A Roadmap to Neo-Schumpeterian Economics

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Overview

• Introduction – The need for a comprehensive theoretical approach
• Industry Dynamics (The Elgar Companion to Neo-Schumpeterian Economics)
• State Development
• Financial Markets
What is Neo-Schumpeterian Economics about?

Neo-Schumpeterian Economics deals with dynamic processes causing qualitative transformation of economies driven by the introduction of novelties in their various and multifaceted forms and co-evolutionary processes.

The introduction of novelties i.e. innovation:

- process perspective
- broad understanding (technological, institutional, organisational and social dimensions)

Innovation ~ the central normative principle
• Neoclassical Economics:
   Rational individuals and the price mechanism are responsible for an efficient allocation of resources within a set of constraints.

• Neo-Schumpeterian Economics:
   Entrepreneurship and innovation are responsible for development by removing and overcoming limiting constraints.

Three characteristic features of the Neo-Schumpeterian approach:

(i) **qualitative change**
   affecting all levels of an economy

(ii) **punctuated equilibria**
   periods of radical change follow periods of smooth and regular development

(iii) **pattern formation**
   processes to be observed are not erratic but spontaneously structuring
This might not sound brand new …

and indeed with respect to the analysis of industrial development, one can without doubt state that orthodox Schumpeterian Economics is representing these features adequately.

However, we state that qualitative development is an ubiquitous phenomenon affecting not only industries but also the state and the financial markets and that there is an important co-evolutionary relationship between these different domains which has to be considered the core of Neo-Schumpeterian Economics.

Accordingly, in order to become a comprehensive theoretical approach Neo-Schumpeterian Economics has to apply its basic principle of innovation to the other important areas shaping economic development.

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The three columns of Neo-Schumpeterian Economics

Co-Development

Industry  Finance  Public sector

Orientation towards the future: uncertainty
Ingredients of Neo-Schumpeterian Industrial Dynamics:

- Schumpeter’s work
- Evolutionary economics
- Complexity economics
- Approaches focussing on change and development
- Approaches focussing on collective innovation processes

Schumpeter’s Work

- Entrepreneurial driven economic development (Schumpeter, 1911)  
  SCHUMPETER MARK I

- Industry driven economic development (*routinized innovation*,  
  Schumpeter, 1942)  
  SCHUMPETER MARK II

Joseph A. Schumpeter, 1883 - 1950
Evolutionary Economics I

- dynamic developments
- historical time
- emergence and diffusion of novelties
- driven by creation, imitation and selection
- true uncertainty

Evolutionary Economics II

Learning is central:

a) bounded rational actors learn and search in uncertain environments
b) as a cumulative process (path dependencies)
c) as a social and interactive process (collective innovation; heterogeneity as a source of novelty)
Evolutionary Economics III

- micro-macro feedback effects

- aggregate phenomena are emergent properties of interactions on the lower levels

Complexity Economics

Social systems share many commonalities with complex systems. Within the last 20 years complexity sciences have developed many tools to describe and analyse complex systems which are increasingly applied on socio-economic phenomena (e.g. Kirman, 2002, Arthur, 2002 …).
Change & Development

- Long run development (e.g. Schumpeter, Kuznets, Clark)
- “Middle-term” development (Industry Life Cycles e.g. Utterback, 1994)

⇒ Laws of motion and dynamics (stylized facts)
Collective Innovation Processes

• Descriptive approaches: e.g. the experimentally organized economy (Eliasson, 2003), sectoral systems of innovation (Malerba, 2002) …
• Systemic approaches: e.g. national innovation systems (Lundvall, 1993), regional innovation systems (Cooke, 1995)

⇒ Learning and building up of competences as an interactive process.
   SCHUMPESTER MARK J
The role of finance in a Neo-Schumpeterian Economy (1/5)

Schumpeter himself has strongly emphasised the role of both the creative entrepreneur and the risk friendly banker in his *Theory of Economic Development* of 1912. They have to be considered in a *symbiotic relationship*.

The major task for the financial sector has to be seen in the acquisition and supply of capital for firm actors.

E.g. J.P. Morgan often did not only play the banker’s role but actively huddled on a creative role in the railway companies.

The role of finance in a Neo-Schumpeterian Economy (2/5)

Besides banks, but historically later, the stock market plays an outstanding role for firms in their processes of acquiring capital.

Only recently, venture capitalists, a blend of financial and technological knowledge, enter the scene with a major focus on acquiring capital for risky innovative start-ups.
The role of finance in a Neo-Schumpeterian Economy (3/5)

In a Neo-Schumpeterian perspective again the future orientation of the finance sector is essential. Besides uncertainty, a major feature of knowledge creation and innovation is the extreme time consuming nature of these processes.

I.e. a long term orientation is necessary.

Two potential threads arise from this intrinsic alliance between uncertainty and long-term orientation:

The role of finance in a Neo-Schumpeterian Economy (4/5)

a) In order to reduce uncertainty, the time horizon is shortened:

Recent developments (e.g. quarterly reporting procedures, immense activities of equity funds and insurance companies offering their members a guaranteed minimum income …) are severely damaging the possibilities of long term planning of the actors on the financial markets.

b) Signals from the real economy are misinterpreted:

Bubble effects like the ICT-Hype in 2000 are examples for a particularity of financial markets which stems from positive feedback effects between potential extraordinary profits (greed) and exorbitant expectations fed by technological development.
The role of finance in a Neo-Schumpeterian Economy (5/5)

The orientation towards future developmental potentials of economies obviously necessitates the inspection of monetary policy and the role of central banks.

Price stability as the only benchmark for evaluating central bank policy might not be sufficient in a Neo-Schumpeterian economy, instead an additional orientation towards growth and development is necessary.

E.g. Amendola, Gaffard (2005):

The problem that central banks confronted with processes of change (and hence with innovation and growth) are really facing is to deal with financial constraints to impact on real constraints - the constraints that determine the evolution of the economy and hence what eventually happens to inflation - rather than the problem of credibility of their commitment to price stability.

Considerations on a Neo-Schumpeterian theory of the state:

a) the necessity for a public sector
b) normative perspective: defining tasks for public activities
c) positive-empirical approaches: explaining the real developments
a) the necessity for a public sector (1/3)

Uncertainty is a key feature accompanying every kind of innovation. Schumpeter’s notion of *creative destruction* is emphasising the two sides of the coin: in every innovation process we will find winners and losers.

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a) the necessity for a public sector (2/3)

A society can agree on a “social contract” to deal with the peculiarities and imponderables of innovation processes which is executed by the state in the sense of John D. Rawls. Uncertainty is tightly connected to Rawl’s *veil of ignorance*.

For firm actors this social contract entails both, support for uncertain innovation and social responsibilities in the case of innovative success.

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John D. Rawls, 1921 - 2002
a) the necessity for a public sector (3/3)

Public responsibilities when uncertainties distort individual decisions, e.g.

- education,
- basic research,
- infrastructure,
- health,
- ...

b) normative perspective: defining tasks (1/5)

Basically all public interventions have to be chiefly scrutinized whether they support or hinder the potential for economic development. An orientation of public activities towards the future is postulated.

Gunnar Eliasson (2001) negatively has formulated this claim by emphasizing the two cardinal errors to be observed in economies:

a) To discard promising opportunities too early, and
b) to stay on exhausted trajectories too long.

In both cases resources for future development are wasted.
b) normative perspective: defining tasks (2/5)

Example 1) Complexity

With respect to education, science and research an important hint can be found in Richard Musgrave’s theory of *meritoric* goods.

Due to their future orientation, their complex character as well as their potential positive spillovers individuals tend to undervalue these goods.

b) normative perspective: defining tasks (3/5)

Example 2) Different speeds of development

Creative destruction in a Schumpeterian sense is closely connected to the obsolescence of qualifications which causes severe problems on the labour markets (*mismatch unemployment*).

From a dynamic Neo-Schumpeterian perspective this mismatch demands not only for an administrative design of labour policy, but for an active *future oriented* namely *knowledge-based* design (e.g. the Danish model).
Example 3) Complexity and different speeds of development

Health and demographic change are two key issues in almost all industrialized countries. A future oriented policy design in these areas has to consider the changing framework conditions for demand development, labour markets and health expenditures.

- new qualifications (service orientation)
- medical technical progress
- new models of health and pension systems …

Example 4) International coordination

Newly emerging economic areas challenge the inter- and supranational coordination of policy in order to benefit from the developmental potentials stemming from globalisation (economies of scale) and regionalisation (variety ~ creativity).
c) the positive-empirical approach (1/2)

*Wagner’s Law* states that the development of an industrial economy will be accompanied by an increased share of public expenditure in GNP.

→ connecting Schumpeterian dynamics with public dynamics:
- with growing incomes more public goods are consumed \( (\eta_{yx} > 1) \).
- and the quality of the public goods is changing.

![Adolph Wagner, 1835 - 1917](image)

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c) the positive-empirical approach (2/2)

Three possible outcomes:

- No limits for the growth of the public sector (*Capitalism, Socialism and Democracy, 1942*)

- Privatisation of public goods (health, education …) → uneven distribution of services

- Increasing importance of the qualitative dimension of the supply of public goods (the quantitative dimension of Wagner’s Law is complemented by a qualitative dimension) → strengthening the consumer absorptive capacities for superior (meritoric) goods.
… to summarize

- A comprehensive Neo-Schumpeterian economic theory focusing on innovation-driven qualitative development has to offer theoretical concepts to analyze the various issues of all three columns: Industry, Finance and Public Sector.

- Innovation and uncertainty are ubiquitous phenomena characteristic for each of the three columns and intrinsically interrelated.

- In particular, an improved understanding of the development processes can only be expected when additionally the co-evolutionary dimension between the three columns is taken into account adequately.

- In a Neo-Schumpeterian economics perspective there exists only a narrow corridor for the prolific development of socio-economic systems.