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Abstract

In the last decades the world changed dramatically. From a global point of view three disruptive processes are on their way which can be called revolutionary: a political, a technological and an economic revolution.

This paper aims to give an overview when and how these movements started what the essence of these processes is and with which consequences we will have to deal with in the future.

Concerning the political revolution the year 1990 can be characterized as a historical landmark because of two reasons: At first, it finished with orthodox communism as it was practiced primarily in the former Soviet Union. Secondly, this year created a new illusion which is described at its best by Francis Fukuyama in his book "The End of History" (1990). The Western form of a liberal representative democracy had overruled communism as its most important counterpart and it promised to stay forever as a political system when combined with a capitalistic market economy. That means in last consequence "the end of history".

The paper shows how this illusive thinking has been demolished in the last twenty years and in which way a new regime of political thinking, the "autocratic system" of political decision making, is gaining relevance worldwide in developed as well as in developing countries. Starting in China and spreading over to other countries in the second half of the last century it now even reached countries in Europe which after 1990 tried to install a liberal representative democracy with great empathy, for instance Russia, Hungary, the Czech Republic and recently also Poland.

The paper tries to grasp this process, to find answers why the attractiveness of the democratic ideal is fading away in these days and to show which consequences this political transformation process might have for the global economy.

The last two decades of the 20th century set off a third great wave of technological invention and disruptive innovation, the "digital revolution". Radical advances in computing-, information- and communication-technology may deliver a similar mixture of transformation as societies had experienced in the centuries before, getting acquainted to the steam engine, electricity, the telegraph and telephone for instance. The larger part of economists and scientists today sticks to the opinion that this new technological revolution will change fundamentally essential characteristics of the three pillars which constitute a socio-economic system: the financial, the public and the real sector.

The paper intends to show how each of these pillars are already affected by the eruptive development of digitalization and how this process may go on in the future with all its social, economic and institutional consequences.

If the 1990's are taken as a historical landmark for fundamental changes in the world, one miraculous development has to be stressed as most important: The economic "catching up" process of the developing world, especially in those emerging countries called the BRICS group consisting of Brazil, Russia, India, China and South Africa. In the last 20 years these nations' growth has far outpaced that of the US and the EU, with China already having become the second largest economy in the world.

The paper will show how this growth phenomenon already changed fundamentally the structure of the world economy and which consequences can be expected in the future, if a country like China will be successful in combining elements of the political and the technological revolution in its development strategy. This scenario and the economic system standing behind may be called "state capitalism" and it is thoroughly in conflict with what is named as "entrepreneurial capitalism", concretized at its best in the US and its Silicon Valley.

If we go back to Schumpeter, the Silicon Valley example can be pictured as a realistic portrait of what he had in mind in his 1912 book (The Theory of Economic Development). Whereas the Chinese kind of forming the country's development process and its innovation culture seems to be more in accordance with the Schumpeter book of 1942 (Capitalism, Socialism and Democracy).

The paper will at the end shortly focus on this interesting issue, which might be called a "Schumpeterian Battle of Systems", namely "Entrepreneurial Capitalism" against "State Capitalism". Perhaps, this antagonism might shape the development of the world economy in the coming decades of the 21st century more than any other event.

Keywords:

Development Economics, Institutional Theory, Technological Change, Schumpeterianism.

JEL Classification:

B52, O3, P10

Revolutionary Developments in the World Economy*

1. Introduction

In the last decades the world changed dramatically. From a global point of view, three processes are on their way which can be called revolutionary:

a) A political revolution
b) A technological revolution and
c) An economic revolution

In the following I will try to give a short overview when and how these movements started, what the essence of these processes is and with which consequences we will have to deal with in the future. Let`s start with the political revolution.

2. Political Revolution

The year 1990 can be characterized as a historical landmark because of two reasons:

At first, it finished with orthodox Communism as it was practiced primarily in the former Soviet Union like a political fetish. It`s long lasting existence, which was celebrated by many politicians and intellectuals also in the West, finally lost its justification as a consequence of its obvious ineffectiveness.

Secondly, this year created a new illusion which is described at its best by Francis Fukuyama in his book “The End of History” (1992).

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The Western form of a liberal representative democracy had overruled communism as its most important counterpart and it promised to stay forever as a political system when combined with a capitalistic market economy. That means in last consequence “the end of history”. Future seems foreseeable and nothing has to be changed to the better.

As it is often in case of illusive thinking, changing times will demolish an erroneous perception of reality. So, 1990 was not the final sequence of a long lasting battle between different political and economic systems, called the “Cold War”, it was much more the beginning of a historical process in which many of the celebrated positive attitudes of “liberal democracy” were interrogated and questioned worldwide, especially in developing countries. A new regime of a political system gained growing relevance in the economically emerging parts of the world, namely the “autocratic system” of political decision making. This system is closely connected with the so called “Asian miracle” of economic development which got into the spotlight of an intellectual and political debate starting in the sixties of the last century in Japan. From there it spread over to South Korea and Taiwan and today it has reached nearly all countries in the East-Asian and Pacific region, particularly Indonesia, the Philippines and even Vietnam. In these countries a democratic political system might be installed, formally based on elections and majority voting, but actually characterized either by a long lasting dominance of one political party or the existence of a charismatic, authoritarian political leader. In these days only South Korea has reached the final stage of a liberal democratic system, comparable with Western standards, after a painful process of institutional and cultural reforming.

But, the top model of an authoritarian political system, which was able to produce since the 90´s an incredible economic success, is without question the People`s Republic of China. This huge country was able to bring up for long periods annual growth rates of its GDP of more than 10%. Besides its actual difficulties, in the last twenty years China has been the best economic performer worldwide (Jacques, 2009). And it reached this outstanding status with a political system which is far away from the model of Western democracy. It is guided by a one party system without democratic elections and ruled by a handful of political bosses. In addition, it is also far away from an

economic system of the US-style, based on free markets and private, profit oriented enterprises. The symbiosis between the political and economic sphere is executed in no way by patterns of liberal democracy and free market, so much celebrated by the West in the aftermath of 1990. On the contrary, the basis of the huge economic achievement lies in a close connection, you may even say a “symbiotic rationality”, between an authoritarian state and a heavily regulated economic system, consisting of the financial and the real sector.

No wonder that more and more countries from the developing world, from Africa and South America, make their pilgrimage to Beijing and not so much to Washington. And even managers of international Western firms, involved in China, secretly confess that sometimes they would prefer the effectiveness of an authoritarian government compared to the boring consensus decision making in Western democracies.

This, you may say revolutionary development, the questioning of the Western democratic ideal, not only happened in the developing world. You can observe it also in countries which after 1990 tried to install a representative democracy with great empathy. These are countries like Russia, Hungary, Turkey, the Czech Republic and recently also Poland. They are step by step developing into authoritarian regimes nourished by political components like populism and nationalism. For Europe, and especially for the EU, this means a huge challenge and even a severe change in the mode of collaboration. The alliance of states based on values like liberty, mutual understanding and solidarity may recede and leave behind a patchwork of nations each striving for its own benefit. The so called “Brexit”, Great Britain leaving the EU these days, can also be characterized as a typical symptom of this process.

But, there is a third very important reason why the Western kind of democracy is losing its attractiveness. It has to do with the Near East and the so called “Arab spring”. What is happening now in countries like Afghanistan, Iraq, Syria or Libya is the result of a huge political experiment, namely to change regimes, even by using the means of war, and to install a democratic system of Western style in these countries. Today we can observe that this experiment has failed totally. Those countries didn`t want such a system. They preferred to

find an own way of state-building based on religion or ideological rules or on the particularities of clans and ethnical groupings. Instead of having acquired the wonderful world of a peaceful democracy they dramatically have to cope with civil wars and the situation of fear and chaos, sending millions of refugees to Western Europe. In very critical and pessimistic terms this might be described as a revolutionary period comparable to the “Great Migration” 1500 years ago at the end of the Roman Empire.

Now, let me come to the second big change on our globe since 1990, the technological revolution.

3. Technological Revolution

If you look back in history, you can observe three great waves of technological revolutions. In the 19th century it was the steam engine, the coal powered railway and the telegraph which brought up a new paradigm, the industrial production and fabric system. In the 20th century we see the telephone, oil as a cheap supplier of energy, the automobile and the aircraft as the main driving forces changing the world, sweeping away old economic structures and transforming society. The 21st century will set off a third great wave of invention and innovative disruption. This time advances in computing-, information-, and communication-technology may deliver a similar mixture of transformation as societies had experienced in the centuries before. This “Digital Revolution” already started in the 1950´s with the development of the computer and the integrated circuit. Since then the number of transistors that could be squeezed into a computer chip has been doubling every two years, following a rule of thumb which is well known as Moore`s law.

The enormous increase of computer capacity and efficiency since then has brought up a wave of techno-optimism which is thoroughly described by Eric Brynjolfson and Andrew Mc Affee in their 2011 and 2014 published books “Race against the Machine” and “The Second Machine Age”. In their eyes we are in the midst of a revolutionary change.

This explosive process, however, is not only the result of better processors, the

lion`s share of that improvement comes from ever more sophisticated and efficient algorithms used as software. Combining the advancement of hard- and software into a computer power of exponential growth can also be regarded as the main building block of an eruptive development of the internet changing in a fundamental way essential characteristics of economies and societies which, in summary, can be ascribed to the three pillars constituting a socioeconomic system: the financial, the public and the real sector.

a) Financial Sector

In that respect, the financial sector seems to have undergone the most dramatic changes starting in the late 20th century. The financial world is not any more a regional or a national one. It grew with an unbelievable speed into a global endeavor, bringing together actors from all over the earth into a business which lasts for 24 hours. Financial or digital innovations like electronic banking, high speed computer trading or the creation of smart algorithms for new financial products, based on the business concept of leveraging profits, changed the financial sphere around the globe systematically into a new world of finance (Davis and Kim, 2015).

In former times there existed a kind of symbiotic co-existence between the financial pillar and the real sector of the economy. The bankers and the financial markets fulfilled an ideal task of servicing consumers and producers by providing information and financial means for their activities “sine ira et studio”. This is well pictured in the Neo-classical “efficiency theory” of the financial system as well as in the concept of the Schumpeterian banker.

The “Digital Revolution” and the “Globalization” of the banking sector, however, changed this ideal concept of a “symbiotic co-evolution” fundamentally. Bankers, in particular investment bankers, are now considered to be cormorant persons who maximize the returns of their financial involvement without considering actors of other sectors: consumers, producers or citizens. A super rational ego is at work, called “animal spirit”, not allowing for any social deliberations (Akerlof and Shiller, 2009). In addition, sophisticated mathematical and probabilistic models are used following basic principles of strategic behavior in the sense of game theory, which is quite

nicely depicted by the German publicist Frank Schirrmacher (2013).

All that creates a world in which the banking sector acts globally interconnected in its own financial sphere, but very isolated concerning other actors or sectors of an economy.

No wonder, that such a system is open to global disruptions and worldwide financial crises like it happened in the years 2000 and 2008.

b) Public Sector

The effects of the “Digital Revolution” on the public or social sector are much less dramatic until now compared to the financial sphere.

In the West we had remarkable progress in connecting citizens and the public administration electronically. This has been established under the topic of “E-Government”. Particularly the fiscal administration is using the electronic infrastructure to a growing degree as well as authorities responsible for inner security.

The most revolutionary development, however, happens at the moment in the fields of education and health care. Starting a few years ago at worldwide known universities like Stanford, Harvard or Yale a movement called “Massive Open Online Courses” is conquering university education in the US and progressively also in European countries.

Today`s hyper-connected internet makes it possible for a professor to give a lecture not only in a teaching room of his university, but to spread it electronically to hundreds of thousands of students around the globe, who follow the lecture at their computers.

An even more basic revolutionary development for the future of society, however, is arising in the medical sector, driven by the application of IT. The technique used aims at connecting in direct way information flows between individuals and the medical sector, based on bio-technology as the core scientific frame. Leo Nefiodow in his just published book “The sixth Kondratieff” (2014) thinks that this innovation in life sciences could even be the source of a 6th Kondratieff cycle.

At all, the ”Digital Revolution” will also be accompanied by disruptive changes

in the social sphere of mankind, because of the special nature of the internet. It can be marked as a transforming technology in social as well as institutional respect. Because, firstly, it has the power to demolish the “exclusion principle”, installed via prices, as the main attribute of goods offered at markets by providing free and unlimited access to the use of goods and services. So called “social networks” or “social platforms” in the World Wide Web are a good example for this development.

Secondly, the internet can destroy the effects of “rivalness”, the other characteristic to systematize the world of goods and services. This way, it creates a transforming capacity that may even change the essence of distribution, which in traditional thinking is defined by the principle of “proprietary claims”.

Moreover, it has the power to personalize public goods by motivating and inducing individuals to participate in the process of producing and distributing. The individual slips into the role of a so called “prosumer”.

All these transformational processes may end in an economic and institutional setting which Rifkin and other scholars are calling the “Sharing Economy” (Rifkin, 2014; Sundararajan, 2016). First steps in this direction can already be observed in the music, film and media business, in the transport- and taxi-business and in the business of rent lodging.

These are all goods or services belonging to the category of so-called “mixed goods” or “group goods” (Hanusch, 1972). Here, the inherent characteristic of “non-rivalness” can be transposed in economic reality either in a proprietory way, as a market or price solution, or in a collective way, as a sharing approach.

Even more, the power of the internet may transform, sooner or later, the supply of all “mixed goods” from the proprietory market into a collective sharing solution. By using the immense possibilities of the digital world nearly every week the Silicon Valley is sending out new start-ups which have the global vision to revolutionize the business concepts used by old and well established icons which carry out their commercial activities in the wide field between pure market goods (exclusive and rival) and pure public goods (non-exclusive and non-rival). Their entrepreneurial spirit and vision may even have the power to establish the internet as the new sovereign of a modern kind of living (Ross, 2016).

c) Real Sector

The last statement brings us to the third territory of revolutionary change induced and guided by digital technologies: Consumption and production as the main building blocks of the real economy. Concerning consumption, we already made corresponding arguments, when we discussed innovative and disruptive changes in the social sphere of digital economies. So, let us finally concentrate on the production and firm side, by discussing the revolutionary effects of digitalization for the real sector of an economy.

The digital revolution going on in the real sector of an economy can be characterized and pictured best by two terms: “Industry 4.0” and “Internet of Things” (IoT). The connotation “Industry 4.0” or the 4th Industrial Revolution originates from a recent project of the German Government. It was coined by Henning Kagermann, former founder of SAP, the largest software company in Europe, and now president of the Technical Academy of Germany (ACATECH) and it relates to the history of manufacturing.

The first industrial revolution mobilized the mechanization of production using water- and steam power. This was followed by the second revolution relying on mass production with the help of electric power. Automation characterizes the third revolution which is now transforming into the 4th one namely “Digitalization” aiming at radical changes in production by introducing methods of self-optimization and self-configuration to improve automation technology.

The vision of “Industry 4.0” is to bring up a “Smart Factory” where people, machines and resources are digitally interconnected and are communicating with each other via “The Internet of Things” and the “Internet of Services”.

A “Smart Factory” is created by linking sensor data from monitoring physical processes with virtual plant models and with simulation techniques. That means machines are equipped with processors and sensors of communication which produce the data, needed to make decisions by their own. In this way production processes are established on a new digital basis, where powerful computers, intelligent software and a huge amount of data are the most important resources of manufacturing.

So, what is needed for a “Smart Production Process” is defined by an immense

computer capacity and an extraordinary personal capability to write brilliant software programs and by “Big Data” as the empirical prerequisite for the analytics and models used in the “Fabric of the Future”. “Big Data” in this context doesn`t mean at foremost a gigantic amount of statistical information but the ability of enterprises to create, to arrange and to settle data for the right purposes, for instance related to the production technique, component suppliers and customers.

Here “Cloud Computing” comes in, the newest technology to handle the exploding quantity of data. Alone in 2014 so many data were produced worldwide as it has been the case in the whole historical period until 2013.

Extending the initial application scope in the production process of firms IoT might also serve as a backbone for “Ubiquitous Computing”, enabling smart environments to recognize and identify objects and retrieve information from the internet to facilitate their adaptive functionality. Through IoT everyday objects such as cars, stoves or refrigerators will be able to interact and communicate. Especially in the automobile industry a revolution seems to be on the way. Not only the traditional car industry but also Internet-firms from the Silicon Valley are working feverishly on concepts for a self-driving car.

One of the most important parts of “Industry 4.0” is also robotics. Here, as well industry is preparing for the next step of transformation. The relationship between “Man and Machine” will evolve into new forms of collaboration. Big production robots which needed a cage to protect humans working with them are old-fashioned in these days. The production robot of the future is a small mobile and sensitive one. He has certain abilities to be used for different functions at different places in the production process.

In addition, the slogan “Man and Machine” should be changed into “Machines for Men”, meaning so called service robots which can be used as a helping hand in households, nursing and hospital healthcare. This will be an interesting and revolutionary development, especially for societies which suffer from shrinking as well as old-aging.

In the context of robotics the topic “Artificial Intelligence” has to be mentioned, which recently is discussed so controversially in different intellectual and philosophical circles. There you can find a very optimistic and a very pessimistic strand of arguments. One of the greatest enthusiasts is Ray Kurzweil (2010), a

well known futurologist.

In his view intelligent machines will create an enormous increase in productivity and induce a new cycle of prosperity. He hopes that already in 15 years only robots will work in our factories, will do the agricultural work and will drive our cars. Software will then write its own new software, machines will control other machines. At the end human beings don`t have to work anymore. And even more, already before 2050, Kurzweil is forecasting that artificial super scientists may program our genes so that the huge plagues of mankind, cancer and Alzheimer`s disease and even death can be defeated.

A situation like Kurzweil is forecasting could also be considered as the last stage in an analytical perspective which Brian Arthur described with respect to digitalization (Arthur, 2011). He sees the future of a capitalistic country divided into two economies, a first physical one and a second one created by digitalization. For him the second economy will certainly be the engine of growth and the provider of prosperity, however, without creating jobs in the traditional way. This striking effect of shrinking jobs brings up a number of problems for modern societies. In the first place, the challenge will be a shifting from “producing prosperity” to “distributing prosperity”.

But, is Arthur´s outlook anymore an optimistic one for a digitalized society or already a doom´s day scenario flashing up the threat of mass unemployment (Ford, 2015). Stephen Hawking, the famous physicist goes even further fearing that the development of full artificial intelligence could spell the end of human race.

Also Elon Musk, a very successful South African Internet entrepreneur and developer of the electro car Tesla, suspects that the development of artificial intelligence may be the biggest existential threat humanity faces. And even Bill Gates, the founder of Microsoft, urges people to be aware of the great danger coming up in the future.

It is hard to decide which group of thinkers will be right. I would tend to the first, the optimistic one, because history shows that revolutionary technological movements at the end get realized and developed to the better of society, even if they are associated with great danger for mankind. The best example is nuclear energy.

Now, let me turn to a third historical movement, which in my mind can be

interpreted as revolutionary. I call it the “Economic Revolution”.

4. Economic Revolution

If we again take the year 1990 as a historical landmark for fundamental changes in the world, one miraculous development has to be stressed as most prominent: The economic “Catching Up” process of the developing world, especially in those emerging countries called the BRICS-Group, consisting of Brazil, Russia, India, China and South Africa. Since the 1990´s the BRICS-Nation´s growth has far outpaced that of the United States and the European Union

So, the BRICS-Countries have been increasingly referred to as a symbol of a dramatic shift in the global economy away from the developed economies towards the developing world (Ruchir, 2012).

Because of rapid growth each BRICS-Country already accounts for a large portion of the world economy, with China having become already the second largest economy in the world. Some observers of this revolutionary development even think that the combined BRICS-Countries’ GDP could eclipse those of the current richest countries by 2050. Under this scenario it is expected that China and India will become the dominant global suppliers of manufactured goods and services while Russia will dominate the supply of raw materials.

This growth phenomenon which has already changed fundamentally the structure of the world economy has one of its roots in “Globalization”, triggered and accelerated by “Digital Revolution”. Another very important reason may be seen in the development model especially used by China and many other countries in the emerging world. It is the old Asian growth model, first applied by Japan, Taiwan and South Korea and then more or less copied by China. The main ingredients of that “Catching Up” model are typical Neo-Classical ones. You need easy access to a lot of capital to be invested in infrastructure, a cheap labor force, the import of technologies either via high technology goods from foreign countries, or direct foreign investment, or at least the ability to imitate efficiently. These factors mainly define a production

function with which you should manufacture standardized goods and services with a high comparative cost advantage, so that you can export them to richer countries in the world economy (Lee, 2013).

The “Catching-Up Model” brought about high success in the developing world, especially in China, regarding GDP as well as per capita income. But, in case of China the model seems to have reached its limits. Chinese growth rates have declined in the last two years and there is an intensive discussion going on in the political circles how to change the old model which concentrated so much on quantitative growth. As we saw, digitalization already started to revolutionize industrial manufacturing in some countries. Definitely “Industry 4.0” will also fundamentally change production processes and the competitive situation in the world economy.

That has been thoroughly realized as well by the Chinese authorities. China nowadays intends to become the world wide leading industrial economy, not by catching up any more but with the help of digitalized technologies. At the moment it still lacks behind the US, Germany, Japan and South Korea, with respect to its future oriented potential. But, it already possesses the main scientific and technical prerequisites and instruments for a development on the basis of innovation. In its new strategy document “China 2025” the Chinese government gives, for instance, the digitalization of its industry the highest priority. Furthermore, economists working in the field of Chinese innovations, are pretty sure that China will bring up the novelties and patents of a new industrial revolution and will build the track to a second “Chinese Miracle” (Yip and Mc Kern, 2016).

Also in the field of bio-technology China is on a good way to develop path-breaking innovations, as the biologist Chuangqui, a mastermind of the Chinese innovation system, is proclaiming. He is expecting a revolutionary process of technological leap-frogging in China, if information- and nano-technologies are coming together in creating, for instance, so called “Cyborgs”, new man-machine-constructs, in producing genetically modified crops or in developing nano robots which can destroy cancer. In these fields China has a big comparative advantage, because the social and political obstacles with respect to biological or nano-technological break-throughs are much lower there compared to Western countries.

So, China has already started to become a leading innovative industrial nation in the world economy, maybe achieving this goal in the midst of this century as the Chinese government is expecting. For the Western developed nations that will be a big technological and economic challenge. To master this challenge will surely be one of the most urgent tasks in the 21st century for the Western hemisphere. Behind this revolutionary development, however, a kind of economic, political and cultural combat shines up, which I would like to call the "Schumpeterian Battle of Systems". Finally, let´s have a few concluding remarks on that.

5. Concluding Remarks: The "Schumpeterian Battle of Systems"

In his first book "The Theory of Economic Development", published in 1912, Schumpeter characterizes a capitalistic world in which the main building blocks are dynamic entrepreneurs and a liberal market system in which innovations are created and distributed (Schumpeter Mark I). This way they act as the main driving force of future development and economic progress.

In his following great oeuvre "Capitalism, Socialism and Democracy", published in 1942, Schumpeter fundamentally changed his mind. Not anymore the creative, risk-seeking entrepreneur is pictured as the hero of innovative progress, but the large, hierarchically organized firm determines development by using the potential of big capital and skilled labor in large laboratories to enhance the process of innovation (Schumpeter Mark II).

If you compare the world of today with these Schumpeterian ideas you may conclude that the western innovation culture, concretized at its best in the Silicon Valley, still can be pictured as a realistic portrait of what Schumpeter had in mind in his 1912 book. You may coin this culture as "Entrepreneurial Capitalism".

Whereas the Chinese kind of forming its innovation culture, in principle, seems to be more in accordance with the Schumpeter book of 1942. Large firms, in the hands of the state, dominate the production and distribution process following strategies of innovation directed by hierarchical authorities and

financed by big banks, all belonging to government. This kind of an economic system may thus be called “State Capitalism”.

Now, will it be the “Entrepreneurial Capitalism” or the “State Capitalism” which will gain dominance in the revolutionary processes which was described before, namely the fading attractiveness of liberal democracy, the “Digital Revolution” and the mastering of their effects in the economic and social sphere. “Entrepreneurial Capitalism” against “State Capitalism” seems to be the slogan of a heroic Schumpeterian “Battle of Systems” which will shape the development of the world economy in the coming decades of the 21st century. And, nobody can foresee or diagnose how this battle will end: Which kind of disruptive effects and how many of them will come out of this conflict in the world economy and who will have to bear them in the future.

At the moment, however, China seems to have one great advantage in this competition, it is the intense connectivity between the public, the financial and the real sector which gives its authorities the leeway to plan profoundly and systematically for the future. All three pillars stand together closely and follow a principle which might be called “autocratic symbiotic rationality”.

Whereas Western capitalistic economies have to cope with a phenomenon which could be described as the “struggle of the pillars” for economic primacy or even dominance. This institutional combat may be characterized as an evolutionary process enabling, in a historic perspective, the one or the other sector to gain a preeminent rank. Currently the financial pillar seems to be in a leading position, especially in the USA (Foroohar, 2016), but also in all the other industrial countries of the West. One of the reasons why it has the primacy especially compared to the public pillar might be its internationalization and global dynamics, while politics principally is confined to national democratic institutions and a laborious process of collective decision making. And, this sector is still investing a large part of its resources to defend this extraordinary status without caring much about the two other sectors. Therefore, many scholars already speak of the “financialization” of the Western economic system (Davis and Kim, 2015).

Other scholars, however, see the real sector dominating. In their eyes huge international firms are using their economic power to influence politics in a

way which already brought up the notion of a “post-democratic” political situation (Crouch, 2004).

So, what the Western “entrepreneurial capitalism” would need, to have a chance in the “battle of systems”, is a concept and a strategy of integration and cooperation between the main building blocks of the socio-economic system, in order to overcome the gap between today’s revolutionary technological development and the need for reform of the institutional structure (Juma, 2016). In other words, the “autocratic symbiotic rationality” of a Chinese-like “state capitalism” needs a counter-strategy which might be called “cooperative co-evolutionary rationality”, giving each sector a specific future oriented role in a joint collaborative process of development. Such a process is characterized best by a conceptual frame which is based on Schumpeterian thinking in the sense of “Comprehensive Neo-Schumpeterian Economics (Hanusch and Pyka, 2007).

Future in this analytical context has a historical time dimension, it is open to “creative destruction”, to permanent changes and unexpected events. It thus incorporates true uncertainty as a central element of development. This is the case for all three pillars of an economy, the real sector as well as the financial and public pillar. The development process of an economy is not limited to one of these sectors, but it takes place in a comprehensive, co-evolutionary manner in all of them. This is made possible by creating and disseminating an enduring flow of novelties in each of the three institutional entities of an economy. This kind of an “innovation fabric”, however, needs preparatory elements, i.e. certain activities in each of the sectors, and specific institutional relationships between them to keep the co-evolutionary development alive and strengthen it.

For instance, to be prepared for an uncertain future the real sector needs a “format of resilience” which will foster at all times the knowledge-oriented progress and the resulting wealth of an economy. This is attained primarily through innovation and parallel investments.

The financial sector, on the other hand, can do its best for the future of an economy if it strengthens this “resilience” of the real economy by engaging in a close relationship. That means, its foremost task would be to establish a sound financial basis in order to accompany successfully individuals and companies in their future-oriented activities and to encourage their innovative projects and activities. This could even be done out of speculative motivations.

The governmental and political responsibilities in a cooperative co-evolutionary development lie, above all, in monitoring and controlling the future-oriented, long term relationship between the real and financial sector and, if necessary, to support the co-evolutionary process through specific budgetary and institutional means. On the expenditure side of the budget these are above all investments in education, health, and infrastructure as well as in science and research. All in all, the public sector has to fulfill, more or less, the role of an “entrepreneurial state” (Mazzucato, 2013).

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