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DEMOCRATIC LEFT

Financial bubbles and economic crises

Carlota Perez talks to Jonathan Rutherford.

June 2009

Think
PIECES

Number 51

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In your recent book *Technological Revolutions and Financial Capital* www.carlotaperez.org you argue that it is possible to discern recurring historical patterns of major technical change, accompanied by cycles of financial turbulence - which could be understood as one explanation of the current difficulties of the neoliberal model. Could you briefly outline your main argument?

In the past 240 years, there have been five distinct great surges of development in capitalism, associated with five successive technological revolutions: the original 'Industrial Revolution'; the Age of Steam and Railways; the Age of Steel, Electricity and Heavy Engineering; the Age of Oil, the Automobile and Mass Production; and the Age of Information and Telecommunications. Each goes through a 'free market' period in the early decades, and a more oligopolistic one in the later period, when the state comes back actively. The switch between these periods happens after a major financial crash.

The 'free market' or 'Installation' period of each surge begins in a state of economic stagnation and falling profitability. The 'Age of Information and Telecommunications' began in the 1970s. As the old technologies of mass industrial production matured and exhausted their wealth-creating potential, new information and communications technologies (ICTs) began to revolutionise the generation, processing and transmission of information, changing the techno-economic paradigm for all industries. A new higher level of productivity became possible for all, including a change in optimal market profiles (from standardised to much more diverse), and a deep organisational transformation (from hierarchical pyramids to participatory networks).

During the Installation period, finance plays a crucial role in unleashing the economic potential of the new technologies. Credit and venture capital are essential to break the old industrial trajectories and make radical changes. Alongside the rising power of finance there is growing inequality and unemployment, caused by rationalisation and the higher productivity of the new technologies. Economic growth is uneven, and there is an increasing polarisation between new and old industries and regions.

Installation ends in a 'Frenzy' phase. In the previous surge - for the age of mass production - this was the 'Roaring Twenties'. In the current one it was the 'frantic nineties'. A casino economy takes shape, ramping up speculation and financial bubbles, and creating a super-rich elite. Individualism flourishes. There are significant levels of migration from poor to rich areas. New markets are created; most of the old industries are rejuvenated; others wane and die. The productive sphere is restructured. Speculation in the stock market rides on the success of the new industries. Such major technology bubbles are endogenous to capitalism, and perhaps inevitable. They are the way in which the market system assimilates successive waves of wealth-creating potential. They are Sombart and Schumpeter's 'gales of creative destruction', leaving in their wake new growth opportunities on the one hand, and suffering and losses on the other.

The transition from the old order to the new requires these two or three turbulent decades, after which the manias end in major busts: canal panic, railway panic, the crash of 1929, the NASDAQ collapse. During the transition asset prices decouple from fundamentals, and a breakdown becomes inevitable. It is the growing structural tensions in the system that eventually make it unsustainable. A post-bubble recession (sometimes a depression) then marks the Turning Point, a time for rethinking and reshaping the future that eventually leads to the 'Deployment' period. That period

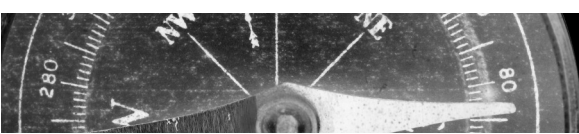
comprises the two or three decades - such as the Victorian boom, the Belle Époque and the postwar Golden Age - when the new potential can be fully exploited across the economy, significantly increasing employment and gradually reversing the income polarisation of the frenzied bubble times.

So, we are now at your Turning Point. Is there then an opportunity to create a post neo-liberal politics?

Yes, indeed. After the bubble collapses, conditions are ripe for political forces to regulate the financial markets, redistribute wealth, and create institutions of social cohesion. Economic sustainability and a politics of well-being for all become feasible once more, and this is precisely what leads to the 'golden age'. Alternatively, political forces supporting the casino economy can try to maintain the selfish individualism of the 'frenzy phase', resulting in a 'gilded age' instead. Whatever the outcome, the turning point will define the particular mode of growth over the next two or three decades.

It is important to notice that wanting to bring back the role of the state to what it was in the previous paradigm is as big a mistake as trying to keep the casino. Each would, in different ways, prevent optimal levels of economic growth and social welfare. Each deployment period requires its own socio-institutional framework, consistent with the nature and requirements of the newly installed paradigm. Two of the many phenomena that distinguish the current paradigm from the previous one are globalisation and the direct role of social groups (NGOs, web 2.0, etc). The first demands an institutional architecture that harmoniously combines the national with the supranational and the local; the second requires participatory institutions that facilitate consensus building.

But finance is the most powerful force in the balance today. Won't it be very difficult to curb it now?



Yes, and the power of finance was unfortunately kept intact after the NASDAQ collapse. But now the Turning Point has really arrived. The casino has been revealed as such and people are angry at what has been discovered, and its consequences. That is what provides the impetus, the strength and the political will to curb financial power. The debate is no longer whether to regulate or not but rather about good or bad regulation. That has historically been typical of the Turning Point. It is always important to keep in mind, however, that these long-term regularities occur in a unique manner each time around. Major bubbles and busts happen midway along each surge of new technology; on this occasion we have had a two-stage bubble. The first episode was Internet mania, centred on the NASDAQ, and truly based on the installation of information technology and over-investment in telecommunications and the Internet. (Every one of the major bubbles has involved over-investment in a new infrastructure that later allows its multiple uses by all industries and activities in the Deployment period.) This time we have also had a second act, which has been purely financial. Whereas in 1929 both technology and finance fell together, this time finance got a new lease of life, especially after 9/11, with the massive injection of liquidity and the reduction of interest rates intended to revive the economy at any cost. This second boom and bust was a typical easy credit bubble, but it was the direct result of the unfinished business of the regulators after the NASDAQ collapse.

Can you explain more about how this second bubble, particularly in housing assets developed?

The first thing to understand is that the sub-prime mortgages - and the synthetic 'securities' they were turned into - are only the weakest link in a much wider set of debt-leveraged casino activities in the financial world. The housing bubbles shared the stage with derivative pyramids, infinite forms of default hedging, complex private equity deals, hedge funds, opaque

instruments and off-balance sheet operations, speculation in oil and commodities futures and whatever else became fashionable. Lack of regulation created the conditions; inexhaustible easy credit enabled the process; information technologies provided the tools; the NASDAQ bubble had provided the necessary experience in modern financial 'innovation'; and the continued success stimulated imitation and facilitated herd behaviour. As the CEO of Citibank said in 2007, 'As long as the music is playing, you've got to get up and dance' (<http://dealbook.blogs.nytimes.com/2007/07/10/citi-chief-on-buyout-loans-were-still-dancing/>).

But this whole episode represents the continuation of the decoupling of the paper economy from the real economy, something that regularly occurs during the major technology bubbles at the end of each Installation period. This one has been worse than any other (structurally much worse than 1929) precisely because it is void of real economy substance, and because information technology has facilitated opaque innovation. I believe it will only end after all the dark corners of the casino have been put to light, and all the bubbles still to burst (hedge funds, private equity, Shanghai housing, etc) have done so.

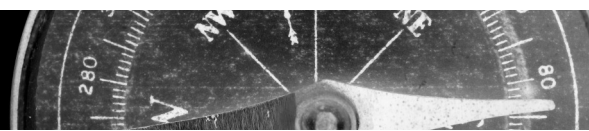
Proper regulation could have come in after 2000 to restrain wild financial innovation; it could have established measures to guide investors away from capital gains derived from asset inflation and back to fundamentals, and to sharing the profits made in employment-creating production. Of course, the victims who will suffer most from all this are going to be the millions of people that were given easy credit to believe they owned a house, and the millions that will lose their small businesses or their jobs. Yet, it is the pressure from all these victims that will push politicians to establish proper regulation. It is terrible to realise that the collapse has to hurt enough to trigger the necessary measures for healthy growth.

The idea of good and bad regulation requires some sort of value criteria. What role do you think the balance of political forces plays in determining institutional change in the years following the turning point? I suppose I want to know where the political fits into your thinking.

We are now in the most important phase of the current surge regarding institutional innovation. This is the time when political forces put forth their programmes for defining the direction to be taken by the installed technological potential. There is now enough investment in ICT and enough understanding of its paradigm to spread its renovating potential across the whole economy and to stimulate innovation in all sectors. The challenges of energy and the environment, plus the requirements of the knowledge economy, encompass a huge set of opportunities for profit, growth and new employment. But all that requires a favourable institutional framework, which will put finance once more at the service of production and real growth, and will define the distribution of its fruits.

Of course, the value judgments that can be applied to regulation refer to the goals it is meant to pursue, and to the effectiveness with which it is likely to achieve them. The question of the goals is the most purely political; the question of effectiveness has to do with whether the method used is capable of reaching such goals. Here we are not just dealing with the practical aspects of regulation but with something that goes deeper, and has to do with the logic of the paradigm and the nature of its wealth-creating potential. Intelligent politics has to keep the goals and values clearly in mind, while making sure that the methods for striving to reach them are coherent with the current paradigm. The old methods, however effective they may have been in the past, are now almost by definition obsolete.

Each technological revolution brings a different techno-economic paradigm, which can be understood as the 'common



sense' that guides best practice in organisation, in innovation and even in competition. The mass production paradigm of the Age of the Automobile followed Ford's dictum: 'you can have any colour as long as it's black'. Optimum productivity and profits came from producing identical products on as large a scale as possible: the bigger and more homogenous the market, the better it was. This allowed a positive sum game between the political goal of greater equality and the business goal of greater profits. It also favoured policies based on the national space and facilitated the protection of nationally based companies.

The current paradigm for the best use of ICT thrives in diversity rather than in homogeneity. This poses a challenge for political innovativeness: how to achieve equity in diversity. It seems to me that the new conditions require a new approach, which would foster different lifestyles - based on preferences, cultural identities, etc - yielding 'equivalent satisfaction'. The current paradigm is also global rather than national in market reach. Not only does information technology facilitate the coordination of unimaginably complex global networks of production and distribution; it also overrides physical boundaries for its most valuable products, which are the intangible ones. This has implications for the politics of development. It should now be possible to establish a global framework of policies and institutions capable of lifting all boats, developed, emerging and developing. But this depends on whether that proposal is viable and on the table when the financial system comes out of 'intensive therapy' and the political battles begin about the best treatment for convalescence and then for recovery.

I want to question how far it is possible to decouple the financial economy from the 'real economy'. The global flows of credit derivatives have their origins in local credit practices which are determined by political forces and enabled by a cultural context. The credit bubble and mortgage-backed securitisation had their origins in real material, political and economic relations and practices. At what point does decoupling happen?

First of all let us agree on a definition of the 'real economy'. Obviously the houses in a bubble are real but, although there is a construction industry involved in making real new houses, the bubble phenomenon is about the inflation of all assets in that class, new, old and ancient. Not all housing bubbles occur where there is scarcity; the main phenomenon is the bidding up of all real estate by herd behaviour and, in this particular case, by the investment incentives that were set up to try to avoid (or, as it turned out, postpone) the end of the over-investment that characterised the last Frenzy.

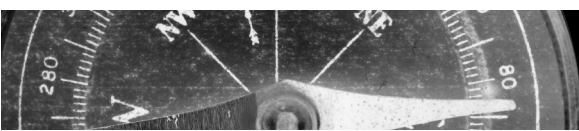
During Installation Periods there is an illusion of great prosperity and success (which is of course real for quite a few), which is based on the constant appreciation of the paper rights held to particular assets - be they equity or bonds or land, commodities or housing. This process occurs at the same time as *laissez faire* has left the markets to operate unrestrained. The decoupling of finance from the real economy that then ensues is an expression that refers to price determination. When there is a bubble, the price of equity paper decouples from the profit-making capability of the companies it represents. In fact, that is how bubbles overinvest in infrastructure (to the benefit of the future users of the infrastructure, but to the detriment of those that are left with the equity paper in their hands). Infrastructures need to have full coverage to be of use but installation investment is high and profits are very slow to come. The way in which they have historically been financed is by trading on paper that has high capital gains on resale.

Those who get out in time, before the bubble bursts, make a lot of money; the others are left with the long-term prospects, and society gets the benefit of, for example, powerful new low-cost transport and communications.

Following Schumpeter, you argue that technological innovation is the driving force of capitalist development. What role do you think capital accumulation plays as a fundamental dynamic of capitalism?

That is a chicken and egg question. Without accumulation there is no capacity to invest in innovation, and growth would be sluggish. Without the growth of salaries and profits there would be insufficient demand for production or innovation, and insufficient taxes for funding education and research, which then could not feed innovation capabilities.

Ever since the industrial revolution, innovation has been at the root of accumulation (and lack of innovation opportunities can destroy erstwhile giants). Microsoft, Google, Cisco, Intel and Apple are typical examples of how each technological revolution creates conditions for the small innovating entrepreneurs to become the giants of that surge of development, just as Arkwright, Carnegie and Ford were in previous surges. Finance - especially venture capital - plays a crucial role in the process and so does the stock market. On the other hand, it is the lack of innovation opportunities, be it in products or in improving processes, that stalls accumulation when technological and market maturity is reached. That is why we see General Motors and Ford as wounded giants today. Each new surge leads to a shift in the engines of growth. If companies can rejuvenate by innovating using the new paradigm, as has been the case with IBM, for instance, accumulation resumes in them; if not, they may disappear.



I'm trying to get at the relationship of technological innovation to social and economic relations. Technology is embedded in social relations, it is shaped by them and in turn it shapes them. To what extent do you think that culture and the structures of class and economic power determine the character, distribution and impact of the new technologies?

As you rightly say, technology shapes and is shaped by society. The question is what is more useful when designing policy or political programmes. If you give the primacy to existing class and economic power structures you may come to the conclusion that the weak are powerless and can do nothing, because society is already structured in such a way that whatever technology comes along it will be absorbed and co-opted into the old social relations and nothing will change. If, on the contrary, you look at the new opportunities that the technology brings for changing social relations, then you understand why Barack Obama can come from the fringes to the spotlight and to the biggest power post on earth, propelled by an Internet-based campaign energised by a network of the young. By looking at technology first, you can also understand why mass production led to mass consumption and to an across-class consensus on the welfare state - though in fact, as those technologies were taking shape, three different social structures arose leveraging the same mass production paradigm: Keynesian democracies, Nazi-fascism and Soviet socialism in all their many variants. None of them in their original form could survive the current information revolution with its flexibility, diversification, open network structures and other non-centralising and non-bureaucratic features.

Does this diversity challenge the idea that technologies determine the relations and structures of economic and social power?

Well, it certainly shows that the range of the possible with each set of technologies is extremely wide, but it does not deny

that technology defines the nature as well as the limits of the stage upon which the social forces can battle and negotiate for their respective values and goals.

For instance, it is a lost battle to fight against globalisation. Information (and money) can travel transparently across frontiers and the global telecommunications infrastructure makes it easy to manage giant complex structures spanning the globe. Those are powerful shaping forces defining important directions of growth. Still, there are many options for globalisation, and the neo-liberal model is only one of the paths to follow. This paradigm offers the possibility of doing for the whole world what mass production did for the workers of the developed countries. And in the process the world could see one of the greatest booms ever imagined.

You argue that intelligent politics has to keep its goals and values clearly in mind while making sure that the methods for striving to reach them are coherent with the logic of the new paradigm and the nature of its wealth-creating potential. You also argue in your book that each stage of capitalism represents a developmental surge that extends capitalism across the globe and deepens it in people's lives. Does this mean that an intelligent politics that follows the logic of each new paradigm ends up squeezing non-market relations and the social realm out of existence?

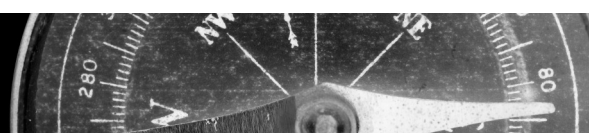
I think that would certainly be an exaggeration. I do think that technology 'invades' the social space, but it does not mean that it squeezes the social realm out of existence. Clothing used to be made at home and there was a lot of conversation among women while they knitted; now women go to the shops to buy their clothes and then meet at the coffee house for chatting. Restaurants are both a way to bring food into the market place and a way to facilitate the meeting of people around the dinner table (without the women having to get up all the time to make and serve the food).

Social spaces were physical until very recently: the pub, the park, the dance hall. Now they also exist in cyberspace. I don't think it would be fair to say that the interactions that now occur in MySpace or FaceBook are any less 'social' or of lesser quality because they are at a distance. And if we bring the Obama campaign back to the discussion, we can see how the traditional political parties and the way they worked during elections have now found a new tool to widen their social links and to connect with many more. In fact, perhaps what happens as technology and market relations invade the existing social spaces is that new spaces are created for social interactions.

Social networking sites do create new kinds of public space. But they are also redefining the boundary between public and private life and providing site owners with vast amounts of information about people's personal habits and interests that has commercial value (see 'Mining the wealth of online communities', Soundings, issue 39). I'm interested in spheres of life that are not defined by the cash nexus or by market calculation. Do you see new technologies facilitating the development of the non-market public sphere in ways that are free of commodification?

I am not sure that increasing non-market relations is the way to maximize well-being. Perhaps the market needs to be 'tamed' to fulfil a wider range of human needs. I suspect that much of the resistance against 'commodification' stems from the way mass production shaped consumption around the possession of goods rather than on any sort of spiritual satisfaction. By contrast, there are many things happening with markets in this paradigm that may be opening new directions towards the greater welfare of both producers and consumers.

The organic food movement, ethical trading and corporate social responsibility give different ways of conducting the market economy. These trends are bound to increase for two main reasons. Firstly, the far-reaching transparency of



information opens behaviour to view (public opinion on the web has pushed Walmart, for instance, to significant changes in relation to its workers and to the adoption of a strong environmental policy). Secondly, in this paradigm, market competitiveness is more and more based on creativity, and creativity cannot flourish unless people feel satisfied at work. Meaningful work, whether self-employed or in a big corporation, adds an important dimension to the notion of quality of life that was absent - except for an elite - in the mass production paradigm.

Other new developments are the Open Source movement, the 'blogosphere' and the Commons that create new channels for expression and communication. Equally, Project Gutenberg, the MIT and Yale courses on the web, Google books, and Wikipedia are offering open access to culture and knowledge in ways that would have been unimaginable even twenty years ago. These are spaces that intermingle with the market in different manners, they live alongside it, they use some advertising as funding (Google's AdSense, for example) and sometimes they even teach the market. Free music sharing sites were ruled out, but they gave birth to the dollar-a-song business model which is a positive sum game between users, artists and producers. The relative weight that these open spaces of non-market or semi-market relations will occupy in the long-run depends on many factors, but they are likely to have a significant influence on the behaviour of market-based web-sites.

It is easy to dismiss all that as merely weak trends destined to be crushed by the inexorable force of market calculation. That is very similar to what happened in the 1930s, when many on the left dismissed the official recognition of labour unions as a ploy and did not see the major transformations that the welfare state and the regular raising of wages with productivity would bring to people's lives. In this respect, we should reflect upon the fact that in the 1930s the goals in the current developed countries were mainly adequate food, shelter and education, whereas now that bottom line is taken for

granted in those countries and the accent has moved to loftier values and aims.

I'm not convinced the new technologies automatically create non-centralising and non-bureaucratic features. What they do is reconfigure existing relations of power into new forms. A good example is the government's micromanagement of the public sector and its managerial culture of targets which have created new forms of Taylorism and standardisation. I'm again returning to the question of technological determinism and the degree to which it drives capitalist development. Is not capital accumulation the true driving force of capitalism, with technology providing new vehicles for its mobilisation?

Nothing is automatic in the relationship between technology and society, but trying to keep the old forms is self-defeating. Taylorism and standardisation have been the means of adopting targets not so much because of the nature of targets themselves, but because institutions have kept their old organisational pyramids and the functional compartments, instead of adopting more creative networks. It could also be that targets imposed from above were not the best way to promote cultural change in the public sector. When a new paradigm appears and proves its capacity to significantly increase productivity, business has no choice but to adopt it or be wiped out in the market. That is not the case for the public sector. There are no other forces than conviction to induce the adoption of better forms of organisation. Human resistance to change can explain a lot of what has not happened.

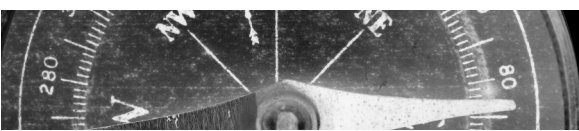
Having said that, it must be recognised that all technologies have up and down sides. The capacity to gather central information and exercise control by both public and private organisations is huge, and it certainly represents a threat to civil liberties inside and outside the work environment. On the other hand, the expansion of communications and the growing networking possibilities can also empower civil society. So there are

important battles ahead to define the regulatory and legal framework that will condition the use of those powers.

As to the accumulation question, it seems obvious to me that to achieve well-being for the whole of humanity on this planet we will need an enormous amount of economic growth. That will also require massive amounts of innovation, both technological and organisational. As long as the market economy remains the main way of harnessing technology, of promoting technical change and achieving growth, the process will involve capital accumulation in some hands.

Research shows that knowledge-driven economic activity tends to increase inequalities. Unlike Fordism it is not a mass employer. The creative aspects of knowledge labour are confined to a very small minority. The expansion of employment in the last decade has been in low paid face-to-face services and office work, where job satisfaction is at a low premium. Can you foresee how the coming period of deployment might reshape social and economic life and what challenges lie ahead?

Most of the social policies of the welfare state were about equality in relation to consumption. The current ICT paradigm is indeed quite different from that. Most of the battles waged by the labour unions during mass production were about wages, functional boundaries, job security and free time. In other words, they were about using the Taylorist boundaries as job protection, and about increasing the time and income destined for consumption. That was the positive-sum game played between business and the workers, until those technologies matured and were no longer capable of increasing productivity. The challenge now is to find a new win-win situation. The goal could be to increase quality of life both at work and outside work. Job enrichment, acquisition of additional skills and time for training, participation, rewards for individual and group achievement, internal labour markets, flexible time, social responsibility, child care and other facilities, quality of



food and transparency of information - all these could be among the new objects of negotiation to enrich the work experience. Income, social security and free time would now be a complementary part of assuring an increasing quality of life overall. There is still a lot of assembly work, of course, and it now involves even higher volumes, but it now tends to increasingly involve continuous improvement with worker participation. Even the call centres expect the workers to know as much as possible about the job in question and to introduce improvements. The many methods of incorporating worker creativity into better products and production processes are a fundamental change with far reaching consequences.

Workers are not only a cog in the wheel of the overseer; you don't leave your brain at home; experience, knowledge and creativity are assets that you bring to the workplace. The use of the term human capital rather than human resources marks the distinction. And it should also lead to much better work relations and levels of remuneration, lest willingness and creativity are withdrawn.

However, jobs-for-life will no longer be likely except for a minority that possesses particular knowledge and skills, as well as the experience that is tied to a particular company's core competences. A great proportion of the population will be part-timers, temporary workers or self-employed. Small and very small businesses are likely to represent a much greater part of the economy than in mass production times. The hyper-segmentation of markets into multiple niches - be they at the 'organic' end or at the knowledge intensive end of super-specialised services - will provide a very wide range of opportunities. The network structures between small and micro firms (the so-called 'clusters') may become a standard feature of the production structures.

As these trends generalise it becomes clear that labour unions in their traditional forms and ways of operating are

inadequate to represent workers under the new conditions. Temporary workers and the self-employed, as well as workers in small companies and in medium term projects, may eventually become the majority. Uneven incomes along the year may also end up as the most typical. This requires a completely different approach to income security and to employability. That will be a major challenge requiring innovative social policies and possibly new forms of organisation. If you add to this the global nature of production structures we confront the major challenge of establishing a bottom-line of supra-national rules for the use of labour. In my view, the only useful way of confronting the change that is occurring in working conditions is to find imaginative and effective ways of increasing and extending welfare taking those conditions into account. They constitute the space where feasible policies can flourish. Outside that space one is powerless.

To continue on this speculative theme, three of the deployment periods mentioned - the Victorian Boom, the Belle Époque and the post war Golden Age - have been times of intense political struggle. Where do you think the contradictions will emerge as we move out of the turning point into a new deployment period? Not just in economic relations, but also in class and social relations and culture?

Perhaps it is time for the left to stop centring its attention on the 'contradictions' and focusing on the ways in which interests can be partially reconciled for the benefit of both sides - or rather of all sides, because there are rarely only two. I think recent history has shown that the poli-classist approach of social democrats was more successful in improving people's lives than the single-class approach of the various versions of the Soviet society. The Scandinavian countries with their consensus policies were a resounding success during mass production in both social justice and overall quality of life. A similar path could be followed now more widely to reap the

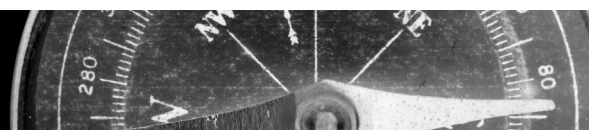
maximum social benefits from the potential of the current paradigm.

Of course, if my interpretation is correct, maturity will also be reached within the ICT-based paradigm and the consensus will again be broken - as in 1968 - and the next technological revolution will confront and eventually supersede whatever socio-institutional arrangements are set up to cater to this paradigm. Finance will come back to force the next paradigm diffusion and advance until it reaches boom and bust ... and so we go again.

One can rightly be impatient about the slow sharing of these successive advances, and the frequent reversals, especially when looking at the developing world. On this occasion, however; we have seen the astonishing rise of Asia and the elevation of many millions out of poverty. If adequate supra-national institutional arrangements were put in place, it could be that all continents would benefit from globalisation as well and that polarisation of income distribution within and between countries would be significantly reduced. The condition for that, of course, is abandoning what Soros has called 'market fundamentalism'.

Taking history as a guide, we are now going through times equivalent to those of the New Deal and Bretton Woods. This is the moment when the medium-term future is being defined one way or another within the wide range of the viable with this paradigm. To obtain the maximum benefit from the enormous potential now available it is necessary for the state to actively intervene in order to shape the space for market action, tilting the field in favour of social and environmental goals and facilitating innovation and widespread investment across the planet.

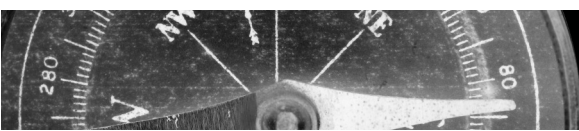
But if there is a time when concentrating on criticism rather than on positive proposals is truly a wasted opportunity, then that time is now. Identifying viable solutions, proposing institutional innovations and making them a central



part of the sort of progressive agenda that can garner widespread support is, in my view, the more likely path towards achieving greater social justice.

This thinkpiece was first published in Soundings issue 41 2009'

Carlota Perez is an economic consultant and the author of *Technological Revolutions and Financial Bubbles: The Dynamics of Bubbles and Golden Ages*, Edward Elgar 2002. Her website is www.carlotaperez.org



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