
LONG CYCLES AND WORLD DYNAMICS

A NEW THEORY OF MONETARY LONG CYCLES, WITH ASSUMPTIONS FITTED TO THE TWENTY-FIRST CENTURY

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Theories of long monetary cycles by Marjolin (1941) and Dupriez (1966) are reconsidered in order to update their practical application framework to the 21st century situation. This leads to recommendations to rely on the euro for taking in charge a social project – consisting in balancing protection of private, social and self property – and to monitor simultaneously three parameters: external (geopolitical), internal (social), and contingent (economic). It might be the start of a new theory of money.

Keywords: *monetary cycles, Kondratieff cycles, economic crisis, world governance.*

Introduction

The theory of Kondratieff long cycles developed in the 1920s (Kondratieff 1926, 1935), ensued from a brilliant intuition about the nature of the economy, of which Schumpeter was afterwards – from 1942 – the main teaching specialist, followed by Mensch after 1975. For Schumpeter, this phenomenon illustrated the ‘creative destruction’ in the economy (Schumpeter 1942), whereas Mensch asserted that innovations may always emerge even during rather quiet periods (Mensch 1978). So, the division of roles between actors appears to be crucial, in the fields of building skills (Conus 1987) or the relations between regions (Conus 1993; Escudier 1993).

However, the initial theory remains complex, so that political scientists argue that destruction may be not only economic but even political – manifested in wars, riots, *etc.* Thus, in the middle of economic and political long cycles, one might look for social regulation, in order to coordinate both political and economical sub-systems.

Another approach to long cycles practised by many francophone writers – Marjolin (1941), Imbert (1959), and Dupriez (1966) – seems a workable middle way between political and economic long cycles. It could feed the debate on the regulation of diplomatic and monetary relations, which maybe, by some relatively comprehensive and well coordinated insurance system, would surpass the already challenged need for the ‘necessary destruction’ as a prerequisite to any creative process value. This is the long monetary cycles’ approach.

We incorporate Dupriez (1947, 1966), which was an extension of Marjolin (1941). Dupriez argued about monetary and credit relations, bank money and currency in circulation, while Marjolin largely studied the phenomenon of valuable metal discoveries.

We reach interesting conclusions. Indeed, the first econometric tests seem to validate our theory. It should complement Dupriez's theory with a more holistic mathematization and an additional systemic character. We also assume – although Dupriez did not – that this glimpsed monetary long cycle, a social project, and a specific key currency whose historical destiny is linked to this project, stand together.

Theory

We go beyond what Marjolin (1941) and Dupriez (1947) wrote about monetary long cycles, in a 'technological' description of such cycles by specifying their precise length (Jourdon 2010b: 1089, 1157) and phases (*Ibid.*: 943–946, 1089–1098, 1157–1162, 1233–1242, 1390–1391). Marjolin mentioned that Kondratieff long cycles were monetary cycles by essence, and explained why. He did not precise the length. Dupriez mentioned these cycles had a goal to insure the secular social evolution, so he referred to a century, but did not suggest dates of past monetary long cycles. Both francophone authors explained that long cycles were of monetary essence, because they authorized margins of decision able to influence global evolution. Dupriez clearly stated that they acted at the same time on the economy and on international politics. But their interpretation of the past was restricted to a rather short period of time (from approximately the 1850s to the 1930s in Dupriez, and beginning before 1847 and ending before World War I in Marjolin), probably because in their epoch the monetarization process was in course but very far from its completion. We can go further in our specification because this process seems to be at the centre of institutional evolution today, and close to its completion.¹

The major claims of Marjolin² theory are accepted. For Marjolin, like for Keynes (1965 [1936]), a monetary economy is not a real economy (Marjolin 1941: 60–65). Progressively the monetary sphere is gaining ground on the real economy which points that 'monetarization' grows. The gap between marginal monetary productivity of the capital (a 'real' factor explaining in part the long cycle) and interest rate ('money' factor) causes the general price movements (*Ibid.*: 38–39). All factors that influence the price level can be classified according to the way they act. They can interact with the interest rate or with the marginal productivity of capital (price, costs, risk ... expectations). Increasing gold production influences long cycles for three reasons: 1) it raises the marginal productivity of capital, revealing new opportunities for savings (*Ibid.*: 127–128); 2) it raises and also allows an increased demand for goods (*Ibid.*: 128–130); 3) it reduces the interest rate (*Ibid.*: 131–134), through the joint action of a higher demand for goods and securities: thus, monetary reserves are brought to a level higher than the one the economic agents deemed sufficient for their safety. (This allows hope for a higher long-term.) The upward movement of long duration is accounted for by the increase in gold reserves. Only the rate of credit coverage by the reserves goes down during periods of increases and goes up in drop periods; other monetary factors are steadily increasing throughout both periods... The reason for the downward trend of the long-term growth rate is that the interest rate gets greater than the capital marginal productivity.³ This results from the latter going down as a result of the gradual exhaustion of opportunities. At the end of the long expansion period, the monetary system has lost its elasticity; with too many liquid assets for the needs of the economy. Marjolin made seven key findings on the long monetary cycle: 1) any explanation of price movements must involve money, since in a monetary economy we think in absolute – *i.e.* monetary – prices

(Marjolin 1941: 58); 2) the interest rate plays a decisive role in long-term economic dynamics; 3) the relationship between monetary interest rate and monetary marginal productivity of capital determines investment, which in turn fixes the national income; 4) DEFINITION OF MONETARY INTEREST RATES (equilibrium meeting point of money supply and demand curves) and MARGINAL PRODUCTIVITY OF CAPITAL (replacement cost of that capital); 5) there is no balancing effect between fundamental currency reserves (gold one century ago) and the amount of credit – both are mutually reinforcing, evolving rather upward; 6) the velocity of money does not compensate the level of currency reserves – the two evolve more or less in the same direction; 7) but the verdict of the theory of long monetary cycles at a given time needs to be clarified and supplemented by the analysis of the economy's structures at that time (*Ibid.*: 58–59). In addition: generally, long fluctuations to a greater degree result from the demand for money than from the actual supply. Even though a disturbance of the economy – notably due to the supply of new money – begins at a given time, its effects continue for a long time, and will be therefore of short-, medium- and long- term duration... Empirical tests for a number of periods: pre-1847 (Marjolin 1941: 186), from 1847 to 1852, then 1852–1856 (*Ibid.*: 186–187), 1857–1873 (*Ibid.*: 187–188), 1873–1895 (*Ibid.*: 188), and 1895–1914 (*Ibid.*: 188), tend to validate Marjolin's theory.

Major assertions of the Dupriez theory (1966) are also accepted. It completed that of Marjolin (1941), presenting a more detailed assessment of the need, aiming to integrate the fiduciary money type. Dupriez first denounced the oppositions 'system of price / system of value' (Dupriez 1947, vol. I: 172–175), 'static/dynamic' (*Ibid.*: 201–214), 'long-term / short-term' (*Ibid.*: 190–214). They seemed to him narrow-minded and contradictory, and need to be managed if we intend to explain the distinctive features of a monetary economy and a real economy.⁴ Such assertions would in fact reduce money to a short-term accumulation problem, forgetting its movement throughout time aspect (Dupriez 1947, vol. I: 171–219) ...Dupriez saw everywhere the question of imbalances which would characterize the monetary economy – they could provide from real or from monetary reasons (*Ibid.*: 78–98, ch. III 'Une solution du problème des débouchés'; Dupriez 1947, vol. II: 321–381, ch. XVIII 'Le système des prix et les déséquilibres du marché'). He proposed a monetary theory of long cycles (Dupriez 1947, vol. II: 219–277), and this for not being trapped in an extreme sort of quantitatively oriented theory of money. Beyond usually money-linked figures and techniques used for managing them, money is for him mainly a stamp of social tensions piled up in the economy (*Ibid.*: 381–441). The purpose of his theory is to think about imbalances without reducing money to imbalances.

Long cycles would be rather an opportunity for lawmakers to produce institutional innovations of monetary nature during the long periods of depression, to fight against the imbalances of the economy (*Ibid.*: 192–200). It is needed to constantly keep both types of cycles, those of business and those of long movements, to think of some transcendent reasons on the trail of the social, human and economic evolution. The 'neutral' feature of money could be expressed in front of secular movements as it can safeguard the factors of human progress. Thinking of dynamism in the action, and 'statics' of the very long term, while maintaining a psychological balance of men as actors of development and subjected to it, should coexist. One should also consider the phenomena of adjustment between psychological, social and monetary fields in saving issues (*Ibid.*: 209–214). He also launches into a demonstration of the comparative monetary concep-

tions in the United States and Europe. From 1873 to 1930, the United States tried to save bimetallism by buying the worldwide silver reserves (Dupriez 1947, vol. II: 184–192). This did not prevent industrialized countries from being more and more ill-at-ease in the 1920s, when it was realized that one could never find enough precious metals to satisfy economic needs (*Ibid.*: 192–200). Thus the monetary economy was insured on a not natural but cultural basis. Since the 1920s, money theorists could have suspected that the real debate on the foundations of the monetary system was not between gold and silver, but rather between credit and the precious metal (*Ibid.*: 192–200). Few have put it in these terms because the rivalry was real, lasting and serious in Europe between proponents of the ‘currency school’ in England, and their competitors in the ‘banking school’ on the continent (*Ibid.*: 192–200).

A serious and comprehensive theory of long monetary cycles puts us on the road of links between money as an institution and their individual connection to time. As soon as 1850, the trend of institutional changes about money would have been that long periods of depression would involve reforms in monetary governance rather than discoveries of precious metals. In the 1920s, the story could also have been different, if the Americans had not seen money initially from a technical standpoint, but had been more concerned about its distribution with other industrialized nations, primarily European at that time, to avoid too brutal breaks. But for that, America would have had to accept higher inflation at home, even in times of peace, which would have hit firmly established moral beliefs. Periods of decline and increase together, as a result of strong social tensions, meant there was separation between coinage and paper currency.

The first was used only for foreign trade between nations, the second for domestic current payments. A third tier came overlapped with the first two: the development of current accounts...

So periods of decline experienced institutional innovations: the creation of the ‘banking school’ and of the ‘currency school’ in 1818–1848, getting rid of bimetallism in 1873–1896, return to greater use of national currency in 1919–1939. Credit expansion existed in every period – of decline and increase – from 1848 to 1873, this was evidenced for the first time. From 1873 to 1897, cash in hand grew faster than deposits, the securities market grew also, and the monetary system dared not develop too much (Dupriez 1947, vol. II: 198). The expansion of fiduciary money resumed sharply in 1897–1913, together with that of the coinage (*Ibid.*: 198). Then the prospect changed radically: from 1920 to 1939 the fiduciary circulation had to be reduced in value because it was challenged by the rise of cash (*Ibid.*: 198–200). Interactions accounting for long cycles are not interactions between the real economy and the monetary sphere; they are both real and monetary, looking for a ‘moving equilibrium’.

The policy interventions, to go back to equilibrium at the end of a long cycle are always expressed by ‘shot bar’,⁵ which in practice would be sufficient to explain long cycles (*Ibid.*: 497–532, ch. XXI ‘Les relations internationales et la conjoncture économique’). The nature of ‘blows bar’⁶ remains, however, partly unpredictable, trapped in a collective unconscious evolving with these long-term movements. Apparently, in the absence of a regulator of the monetary system, they depend on wars as much as on the monetary authority. Credit depends on satisfying true needs, and the demand for it on ‘expectations’ based on analysis of the prices and costs structure. Each lender has its own way of analyzing these structures and passing credit, which however leads to unclear long-term consequences. All this holds in store future shot bars. Credit supply depends on cash management: but this technical management feeds on weaker grounds!

As long as one fails to identify with greater certainty the true turning points of long cycles and their causes, one can only manage the accompanying putting back the meters to zero intuitively, guessing the beliefs that agents build up on the need for savings and investment, on how much the capital costs really. Should one succeed in that one day, one could have the benefits of long cycles (in evolutionary terms) without the inconvenience (in terms of 'blow bars' required).

So it is tried to extend Marjolin's (1941) and Dupriez's (1966) analysis with today's tools, and recent events in mind. It is asserted that long monetary cycles of ninety to one hundred years each follow one another (Jourdon 2010b: 942), during which any given key currency has three successive periods (*Ibid.*: 943–946): 1) the establishment of legal and financial reserves in relation to the system embodied by the key currency then in place; 2) the dominant influence of the new key currency in the international monetary system, a growing debt being simultaneously coupled to it; 3) the decreasing influence of the key currency, whose power is then progressively passed on to a new one.

Each key currency ensures another social project. Subsequently, two long currency cycles of this type have been identified. Both date back to the first period of globalization; *i.e.* approximately to 1850.⁷ The first cycle was that of the £ Sterling (1848 to 1945): it would have provided a defence of private property. Its first phase would have been 1848–1870, second phase 1870–1917, third phase 1917–1945. The second round would have concerned the US \$ between 1917 and 2015 to come^{8,9}, and would have to some extent balanced defence of private property and social ownership. We estimate the first phase from 1917 to 1945, then second phase from 1945 to 1992, then third phase after 1992, unfinished in 2010. Logically, a third cycle, presumably between 1992 and 2090, might be that of the euro, and involve private property, social property and self property balancing (Jourdon 2010b: 1381–1383, 1392–1394). Self property means being the master of one's own destiny, expressing one's subjective identity while acquiring objective knowledge that enables the person to integrate into society. It means having access rights to what would constitute a new era, the twenty-first century, as it might be acknowledged as being the subject of global consensus: the parity between developing and developed countries.

Moreover, these cycles are included in a trend in which the international monetary system, each new long cycle more complex, must provide a continuously expanding world-economy (Braudel 1985). The euro might guarantee such a social project, because the whole social system will be governed more and more by a sub-monetary system. Three parameters of Kondratieff theory: 1) education, demography; 2) innovation; 3) wars and social movements – have reached their turning point, from which their chronological dimension, from quantitative has become qualitative. Probably the fourth parameter – 4) money – will do the reverse journey; from qualitative becoming quantitative at the world scale. Thus, it will be able to ensure the overall development (economic, political, and finally social) being able to increase its effects next to the other three evolution factors. Money no longer belongs to a few people, but to everybody, so it becomes quantitative (Jourdon 2010b: 1276–1309). 1) It became qualitative (from demography to qualifications-driven, 1870) (*Ibid.*: 978–985, 1254–1262); 2) it became qualitative (from innovation to meta innovation *i.e.* societal innovation, after 1918) (*Ibid.*: 1254–1271); 3) it became qualitative (from destructive wars to optimistic social movements, after 1940) (*Ibid.*: 1018–1023, 1262–1271). It also seems quite logical that this turnaround may happen at a given time, once half of the world's national economies

will have passed from the non-monetized economies stage – with savings in bigger quantity than money – to the monetized economies – with the opposite situation – that one could date back to the years 1970–1980.

Research Approach

The approach is of dualist evolutionary research, assuming that the emerging monetary system results from interactions between two sectors in a dualistic relationship to each other, in a logical evolution (Jourdon 2010b: 946, 963–972; 2010c: 1599–1610).

This emergence is possible because of an underlying social change worldwide, which is always a particular structured economic sector ready to spread or receive credit. The pressure applies on this sector by the whole economy so that it embodies a development concentrate, credit, and a consistent vision of future shared by all players. This sector creates structural change and the gradual establishment of a new property rights managing system, properly the legal protective skin of the new social project. The latter is correlated chronologically with emergence, triumph and decline of a new key currency. The associated logical correlation is more delicate: it requires restating the vision of the cycle in conjunction with trend of five centuries.

Our data concern the long Kondratieff, hegemonic, monetary cycles and their relationships with the industries. We study the evolution of industries and try also to analyze their relationship with the issue and nature of property rights attached to their agents, therefore related to the social field.

All data are also submitted – monetary data of European Union countries, European Union at various levels of consolidation – with the first level formed by three countries whose conceptions of the Central Bank independence (balance of powers, legal coverage of financial intermediaries, or economic independence) differ, but whose collaboration would appear necessary for building the European Union (27): France, Britain, Germany (Jourdon 2010b: 1137–1139; 2010c: 1796–1800); the second level adding Benelux, Italy; the third one the EU-15 level reached in 1992, with the setting-up of the commercial Big Market supported by the ECU Common Currency; the United States in comparison; the group EU + USA to appreciate their collective power to regulate the global economy; even the group EU + US + Japan (Jourdon 2010c: 1833–1838) to judge the overall power of so-called ‘Western powers’ in a logic of expansion of the Centre of the World System.

– Can we identify any long cycle in the evolution of currency reserves in the world linked to the £ Sterling, during the period: 1850–1945 (Jourdon 2010b: 1089–1109, 1136–1139; 2010c: 1792–1800) ... and for the US \$ between 1917 and 2015 (Jourdon 2010b: 1139–1142, 1146–1147, 1157–1178, 1195–1204, 1209–1212; 2010c: 1800–1803, 1807–1811, 1816–1833)?

– Could we, to prevent risks, read the phenomenon ‘backwards’, examining the ‘structure’ linked to this money which would in some way constitute a ‘negative’ of it to manage the balance at the margin of international relations: debt indexed to these key currencies £ Sterling 1850–1945 (Jourdon 2010b: 1113–1123; 2010c: 1778–1792), US \$ 1917–2015 (*Idem* 2010b: 1182–1184)?

This research comes after the author has previously written an economic history (Jourdon 2009) and a monetary history (*Idem.* 2009, 2010a) of Europe in the period 1800–2007. The economic history differentiated times when the real economy was likely, and those when it became monetary. Flexible criteria about relations between

agents are implied, basically philosophical as they refer to the possibility at a given moment to lay any particular system of political economy used to manage the entire system. First, the studying of the swinging effects between historical facts and history of ideas led to these descriptions. This is a moral history in which studied sets are separable into two types, but often discussed in-between, in a 'philosophical' way (the final nature of money never specified – according to usual practice on macro economy). Instead, after such precautions, in this 'Monetary History' (Jourdon 2009), the currency can capture all phenomena. We deliberately introduce a triptych of money: 'credit' nature; financial promises and feeding a bypass permanently along a changing world; fiscal, enabling to mathematically integrate property rights in human history. So the monetary history would help demonstrate the unique destiny of Europe in the world economy, believed to be linked to its currency. But it relies on an economic history which can reprocess or treat separately as a set of guarantees: 1) relationships between various 'nationalisms' or if you prefer 'national ideologies'; 2) relationships between economics and demographics, considered as complementary to that between currency and economy; 3) relationships between key economic sectors (agriculture, industry, services ...), and relations with various regions or countries of the world, especially large ones; 4) the dual currency par excellence of the United States of America; 5) the existence of certain 'special sectors' such as energy, or even psychology. All these sets of guarantees enabled to make recently emerge a new institution in European economy, society and destiny, called 'the single European currency'. It is well established legally, with a lot of safeguards.

But this consistent method of analysis could help economic policy recommendations only if the 'external' approach (institutional) of the currency is completed with an 'internal' one. The latter reflects the material dialectical power struggle throughout history. That dialectics plays through the real credit game between sectors, which act within a game of complementarity / contrast in a historical logic of 'evolutionary dualism' whose currency is a precipitate resulting from that friction. This justifies *ex post* the institution – even anticipated by a number of agents. The object of our research and the source of our data once defined: let us discuss them.

Discussion of Data

These data relate, on one hand, to Kondratieff, hegemonic, monetary, long cycles, and their relationships with the industries. They are examined studying these industries develop, also trying to analyze their link with the issue and nature of property rights attached to them and their servants in connection with the social field.

1st data: the internal (social), external (political, legal, geopolitical), contingent internal-external (economic) data (Jourdon 2010b: 947–948).

The 1st Kondratieff cycle (c. 1770 – c. 1850) (*Ibid.*: 947) is divided into a depressed period (1810–1850) (*Ibid.*: 947, 949–950), the 2nd Kondratieff (c. 1850–1896) (*Ibid.*: 948, 950–954) into an expansionary period (1850–1873) (*Ibid.*: 948) and a depressive period (1873–1896) (*Ibid.*: 948). One notes the national debt rising, the key role of transportation, the setting-up of the first national macro economical circuits, the positioning of the nation-States 'pro- or anti-liberalism' and failure of a European social feeling...

In every phase, achievements, as regards secular social change, are attributed in the columns 'economic sphere', 'national and international politics sphere', 'social

sphere'. From 1896 to 1945 the 3rd Kondratieff (*Ibid.*: 955) experienced an expansive period (1896–1914) (*Ibid.*: 955–956), then a depressed one (1914–1945), with currency wars (*Ibid.*: 956). The social issue became a bone of contention.

The 4th Kondratieff Cycle would take place from 1945 to 2006 (*Ibid.*: 957). Expansion period 1945–1975 (*Ibid.*: 957), depressive afterwards (*Ibid.*: 958). The march towards a European currency starts implicitly from the very first steps of European construction, thanks to the possibility of fully integrating one 'sector' (social ... linked to public services), because complementarities with the private economic sector exist... Subsequently proto cash, then money surplus can be retreated, set aside, piled up to have the final legal, institutional 'single European currency' created.

2nd data: economic sectors themselves.

1810–1850: between agriculture and trade / transport: 'credit' is purely personal and strictly optional, in other words 'savings' (Jourdon 2010b: 964).

1850–1896: between agriculture, trade and finance, industry and transport: industry gets savings from agriculture. The financial world gets more complexity in autonomy ... finance is retreated as currency through the institutional mechanism of the key currency (*Ibid.*: 965).

Agriculture will rely on the organizational factor 'work force', unskilled labour, raw demographic resources, industry relies on the physical product; services on skilled labour, or human capital. Industry, being organized as 'services' will rely on processes, the sector of communication on networks, industrialized agriculture also on skilled labour, and products.

From 1896, each country develops its national 'money ideology', with regards to patrimony and property rights defence... Only after 1945 a macroeconomic, multi-sides policy appears: in private company – household – bank (State) circuits, also in intersectorial credit relationships. Organizational factors get increasingly important. Sometimes funding precedes organization in business, sometimes not. Strategy may be confusing and risky in transition phases.

We want also to explain how we connect our monetary long cycles with main stream references in Kondratieff Cycles Theory, and why we cannot stand on exactly the same phases that most authors keep for the end of the 4th Kondratieff Cycle and beginning of the 5th one...

Hypotheses about a turning point in the global system have been issued by various Kondratieff researchers and they have proposed different solutions. These presentations can appear to be vague. The difficulty to treat the parameters stems from the fact that we speak of the structure and evolution of the system of systems, the global system. The nature of the structural parameters themselves seemed have been recognized. These are the parameters that Kondratieff highlighted: money, wars and social movements, innovation, demographic phenomena. This is in sum the physical nature of the global system. But if we think of the different states the system can take throughout time, we do come to the problematic of turning points: the moments from which chronologically the global system is changing in nature, *i.e.* in state. Mathematically it is by the act of transforming the system that a transaction may be an exchange operation, *i.e.* a price, or an accumulation ratio, *i.e.* normally one salary, or a twist, *i.e.* the result of crowding out effect ... wealth produced by public industries is diverted their monetary matches by the private sector, or the opposite, or policies in order to retain wealth produced inside this country, *etc.* One might thirdly wonder about the social nature of the world system after

investigating its physical state, and secondly its time depending state. In our opinion, examining this social trend in the World System – with help of mathematics – should come third after explaining structure: and then the evolution of structure. How to state applied theories of mathematical structure within the fundamental theory of Nicolai Kondratieff? What means a structure with four elements? What are their implied connections given their different natures? Should there be a fifth parameter in order to release it from its hermetic dimension (for many economists)? What fifth parameter? Built in what way? The turning point is calculated using the mathematical relation between the world system as a whole, used as numerator, and a denominator: that is to say, under the helm of the fraction, a parameter chosen, or even one aspect of this parameter, the state in which it stays is at the moment when is ascertained the turnaround. Thus the interpretation may seem subjective if the choice of the parameter for the operation were to fall arbitrarily. This has to be supported by a theory, or narrative, with confidence in one time, of the community of scientists. Scientists should also explain how to make a fraction with the denominator which is a parameter of a certain nature, and at the numerator the system has a more complex nature ... how can the result of such a calculation make sense?

The question of when to begin the 5th Kondratieff Cycle, in the 1990s or the 2000s, or if it has not yet begun, is essential to be able to produce probability-tests of any event's arising. One needs to know within which Kondratieff cycle we are, with which structural attributes (the nature of the economy changing on every Kondratieff cycle, after Schumpeter). Such questions are even needed for scientific theoretical credibility... Do Kondratieff cycles still exist? Or could they otherwise correspond to a given period in time with a certain economic structure (for example industrial productions)?

– Firstly, there are serious challenges issued by top scientists, as to whether the 5th Kondratieff Cycle actually began in the 1990s or not. Ayres (2006) writes that basically a new Kondratieff Cycle begins again with the operation of a new form of energy ... and the revolution of new forms of energy – hydrogen and renewable forms – says a slow spread, the fossil energy are still dominant! Mensch (2006) admits the difficulty to face interpretation of the work from econometric results – data, series – about the state of the system today. While since the 1970s as the statistical and econometric advances had been so useful in analyzing, delivering alternative forecasts, it suddenly seems that many scientists working on Kondratieff find themselves helpless facing an essential assumption of the theory of Kondratieff cycles, the length of the cycle – and because we may be in a transition period where the structural nature of the global system is at stake: is it that the 5th Kondratieff Cycle really announced the 1990s after considerations about the normal term of the 4th Cycle, was supported by the Revolution of Information and Communication Technologies, but after a few years disappeared from traffic? This new revolution took place in the United States where it already created tens of millions of jobs, but did not yet disseminate in Europe, where those social effects in terms of employment and purchasing power would not arise. Mensch (2006) dares to write that the 5th Kondratieff Cycle would have begun in the years 1990s and suddenly have been aborted. We can deduct there would be no 5th Kondratieff Cycle, as long as we have not found common acceptance of feedback from Kondratieff scientists – with nuances – where are we, how does the system work, how we would come out of the depression? De Greene (2006) also notes the moribund nature of the current system. He then assumes there will not be any more Kondratieff Cycles because humanity would be

incapable of learning: therefore this theory, which was supported during the industrial era, and helped building systems of negotiation, cannot be used in the future ... he predicts the end of the phenomenon of Kondratieff Cycles!

– If one believes instead that Kondratieff Cycles still exist, one thing remains certain: the length of each cycle, Kondratieff indicated his cycles existed because their periodicity appears more regular than Juglar cycles. If the 5th Kondratieff started in 1945 and we add 54 years to it, we make the 5th Kondratieff begin in 1999. Why do we make it start in 2006? a) The Kondratieff cycles have always corresponded to a situation – in the dominant pedagogy of Schumpeter – where a centre distributes the motion of innovation at the periphery which creates the overall cycle. But the remark, from the observation of very rapid evolution of the world system since the accelerated globalization process in the 1970s, leads us to favour the hypothesis there would exist today – a new type of situation – two centres of the world economy: the US and Asia. So to justify the existence of this central Kondratieff cycle one must find a powerful reason. b) We might only find this reason in considering the hypothesis of a trend behind the existence of Kondratieff cycles, which has evolved from one cycle to the next. The theory of Kondratieff cycles would have its main use to approach comprehension of this trend in the world's social history ... But if there is a trend the system evolves according to principles of conservation and amplification of one's internal consistency. Then come new qualities and characteristics for the system at each new cycle, and previous advances are not lost. In these circumstances, since we believe that the 4th cycle brought with it mainly an improvement in management of social systems – negotiation and budgeting – then the 5th cycle should logically be based on input from the previous cycle so as not to break the trend, while bringing something new to create the next predicted long wave. We mix considerations a) and b), and consider that the new cycle in a global system – becoming more complex in international relations and geographically much expanded – must be based on an organizational factor called the central geographic area as socially advanced as possible. And for us this one would be located in and around the European Union (27). Around this central organization triggering global stability, could be added innovations, which usually generate growth. When the central area has restarted itself – jobs, public structuring investment, purchasing power ... – the 5th Kondratieff Cycle will have its central regression path around which the development and growth, stand up, auto-creation will take place. Until this perception has been acquired, one should remain sceptical about this. When it has been acquired, we see the existence of the central movement's 5th Cycle, all the more so because Europe and Russia seem to be the necessary and sufficient link between the American and the Asian engines.

– We offer three alternative scenarios.

Scenario (A): The 5th Kondratieff Cycle started in 1999. The revolution of New Technologies of Information and Communication commenced in the United States for the years 1980s and arrived in Europe with ten or fifteen years' delay. Some European countries anticipated the movement, reducing their unemployment rates considerably in the early 1990s. Yet it seems fragile so the recovery could be aborted, also for the US and Europe public finances should be required to close due to their progressive deterioration since thirty years. Furthermore, Europe should at the same time manage its political enlargement towards countries starting from a lower level of economic production

and consumption ... while suffering increasing competition from emerging countries in Asia. This scenario seems possible, but not fair regarding the social context – careers, working conditions, *etc.* – substantially degraded in Europe for twenty years, in particular for the new generations entering the labour market.

Scenario (B): The 5th Kondratieff started in 1992. The year's Large European Market opened a new era, which is sure to impact positively in terms of purchasing power, also for new countries joining the European Union which often worked hard to achieve it. Some decisive impulses of the Europeans and the Russians to reorient world affairs of the 1980s on the institutional level (as discussed in our next article), might be related to this scenario, that it prepared. This can not be credible – as Scenario (A) – unless a few conditions are met. Primarily if a recovery can be carried on for generations left behind during the lengthy transition period. Also if a new style of negotiation is found to regulate public and private affairs, help the parties form their legal interests and defend them in this new Kondratieff Cycle.

Scenario (C): Considering this sword of Damocles of international negotiations on several issues (climate change, financial crises, common goals to live in peace and preserve resources, millennium goals...) it would be more reasonable to say the 5th Kondratieff Cycle started only in 2006, just as we are not in agreement at the highest level of international negotiation and with people, on finding items of deterioration of the situation in the transition period of some twenty years or so, trying to determine the responsibilities, checking how people can get out of these nodes of risk. With 2006 we connect more easily the global move with both euro and its first guarantee an internal European Final Constitutional Appeal.

Now two important points of method.

– To the theory's ring. We try and place our feet into those of all Kondratieff researchers. Our elements for the debate: our theory of long monetary cycles that govern monetary Kondratieff Cycles retain their own temporal component to apprehend the Kondratieff Cycle Phenomenon differently. About 1992, 2006, and 1999: any choice to start the cycle at any given time may be bursts of stress – as in 1945 at the end of World War II – or is the effort back and then discussion and negotiation, to avoid a further brutal end... ? No choice is neutral.

– Our approach has two other characteristics. It would tend to be basically cooperative since subject to discussion and creating mutually profitable contracts. These contracts would be positive as they are short numbers and to be planned. The funding of the Kondratieff Cycle is an important character derived from the Kondratieff cycle, and its organization, too. Both will rely on the monetary authority. We propose to start from the logical end of anticipable announces of this new cycle, so that trading is more efficient by bringing in at the beginning those who undoubtedly could have an even more important supervisory role during the next, 6th Kondratieff Cycle. Once we have looked for the latest logic from the 5th cycle, if we know it we can begin to integrate its chronological elements as a basis for management throughout the cycle... Only then could we reconstruct the start time of the 5th cycle having investigated the respective roles of every part.

The year 1973 opens a new horizon, new questionings. From 1973, facts and ideas will be studied more jointly for we are in search of 'ideal types' enabling to understand the twenty-first century.

3rd data: invasion of series of Kondratieff type parameters.

Parameter 'demography':

The turning point is in 1870. The factor was of quantitative nature. Its nature becomes qualitative (Jourdon 2010b: 978–985, 1254–1262). The mechanisms of transmission to the world of this turning phenomenon lead to a new division of it, a new separation between internal and external aspects.

Parameter 'social movements, wars and revolutions':

Turning point is in 1940 (Jourdon 2010b: 1018–1023, 1245–1250, 1262–1271). A new set of problems is set down with the period 1945 – nowadays: is economical development funded by war (Goldstein 1988), or is it the opposite (Reijnders 2006 contradicts Goldstein 1988 on that point)? This makes the choice of this turning point quite a key issue as well as for understanding history as also for clarifying decisions to be taken to prepare the future of Europe.

With these two parameters, one can characterize the type of ambiguity enabling the world leaders, in particular leading States, to manage changes to the margin. From 1870 to 1945, leaders used the 'primary' ambiguity (plain choice between backward destruction, and forwards building, without any massive financial or monetary retreatment of risks), between two nations (political) on one side, and two sectors (economic) across. It was a context where economic management of sectors at the end gave place to political 'shots bar' decided by party leaders.

Parameter 'innovation':

Innovation relies on the intensity of turning points from the parameters listed by the theory of Nikolai Kondratieff. It allows us to better understand a series of events and not only isolated events. That concurred with the success of Schumpeter's approach, but then with globalization one has to get also an institutional side of it which can probably take its source into a new monetary framework.

Conclusion

Secondary consequences of studying the 3rd level of data:

- The possible fifteen or twenty large commercially homogeneous regions in the world are mentioned (Jourdon 2010b: 986–987). The role of the United States (*Ibid.*: 987–988), the relations Europe – United States (*Ibid.*: 988–989), the complexity of relationships due to the recent phenomenon of world regions 'catching up' (*Ibid.*: 989–990), and the geopolitical relations of some major regions with Europe (*Ibid.*: 990–1013) are discussed.

- Depending on a theory of 'fuzzy sets', Europe must sociologically bring closer three different zones to a common destiny, one of which is already integrated (the EU-27) and the others being: the Arab-Muslim world, Russia and its neighbouring countries linked by history, culture and economy... The euro will have to ensure these changes to harmonize social and economic evolution and bring the regions together.

- Since 1970 one has entered a crisis of civilization. One is 'in the midstream' in uncertainty as to which side of the scales things will fall.

- Aspects of Kondratieff vis-à-vis a vision symbolizing new reconciliation between energy and psychological aspects of cycles turning 'moments' are retreated. Economic conditions' short cycle (ten-year cycle) is looked at... Structural (fifty years with the long Kondratieff cycle, seventy to ninety years with a monetary long cycle according to the author), political (one hundred twenty or hundred fifty years for Modelski 1983,

1987; Goldstein 1988), cultural (five hundred years for Modelski 2006), long cycles, are re-examined. This gives us three aspects (Jourdon 2010b: 1439–1442): 1) energy; 2) monetary and geopolitical; 3) monetary and social. We try to think about turning points whether evolution is thought about endogenously – by 50–60 year long periods – or exogenously in the scope of monetary long cycles when one could hope for cooperative succession between two key currencies.

The hypotheses formulated in the present paper will be tested empirically in our next paper: ‘A new theory of monetary long cycles under scrutiny of First Round empirical tests’.

NOTES

* In collaboration with Dominique Eira Adey Balinova.

¹ Marjolin and Dupriez were also influential advisors in the process of European construction. Dupriez was an advisor of the Belgian Central Bank, and Marjolin became an important Vice-President of the European Commission dealing with economic affairs.

² Marjolin established principles of separation between real and monetary showing the link between money and long cycles (see also Simiand 1932, 1934; Kondratieff 1926, 1935). Dupriez thought further, stating that we can relate the real and monetary dimensions by some generally interdependent system where the money would come at last extracted. But its neutrality is questionable. He concluded that the action of man on monetary instruments is becoming more conscious. However (like Marjolin) he did not specify absolute dates. This reflection was clear in the two authors on the £ case.

³ This phenomenon of ‘communicating vessels’ between changes in the level of interest rates and the marginal productivity of capital is quite comparable with the Juglar ‘business cycle’ lasting from seven to eleven years, and Kondratieff cycle during about fifty-four years. In both cases we observe a similar process of reversal. Regardless of the compared lengths of both types of cycle, another key difference is apparent. In the case of the Juglar cycle, it is essentially private matters. Instead turning down, the Kondratieff cycle indicates a time when society will invest in new infrastructure and institutions to ensure a more sustainable global insurance system. Using Marxian terminology, we can consider, during the Kondratieff long phase of depression, the phenomenon of ‘expanded reproduction’ of the economy. Regarding the phenomena of credit, if we observe that it is intended to foster trust, we assume that during the reversal of the Juglar cycle credit is reduced in order to avoid economic overheating it is a simple restriction, beginning a recovery somewhat later. Under the Kondratieff Cycle, new monetary forms would emerge instead. This is the famous ‘socialization of losses’, with a qualitative impact of a fiscal nature which cannot be found in the Juglar case. At the Kondratieff cycle, when private capital becomes threatened with bankruptcy, if it represents investment opportunities for the entire economy with an infinite horizon, then it might be purchased by the state. This private capital is transformed into public currency indeed!

⁴ Nowadays a number of thinkers (Aglietta and Orlean 1998) agree on Dupriez's ideas. They deduct: 1) money is not only a system of prices, as it plunges into anthropology; 2) monetary economics ought to be a dynamic and structural theory.

⁵ According to Dupriez, the state takes then brutal decisions in order to make the agents believe that economy has come to a new balance. These decisions are called ‘shot bars’: the state wants to prove its authority over events. But for Dupriez the monetary balance could only be of a psychological nature. Practically, shots bars can be wars or repression, and this in turn can trigger coups, riots. At the end it always has been brutal. It brings about a difficult time in geopolitical relations.

⁶ The expressions ‘shot bars’ and ‘blow bars’ are similar. A smooth spelling would be ‘direction changes’, but in its consequences the phenomenon is more brutal.

⁷ The Central Bank of England was founded in 1694. In 1812 its banknotes became legal tender. In 1844 the Bank of England established a legal monopoly to issue banknotes. Still we estimate the beginning of the monetary long cycle linked to the £ Sterling to about 1850. Our arguments: first, in no case could it have been before 1770–1800 for which period Kondratieff estimated the beginning

of the economic long cycles process, as our theory is connected with Kondratieff's theory. There should have been a special stream between two economic sectors, agriculture and industry, with inter-sectorial transfers of savings. This process between two sectors was not immediate in England, though, it probably began in the 18th century. But this is only the first condition of two. The second condition in order to speak of a monetary long cycle (a secondary process): means that the monetary process will rely on both an economic inter-sectorial process, and a political international process. There should be both an internal condition in the nations' life, and another one – both real and official – with other countries. For these reasons the date 1848 makes sense: because it is the starting point of national affirmations. Then we compare the evolution of financial and monetary relations between England and France, which makes sense to account for the European monetary history at this time. It gives support for the advantage of the £ Sterling. Technical savings ratios and monetary masses, between 1817 and 1848, show this emergence. After the Central Bank has existed for one-and-a-half centuries, the monetary authorities had piled up some monetary reserves. The British, having got some international economic influence thanks to their currency's reputation, then expanded their world influence massively, also thanks to private savings. The development of private financial markets came as a support of legal money, being more flexible towards economic risk. The monetary mass climbed from 20.3 to about 500 (which means about 50 in constant value, there was a legal re-evaluation in 1870) in 1871. Savings in financial markets started from almost nothing (0.2) in 1817, up to 30.3 in 1847, then continued. Savings first exceeded the monetary mass in 1836 (18.8 against 18.1). The fiscal positive external effects for the reputation and wealth of British business makers must have been very effective, thanks to this complementarity between private and public management of both money and property rights. We could have estimated the beginning of this monetary long cycle (£ Sterling) somewhere after 1836, because of these figures and their interpretation in monetary power margins of management... but we prefer to say that after one business cycle – so 12 years – when France and Russia also got a Central Bank, the £ Sterling was ready to play the international role of the first key currency in history.

⁸ As monetary long cycles seem to be lasting about one century, we estimate the end of the cycle of the \$ to about 2015. It would give the dollar about twenty-five years – from the Single European Market of 1992, to our final estimated date – in order to self-prepare to the fore-coming international situation. So, we would call for a not too long last phase serving for efficient international negotiating of some relay judged necessary. The final date might be rather later than sooner ... but international strategic players may have no interest in delaying this waiting period for too long. Our estimation is precise – between 2015 and 2020, if later, the whole process might entirely fail, with consequences like global war.

⁹ Chinn and Frankel (2005) estimate £ Sterling entering into the euro zone between probably 2015 and 2020.

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