

# Rational Exuberance

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*In this book, Michael Mandel, the famous American business journalist makes the case for “exuberant” growth driven by technological breakthroughs. Shifts in budget deficits or surpluses will have only a marginal effect on the long-run growth rate. A much more significant impact on long-term growth can be generated by boosting R&D spending and increasing scholarship funding for advanced science and engineering degrees. Mandel argues that support for technology should be central to US economic policy.*

## **In Defense of Exuberance**

The US needs to keep innovating. A slowdown in innovation will drain away the main competitive advantage of the US. Routine technologies can be easily moved to low-wage countries like India and China. The US must do much more to encourage innovation. Defense and health account for about 80 percent of the federal government’s spending on R&D. The number of graduate degrees in science and engineering going to Americans has plummeted in recent years. Funding for both R&D and graduate science education must be increased substantially.

An important point which Mandel makes is that what distinguishes capitalism from other economic systems is how it handles “capital.” Here, America possesses a unique competitive advantage, a vibrant financial system. During boom times, the US is able to fund innovative and growing new businesses with financial instruments – venture capital and junk bonds – that barely exist anywhere else. The US financial system is highly liquid and far more diversified than elsewhere. So it is able to cope with sharp plunges without cracking.

For the US, the ability to direct resources to innovative new businesses attract new ideas and smart people from all over the world. This accelerates innovation, produces new jobs, and creates a competitive advantage that other countries cannot match, no matter how low their wages are. Contrast this with Japan and continental Europe which still struggling with rigid bank-based finance. In these countries, it is much easier for money to flow to existing big companies than to smaller, more innovative ones.

While encouraging innovation, the government must also provide a safety net for people who are hit by financial or technological turbulence. Ideally, the government should provide some form of income insurance, which would go beyond unemployment insurance and offer a measure of protection against drops in income. That would make people feel easier about taking risks. It’s necessary to fortify the safety net for everyone. But Mandel feels that a fast-growing, exuberant economy has enough resources to provide at least a minimal level of security for everyone.

Mandel draws a distinction between cautious and exuberant growth. Cautious growth depends on observable and measurable factors - the number of workers and the amount of hours they put in; the quality of the workforce, as measured by better education and

training (human capital); and the stock of equipment, software, and buildings owned by business (physical capital). The size of the workforce, human capital and physical capital are the three main inputs to cautious growth. The more we save and invest, the faster the economy grows. Conversely, if we consume too much, or run big budget deficits, the economy suffers. Unlike cautious growth, exuberant growth is linked to the residual, or multifactor productivity or total factor productivity. Exuberant growth is driven by innovation.

### **Why Innovation Matters**

A significant part of the US growth has been the result of innovation. Without innovation, the long-term growth rate of the US economy would have been closer to 2.5 percent per year than to the 3.6 percent per year that has been the average since World War II.

There are three ways in which innovation drives growth: the “ramp-up,” the “spin-off,” and the “free lunch.”

When the innovation first hits the market, and the demand grows very rapidly, there’s typically a lot of investment in the new industry and new products. As the innovation takes hold, it transforms other parts of the economy. In some cases, such as information technology and electricity, the effect is to increase the productivity of other industries. Big technological breakthroughs also violate the free lunch principle, giving a boost to growth and living standards.

During periods of cautious growth, companies have only one way to boost productivity and profits – by cutting costs and payrolls. Retrenched workers remain unemployed, or they may move into the service sector – the dry-cleaning, health care, restaurant, retailing, and other service jobs that grow almost every year, along with the population. The problem is that these are low paid jobs.

However, during periods of exuberant growth, both companies and workers have other options. Innovation enables companies to compete by using new technology to make existing workers more productive. And when workers are laid off, there are innovative new industries that hire people.

Exuberant growth builds on the real competitive advantage that the US has-not in capital, not in education, but in risk-taking. Other countries simply do not have the resources to develop an expensive new technology the way that the US does. The result of innovation is not just economic growth, but growth of the human spirit as well. It reinforces curiosity and risk-taking, and the idea that there is always something new waiting to be explored.

### **Innovation and Financial Markets**

The case for rational exuberance rests on the superior ability of the US financial system to support innovation. Scientific creativity, spending on research and development and an educated workforce are all essential. But at the end of the day, the crucial difference between cautious and exuberant growth is as much financial as technological.

In command and control economies, there's a lot of waste – roads that go nowhere, buildings that no one wants to occupy. It's difficult to fund the research and development of new technologies that challenge the status quo. New ideas find it difficult to tap into the financial markets.

Over time, the US has understood how to fund and promote innovation in a mature economy. The financial markets are far better developed in the US than in any other country. Key financial instruments for financing innovative activity include venture capital (VC), stock options, and high-yield or “junk” bonds.

Venture capitalists succeed by helping create a new company that is valuable to someone else—either to investors, by way of an IPO, or to a larger company. No other source of finance is so much focused on assessing and funding innovation for pure profit motives. Unlike big companies, venture capitalists have no existing products or markets to protect. And unlike governments, venture capitalists do not have to worry about lobbyists or the need to favor local companies. Venture capitalists have no vested interest in the status quo. They do spectacularly well during periods of exuberant growth. Going by their track record, they seem to be the best answer to the question of how to fund innovative small businesses.

Venture investment is also not simply a one-time allocation of funds. Instead, it goes in stages. In the early stages, a venture fund will put money into several different start-ups, without really being able to determine which ones will succeed and which ones won't. But it will be just enough money to get the companies started.

Then, when the start-ups come back for the next round of funding, the venture capitalists allocate money to only the potential winners, while the losers fall by the wayside. Because of this stage-by-stage and hands-on approach, money invested through VC funds has a higher chance of succeeding.

While there are high levels of savings in Europe and Japan, the financial institutions are unable to efficiently use them. The bank-based financial systems in Germany and Japan are based on relationships between lenders and big borrowers. On the other hand, the US financial markets draw smart people and good ideas as well. It is easier in the US to get financing for innovation, which attracts entrepreneurs from elsewhere.

The chances of something good happening are higher when there is enough money to explore all the different alternatives. The US financial system encourages different alternatives to be explored. That makes it more likely that exuberant growth will bloom in the future.

As each potential new technology breakthrough comes onto the scene, investors leap in with the goal of getting a piece of the Next Big Thing. This quickly drives up stock prices, until the actual usefulness of the innovation becomes clear. Then stock prices either collapse or continue to rise.

Every time a bubble bursts, there's a chance that something unexpected will happen, and the bust will turn into a full-fledged financial crisis. The financial system must be able to absorb such a crisis. The banks and other financial institutions have to be well diversified and well funded. Moreover, there has to be a central bank with the means and will to back up the financial system. There must also be a political system willing to take decisive measures when things are tough.

Over the last few years, the US financial markets have demonstrated they are robust and resilient, having survived the triple punch of 2001 – the end of the stock market boom, the Enron debacle, and the terrorist attacks. There was some damage. Venture capital (VC) funding fell way off. There were some high-profile bankruptcies, including Enron and Worldcom. But overall, financial disruptions were hardly apparent. Non-financial corporations were easily able to raise a total of almost \$500 billion through the bond market in 2001 and 2002. Mortgage lending hit record levels. Consumers with good records had no trouble accessing the credit. In 2001 and 2002, household mortgage debt increased by more than 20 percent. Consumer credit rose by about 12 percent.

Financial crises can come in various forms: stock market crashes, bank runs, currency crises. They all have one basic characteristic. Investors lose their trust in an asset or security, leading to selling, which feeds on itself. A boom sustained by investment in new technologies has a good chance of ending in a sharp downturn, simply because the uncertainty is always high. When a crisis occurs, the main obligation of the central bank is to provide liquidity to the financial system—that is, to make enough cheap funds available to banks and other financial institutions that they are not forced to foreclose on their borrowers.

But Mandel adds that the central bank should not choke off financial booms before they get out of control. Innovation is profoundly unpredictable. It's easy to make value judgments after the fact, but at the time, it's very hard to distinguish bad investments from ones that turn out to be eminently successful.

To discover and develop the best new technologies, it may be helpful for policy makers to allow financial booms and busts – that is, periods of cheap capital and exuberance that alternate with periods of expensive capital and tight money. The periods of easy money fuel the exploration and exuberance. Start-ups strike out into new territories, creating excitement and new opportunities. The access to cheap capital enables people to try a lot of things that wouldn't be possible otherwise. There's a gold rush mentality.

Indeed, this was exactly what happened in the US in the late 1990s. The conventional wisdom is that the period of exuberance during the boom period – especially 1999 and 2000 – was a bubble. But Mandel feels the late 1990s could just as easily be called an “age of exploration.” The low cost of capital enabled adventuresome people and companies to try out several new ideas simultaneously, and on a large enough scale that they got a fair test.

The boom phase is inevitably followed by a bust. But even busts serve their purpose. Expensive capital serves as an effective screening device for separating the successful innovation from the wanna-bes. It is survival of the fittest, but according to a very specific rule. The companies that are self-supporting survive. The ones that are still dependent on outside funds die.

Despite all the waste and corruption, and despite all the companies that folded up, the US ultimately benefited from the period of cheap funds in the 1990s. What the US had that its competitors did not, was a financial system that rewarded innovation.

The US financial markets have several advantages that make booms and busts easier to handle than ever before. The US financial markets are simply bigger and deeper than anywhere else.

The US has the biggest and most diverse economy. Even big risks can be absorbed more easily. The US financial markets have also spread risk using securitization. And ofcourse the US has a strong central bank led by competent people for more than 25 years now.

### **Building a coalition for Exuberant Growth**

Technology is fuelled by finance, which in turn is linked to politics. Technology, finance and politics are all necessary to reap the innovative benefits of a pulsating market. Without the boom-era easy financing, it's tough for new innovative companies to get funding. And without the intervention of the central bank and the political system, financial markets can get out of control, especially on the downside.

Mandel feels the biggest threat to exuberant growth today is the lack of popular support for innovation. Exuberant growth is a tough sell. Both new technology and financial markets are vulnerable to pressure from enemies of growth and from existing companies who want the status quo to prevail. Technology-driven growth can be sustained only by mobilising a broad coalition in its favour.

Financial markets are particularly vulnerable to government interference, since they are already regulated closely. Broad based support for exuberant growth needs to be mobilized. One group that logically should favour exuberant growth are stock market investors. The second group that should be friendly toward exuberant growth is the members of the educated class. The final group that did well in the 1990s was workers toward the bottom of the pay scale. Low-paid workers, do much better in periods of rapid productivity growth. However, they are more concerned with safety and security than anyone else, because they don't have the financial resources to cope well with the volatility in the economy. Hence, they must be provided a safety net.

Changes in tax laws can be a great help in an innovation driven economy. By allowing income averaging, and giving taxpayers the option of paying taxes as if their income was averaged over three years, risk taking can be encouraged. The current tax system actually penalizes people whose income changes sharply from one year to the next. Higher incomes get taxed at a higher rate. That means a person who has a high income one year

and a low income the next will typically pay a higher total tax than someone who has the same total income, but spread out over two or three years. In short, the existing tax system penalizes both job-losers and risk-takers. People who take more risk and have more variable income – because they own their own businesses, or because they are freelancers – pay higher taxes on average than non-risk-takers.

### **Concluding Notes**

It is precisely the routinization of technology that poses a deep and hidden danger for the educated class. As a task becomes more routine, it is more amenable to being computerized, so that it requires a lower level of skill and education. If the economy stops pushing its way into new technology territory, educated workers are in danger of seeing their jobs “deskilled.” The need for judgment will reduce. The work will be done by less-skilled, lower-paid workers, either in the US or overseas.

Exuberant growth may look a risky strategy. But not pursuing it could lead to bigger risks. With cautious growth it is absolutely certain that the economic output of the US, 20 years from now will not be large enough to pay for the retirement of the boomers. It does not matter whether the current system of Social Security and Medicare is kept as it is, privatized, or completely revamped. If growth slows, and the economic pie is not big enough, future generations of both retirees and working people will suffer.

Mandel believes the US has reached a turning point. The combination of finance and technology can propel the US forward at a rapid rate, without quite knowing what is around the next bend. Another option is to tread more placid, slower-moving waters. This book makes the case that the faster, more turbulent path is the right one to choose. Mandel firmly believes that if the US does make that choice, the future is bright.