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**“The danger we are running now: to have a gilded age instead of a Golden Age”, Carlota Perez**

*Por Jorge Nascimento Rodrigues em 2 Março 2010*

“[The third surge] did not really have a Golden Age but only a gilded age. And this is the danger we are running now [in this fifth surge].”

#### HIGHLIGHTS

##### *The risk of an overlap*

“There could be another overlap. In the previous case the overlap was due to (and the cause of ) a changing of the core country from Britain to the US.”

##### *The uniqueness of the recent financial crisis*

“But never before as in this [last] surge has the technological revolution been so directly relevant to financial innovation and to its spread across the globe. That is why I think this financial boom is different from the 1907 one. This one was also about innovation, but in financial instruments. All other financial bubbles are about leverage, arbitrage, asset inflation, etc. but not necessarily about financial innovations (although there are always some, of course).”

##### *Globalization*

“Full globalization will not happen unless there are measures taken to induce investment across all continents and stop the marginalization that leads people to migrate or adopt violence.”

#### FRAMEWORK OF THIS CONVERSATION

Carlota Perez developed in her book **Technological Revolutions and Financial Capital** (2002, Edward Elgar) a hypothesis of the long-term pattern of modern capitalism based in great surges of development driven by technological revolutions: five great surges until now since the beginning of the Industrial Revolution. Each surge represents a process of propagation of a tech revolution across the economies and societies during more than a half a century, from installation phase to deployment and maturity. In each surge we saw boom and bust episodes that constitutes a recurring endogenous capitalist phenomenon, caused by the way the modern market economy absorbs tech revolutions.

Carlota Perez found that the major tech bubbles regularly occurs midway along the process of assimilation of each tech revolution, after a generation of 20-30 years of market experimentation. The collapse of these major bubbles creates the conditions for enabling a Golden Age.

In the case of the fifth surge of capitalist growth – driven by the information and digital communications revolution from the 1970s and the 1980s -, we have seen a double bubble, first the dot.com mania from 1994 until 2000 Nasdaq crash, followed a few years later by a financial boom around new financial vehicles and a crash mid 2007 with a financial panic in 2008 and a world Great Recession.

For people interested in the technical side of this pattern, Carlota Perez published in the *Cambridge Journal of Economics* (2009, number 33, pp.779-805) an article titled “**The Double bubble at the turn of the century: technological roots and structural implications**”. Perez hypothesis is different from the notion of Kondratieff long waves that have been applied by several researchers to economic history and forecasting. An article by Tessaleno C. Devezas, Harold Linstone and the late Humberto Santos pictured a similar analysis for the tech bubble and the innovation and consolidation structural cycle of a long wave. “**The growth dynamics of the Internet and the long wave theory**” was published at the *Technological Forecasting and Social Change* review (2005, number 72, pp. 913-935).

In this interview we do not develop two other aspects of the long waves of modern capitalism or surges of

growth that professor Carlota Perez mentioned directly or indirectly in her paper referred above: a) the financialization waves studied since Hilferding and Hobson and stylized by late Giovanni Arrighi and late Hyman Minsky, and b) the David Harvey's "switching crisis".

## PROFILE

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*Q: The double bubble and crash patterns of the 1990s and 2000s are unique in modern capitalism's history or we can visualize the same pattern before in the double bubble and crashes from 1890-93 (a major technology based type) and 1906-1908 (a financial type)?*

A: That's a very interesting point. Apart from the 1907 panic, there was also the "rich-man's panic" of 1903 and they were both mainly financial. I have always seen them as a manifestation of the fact that the third surge [the third great surge of development] did not really have a Golden Age but only a gilded age (see Chapter 12 of **Technological Revolutions and Financial Capital, TRFC**). And this is the danger we are running now. Every major technology bubble is unique, among other factors because every technological revolution is unique. In the third surge, which was the first globalization, there were major technology bubbles in most of the emerging countries of the Southern hemisphere and in the USA. In each the frenzy was about the new infrastructure for long distance trade, especially the railway network. In most of those cases the whole funding process was centered in London which was also the center of world trade. But never before as in this surge has the technological revolution been so directly relevant to financial innovation and to its spread across the globe. That is why I think this financial boom is different from the 1907 one. This one was also about innovation, but in financial instruments. All other financial bubbles are about leverage, arbitrage, asset inflation, etc. but not necessarily about financial innovations (although there are always some, of course).

*Q: Despite the actions taken and J.P. Morgan leadership in the financial panic of 1907 and after, until the establishment of the Federal Reserve in the US, we assisted 20 years later to a renewed bubble and then to a big crash and the most severe Great Depression so far. Can this pattern repeat in the next 20 years after this Great Recession of 2007-2009?*

A: That was already the fourth surge which began in the US with Ford's model T before the third surge deployment was over in Europe. This is a case of overlap. The real regulation should have happened in the end of the 1890s to enable a proper Golden Age. I do expect another major technology bubble with bio, nanotechnologies, bioelectronics, custom materials or whatever but a couple of decades after some major breakthrough in them comes and after the whole potential of this revolution has reached maturity. But, of course, there could be another overlap. In the previous case the overlap was due to (and the cause of ) a changing of the core country from Britain to the US.

*Q: You refer that technology waves, or great surges of development of a new technology platform and subsequent techno-economic paradigm, are the "drivers" of economic growth and society shifts. Toffler referred in the 1970s the so called Third Wave. Despite 20 years of "third industrial revolution", only after the Nasdaq crash (the cleanup of the infant mess) and the crises of the 2000 decade we are truly entering in a new age? We need always this financial and economic destruction as a bridge to a golden age?*

A: Yes, we do, unfortunately.

*Q: At the time, when the "irrational exuberance" of the so called "new economy" assets picked, what was your mood, your perception?*

A: I was in the middle of writing the TRFC book and was “predicting” the crash. When it happened, I had to rewrite everything in the past tense. But it was good because now the book is timeless. It can be read at any moment of the surge. It explains how the system works across the centuries.

Q: *In the new deployment phase of the present fifth tech wave, which kind of companies will see an asset valuation boom?*

A: Every deployment is about shaping the potential that was installed during the previous decades and especially during the boom. The mass production boom was shaped by suburbanization, the Welfare State (through income distribution making it possible for the workers to become middle income consumers) and the Cold War. I believe this potential will be strongly shaped by the environmental imperatives, not only global warming but also the limits to availability of natural resources, oil, water, etc. But that will depend both on market forces (price changes) and on regulation. The other force that could be extremely important in shaping the direction in which the ICT potential transforms products in all the other industries is full globalization. The more countries and people are incorporated into modern consumption the greater the possibility of catering to the “bottom of the pyramid” and to the people that gradually climb up the pyramid, rather than to the top layers, as happens during installation (because of income polarization). But, again, full globalization will not happen unless there are measures taken to induce investment across all continents and stop the marginalization that leads people to migrate or adopt violence.

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