⁶ The meetings were discussed, and a couple of minutes of one shown, in an excellent David Faber 2004 CNBC documentary *The Age of Wal-Mart*, which won a Peabody Award in 2005 and an Alfred I. duPont-Columbia University Award for Broadcast Journalism.

⁷ Freiberg and Freiberg document the silliness, but imply it is intended mainly to make work “fun” for Southwest employees. That may be, but I believe that it serves a subtler purpose of easing communication up the hierarchy.

⁸ "Trade unions . . . impaired British competitiveness by designing rigid demarcation rules and fostering an environment of mutual distrust between workers and management." (Allitt 2002, p. 42 of Course Guidebook; ellipsis added)

⁹ Lemieux (2007, p. 762) reports that Lipset and Meltz (2004) attribute lower unionization in the U.S. to a greater individualism that results in skepticism toward collective action.

¹⁰ A correction was published to the Dickens et al article (2007b). But the correction involves a brief, minor graph-labeling issue; and does not affect the result that unions increase wage rigidity.

¹¹ But he also thought that with the right management process, more sophisticated city workers could be good associates too (Walton 1992, p. 138).

¹² One source of the phrase “creeping credentialism” is Ansalone (2009, p. 10) who writes: “. . . many believe that the steady rise in educational credentials required for employment, often referred to as “creeping credentialism,” is a serious problem for the

poor who have difficulty affording the required education.” I have not made the effort to discover who first used the phrase.

¹³ The incumbent Chinese educational system places even more emphasis on rote learning than that in the United States (Gupta and Wang 2011). As a result, Chinese students often perform well on standardized tests. But such an education would be even less useful for the future innovative entrepreneur. This would be reassuring to those worried about the United States losing a competition with China (see, e.g., Schramm 2006). But it would be worrying for those, like Bhidé (2008; 2009) and myself, who believe our future is enhanced by increasing the overall amount of innovation in the world.

¹⁴ “Like other Americans, immigrants often dramatically improve their quality of life and economic prospects by moving out to less dense, faster growing areas. They can also take advantage of more business-friendly government. Perhaps the most extreme case is Houston, a low-cost, low-tax haven where immigrant entrepreneurship has exploded in recent decades. Much of this has taken place in the city itself. Looser regulations and a lack of zoning lower land and rental costs, providing opportunities to build businesses and acquire property.” (Kotkin 2005, p. A16)

¹⁵ “Mr. Moynihan has long advocated the creation of personal investment accounts.” (Stevenson 2001).

¹⁶ At a time when it is often claimed that bi-partisanship is rare, it is interesting that important economists who advise both parties, have supported the importance of innovation through the process of creative destruction. Besides Spiering and Reich,

“Democratic” economists who have sometimes praised creative destruction include Martin Neil Baily, Brad LeLong, Joe Stiglitz, and Larry Summers. *New York Times* columnist Thomas Friedman is often associated with “left” positions, but also has praised creative destruction. I sometimes identify these intellectuals as the “left Schumpeterians.” One of the main positions that separates them from the “right Schumpeterians” is that the left Schumpeterians tend to support a substantial government safety net for those whose jobs become obsolete through creative destruction, while “right Schumpeterians” tend to put more weight on Hayek’s worries about the perverse incentive effects of a substantial safety net. I have tried to be alert to any presidential references to Schumpeter and so far have only found evidence of one President ever mentioning Schumpeter or creative destruction (see Clinton 2005, p. 111).

¹⁷ See, for example, Morrell and Capparell’s *Shackleton's Way: Leadership Lessons from the Great Antarctic Explorer*.

¹⁸ As far as I am aware, the concept of a “BHAG” was first introduced, and elaborated, in Collins and Porras’s business classic, *Built to Last* (1994).

¹⁹ Other authors have made arguments similar to Stanley and Danko. E.g.,: Wilcox 2008.

²⁰ *The Millionaire Next Door* (1996) claims that a ubiquitous goal is financial security, which is defined partly in terms of being able to maintain the current life style after job loss. The book persuasively argues that the key to financial security is frugality. I am less convinced that frugality in turn requires extensive financial planning (like detailed

family budgets, expense records, and the like). I think a close substitute for such planning would be to instill in oneself frugal habits. This method is actually superior because it takes less time and effort. Frugality involves checking for sales, cutting coupons, buying used, buying less often, etc. It also involves putting little weight on conspicuous consumption as a criterion for evaluating oneself and others. If more people adopted frugal lifestyles, then more people could achieve the financial security that would insulate them from much of the negative effects of creative destruction. Another interesting point made in the book is that when compared with other high-earners (e.g., doctors, engineers, lawyers, middle-managers, professors), the entrepreneurs were more likely to have developed frugal habits, and thereby were more likely to accumulate significant wealth (a.k.a. achieve financial security).

²¹ Jeffrey Bezos (Amazon) and Sergey Brin (Google) are two prominent information technology entrepreneurs who participated in Montessori education as children. (See: Hof 1998; and Malseed 2007)

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