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# After the crisis: creative construction

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Economic policy must go with the grain of technological history, argues Carlota Perez [0] in her analysis of the economic crisis. Our current crisis arose from a misunderstanding of the historical position of the late 90s technology boom. IT, clean energy and globally spread benefits of growth will need to mark the real phase of growth that will emerge from this crisis.

Another "once in a half-century event" [0]

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An article by Mary Kaldor [0] introduces the relevance of her work to understanding the current crisis.

In Technological revolutions and Financial Capital: the Dynamics of Bubbles and Golden Ages [1], I have suggested that growth in the world economy takes place by successive surges of about half a century, each driven by a technological revolution. The massive changes that this brings each time around, not only in technology but also in production systems and organization, in means of communication, transport and distribution, in patterns of consumption and styles of living involve great behavioural upheavals in the economy and society. For that reason, the difficult process of unlearning the old and absorbing the new takes twenty or thirty turbulent years of "creative destruction." [2] It is after the massive paradigm shift has been basically achieved, that the fruits of the new technologies in higher productivity and widespread innovation can be reaped and socially shared.

Historically, the first half of each surge -the Installation Period- has been the time when financial capital shapes the economy, while the ideology of laissez faire shapes the behaviour of governments. It is a grand experiment when unrestrained finance can override the power of the old production giants and fund the new entrepreneurs in testing the vast new potential. Finance then helps the new giants emerge, enables the modernization of the old industries with the new techno-economic paradigm [3] and facilitates the necessary overinvestment in the new infrastructures (so coverage is enough for widespread usage). Thus the extreme "free market" ideology has a role to play in the early decades of each surge.

The Installation period has led each time to a major bubble followed by a major crash (canal and railway manias ending in panics, the roaring twenties ending in the crash of 1929). The collapse reveals the need for regulation to restrain financial excesses and to favour the real economy, usually under political pressure for reversing the income polarization and other negative consequences of the bubble times. If adequate policies are put in place to facilitate and develop the conditions for healthy market operation and social fairness, what follows is a Golden Age -the Deployment Period- when production (rather than finance) leads the expansion, the benefits of the new technological potential are fully realized across the economy and its social benefits better spread (theVictorian Boom [4], the Belle ƒpoque, the Post War Golden Age).

Yet, each great surge is unique. In the 1920s the technology and financial bubbles crashed in one go; this time we have had the boom and crash in two episodes. The first was the Internet mania which was truly fuelled by new technology and ended in the NASDAQ collapse of 2000. The other was the set of easy credit bubbles of 2003-08, when investors were pushed by an abundance of quasi-free money [5] into finding anything but technology as an object of speculation (from commodity futures to securitized sub-prime mortgages). The enormity of this financial bubble was facilitated by the process of globalization and the capacity for computer-aided financial "innovation" acquired during the NASDAQ boom. It is because regulation did not follow after 2000 that free-wheeling finance was able to reach such astonishing levels of systemic risk. It is only now, when all the crooked doings of the casino have been revealed and their painful consequences for the real economy are being suffered, that there is enough political pressure for regulation and institutional recomposition.

Of course, the way in which easy credit was made available to reconstitute the casino of the Internet Bubble beyond its useful life has already had its explanations [6] (and here [7] and and here [8]. The Greenspan reduction of interest rates and the increase of liquidity after 9/11, the growing imbalances and the savings glut in Asia plus the way the surplus was ploughed back to the importing countries feeding consumption (through lower priced goods), housing bubbles and financial "innovation". It is always important to analyse the immediate causes that unleash structural phenomena; that is crucial for designing the avoidance mechanisms. However the true solutions to the underlying tensions can only be found by facing the fundamental causes.

The long-term pendulum has swung again. We are now entering a global recession that is the historical equivalent of the 1930s and which requires equally radical transformations in society and institutions. The question is: what are the adequate policies -the Bretton Woods, the Keynesian mechanisms and the Welfare State equivalents- to stimulate the global and national economies after this particular meltdown. If history is any guide, this is the time for the State to come back actively in order to:

- be the enabler of a shift in the balance of power from finance to production,
- to change the focus from the stock market indexes to the expansion of the real economy, and to the increase in social wellbeing [9].

And this cannot be done by copying any past recipes but by massive institutional innovation, as bold and as numerous as those of the 1930s and 40s but responding this time not to the demands of Fordist consumerism, but to the needs and the potential of a sustainable global knowledge society.

Does this mean financial companies should not be rescued? Not at all! What it means is that the real goal is not to save them but to restructure the economy and its drivers. You must first save the life of the patient, but after that you must radically change the conditions that led to the mortal disease. The voices that claim that the solution is "to restore trust" are staying on the surface of the problem. The whole financial edifice that is now crumbling was built on trust (and the illusion of riskless lending and profiting). What needs to be restored now is trustworthiness! [10].

The complexity and dimensions of the crisis suggest a step by step sequence in the actions to be undertaken: the immediate term is about emergency action; the very short term must confront the regulation of finance and the short to medium term needs to tackle major institutional recomposition and policy action. Success in the first, even if only relative, is crucial in order to undertake the second. But stopping at financial regulation would achieve very little if it is not part of a wider package of measures that truly tilt the playing field in favour of real investment in real job creating production within each country and across the globe.

**First the emergency measures**

Phase one is essentially the 'intensive therapy' treatment, when the financial system must be saved and the real economy has to be stopped from slipping into deep recession. This is not only a job for central bankers and finance ministers. To keep a healthy balance between saving finance and saving jobs needs action from parliaments and pressure from social movements and opinion makers. It makes sense to save mature industries (such as automotive) while helping them move towards fundamental product change, instead of letting them fall precisely now when they will pull the rest of the economy further down. The argument that you shouldn't throw money at hopeless cases could just as well be used for most of the money being thrown at the banks. If the auto companies and others with big employment rolls are to go bankrupt, let them do so in competition after the economy is prosperous and can absorb the shock so that their demise will not become a downward multiplier.

Public investment in infrastructure is, of course, a way to soften the recession by replacing the void left by private lending and investment in generating jobs and demand for materials and equipment. But even in these hard times, a look to the future is in order. Renewing and increasing physical infrastructure is crucial but so is the need to expand internet access either with fibre to the home (which can -and should- be coupled with any other physical infrastructure works) or with wireless. Environmental protection [11], alternative energy development and diffusion, pollution cleaning, materials saving, recycling and other such projects are also job-creating and forward looking. And some of these are a training ground for the future growth of "green" jobs. Fortunately, this dimension is being increasingly incorporated into the stimulus packages.

Finally, there is a list of countries threatened with collapse that will need to be salvaged for everybody's sake. In a world of globalised finance no country can assume immunity from what happens to another. Finding a realistic way to replenish the IMF [12] is one of the urgent tasks. But the size of the problem may also call for other bold and imaginative solutions, such as the Soros and Stiglitz SDRs proposal [13] or Soros' Eurozone bond market [14].

**Second a new financial architecture**

Financial regulation, generically, is no longer in question. In fact most of those who refuse to blame free markets for the financial mess prefer to pin the guilt on lack of government regulation (which they find a more comfortable way of saying the same thing). However, the current battleground presents multiple forces pulling and pushing in different directions. At one extreme there are some who mainly want to punish and control [15] (a sort of revenge against the culprits), at the other, there are those who would like to make regulation that looks strict but has plenty of loopholes that would allow the casino to return.

But neither of those extremes will solve the underlying problem and lead to a reliable and effective banking structure. What is needed is the redesign of the financial architecture so that the system will go back to its basic role of reallocating resources [16], smoothing the flow of money from savers to investors and making its profits by sharing in the wealth it helps create and acquire. Of course, there will always be special instruments that take advantage of imbalances or misjudgements, and that is part of the legitimate workings of the market. But the idea that money can "work" and make you a millionaire in no time and with no risk has to be clearly ruled out if the global economy is to get the full growth and profits benefit from the potential of the current paradigm.

There are many regulatory directions to follow, but there are two that define whether finance will be constructive or will continue to be decoupled from the real economy, playing its own game. One is transparency, the other is global reach. The need for transparency is obvious. One of the main strengths of the synthetic instruments, hedge funds, default swaps, derivatives and other supposedly sophisticated innovations in recent times was precisely their opacity [17]. Without full information there is no accountability, no protection for investors and no proper supervision or regulation is possible. To achieve effective disclosure rules, only the truly savvy financiers could help define effective disclosure rules -quite a few are willing- and only very determined political will can effectively set and enforce them.

Global regulation [18] is even more difficult as a goal. Finance wants to play one country against another and politicians want to keep their national power intact and untouched by any supranational authority. That is really self-defeating. We all know that financial flows no longer respect any borders and function 24 hours a day around the globe. Regulation at the national level only is like trying to tame a wild horse in the middle of the street, with the cowboys inside the houses throwing the ropes through the windows. Information technology [19] has fundamentally transformed the conditions for financial flows and, in doing so, made it imperative that some basic global regulation together with means of enforcement be common to the whole planetary space (whichever existing or new institution assumes overseeing responsibility). Fiscal and monetary policy would continue to be national; that is part of how each country defines what role it wants to play in the globalization game. But in terms of the basic financial rules the world should really be "flat."

A historical parallel can perhaps be made with the arrangements made with the labour movement in the 1930s and 40s to -consciously or unconsciously- facilitate the deployment of the mass production paradigm. Having a single trade union for all the auto workers, while making it possible for the union to be stronger and capture a portion of the productivity gains for all its members, also relieved the automakers from competing on the costs or conditions of labour. Once that playing field was common, they could concentrate on other forms of oligopolistic competition (design, models, innovation, productivity, marketing, advertising, etc.) and in addition they could also count on the growing salaries as a source of increased automobile demand. Similarly, with a basic set of global rules, finance would stop playing one country against another and would concentrate on making profits by providing high quality services in all countries. National governments in turn, would stop worrying about their neighbours' policies and concentrate on fostering smooth and dynamic economic growth and increasing social well being.

**Third, structural change favouring real growth**

Even though some of the actions of the third phase may need to be delayed while the storm is being braved, the opinion shaping debates cannot wait and they can serve to provide criteria for choosing among the options in the short-term stimulus policies. The long decades of laissez faire have made a dogma [20] of the 'free market'. It has been seen not as a rule-guided mechanism there to serve social ends, but as an unrestrained process the consequences of which, however toxic or harmful for the economy and society, must be accepted as right and legitimate. This is the typical -perhaps inevitable- view that prevails during Installation periods. Those are the conditions that enable a technological revolution to really transform the economy and to let the new leaders emerge. But, once Installation has run its course, this view needs to be replaced. Fortunately, bubble collapses and the many revelations of market wrong-doing put the dogma into question. The debate has now moved from whether regulation is necessary or not to what is good or bad regulation. Further still, the notion that the State [21] has a direct responsibility in what happens in the economy has been reinforced in two senses: first, by the widespread recognition that the lack of regulation facilitated the casino and, second, by a general agreement on the need for government to come to the rescue directly and to stimulate the economy well beyond simple monetary policy.

This is not merely a financial crisis; this is the end of a period. As Stephen Roach puts it [22]: leaders must have "the wisdom and the courage to shift the policy debate away from tactics and toward strategy". To move ahead is not just to restore the previous "normality", the false prosperity created by the financial boom. What is needed is to facilitate structural change and to create new conditions for a very different sort of prosperity into the future, where market and competition function under well designed rules and with a set of incentives that maximise growth and well being in a socially agreed direction.

In other words, it is not enough to define the criteria for good regulation, it is also crucial to define the criteria for a whole set of other policies that must accompany the treatment of finance in order to guide market behaviour in the direction that is most beneficial for all (including an effective and profitable financial world).

Institutional recomposition should include fiscal policies strongly favouring investment in the real economy and discouraging short term speculation. The Gerstner proposal [23] of high capital gains taxes for short-term operations, phased down to zero in five years, is one example. Fast depreciation of investment in equipment made in the next three years, say, could be another. This has both the advantage of stimulating investment, creating new jobs and improving demand for capital goods in these tough times. Tom Friedman's tariff on oil [24], that kicks in whenever the price drops below 60$/barrel, would be another example, especially if the income from it is earmarked for alternative energy investment. A fiscal paradise for the education systems (both for those who educate and those who pay for the education) is a must when stimulating a Knowledge economy. These are just a few examples; what is important is to clearly define the highest level intentions and directions..

The other debate that is sorely needed is about the relative roles of investment and consumption in reviving the economy. In the shortest term, consumption is the realistic target. But since, in the long run, it is investment that generates new wealth, the balance needs to be regained as soon as possible. Only new wealth will bring down the mountain of debt that is burdening individuals and countries. But this has to be understood in the context of globalization and sustainability. Overall consumption will grow across the planet following new investment and new jobs. However, continuing with the current pattern of globalization without drastically reducing energy and materials consumption in our ways of living and producing would require seven planets [25].

Paradoxically, this environmental constraint may yet be the saving factor for inducing massive innovation, sustaining economic growth, while also shifting consumption away from unsustainable lifestyles. There is an enormous wealth creating potential in facilitating a major overhaul of most products and production methods and a redesign of consumption patterns [26] to stress quality, durability, low energy consumption, low or no emissions, recyclability, upgradeability etc. That is the only sustainable way to both give a powerful boost to the US and European economies and to incorporate the hundreds of millions of new consumers that full globalization offers to bring into the market from the rest of the world. The true key to unleash all that transformation is the establishment of very strict environmental regulation accompanied by clear incentives. That may require a broad consensus among global corporations to lobby governments in that direction (that is, if they can overcome the habit of thinking from quarter to quarter in order to please the stock markets). [cp1]

There is an implicit flavour of "industrial policy" in the above, which it is important to make explicit. Next to the insistence on free markets, the strongest interdiction in recent decades has been on any sort of industrial policy. However painful and costly it may be, that is how capitalism works during the Installation period: new technological possibilities are still unknown and untested, massive experimentation is necessary to identify the best directions and to select the new industry leaders. Many routes will be blind alleys, there will be overshooting and misallocation and much investment will be lost. Free wheeling finance takes the risks, over-invests in the new industries and infrastructures and, in fact, forces the modernisation of the whole economy. The old production patterns have become obsolete, by definition and, as the new paradigm upgrades the organisational models and sets higher productivity and innovation standards across the board, the old industries must modernise or disappear in competition. It is the typical period of Schumpeterian "creative destruction" [27].

Once installation has been achieved, however, there is a vast innovation and growth potential that the economy is ready to tap. Unrestrained markets then become a very blunt and brutal instrument; yet markets guided by policies that implement common visions arrived at through a social consensus orchestrated by modern, well informed, realistic and socially responsible governments are more likely to achieve the best results in these circumstances.

On this occasion it is not only a national issue. Information technology has created the conditions for the globalization of the economy and national policies are now mostly defined as choices within the global space. The particular combination of static and dynamic advantages, together with conscious intelligent policies that will best enhance and complement them, will define the place that each region, country or locality will occupy in the global economy. Growth in a significant way takes place when there is a wide technological space for innovation [27] and an adequate social and institutional context to take advantage of it. Re-specialisation [28] may be the answer to make sure there is enough wealth creation in each participating country to ensure that all boats are lifted and none have to lose out. The various policy instruments needed to tilt the playing field can be a combination of new, old or renewed measures, all aided by market mechanisms, both spontaneous and designed. What is essential is to have a basic strategic vision that is shared by government, business and society in each case. It is in this context that the proposal of taking the environmental imperatives as a direction setter should be seen.

Another element of the necessary recomposition relates to education [28]. The mass production model of kindergarten to PhD with various irrevocable exit doors along the way is completely obsolete and inadequate for the making the best of the Knowledge Society for all. Not only is there an obvious need for lifetime education entries and exits and re-entries but also for much greater flexibility in self-managed education and training, involving multiple methods and institutions, multiple combinations of contents and different forms of recognition of skills, knowledge and specialization. At the same time, it must be recognized that the miserable salaries paid to teachers in most countries are a shot in the foot. Working in the education industry should become a lucrative and, especially, highly regarded profession in order to attract the most competent and best suited. But in the meantime, the use of information technology to provide access to top teachers would need to be incorporated in a much more intense and serious way. The range of institutions - from public to private - needs to be much more diverse and to involve a blending of the traditional dichotomy between education and training. In fact, a part of the skilled labour force that has lost its jobs to the global economy could get gainful employment engaged in global training. Education -in other words- should become a very diverse, dense and gigantic industry spanning from the local to the global. And it is everybody's business to ensure that this is so (especially in the US, where the shortcomings are particularly acute, except at the very top).

Another aspect in the promotion of investment is grassroots entrepreneurship, which in this paradigm is much more diversified than in mass production times. Given the outsourcing practices of global companies and the segmentation of all markets, there are innumerable possibilities covering multiple niches from organic food to high technology as well as a vast array of specialized personal and business services. It is the density, adequacy and dynamism of that entrepreneurial, market network that will determine the quality of life and the competitiveness of the economy in both developed and developing countries. Enabling and encouraging the funding of entrepreneurship in those areas will be a crucial element in the growth of local and national production and employment.

But the measures to stimulate real investment need to encompass the whole world. Current globalization patterns are strongly biased towards Asia, leaving behind Africa, the Middle East and much of Latin America. The chemical, mining, metallurgical, agricultural and food processing industries have a lot of innovation and investment to do in those less attended parts of the planet, but some dynamism needs to be injected from within to make those parts of the global space more attractive.

Poverty needs to be seriously tackled in a permanent way with wealth creating capacity not with emergency-driven charity. And this is not only in the name of justice. There is a whole range of consequences for the rest of the world, from migratory pressures to terrorism [28], which have their roots in frustration, desperation and lack of hope. Willy Brandt's [29] old suggestion about global Keynesianism may warrant reconsideration and so does the Tobin Tax [30] on international financial transactions to create a fund for development.

There are other areas of institutional innovation that merit attention now. For instance, the current welfare State [31] -what has survived of it- was designed in a world of "jobs-for-life". That is no longer the case for the majority of the population; this paradigm involves continuous change, flexibility and adaptability.The social safety nets need to be redesigned to be adequate for such a world or they will simply not provide the safety they promise.

### The conditions for creating a shared vision

Taken together, all these elements (and the many that could be added) constitute a sort of strategic vision that would best be promoted and put in motion if it is jointly designed and agreed by business, government and the various organs of civil society. Finance has already fulfilled its job in the current technological surge. The next two or three decades -the Deployment period- should see production capital at the helm (as it was in the 1950s and 1960s), deciding on long term investment and expansion and making sure that the potential of the new paradigm is fully realized for widespread innovation and for increasing productivity across the board.

The condition for the necessary switch of leadership to take place is for the State to come back into action and tilt the playing field decisively in favour of real production investment--using market mechanisms in implementation wherever these are fitting--while creating policy instruments to spread the benefits of the new wealth to the widest possible number (which is also a way of widening markets). That is what Bretton Woods and the Welfare State did the previous time around. The legitimacy of capitalism rests on fulfilling its promise of achieving the common good through individual pursuit of wealth and power. Installation periods, and especially bubbles, bring the system to extreme individualism and callousness; bubble collapses and the ensuing Deployment periods tend to bring back the balance and put the accent on the common good [31].

But such great changes do not happen automatically; they require widespread consensus and a shared vision. After World War 2 the stage was set for the general acceptance of strong government intervention in the economy and for increasing social justice. The favourable circumstances were:

- The sacrifices of the war and the social cohesion it promoted had established a favourable climate for solidarity and social safety nets.
- The enormous production effort for war material had also created the conditions for a reconversion to massive civil production with all the acquired experience.
- The particular paradigm with the mass produced automobile, allowed what can be considered the "invention" of suburbia: cheap houses on cheap land with roads, electricity, water, telephones and supermarkets. The working classes could then also become the consuming classes.
- Social democratic ideas constituted a programme to put forth that worked as a positive sum game for business and the great majorities.
- The 1930s had purged the system of financial frenzy and the faith in the free market had been badly battered.
- In addition there was the threat of communism to move any who would resist the "great transformation" [32].

The question of whether we are facing equivalent conditions today to facilitate the shift is a valid and perturbing one. Some conditions are favourable but the balance is not clearly in favour:

- It is true that the free market dogma has been shaken and that the State is being called in to the rescue
- Yet the people who led the frenzy and made all the decisions that have brought the debacle, are still very powerful, very rich and, essentially in control of the decisive levers almost everywhere. They are recognizing the need for a change but mostly superficial.
- There is no structured ideology or programme to confront them; no positive sum political design has been put on the table offering to intensify wealth creation in ways that will reverse the income polarization trends and compensate the negative effects of globalization on the weakest. And yet this is within the range of the possible with the current paradigm.
- The recession, although, serious and increasingly global has not yet lasted long enough or had deep enough consequences to make people accept that the party of the 1990s and 2000s is truly over and that radical solutions are required.

What are then the conditions that could be favouring the acceptance of significant changes in policy and regulation, including major institutional innovations?

- Understanding the historical pattern can provide a theoretical underpinning for such proposals. Already an intuitive appreciation of the character of the situation has brought calls for a new Bretton Woods and made parallels with the 1930s

- The depth of the technological changes that have occurred in the past few decades and the accompanying paradigm shift [33] in organization have made people aware of the importance of innovation for economic growth. Proposals that focus on the relationship between the favouring of widespread innovation in the real economy and the possibilities of a healthy recovery will fall on fertile ground.
- The increasing awareness of the threat of global warming [34] and of the geopolitical complexities of energy supply has created a general disposition to take measures on both counts. The "Green" movement has suddenly moved from the margins to the centre of concerns throughout most of the political spectrum. It so happens that confronting the environmental challenges may this time play a crucial role in stimulating innovation and in shaping markets.
- The process of globalisation has advanced enough to create a multipolar economy where the BRICS must be brought to the negotiating table and where it no longer seems realistic to try to solve the problems of the advanced world regardless of what happens in the emerging countries
- There have been a few supranational institutions and actions that open some narrow windows of acceptability in relation to global regulation. In finance itself, the Basel accords in the BIS -however one may judge them- are a timid beginning towards common global financial rules for banking. In other areas we find the WTO, the International Court of Justice, the Kyoto Protocol, the Basel convention on hazardous waste, the use of UN troops in various parts of the world and several other supranational arrangements. There are also the common markets such as NAFTA or Mercosur and, of course, the more advanced supranational institutions of the European Union. All are, in one way or another, at the same time examples of success and of strong resistance. But they do signal a direction, given the conditions of globalisation.
- The threat of terrorism, coupled with the increasing poverty [34], the migratory pressures and the humanitarian tragedies in the marginalised countries of the developing world make it difficult to ignore the need to include those regions in the plans for recovery.
- The increasing electoral successes of messianic leaders in the developing world, are clear signals that resentment and frustration [34] with the current world order have already reached critical levels.
- The beginning of demonstrations and various forms of resistance within the advanced countries, together with the tendencies to protectionism [34], which are if anything likely to grow as the recession deepens, create political pressure towards restoring and strengthening the social safety nets. Lending a deaf ear in the name of ideological rigidities may presage social explosions, such as those of 1848.

Ultimately, the length and depth of the global recession (perhaps depression) will depend, not on the financial rescue packages but, to a much greater extent, on whether the wider measures taken are capable of moving the world economy towards a viable investment route with high innovation potential. The technological transformation that occurred during the past few decades has already provided the means for unleashing a sustainable global golden age. The environmental threats offer an explicit directionality for using that creative potential across the globe in a viable manner. The major financial collapse has generated the political conditions to take full advantage of this unparalleled opportunity. It is everybody's responsibility to make sure this possibility is not missed.

## Footnotes

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