

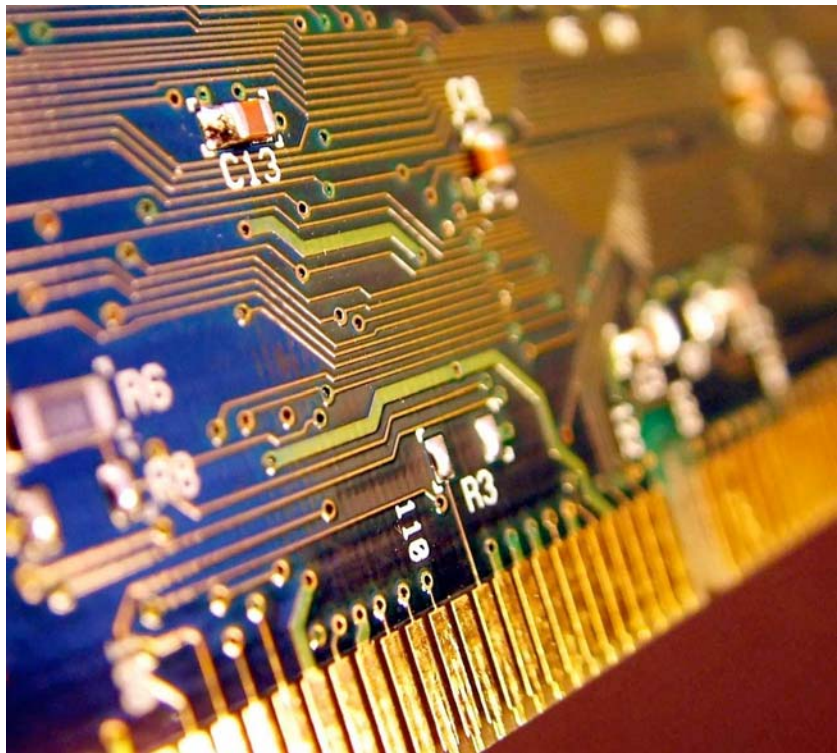
## The Crash of 2008 and Historical Materialism

*By John Case*

Understanding the impact of technological revolutions on major financial booms and busts, including the ongoing crash of 2008, from the standpoint of historical materialism allows us to understand the causes of economic crisis as well as what can be done to change the system we live in and reduce the turmoil.

Historical materialism has been the most lasting, and also most widely accepted, contribution of Karl Marx and Frederick Engels to philosophy. Here is Engels classic definition of it from the preface to *Socialism: Utopian and Scientific*:

"The materialist conception of history starts from the proposition that the production of the means to support human life and, next to production, the exchange of things produced, is the basis of all social structure; that in every society that has appeared in history, the manner in which wealth is distributed and society divided into classes or orders is dependent upon what is produced, how it is produced, and how the products are exchanged. From this point of view, the final causes of all social changes



and political revolutions are to be sought, not in men's brains, not in men's better insights into eternal truth and justice, but in changes in the modes of production and exchange."

Simply put, social changes are tied to economic developments and upheavals. Those familiar with historical materialism will be least surprised to learn that there are powerful historical precedents for such crises as the one in which we currently find ourselves. Those precedents show a

profound inter-relationship between the periodic surges of technology we have come to call "technological revolutions," and the boom and bust cycles of finance capital.

Lets extend Engels a bit and attempt to define a technological revolution in the historical materialist spirit as follows (borrowing some elements from Venezuelan technology expert Carlota Perez).

"A technological revolution," she writes, "can be defined as a powerful and highly visible cluster of new and dynamic technologies, products and industries, capable of bringing about an upheaval in the whole fabric of the economy and of propelling a long-term upsurge of development. It is a strongly interrelated constellation of technological innovations, generally including an important all-pervasive low-cost input, often a source of energy, sometimes a crucial material, plus significant new products and processes and a new infrastructure. The latter usually changes the frontier in speed and reliability of transportation and communications, while drastically reducing their cost."

The history of the major surges in technology under capitalism varies to a significant degree on location and depends on the "historical speed" with which they reach various regions of the world. Yet everywhere they demonstrate strikingly similar patterns in their "difficult marriage" with finance capital.

From the onset of the first wave of industrial revolution in the 1770's until today, using the UK/US/Europe "industrial calendar," there have been five such surges. Each cycle begins with an eruption of innovation. The eruption is facilitated by a split between finance and production capital (of the status-quo production mode). Finance capital is looking for greater rewards than the mature technologies can return.

The old mode of production is nearing exhaustion as a previous techno-economic era matures and saturates markets. As excitement over the new cluster of technologies mounts, a frenzy of speculation follows. Inequality skyrockets as some become fabulously rich, while most fall behind. Then comes the crash as speculation pushes asset values above their real value. After the crash comes a new wave of institutional reform, regulation – often entire changes of government, and not infrequently, social revolution.

The new regulations not only correct abuses, but also typically result in increased overall socialization of infrastructures and "too big to fail" enterprises. Crashes are often multiple, and are usually followed by one or more recessions or a depression. After the reforms, the new technologies – free of regulatory and institutional restraints of the old paradigm – are steadily deployed throughout the economy. Finance capital and production capital find themselves happily married again.

Eventually the new technology itself matures and again saturates the market. At which point capital once again looks to pent-up innovations that have been excluded due to the last "reforms", and finds its own "innovative" means to again seek high returns from the next technological revolution.

A short outline of the five surges in technology since the dawn of capitalism, at least in the UK-US, gives a better sense of the crossroads we now face, and the underlying "means of production" forces at work in the current crash.

### **The Industrial Revolution, 1771-1829**

**W**hen Richard Arkwright's Cromford mill in Britain opened in 1771, the future paths to the cost-reducing mechanization of the cotton,

textile and other industries became powerfully visible. Soon mechanization of cotton, wrought iron, and the age of machine tools transformed, or created wholly new economic, industrial and social infrastructures such as canals, waterways, turnpike roads and the greatly improved application of water power to industry.

Once risky ventures of the early investors in the application of this new technology gave way to a speculative frenzy. Thomas Tooke, the early 19th century merchant and author, described the British crash of 1793, which brought the first industrial revolution in Britain to its turning point, to "a great and undue extension of the system of credit and paper circulation." A year earlier in America, Thomas Jefferson, observing the first financial collapse in the independent United States, noted that "our paper bubble has burst."

In turn the entire work of society was likewise transformed and re-divided. New economic classes were created; and others began to flatten or decline. Centuries-old institutions and laws that barred the accumulation of wealth or social respect beyond royalty, nobles and clerics were swept aside. Freeing peasants to become wage workers and the bourgeois to ascend to "elevated" society required a whole new set of institutions.

### **The Age of Steam and Railways, 1829-1873**

**I**n 1829 the "Rocket" steam engine powered a passenger train from Manchester to Liverpool. And with it was born – almost simultaneously in the US and Britain – the explosion of iron and coal, steam, machine and power industries that again mandated the remaking of much of the old economy and society. New and much enlarged requirements for resources and

changed modes of production stimulated vast imperial ambitions throughout the world.

In Britain, the "put out" labor system where much manufacture was produced in small shops and homes and on hand tools or looms ended. In the US, these new technologies played a major role in making the continuation of the slave system an intolerable economic as well as political and moral threat to national unity. It was in this period that the impact of the revolutionizing of production on society at large was most famously captured in these words of Marx, from the Communist Manifesto:

"The bourgeoisie cannot exist without constantly revolutionizing the instruments of production, and thereby the relations of production, and with them the whole relations of society. Conservation of the old modes of production in unaltered form, was, on the contrary, the first condition of existence for all earlier industrial classes. Constant revolutionizing of production, uninterrupted disturbance of all social conditions, everlasting uncertainty and agitation distinguish the bourgeois epoch from all earlier ones. All fixed, fast-frozen relations, with their train of ancient and venerable prejudices and opinions, are swept away, all new-formed ones become antiquated before they can ossify. All that is solid melts into air, all that is holy is profaned, and man is at last compelled to face with sober senses his real conditions of life, and his relations with his kind."

The frenzy of speculation built on the potential of these industries swelled throughout the 1830's and 1840's, with numerous and increasingly European-wide crashes in the latter years. The pain of this era of mounting inequality was documented with poignancy and outrage in Engels' The

Condition of the Working Class in England – 1844.

Then came the turning point in 1848-1850, when the institutional and social changes needed to again remake the division of labor in society led to more radical democratic changes, including revolutions throughout Europe bent on further wiping out vestiges of feudal relations that blocked expansion and growth. In the United States, the deployment of new technologies was somewhat postponed, as it awaited the destruction of chattel slavery. After the revolutions and reforms, a period of greater stability ensued, greater unity of finance and production capital, more stable if less rapid growth, and the sanctions against the excesses of the previous frenzy established a new regulatory, legal and institutional regime.

### **The Age of Steel, Electricity, Heavy Engineering, 1875-1918**

**T**he Carnegie Bessemer steel plant opened in in 1875 near Pittsburgh, Pennsylvania and inaugurated the Age of Steel. Steel production promoted a host of other industries: the full development of steam engines for ships, large-scale chemistry and civil engineering projects, the electrical equipment industry, the copper and cable industry, canned and bottled food, paper and packaging industries. These technologies and their economic integration required renewed, large-scale re-definitions of infrastructure. World wide shipping and its security, the Suez Canal, world-wide railways, great bridges and tunnels, worldwide telegraph, telephone (national), and electrical networks for illumination and industrial use are examples.

Again, speculative frenzies opened and led to big financial crashes in the late 1890's – the huge increase in inequality that resulted from a new era of financial

speculation was celebrated in Veblen's "the Leisure class." A new era of reforms and socialization (epitomized in the Theodore Roosevelt reforms) attempted to align institutions with the rapidly changing technological infrastructures. The early trade union movement was born out of the fight for the eight-hour day, and bans on child labor in this era. In addition worldwide conflict between the emerging and powerful capitalist centers culminated in World War I. The striving for new technologies of war accelerated and shortened the hoped for stability of the "reform era." A new technological revolution was already erupting. Finance capital again found a new cluster of technologies that would make the Age of Steel appear primitive, and began its split from production again.

### **Age of the Automobile, Oil and Mass Production, 1908-1974**

**I**n 1908, the first Model T comes out of the Ford plant in Detroit, Michigan. Mass produced automobiles, cheap oil and oil fuels, the petrochemical industry, the internal combustion engine, home electrical appliances, and the refrigeration and frozen foods industry all combined to radically redefine and expand an immense infrastructure both civilian and military. A new the division of labor ensued rapidly expanding the class Marx called the proletariat – wage workers in the mass production industries who must survive and participate in a market for "labor-power." This was the same class that Marx and Engels observed and studied earlier in the textile and iron industries – but with work made even more homogeneous, more machine-like, more alienated and dehumanized. The value of this "labor power" was merely the cost of its production, meaning human subsistence.

The frenzy associated with this new technological revolution we remember today as the Roaring Twenties. The crash that ensued in 1929 was devastating. Institutions and politics throughout society were fundamentally changed. The rise of the industrial union movement, the New Deal, Social Security, financial regulation, and the ideology of socialism (in both its social-democratic and Marxist forms) became the foundations of radical institutional reforms. Networks of roads, highways, ports and airports, oil and natural gas pipelines, universal electricity, world-wide analog communications (radio, telephone telex, cablegram) – wired and wireless – all testified to the scope of the infrastructure deployed in the growth and maturing phases of this technological revolution.

### **The Age of Information and Telecommunications, 1971-???**

**I**n 1971, the Intel microprocessor was made public in Santa Clara, California. Today, every science is also computer science. Itself an outgrowth of the previous generation's electrical, information and materials research – the microprocessor introduced cheap electronics, then computers, then software, then telecommunications, then control instrumentation, then biotechnology, and further revolutions in materials science. Massive infrastructure investments in fiber optics networks, satellite and cable global systems; the Internet, e-mail, and other e-services; multiple source electrical networks, higher-speed physical transport links by land, air and water – have again changed occupations, lifestyles, demographics – all social relations – across the world.

The crash of this cycle however, as each before it, has familiar, but also new features. We do not have to go back beyond

living memory to recall the eruption of the semiconductor and software surges of the 1980's, and the frenzy of speculation from the mid-1990's through 2000 – when the latest turning point, and build up to the current crash, began.

### **The Current Crash**

**T**his crash has had two stages. The first occurred in 2000 when the latest technology bubble, referred to as the "dot-com bubble," burst. The second occurred now, eight years after the Bush administration did not get the hint that serious reform was needed in financial markets. Instead, Bush loosened regulation even further under the influence of a "free-market fundamentalism" perfectly fitting a frenzy mentality overtaking an entire government. As with previous revolutions, finance capital overshot the rate at which the new technology could reach its full potential.

However, instead of channeling finance capital back into production through institutional reform – necessary in order to truly deploy the technology – an unbalanced and crippled regulatory system of another era helped enable reckless speculation in largely fictitious real estate assets. Inequality accelerated. Globalization, especially globalization of financial securities and the balance sheets of banks, multiplied the speculative frenzy many times. (A piece of your home mortgage could actually be subsidizing a Norwegian town fire department pension fund.) And of course, in the international arena governance and reforms required to restart and regulate economic activity must themselves be "international", and there is currently very skimpy governance. Global institutions significantly stronger and broader based than the IMF and World Bank, and a much

strengthened UN, will have to come into being.

The full impact of this technological revolution and how transforming its world wide deployment can yet barely be glimpsed. It is though we are driving a 1930 automobile trying to see the world after World War II before it happens – which makes the difficult questions of global governance all the more compelling to solve. But a few features are becoming clear:

- \* Economic infrastructures, including much of the financial system must be further socialized. This is necessary to begin the large institutional restructuring process without which recovery is impossible. Institutions whose failure creates systemic risk must be nationalized in whole or in part.

- \* At the same time well-functioning markets must not disappear, but in fact improve. A big government, more socialist, regime can correct many instabilities, can improve the distribution of wealth to moderate inequality, and it can train and pay intellectuals and scientists to invent new ideas, but it is notably less successful at deploying the benefits of new technology throughout an economy, at least insofar as the myriad of unimportant transactions between producers and consumers of goods and services are concerned. Markets are mandatory tools for the efficient allocation of scarce resources with the appropriate institutional support and infrastructure. Markets are not natural entities and can be designed to serve a wide range of human ends. Ideologies associated with the frenzy and the crash, like free-market fundamentalism, however, are going into a lengthy and well-deserved decline.

- \* The reuniting of finance capital with production capital to fully deploy the new technologies will likely require huge public and international investments. For the next

decade, at least, we should expect a public intervention on the scale of up to 100 percent of GDP, or more. The initial trillion dollar bank bailout represents about 10 percent of current GDP – by comparison. The precedent: World War II spending reached 110 percent of GDP, and finally lifted the economy out of the great depression.

- \* It is also clear that innovation is inherently destabilizing. In addition, compared to previous eras, its pace may increase. Some separation between finance and production capital is thus also inevitable and a key challenge will be to understand the process better and establish a balance between financial instructions, government and production that hopefully will permit growth and innovation – without either excessive instability, or stagnation from an over-regulated environment.

- \* The strategy of full employment is the best long-term antidote to instability. (See "How More Socialism Could Fix the Economy," for more details on this). It permits society to tolerate the inevitable destabilizing impacts of innovation, imperfect competition and increasing returns to scale with far less risk of catastrophe.

- \* The new technologies tie the world together in millions of myriad new ways that can provide the foundation for emerging from the crisis without world war. But of course, we are betting against historical trends in this regard.

- \* The new technologies have the potential to de-proletarianize much of labor, even banishing from public discourse the corporate view of workers as "maggots with hands." Nationalized health care, retirement, and education, shorter hours, plus the freedom to organize, promise to erode the "labor-power" market and replace it with a more protected "labor" market where work is compensated proportional to its product, or the actual value of the service rendered,

not merely what subsistence it takes to them to return to complete alienation from the product of labor each day, and with a declining share of national income as well.

It is this last point that crystallizes the role of Marx's communist ideal as a valuable guide with which to approach the possibilities and dangers before us. The opportunity to move forward from this crisis towards an enlightened society is here. Marx

often characterized the emergence of communist society as the bourgeois rights of the Enlightenment, given voice in the Declaration of Independence for example, extended to all workers – "from each according to their ability, to each according to their work." The slogan will serve us, our country, and our world well in the troubled times ahead, as once again, we set forth to remake the world.

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