УДК 330.33; 338.14

SCHUMPETERIAN SOLUTION TO THE CURRENT CRISIS

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Abstracts

"We need a new, ecological, Industrial Revolution"
(Horst Köhler, 23.05. 2009).

This quotation captures the gist of may paper. Having written a book on the 1st Indus- trial Revolution, The "Brno Study", dealing with Schumpeter's vista of a wave of new entrepreneurial, innovative activity as it occurred in the Brno region, I am delighted to have this opportunity today to present my vista of a "Renewal" in Trest, near Brno. In 1975, my Brno Study carried the subtitle that says it all: "On the Political Economy of Renewal - examplified by the cluster of innovation in the region of Brno".

Renewal calls for dialectic diagnosis: At Schumpeter-Conference 2009 in Trest, we shall meet a spectrum of ideas for solution ranging from a Neo-Marxian THESIS (Rivival of Radical Systems Transformation), via the Neo-Classic ANTITHESIS (New Deal of Recovery of the Regime = Neo-Marshallian Continuity), and the modern Neo-Schumpeter-Versions as a SYNTHESES (Renewal). Renewal stands for a cluster of major innovations in "systems-relevant" parts or the system which caused the crisis.

Such major breakthrough innovation I coined basic innovations. The type of Renewal overcoming this crisis will differ from country to country, each adopting a different mix of basic innovations; a specific mixture that fits their culture and structures. Presently, in each and every country we see proponents of these ideas struggling for votes with programs that promis anything from Radical Transformation to Simple Recovery.

My scientific message is: While all countries hunger for a macroeconomic Recovery, the way of Renewal offers a best way to Recovery. It requires concerted cooperation.

This paper presents a Schumpeterian microfoundation to the above macroeconomic scenarios: A foundation for managerial approaches for both Recovery and Renewal. The hallmark of this microfoundation is, say, Neo-Schumpeter Management Science. My diagnostic thesis is: There's a bottleneck in Institutional Behavioural Finance, IBF. A bottleneck produced by the boom in Financial Entrepreneurship, Financial Product Innovation and Derivatives, which distracted from Innovation Financing and Banking of innovative entrepreneurs in the Real Economy. This diagnosis leads to a therapy.

This therapy will soften the slump and shorten the slide towards a deeper recession. My message, based upon said Schumpeterian Microfoundation: Yes, we can reach a macroeconomic recovery quicker by basic innovations realizing a better Renewal.

What's New?

Schumpeterian theories originating in the Industrial Epoch of the past hundred years have to be updated somewhat to fit some changes that occurred in recent years and must be regarded as early steps in the transformation to new Post-Industrial realities.

To give some pertinent figures of such changes: In England, France and Germany, from 1945 to 1975, industrial output and industrial employment was over and around forty percent of GNP. After 1980, de-industrialization has industries' share sink down to 25% and under. Other sectors have emerged. New financial products, services, and virtual derivatives on such immaterial products,

have grown exponentially, such that in fiscal year 2007, 40 percent of US profits were made in finance.

Theory updates help to argue for a better Renewal as a therapy that brings Recovery faster, and help easing the understanding that Institutional Behavioral Finance (IBF) has become the domain where Schumpeter's Process of Creative Destruction played out both most creatively, and most destructively. Now, after boom turned bust, in the slump, the challenge of the reversal from bust to boom, again will require great crea-tivity for improvement innovations in the IBF profession: Operations and controlling.

Two needs for updating stand out. One, the definition of long-term, medium-term and short-term needs adjustment to the fact that trend periods have shortened. Secondly, staying with Schumpeter's wave analogy of short and long waves, the length of boom periods correlates with latent volatility: What speeds up is getting steaper in the boom phase (higher amplitude). Shortening produces heightening; waves get sharper both on the up-side and on the down-side. Firstly, these realities force me to adjust my definition of "basic innovations" (Mensch 1971, 1972). In 1970-71, under the influence of Schumpeter's Business Cycles book (1939), I defined "Basic Innovation" as creating new branches of industry which then grow over the long haul (Schumpeter: Kondratieff waves). The long term, that was the length of industrial growth cycles. In my Metamorphosis Model (Mensch 1975), I replaced the notion of waves by long-term industry cycles and overlapping S-curves.

Still, the underlying reality was conceptualized by a materialistic production function which incorporates a basic technology into a trajectory of industrial expansion. In the Figure 1, Schumpeter's Wave Theory is shown, depicting a long wave (Kondratieff wave superimposed by short waves (Kitchin, 4 years) and medium waves (Juglar, 12 years). Clearly, the wave concept is "much too flabby" (John Hicks) for purposes of financial planning; hence,it is unacceptable for institutional finance professionals. Since 1977, in my work as a financial advisor to Innovation Fonds (iFonds) investing in Innovation Firms (iFirms), I have extended the definition of "basic innovation" to Kuznets Cycles. In February 1977, Klaus Schwab had invited Nicolas Kaldor, Simon Kuznets, and myself, to a podium discussion at the Davos Forum. Kaldor presented his S-shaped "progress function", which can have the length of a 20 year Kuznets Cycle of branch of industry growth. Both Kaldor and Kuznets suggested to me that I include into my Metamorphosis Model a medium-long Kuznets-Kaldor trend period characterized by a Kaldor Progress Function, set-up by a push of basic innovation. Figure 2 integrates these Neo-Schumpeterian improvements in one plot. New and of great practical utility for iFonds and iFirms is that in a situation as this one, in 2009, this model gives a range of possible trend periods (a "Trend Fan") to choose from.

Situation: Confusion over Some Conjectures. Since I am suggesting "Renewal" as a better, faster way to "Recovery" from crisis, my task is to delineate the microfoundation for decision making on basic innovations. It should be a microfoundation which is consistent with Institutional Behavioral Finance. So let us begin our journey of discovery into the land of Schumpeterian Solution with a quote from Prof. Dr. Clemens Börsig. He is the Chairman of the Board of Deutsche Bank. I picked this quote because it anchors my claim that in order to find a solution to the current crisis, we must first diagnose what is wrong in finance. Hence, Börsig matters as a benchmarker. His view on where we stand is important for us and IBF, (Institutional Behavioural Finance): It is IBF where the key problem appears to be. Before Easter 2009, the Frankfurter Zeitung, a daily widely read by members of the financial community, interviewed Börsig. It was when some financial journalists had written that, maybe, the worst is over. Asked how he sees the crisis will proceed, he replied: "How the time path will look like? I think not like a V; rather more as a U."

In essence, Börsig said: Neither optimists [V] nor pessimists [U] seem to be right, and I personally should not speculate what is realistic [? ? ?] and what is not.
Thus, we can summarize what the symbol [? ? ?] means in the situation, May 2009.

My 45 years of work in Innovations Research for Investment Banking and Innovation Financing lets me venture a suggestion: [? ? ?] means Cognitive Confusion in IBF. Now, suppose we would have asked Professor Schumpeter back in 1939, when his pathbreaking landmark book Business Cycles appeared. “Ten years after the 1929 crash and many years of deap depression, say, Professor Schumpeter, where do we stand now?” His reply might have been, I think, just like that of Professor Börsig in 2009: “As a former banker, I hasten to admit: [? ? ?] = (Neither [V] nor [U])”.

But after that admission of (neither V nor U), Professor Schumpeter might pull his famous Kondratieff Cycle picture from under a pile of papers. This “K-Wave-Picture” is taken from Schumpeter’s 1939 book, and it is depicted as Figure 1: Schumpeter’s Business Cycles. Kondratieff Cycles with overlapping Juglar and Kitchin Cycles.

Given his concept of overlapping Kitchin and Juglar waves over a Kondratieff wave, one of his pupils, say, Paul Samuelson, might have posed three pertinent questions: One, again, “Professor Schumpeter, where do we stand today, in 1939?” Two, “Professor Schumpeter, how do the last six years 1933-39 matter?” And three, “Professor Schumpeter, how about the next six, 1939-45?”

Now, after Easter 2009, let us walk over to MIT and ask Paul what he thinks “Jozi” (Schumpeter’s nick name) migth have answered. You all know Paul’s work and some of his recent writings. Wouldn’t all you Schumpeterians agree with Paul if he replied: “I guess that Schumpeter would give three question marks as his answers: [? ? ?]“. Wave theories fail to give answers to [? ? ?]. In 2009 they fail as they failed in 1939, since wave models work with given wave lengths. We need an alternative theory.

Complication: Cross-Impacts between Finance and Real Economy. Our Formula: [? ? ?] = (Neither [V] nor [U]) is good as a starting point, but it is not good enough for better diagnoses that show ways towards time-saving therapies. My approach is based on the Metamorphosis Model (Mensch 1975). In it I replaced the wave-model of overlapping sine curves (Figure 1) by overlapping S-Curves which might shift back or forth in time, adding flexibility and room for speeding-up actions. Now (Mensch 2009) I show how short and medium-term cycles may accellerate and form bubbles, which eventually go bust, breaking the Kuznets Cycle, creating crash and slump. New in 2009 is the notion that the forces of the breakdown trigger multiple trend-reversals. These reversals form a “Trend Fan” of real options for investors and entrepreneurs. These economic agents perceive of these options as “Trend Fingers”. They represent alternative paths into the short-term, mid-term and long-term future. This “Trend Fan” depicts real options facing the financial and industrial managers.

Figure 2: Mensch’s Metamorphosis Model (2009). Overlapping S-Kurves of various lengths, adding the medium-long Kuznets Cycle, showing Bubbles, Bust and Boom, and what’s up: The “Trend Fan” The fundamental issue is “path-dependencies” between financial and real economic expectation formation, and not only that. “Path-dependencies” are the evolutionary economists’ vocabulary when it comes to regularities in market developments, and technological regimes, that are the basis of industrial dynamics in the real economy.

Industrial managers need regularities (like trends) to make predictions. A financial managers, when he evaluates debt or equity requests made by industrial managers, can simplify things by cutting the request sum down to a risk-adjusted smaller sum by some jack-knife-method that can do without considering any “path dependency”. In other words, industrial managers are forced many years ago to adopt evolutiona- ry models whilst financial managers in banking and equity fonds could do without.

Now, the credit industry must learn to assess the evolving options in real economy. Now, financial managers are challenged not only to learn “path dependency” but, more complicated, higher order complications like “phase dependencies”, “place dependencies”, “pace dependencies” (alias changing speed of change), and “race dependencies” (alias the different competitive games

played by enterprises in real economic branches that are growing slowly ("Kuznets"), or swiftly ("Juglar") or fast ("Kitchin")). If the financial managers don't learn what industrial managers happen to already know, information asymmetry will increase. Banks will get stuck with the less good prospects. But if they learn fast, they will attract the better prospects.

As an Innovations Researcher who has been working for decades for Innovation Fonds (iFonds) that invest in Innovation Firms (iFirms), I participated in the develop- ment of Nonlinear Soft Modelling (Mensch and Wold, 1984) and application in iFonds who need the NSM-Algorithm, for calculating nonlinear interdependencies between "trend fingers" as iFirms' real options in various branches (Wold 1987).

The enhanced Shumpeter-Model (Four Types of Business Cycles)

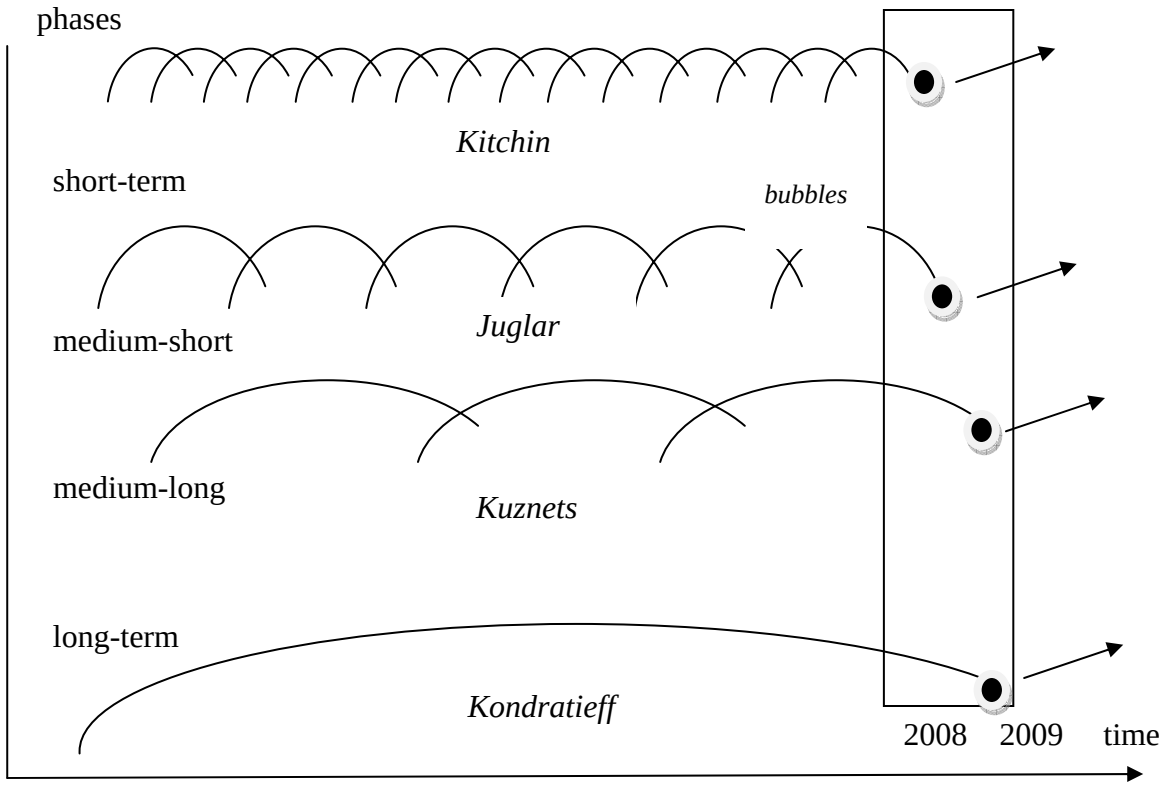


Figure 2: Mensch's Metamorphosis Model (2009). Overlapping S-Kurves of various lengths, adding the medium-long Kuznets Cycle, showing Bubbles, Bust and Boom, and what's up: The "Trend Fan"

Solution: Integrated Microfoundation for Financial and Industrial Managing. Figure 2 shows an alternative for approaching the "Neither [V] nor [U]" by claiming existence of opportunities for speeding-up the pessimistic pathway [U] out of crisis. Speeding-up means: inacting path-, phase-, place-, pace- and race-dependencies. Our working hypothesis is that Institutional Behavioural Finance is the bottleneck. The working hypothesis is, from a Schumpeterian perspective, that the bottleneck

is the most restrictive within the field of Innovation Financing. Its a market failure, yet a rather complicated one to diagnose and possibly very difficult to cure. Because in Institutional Behavioural Finance, a tendency exists for both over-optimism [V..] and over-pessimism [..U]. In either case, financial risk managers restrain. They don't change behaviour and market conduct, arguing they need not change or cannot change, thus continue a course of action which is risking boom and bust. In Micro-Macro-Theory, this places the blame on IBF, which has a long history going back to before 1931.

When Edmund S. Phelps, in 1981, reviewed Arthur M. Okun's last book, «Prices and Quantities», in the JEL XIX, entitled «Okun's Micro-Macro-System», printed in 1981, he started with what he denoted «the original Keynesian question» of 1931: Why do not wages jump to forestall slumps or at any rate to cure them before they become serious? Hence, in 1931, the blame was placed on labor market participants. In the 1981 review, Phelps failed to note Schumpeter and the entire line of European Micro-Macro-Theories. He wrote that Okun "pays extensive tribute to the earliest micro-macro theory of boom, and of slump. Yet he (Okun) concludes that such theory cannot explain the duration of the deeper slumps".

This "ealiest" (Phelps) wave of micro-macro theories included information theories in the "invisible hand" tradition as well as wage-contract theories and price-contract theories of the market coordination failure tradition. Authors in this "earliest" wave of contributions were Alchian (1969), Phelps (1969), Mortensen (1970), Holt (1970), Lucas (1972, 1974), Stiglitz (1972) and others "in the rational expectation camp", wrote Phelps. Hence, in our terms, even around 1974: No answer to [???] = [..U]. In this paper I am exploring an innovation-theoretical microfoundation as the polar opposite to the information-theoretical microfoundation. In order to highlight this juxtaposition of quasi-neoclassical information theory with neo-schumpeterian innovation theory, let's form a Two-by-Two matrix of theories for sorting these Micro-Macro-Theories in a systematic way.

Information-Theoretical Micro-Macro
Information Inefficiencies
Information Asymmetries

Price-Quantity Equilibrium Theories
Output Market Power Theories
Goods Market Failure Theories,

Wage-Cost Contractual Micro-Macro
Labour Market Power Theories
Input Market Failure Theories

Innovation-Theory: Neo-Schumpeter
Incremental Gradualism of Change
Evolutionary Structuralism (SETs).

We place information theory in the North-West corner, over and above the wage-contract (labour-market failure) theory in the South-West corner.

In the North-East courner we place price-quantity equilibrium theory, price-contract (market disequilibrium) theories being special cases. This North-East quadrant is also the place where we locate the flip-side of our diagnostic working hypothesis, namely, that Institutional Behavioural Finance (IBF) became the domain of Schumpeter's Process of Creative Destruction and goods markets failure. If "Goods Markets" refers to Financial Products, Structured Products, Virtual

Investment Products, and Hybrid Virtual Derivatives such as Credit Default Swaps (CDS), and Reinsurance Products on CDSs (CDOs), plus CDS-Options and CDO Reverse Contract, we are in place.

Creativity in Financial Innovation goes hand-in-hand with failure in real-goods investment in industrial innovations, and with indirectly contributing to deindustrialization and gradual destruction of the Industry Structure, and its destabilization. In the South-East quadrant of the matrix we place evolutionary innovation theories as polar opposits of information-theories in the North-West quadrant. It is 21st century evolutionary theory versus 19th century equilibrium theory in modern disguises. These four fields summarize our literature review of the Micro-Macro-Theories.

In the N.W. field, we have placed the "invisible hand" information theoretical tradition. The market failure theories are placed in the S.W. corner and in the N.E. corner. In his landmark micro-to-macro systems analysis of 1981, Okun dubbed these two wage contract and price contract theories as the «invisible handshake» theories. Clearly, our diagnosis if market failure in the financial sector due to imbalances in Institutional Behavioural Finance (IBF) is an "invisible handshake" theory á la Okun. Now, this Four Theories Matrix provides us with a clearly differentiated spectrum. The "visible hand" innovation theories in the S.E. corner constitute our focus of interest.

My suggested "Schumpeterian Solution to the Current Crisis" fits in this S.E. Field. In regard of the working hypothesis, that The Therapy concerns the IBF-Imbalances, it simply says that we must replace too much "invisible handshake" by too many public banks by more "visible hand" in controlling Financial Innovations and in promoting Real Economic Innovations by better Innovation Financing Techniques, and iFonds. This is Micro-Macro-Theory with better, positive feedback Macro-to-Micro. What follows is the outline of the solution. The outline operationalizes Gutenberg's bottleneck principle. Erich Gutenberg, the eminent management scientist, suggested that in order to find a viable strategy of change, even a veritable basic innovation, one first analyses how a restrainer in the bottleneck views his very situation, secondly one analyses how a restrainer (supposedly IBF) is thinking in view of the alternative chances he has in the situation, and thirdly, with his typical objective in mind, one analyses how he bridges the gap between his restricted reality and his desired result. Since our working hypothesis assumes that Institutional Behavioral Finance (IBF) is the set of economic agents in the bottleneck, step one is illustrating how IBF thinks. Step two and three follow accordingly.

Figure 3 presents the Three-by-Three Morningstar Matrix of Capital Assets which the financial managers always have in mind when considering investing or not investing. To focus on IBF in Innovation Financing, we consider iFonds and iFirms managers. Typically, they are employed to handle either small firms (Small Caps), medium-size firms (Mid Caps) or large firms (Largs Caps). These are the three Morningstar rows. Typically, investment analysts are specializing on conventional business (Value), on expanding business (Growth) or innovative business (Chance). They take a stance in terms of both Morningstar rows and columns. Value Firms, Growth Firms and Chance Firms (iFirms) are what investment fonds look at. Typically, the Morningstar Matrix tells an investor by a mark in the respective box what the fonds manager pursues as an investment strategy. Asset managers who are working for iFonds typically look for small and mid-sized iFirms (column 3, row 2 and 3). Note that iFirms capture only a minor fraction of the attention span of iFonds managers. They have a narrow focus. Their stance is highly specialized, due to the information efficiency requiremens, and due to information asymmetries.

Figure 3: Mornigstar Matrix of IBF-Stance within iFonds.

Figure 4: Boston Consult Matrix for categorizing IBF-Target iFirms. The second step is illustrating how this fragmented view of IBF is further constraint.

Additional constraints are understood when seeing what IBF-Stance further implies. Figure 4 presents the Two-by-Two Boston Consulting Matrix of Business Divisions of industrial firms. They

are being classified as “Cash Cows”, “Stars”, and as “Dogs” in terms of their dynamic market characteristics: relative Market Growth and relative Market Share. These indicate target firms’ “relevant strength” and “relative strength”. Typically, all iFonds managers avoid “Dogs” for lack of innovativity, and all iFonds managers prefer “Stars” because of outperformance in innovativity ($0 < °M < 10$ on a ten-degree scale of degree of innovativity). M is measured by Innovation Rating™, a new, proprietory technology of the IN-Group.

All iFonds desire earning pioneering profits: Expected Alpha returns from innovation. There objective function reads $E(P) = F(dS, °M)$, where E(P) stands for expected performance, °M the degree of innovativity ($°M = 10$ means: a basic innovation), and dS stands for structural readiness of the iFirm to jump from small to mid-size, or from medium-small to mediumlarge, as a result of a “shooting Star” in the pipeline. Note that in Figure 3, depicting financial managers’ preferences in terms of Value, Growth and Chance, the terms denote expected performance E(P) in Trend Periods identified as phases of the Kitchin Cycle, Juglar Cycle or Kuznets Cycle, respectively. Thus, if a fonds manager typically focuses upon one row in the Morningstar Matrix, this restraining stance means he probably misses many an iFirm- opportunity if the situation is as in Figure 2: Many iFonds are missing iFirms on other Trend Fingers.

Note also in Figure 4, depicting how a target firm performs relative to other firms, the iFonds manager looking for “Stars” typically overlooks mid-sized “Dogs” which have a major innovation ($°M>5$) in the pipeline; one that allows the “Dog” becoming a “Star” if the institutions’ financial behaviour would accommodate: Looking for “Renewal”.

This completes the rough outline of an integrated Schumpeterian microfoundation, which incorporates new concepts and methods for shifting towards wanting Renewal.

Conclusions:

By expanding on Schumpeter’s short and long wave model (1939), namely by fitting- in Kuznets-Cycles that are formed as an S-Curve, like Kaldor’s Progress Function is, we have reached a depiction of the current crisis that opens the view at a spectrum of potential options. These choices offer more flexibility than Schumpeter’s model does. It offers the flexibility to move quicker (picking a faster new Kitchin trend), bigger (by selecting a Juglar trend, making a large leap investment), or better (selecting basic innovations that reach far: Far as Kuznets Cycles or beyond to a long Kondratieff).

This expansion also opens the view for scenarios not tied-down by an underlying Production Function, which is appropriate for industrial and material production but not for immaterial goods and virtual goods and derivatives. For which the Progress Function still holds true, and offers alternative future paths (a Trend Fan). Modern methodology is available (Nonlinear Soft Modelling) for calculating real options with new tools (Real Option Method, ROM), supplementing the Discounted Cash Flow Method (DCF) that is standard in handling predictions in the financial community. Our working hypothesis is that Institutional Behavioral Finance (IBF) is diagnosed as main cause of the crisis, and that improvements in IBF will provide the therapy. Pro- vided, conceptual and methodological progress is facilitating the change. It does!

The gist of this new, Special Evolution Theory (SET) is that it has a Schumpeterian Microfoundation that is pragmatic. Pragmatic that it allows for speeding-up activities along Kaldor’s Progress Function (“up the J-Curve” with positive returns to scale and to scope); thus breaking out of the lull of Marshall’s “Continuity Principle”, which is characteristic of all General Equilibrium Theory (GET) with structural standstill.

Schumpeterian Microfoundation is consistent with practical realities of financial and real economic entrepreneurs. The world is often “discontinuous” (Schumpeter, 1909).

In 2009, Schumpeter’s “Discontinuity Principle” prevails. There exists a “Trend Fan” of real options. Up to five Trend Fingers to choose from; and new ROM methodology for IBF to look for

better choices and for succeeding by investing in Renewal. In an GET-oriented institutional setting, gradualisms is always preferred, and the structural improvements are always considered too difficult. Reforms are seen as too complex. There is complexity. Simple evolutionary concepts of "path dependency" are refined by pragmatic differentiations: Today's "phase dependencies" will differ in all 27 EU- countries; there are "place dependencies" that require a Schumpeterian Microfoun- dation as delineated above. Some countries move faster than others in new growth sectors. There are different speeds of progress ("pace dependencies"). And there is "race dependency" when iFirms run for the best opportunities. The Trend Fan says: "Before you invest, investigate. Don't invest in prediction (simple trends), invest in preparation (best options)". The SET says: This crisis favours the prepared minds. This is my new "structuralist" message at a time or "gradualist" reform-stagnation.