Extending or fusing Régulation theory to analyse contemporary industrial sectors? Insights from the financialisation of electricity sectors[1]

Lynne CHESTER
University of Sydney, Australia, lynne.chester@sydney.edu.au

ABSTRACT.

Electricity sectors around the world have undergone radical structural change driven by neoliberal policies and global processes. There is little understanding of the impact of the global phenomena of financialisation on the structure, operation and outcomes of electricity sectors which this paper seeks to address and to explain financialisation's restructuring role in conjunction with globalisation and national policies. An empirical analysis, using a sector *Régulationist* approach, is undertaken of the electricity sectors of the EU and Australia. Drawing from these empirical insights, the paper explores how the concepts underpinning this macro-bounded framework can be either extended or fused with alternative non-mainstream approaches to analyse the concrete form of industrial sectors no longer confined within national geographic borders. A conceptualisation of the contemporary form of industrial sectors is also advanced.

Keywords: electricity, industrial sector, institutional forms, regime of accumulation, sectoral mode

[1] **DRAFT: NOT TO BE CITED WITHOUT THE PERMISSION OF THE AUTHOR.**

A. INTRODUCTION

Industrial sectors have undergone significant restructuring from the global phenomenon of financialisation, globalisation and neoliberalism. Most analyses of financialisation have focused at the macro level or the firm. To a far lesser extent, the relationship between financialisation and the restructuring of production within specific industrial sectors, global production networks, firms and commodities has been the subject of empirical research. Hence there is a limited understanding of the form of productive restructuring which has occurred from these phenomenon and the consequential implications for national industrial policies.

A systemic understanding of the impact of financialisation on the restructuring of production needs to be grounded in empirical analyses of industrial sectors. The restructuring of production will not be illuminated by the study of a single commodity or a single firm. Empirical studies commonly rely on a single framework which confines analysis to one level such as a macroeconomy, an individual firm or a commodity. However, financialisation is denoted by several different dimensions which have impacted at multiple levels - global, national, sector, market, commodity, firm and household. Moreover, an industrial sector produces multiple commodities, interconnects with multiple markets (including export and import), comprises a large number of firms, and provides inputs to other sectors. Thus the scope of the analytical task requires a framework that: integrates finance and production; takes into account sectoral specificities such as firms operating in more than one industrial sector and globally; can be applied at multiple analytical levels (sector, market, firm and commodity); is able to explain structural change arising from multiple factors over time and at different levels within an industrial sector; and can relate concrete forms of financialisation and the restructuring of production with abstract theoretical explanations of contemporary capital accumulation.

The analytical challenge lies in the articulation between enquiry conducted at macro, meso and micro levels, that is, the theoretical reconciliation between capitalism as a macroeconomically coherent production-distribution-consumption relationship and the structure of its constituent parts without privileging a particular direction of causality either from macro to meso to micro, or the other way around. The study of the constituent parts of the capitalist system, the units of production, has typically focussed on the firm and the relationships between firms.

Régulation theory provides a macro-bounded analytical approach which can be deployed to analyse a sector. Can it be effectively applied to analyse contemporary industrial sectors which operate beyond the physical boundaries of a macro-economy as a result of global phenomena like financialisation? Would its explanatory strengths be enhanced through extension of fundamental concepts and/or fusion with similar institutional mid-range theories, namely the Social Structure of Accumulation (SSA) approach and Fine's systems of provision (SOP) approach? These are the two fundamental questions which this paper seeks to answer through the analytical lens of one industrial sector, electricity.

The paper is structured as follows. Section B discusses the differing conceptualisations of financialisation and explains the rationale for our view of financialisation as a multi-dimensional phenomenon, with differing scales of incidence and effects, grounded in a co-constitutive dialectical relationship with the political and economic doctrines of neoliberalism i.e. the political and economic ideology of neoliberalism has driven the processes of financialisation which in turn shape or may run counter to neoliberal ideas and principles. Similarly, we assume a co-constitutive relationship between finance and production working together both in reinforcement and possible contradiction which is consistent with our view of the capitalist economy organised around the accumulation of capital and its inherent contradictions.

Section C provides a broad overview of empirical financialisation studies which are distinguishable by their methodologies and analytical levels. While these studies have revealed the relationships between finance, profit and production, these analyses, with few exceptions, have not specifically considered how production has been restructured in response to the primacy of profit and financial imperatives. Analyses have predominantly been at the macro level with attention to production limited to financial investment being privileged over productive investment. This has obscured the nature of the symbiotic relationship between finance and production and the complexity of the structural transformation of production has been precluded by the analytical level adopted by past studies. To fully understand the implications of financialisation on the organisation of production, empirical analysis needs to be extended to the level of sectors and the production of specific commodities within those sectors.

Section D discusses the application of *Régulation* theory to the analysis of 'financialised' industrial sectors. A set of analytical questions is proposed to reveal the financialisation of the macroeconomy's mode of *régulation* which it is posited can be mirrored in a sector analysis. The findings from the empirical analysis of two electricity sectors – Australia and the European Union (EU) – are presented. Australia provides an example of a sector which is globally integrated not through trade but through financial flows and ownership. The EU provides an example of an electricity sector which trades across national geographic boundaries. Both sectors are shaped by nation-state agreements with supranational institutions.

Section E discusses the potential analytical purchase of the SSA and SOP approaches to investigate the parallel processes of financialisation and the contemporary restructuring of production, and the differences with a *Régulationistist* analysis.

Section F presents conclusions. The findings of the empirical analysis are used to theorise about the implications of financialisation for the structure and operation of contemporary industrial sectors, and the strengths and limitations of a *Régulationistist* analysis. It is contended that there needs to be a re-conceptualisation of each institutional form which comprise the mode of *régulation* to ensure there is adequate account of 'flows' or 'processes' embodied in global phenomena and impervious to national geographic borders. This re-conceptualisation may benefit from drawing on the 'institutional insights' proffered by the SSA approach. For example, the definition and understanding of the wage-labour nexus could give more explicit consideration to cultural implications for 'way-of-life' and the standard of living and to the impact of different household structures on consumption. It is also proposed that the commodity-level of the SOP approach – fused with a *Régulationistist* sector analysis – may illuminate a different dimension of a financialised industrial sector.

B. CONCEPTUALISING FINANCIALISATION

Finance has long played a central role in the economy rendering goods or services into an exchangeable form and thus, facilitating trade. Since the 1970s or so, finance has moved beyond this traditional role and the extent of its influence has been observed through several empirical dimensions including: the large-scale expansion and proliferation of financial markets over the last 30 years leading to a three-fold growth in the ratio of global financial assets to global GDP (Blankenberg & Palma 2009); the de-regulation of the financial system since the 1970s; the expansion and proliferation of financial instruments (futures, derivatives, sub-prime mortgages, securitisation etc) associated with the creation of a wide range of financial institutions and markets; the increasing share of national income from the financial sector as the profits of non-financial firms have been increasingly derived from their financial not productive activities; the marked increase in the share of national capital stock from intangible assets; the distinct shift in national income shares from wages to profits and a significant rise in the ratio of managerial remuneration to employee income, and rising income inequality (OECD 2008); the penetration of finance into a wide range of economic and social activities (housing, health, superannuation, education) and into the environment through the creation of carbon trading markets; and an ethos of reliance on the market and the use of the state as an 'agent of last resort'.

Much has been written about the observed realignment of capitalism towards financial markets, the emergence of 'money manager capitalism' and the rise of the 'global financial system'. This discussion of the nature and dynamics of contemporary capitalism has been increasingly framed around the term 'financialisation' to describe how finance has come to dominate the operation of the real economy and permeate almost every sphere of social and cultural activity (Christopherson *et.al.* 2013).

Definitions of financialisation throughout the literature generally refer to it in a concrete sense being a phenomenon, having processes, forms, mechanisms or measures, and leading to effects and consequences. Sawyer (2013: 16) suggests financialisation should be viewed either "in terms of the object of study in the broad terms of the quantitative and qualitative evolution of the financial sector and the role of finance" or "a new epoch or stage of capitalism". We agree that some definitions do point to such a dichotomy although not all can be so easily categorised and nor are concretised definitions always suitable to the analytical task as we explain below.

One widely cited – and broad - definition is that proffered by Epstein (2006: 3) with financialisation seen as "the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies". Writing around the same time, Krippner (2005: 174) defined financialisation as "a pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production" which she measured through the relative importance of revenue sources for non-financial firms and that of the financial sector "as a source of profits for the economy comparing financial to non-financial profits" (*ibid.:* 182).[2]

The notion of financialisation as a 'regime of accumulation' or 'stage of capitalism' is also posited by *Régulationist* scholars (Aglietta 2000; Boyer 2000, 2013) and those of the Social Structure of Accumulation tradition (Kotz 2010). Others have suggested financialisation to be "a new hybrid phase of the monopoly stage of capitalism" (Foster 2007: 1) and a "systemic transformation of mature capitalist economies" (Lapavitas 2011: 611).

Further empirical conceptualisation of financialisation is evidenced by Stockhammer (2004: 270) who refers to the "increasing activity of non-financial business on financial markets … [and] "the rise of incomes from financial investment". Similarly Dumenil & Levy (2004) point to the increasing political and economic power of a *rentier* class whereas some ten years earlier the growing prevalence of financialisation was seen as the explosion of financial trading (Phillips 1994).

Others have defined financialisation as a distinctly changed relation between finance markets and large non-financial corporations with, for example, the NFC being conceived as a 'portfolio' of liquid assets to be used to maximise continually maximise the stock price instead of the more traditional view of "an integrated, coherent combination of illiquid real assets assembled to pursue long-term growth and innovation" (Crotty 2003: 272). A further definition, and commonly adopted, is the conflation of financialisation with the changes induced by the ascendancy of 'shareholder value' as a mode of corporate governance (Lazonick & O'Sullivan 2000). In addition, financialisation has been equated with the use of financial innovation (e.g. securitisation, derivatives) to convert illiquid to liquid assets to reduce risk and increase the mobility and volume in financial assets trading (e.g. Allen & Pryke 2013; Toner & Coates 2006). This latter group of definitions, in our view, are more concerned with the *mechanisms* of how financialisation occurs i.e. the means used to facilitate the penetration of finance into ever more areas of economic and social reproduction.

Throughout the literature, there is generally widespread use of empirical concrete phenomena around which definitions of financialisation are framed. Another relatively common occurrence, with the exception of some scholarship of financialisation as an accumulation regime, is the conceptualisation of this phenomenon as being static – it occurs, becomes embedded, and remains in some fixed form over time. There is also a tendency to perpetuate a binary treatment of financial and non-financial firms with the former acting as an exogenous force on the latter. In other words, financial firms are the agents of financialisation subjecting non-financial firms to this pressure. Not only does this express a one-way causality, it reinforces the binary distinction of firms and attributes any shift in productive organisation solely due to the calculative logic of non-financial firms.

This raises another aspect about causality and in particular, the causal relationships between neoliberalism, globalisation and financialisation. In Fine's (2013: 57) view financialisation "has become the most prominent characterization of the current [neoliberal] period of

[2] A few years later, Krippner (2011: 27) similarly refers to financialisation as "the growing importance of financial activities as a source of profits".

capitalism" with globalisation being the other stand-out feature. The genesis of financialisation, according to Kotz (2010), lies in neoliberal restructuring and "the leadership of finance has been identified at the root of neoliberalism and the internationalization of capital (Dumenil & Levy 2005: 17). These views, however, invoke a sense of one-way causality between the political and economic doctrines of neoliberalism and the phenomena of financialisation and globalisation.

Within a literature dominated by 'empirical conceptualisations' a small group of contributions have presented a more abstract understanding of the process and outcome of financialisation particularly from a Marxist perspective. Financialisation is viewed as the result of fictitious capital 'pushing aside' industrial capital and thus causing a shift in the alignment of the spheres of production and circulation (Blackburn 2006; Leyshon & Thrift 2007: LiPuma & Lee 2005). Thus competition and outcome is seen, in part, as reflecting the dialectical nature of the relation between the credit system and real (productive) capital. The credit system, which plays a pivotal role to the process of exchange in the circulation sphere, can both reduce the turnover of industrial capital and undermine capital accumulation if surplus value is appropriated instead of channelling it into investment in productive capital and the generation of surplus value. This is an inherent contradiction of fictitious capital within the money circuit of capital, and the creation of more and more complex financial products has vastly expanded the sphere of circulation and increasingly circumvented the sphere of production. Thus, according to this logic, a greater share of value is going to that part of money capital (money to make more money or IBC, interest bearing capital) not used to finance the expansion of industrial (productive) capital.

Although more complex and abstract than the more commonly found conceptualisations of financialisation, this latter approach does provide a useful starting point towards theorising about the relationship of the three phenomena of financialisation, globalisation and neoliberalism to the dynamics of the accumulation process which is critical, along with comparative empirical studies, if we are to develop a systemic understanding of contemporary capitalist accumulation.

We view financialisation as a multi-dimensional phenomenon, with differing scales of incidence and effects, grounded in the political and economic doctrines of neoliberalism and one of the defining features of the contemporary era of neoliberal capitalism. This phenomenon, like that of globalisation, we also view as having a co-constitutive dialectical relationship with neoliberalism, i.e. the political and economic ideology of neoliberalism has driven the processes of financialisation which in turn shape or may run counter to neoliberal ideas and principles. Similarly, we assume a co-constitutive relationship between finance and production working together both in reinforcement and possible contradiction. This is consistent with our view of the capitalist economy organised around the accumulation of capital through the production, circulation and distribution of surplus value, and the contradictions inherent to the process of capital accumulation.

For the above reasons, we concur with Fine's (2013a: 55) definition of financialisation as the "intensive and extensive accumulation of fictitious capital or, in other words, the increasing scope and prevalence of IBC in the accumulation of capital". By 'intensive' is meant "the growth and proliferation of financial assets themselves with increasingly distant attachments to production and exchange of commodities themselves" (*ibid:* 47). 'Extensive' refers to the increasing spread of new forms of IBC across the areas of social and economic reproduction.

This conceptualisation of financialisation is not bound by empirical phenomena and allows us to move from the abstract to the concrete, does not presuppose one-way causality between financial and non-financial firms, and does not assume that the processes, mechanisms or forms of financialisation are static over time or that exogenous forces drive the processes of financialisation. Thus, the research task is underpinned by a definition which does not pre-empt findings by constraining assumptions nor limits the analysis to any particular process or mechanism of financialisation or only empirical outcomes. This conceptualisation provides sufficient scope to develop a systemic understanding – based on empirical evidence – of the effects of financialisation on productive activity and the contemporary process of capitalist accumulation and thus facilitate the use of the empirical to contribute to the theorising of the dynamics and relations of accumulation.

C. EMPIRICAL STUDIES OF FINANCIALISTION

A number of research areas have emerged, during the last three decades, about the phenomenon of financialisation which are distinguishable by their methodologies and analytical levels.

First, *Régulationist,* post-Keynesian and economic sociology studies have observed significant changes in the institutions and structures of capitalism arising from the declining profitability of manufacturing in advanced capitalist economies, and the growing financial activities of non-financial firms, leading to a characterisation of financialisation as the regime of accumulation to succeed Fordism (e.g. Boyer 2000, 2013; Kotz 2010).

Second, macro level studies have demonstrated the increase in financial investment and the simultaneous slowdown of the accumulation of physical assets i.e. 'real' investment (e.g. Crotty 2003; Krippner 2005; Orhangazi 2008; Stockhammer 2004). In addition, there have been specific country studies of the ways in which financialisation has worked itself out at national levels (e.g. Epstein 2005: 243-353).

A third research area centres on financialisation of the modern corporation. Shareholder value is attributed to the shift in corporate governance, since the 1980s, to maximise profit for shareholders rather than to retain earnings for productive expansion (e.g. Aglietta 2000; Lazonick & O'Sullivan 2000). A handful of empirical studies have focused on the business strategies of giant US and UK firms (Froud *et.al.* 2006, 2012).

Another area of research focuses on how financialisation processes have shifted risk from large firms and institutions to individuals, households and everyday life (e.g. Martin 2002; Rafferty & Yu 2010; Sennett 2006). More recently, the spatial dimensions of financialisation have been considered (e.g. Coppock 2013) along with the impact on production innovation (Berger *et.al.* 2014).

While these studies have revealed the relationships between finance, profit and production, research about financialisation has fallen short of providing a systemic explanation of the structural transformation of national economies over recent decades (Lapavitsas 2011). Empirical analyses, with few exceptions, have not specifically considered how production has been restructured in response to the primacy of profit and financial imperatives nor – and equally important - the role which the restructuring of production has played to sustain the phenomenon of financialisation. These analyses have predominantly been conducted at the macro level through a quantitative finance 'lens' with attention to production limited to financial investment being privileged over productive investment (e.g. Stockhammer 2004). This raises two critical issues.

First, the juxtaposing of the financial and the real obscures the nature of the symbiotic relationship between finance and production and the restructuring of capital itself in the process of accumulation. Financialisation has impacted differently on national economies because of their differing structures and development levels. Equally, it has become integrated and embedded in different ways across different industrial sectors. Hence, we cannot understand this phenomenon in terms of finance versus the rest of the economy. Financialisation needs to be understood and theorised as a phenomenon that encompasses distinct processes which characterise the form of production and capitalist accumulation that has developed over the last three decades. In this way, financialisation works in a co-constitutive manner with the other global phenomena of neoliberalism and globalisation in its impact on capitalism.

Second, the complexity of the structural transformation of production, and thus the implications for the ongoing accumulation process, has been precluded by the analytical level adopted by past studies. Financialisation studies have been skewed towards analysing national accounts to illuminate the changed macro savings-investment relationship brought about, in part, by changes in investment decisions of non-financial firms as a result of new financial imperatives (e.g. Krippner 2005; Orhangazi 2008). Industrial organisation studies, within the globalisation discourse, have focussed heavily on the rapid growth and increasing consolidation of transnational corporations (TNCs), and the vertical de-integration and fragmentation of production globally with the rise of commodity supply chains (e.g. Milberg & Winkler 2013). To fully understand the implications of financialisation and globalisation on the organisation of production, empirical analysis needs to be extended to the level of sectors and the production of specific commodities within those sectors.

There have been a few notable exceptions to the tendencies within the analytical literature mentioned above that specifically focus on the ways in which the structure of production and the financial practices of firms have become increasingly related. These industry studies have been of global retailers, clothing and coffee supply chains, the pharmaceutical industry (Baud & Durand 2012; Froud *et al.* 2012; Montalban & Sakinç 2013; Newman 2009a; Palpacuer 2008), and outsourcing by firms (Milberg 2008). These studies reveal that the global process of financialisation takes a variety of concrete forms that depend upon the financial imperatives faced by a firm and the opportunities to engage in financialised accumulation. Both imperatives of, and opportunities for, financialisation interact critically with the structure of the given industry and market, themselves contingent on the material nature of the product.

The modes of financialisation (the avenues for financialised accumulation available to firms/actors) and their interaction with how production and distribution is organised are therefore heterogeneous and sector specific. For example, Newman (2009a) found that international coffee trading houses reoriented their business strategies towards financialised accumulation through speculative hedging – the practice of hedging on derivatives markets for the purposes of making profits directly from trading in financial instruments. Trading companies faced greater imperatives for seeking out profits from financial activities owing to the erosion of profit margins in trading. At the same time, opportunities to profit from futures trading increased with the collapse of the International Coffee Agreement, the prior restructuring of the sector towards greater concentration, and the liberalisation of coffee marketing systems in producer countries. The process of financialisation involved changes in the contractual arrangements between traders and coffee producers that resulted in the redistribution of price risks at the expense of producers and the redistribution of surplus in favour of international traders.

While similar avenues for financialised accumulation and impacts on the social relations along supply chains might be found in other primary commodity supply chains where developed and liquid derivatives markets exist, the mode of financialisation and its interaction with the structure of production and distribution can differ for different sectors. Milberg (2008) showed that the off-shoring activities of US 'productive' firms coincided with increases in financial investment. Off-shoring, and increasingly arms-length contractual arrangements, allowed firms to reduce the input and operating costs, transfer production risks to subcontractors, and reduce productive investments necessary for in-house production. The organisation of production thus freed up financial resources that could be used for share buybacks and the acquisition of financial assets and increase (financial) profits without production. Since coffee trading companies have not traditionally invested directly in production to any great extent, there was no opportunity to divest in order to free up funds for the acquisition of financial assets. Moreover, the largest coffee trading companies are not publically listed and thus not subjected to the same kind of shareholder value imperatives of listed companies.

In their study of the highly concentrated sector of global retailers, Baud and Durand (2012) found a mode of financialisation distinct to the industry owing to the specificities of supplier relations. By increasing the time between sales and receipt of payment, global retailers appropriated 'free' short-term credit from their suppliers which they then channelled into short-term financial investments. The trade partner 'net' account of the top 10 global retailers increased from 30 days of sales in the early 1990s to 43 days in 2007. The ability of lead firms to appropriate 'free' credit from suppliers is distinct in retail owing to the structural asymmetry that arises because payments made upstream occur with a lag whereas payments are made at the point of purchase downstream that allows retailers to finance payments with supplier liabilities.

Both Palpacuer's (2008) study of the garment industry and the Froud *et. al* (2012) study of the Apple business model, show how the imperatives for divestment in productive activities of lead firms and the squeezing of profit margins of suppliers have restructured the relations of work in supplier firms with serious negative impacts on working conditions and increasingly precarious contractual arrangements for workers.

Overall, these recent studies focusing on the interactions and interdependencies between financialisation and the organisation of production reveal the heterogeneity and variety of the modes of financialisation and the structure and restructuring of the relations of production across sectors, commodities, geographies and institutional contexts. It is our contention that detailed empirical study of the interactions between financialisation and the restructuring of production will allow us to better theorise processes of financialisation and capitalist accumulation in the contemporary era.

D. *RÉGULATION* THEORY

D.1 APPLYING THE THEORY TO AN EMPIRICAL ANALYSIS

Régulation theory, like the SSA approach and the systems of provision approach, is regarded as a middle-range theory which rejects abstract general principles and is "based on intermediate concepts with a more immediate identification with concrete phenomena" (Mavroudeas 2012: 308).

Régulation theory seeks to explain the changes which characterise the distinctive trajectories and dimensions of capitalist economic growth and development over time. Structural change is explained by analysing the mode of *régulation* of a capitalist economy which supports and secures capital accumulation through a conjunction of institutional forms (wage-labour nexus, monetary regime, form of competition, international relations and form of the state). The dimensions of these institutional forms are not limited to economic factors encompassing a far wider range including social, political, spatial, cultural, organisational, technological and historical factors.

The state is not viewed solely as an institutional form but one that also plays a significant role in securing the other institutional forms and their overall complementarity by relating to the mode in two ways - it works *within* the mode by supplementing and reinforcing the other institutional forms and it acts *on* the overall mode, a key mechanism for which is economic policy. Nor do the other institutional forms operate in isolation. It is after all the structural configuration of the wage-labour nexus, monetary regime and competition *in relation to each other* which has ensured "the remarkable resilience of the capitalist mode of production" (Boyer 2002b: 73). The wage-labour nexus and monetary regime (as do the state and international position) impact on profitability conditions. The interaction between these two institutional forms and the form of competition means that changes, for example, in the latter can also accompany or cause changes in either of the former.

A dominance of particular institutional forms has been found to characterise different (macro) modes of *régulation*. The mode, evident from the end of the second World War until the 1970s and commonly referred to as Fordism, is dominated by the wage-labour nexus (collective wage negotiations) and, to a lesser extent, the monetary regime (strong growth of credit money). Since the late 1970s, the monetary regime (depicted by financialisation) and "the internationalisation of competition" have replaced the dominance of the wage-labour nexus (Boyer & Saillard 2002: 39).

A framework of analysis at the level of the macro economy is immediately apparent given the mode of *régulation* can be explained through the empirical representation and conjunction of its five institutional forms *over time*. The extensive range of factors which define each institutional form means that the concrete manifestation of each is not limited to, for example, output, investment or employment and a far more holistic picture can be evidenced.

Although generally regarded as a macroeconomic theory, *Régulation* theory also has been applied to meso-economic analysis focusing upon large sectors of productive activity.[3] The

[3] Sectors have included wine, agriculture, computers and communications, telecommunications, building and public works, and the services sector (see Chester 2007: 64). The geographic focus of these sector studies has been primarily France and Europe with two exceptions being US agriculture and Australian electricity.

Régulationist method of sector analysis, crafted by Boyer from Bartoli and Boulet's study of the French wine sector (Saillard 2002), requires the identification of the following four elements: (1) a sector's social and historical origins, and its collective actors and spatial implications; (2) the institutional arrangements that both define the sector and enable it to function; (3) the sector's place in the accumulation regime and macroeconomic interdependences; and (4) the drivers or points which cause transformations of the sector and the overall economic system.

These elements define the core properties of the nature, structure and interrelationships of a sector of production which can be delineated in detail by applying a set of analytical questions as outlined in Table 1. The questions are framed very generally and need to be applied in ways which will enable an historical dynamic analysis of a sector's development, functioning and position within the mode of *régulation* over time.

It is apparent that a *Régulationist* sector analysis requires two levels of analysis - first, the five institutional forms of the macro economy's mode of *régulation* and their conjunction; and secondly, the sector's reflection of these macro institutional forms. A sector's dynamic will be determined by its own sector-based aspects (institutional arrangements) *in conjunction with* its place in the accumulation regime. This means that the sectoral mode of *régulation* can only be understood in terms of the macro mode. It cannot be understood purely through analysis of a five-dimensional grid. If we are to understand the sectoral impact of financialisation on production, a sector analysis situated within a macro analysis is required.

Table 1: Analytical questions to conduct a *Régulationist* sector analysis

ELEMENTS REQUIRED	ANALYTICAL QUESTIONS
A sector's social and historical origins, and its collective actors and spatial implications.	• What was the impetus for the sector's development? • What has been the sector's historical pattern of development? What has been the nature and dimensions of structural change within the sector? How does this compare internationally? • Who is involved in the sector (e.g. firms, organisations, trade unions)? Has this changed over time? What role does the state play? • How has the sector's development impacted spatially? Are there regional implications?
The institutional arrangements that both define the sector and enable it to function.	• What is the sector's representation of each of the institutional forms of the mode of *regulation*? • How does the conjunction of the institutional forms at the sector level compare to the macro mode?
The sector's place in the accumulation regime and macroeconomic interdependences.	• What is the economic and social significance of the sector (e.g. level and forms of employment; productivity; capital expenditure; contribution to economic growth and standard of living, including general price levels)? • What is the interdependence between this sector and other sectors of the macro economy? • What is this sector's relationship to import and export markets?
The drivers or points which cause transformations of the sector and the overall economic system.	• What have been the drivers of the sector's structural change over time? • How are these drivers different from, or similar to, those driving macroeconomic structural change over time?

The second element of the *Régulationist* four-point method – identification of 'the institutional arrangements that both define the sector and enable it to function' – will be established through determining the answers to two questions: what is the sector's representation of each of the institutional forms of the mode of *régulation*; and, how does the conjunction of the institutional forms at the sector level compare to the macro mode. This will require a deep empirical analysis (for example, see Chester 2007) which considerably dwarfs the analysis required to answer each of the other questions listed in Table 1. We contend that this extensive analysis will yield answers to all the other questions posed if that analysis is framed with those questions in mind.

To undertake such an analysis, and if we are to locate financialisation within this analysis, two further important steps are essential.

The next step is to develop detailed descriptions of the concrete manifestation of each institutional form of the mode of *régulation,* evident during the contemporary era of capitalism, for the macro economy of the sector to be analysed. Descriptions will usefully provide parameters for the research task and focus the analysis by delimiting each institutional form to its prime dimensions including the most significant relationships with other forms. If we are to locate financialisation in the analysis, these descriptions need to include relevant processes, forms and mechanisms of financialisation which can be revealed through a set of analytical questions. The deployment of these questions raises two important points.

The impact and consequences of financialisation on production cannot be analysed solely through a set of 'financialised analytical questions'. The spread and implications of this phenomenon, we argue, can only be understood and theorised if those questions are posed within a wider set of analytical questions about the object of analysis. To do otherwise presupposes, in our view, some form of causality between financialisation and production and ignores co-constitutive relationships between financialisation and other factors which impact on the organisation of production such as the phenomenon of globalisation.

The analytical questions posed to reveal the relationship of financialisation to the restructuring of production should not be regarded as definitive and immutable. We regard the phenomenon of financialisation as constantly evolving and in many respects as being somewhat 'hydra-headed'. This analytical approach actually helps to reveal the pertinent questions which differ and change according to historical, geographical, institutional, sector and scalar specificities. Hence, the 'financialised questions' posed should be regarded as indicative of the analytical questions which a researcher needs to ask and should be adjusted to take into account the changed forms and processes of financialisation which occur over time

Table 2 presents a high-level articulation of each institutional form of the macro economy's mode of *régulation* and outlines a set of analytical questions framed to reveal the impact of financialisation within each form and, through their conjunction, on the mode. These analytical questions are framed broadly and need to be applied to enable an historical dynamic analysis which will concretise how the mode of *régulation* has become financialised. It should be stressed, however, that these 'financialisation' questions need to be posed within a broader set of analytical questions to yield an in-depth picture of the mode in the contemporary era. The spread and implications of financialisation will not be fully exposed unless situated within the other characteristics and features of each institutional form. In this way a comprehensive account can be presented of the relationships and interactions of the financialised mode of *régulation* which will also indicate the ways in which different factors are reinforcing or working in contradiction.

Table 2: Analytical questions to reveal financialisation of the mode of *régulation*

INSTITUTIONAL FORM	ANALYTICAL QUESTIONS
WAGE-LABOUR NEXUS: *Characterises the social relationship between labour and capital which is found in: the means of production; the organisation of work; the length and intensity of the working day; the ways in which workers are recruited and retained; skill structure and acquisition; the factors which determine direct and indirect wage income; and, the standard of living or 'way of life' of wage-earners.*	• What is the pattern of household debt to disposable income? • What use is made by households of credit for consumption? • What is the private provision for social wage elements e.g. retirement income, education, health? • What is the extent of non-bank lending to households?
MONETARY REGIME: *Prevailing monetary standard subject to arrangements controlled and exercised by the state (e.g. monetary policy, banking sector regulation, lender-of-last resort policies, controls on transfer of money between countries); its very nature and functioning determine the distribution of money between industrial capital and finance capital.*	• What is the use of debt, commodity and other derivatives, securitisation and other financial instruments? • What type and sources of finance (e.g. commercial paper) are used by financial and non-financial firms? • Is there evidence of changing debt-to-equity ratios? • What is the turnover of financial markets, and are any particularly dominant? • What is the extent of investment banking? • In what ways has prudential regulation changed and what are the implications?
FORM OF COMPETITION: *How units of*	• What is the pattern of investment in productive capacity by

INSTITUTIONAL FORM	ANALYTICAL QUESTIONS
accumulation relate; distinguishable by many market structure aspects (e.g. company and/or production unit size, number and type of market participants, nature of relationships between companies in different stages of the production process, the role of the market and state, goods exchanged in markets and price determination).	financial and non-financial firms? • What is the evidence of retained earnings being used to fund productive investment? • What are the shares of total assets and profits from financial assets? • What financial services and investments are used by non-financial firms? • What is the pattern of dividend payout to after-tax income ratio? • What divestment strategies are utilised by non-financial firms? • What is the pattern of public listings? • What is the extent of share buybacks and equity repayments? • What is the extent (and forms) of financial trading undertaken by non-financial firms? • What is the relationship to banks and other financial institutions of non-financial firms?
INTERNATIONAL POSITION: *Depicted by trade agreements, the international monetary system, participation in international institutions (e.g. OECD, World Bank, IMF, WTO), financial and trade networks, and transnational corporations (TNCs).*	• What use has been made of global financial markets for borrowing and lending? • What is the extent of foreign direct investment by financial and non-financial firms? • What is the extent of TNC activities?
ROLE OF THE STATE: *Secures the other institutional forms and their overall complementarity; eeconomic policy is a key mechanism which the state uses to act on, and work within, the mode of régulation.*	• What shares of national income and employment are derived from the financial sector? • What privatisations have occurred and what has been subsequent investment in these former public assets? • In what ways has foreign investment, trade and other economic policies facilitated the processes of financialisation?

Completion of this macro analysis, which specifically includes the processes of financialisation, as a precursor will enable a sector analysis to be undertaken which explicitly reveals the effects and consequences of finance and financialisation on production within that sector and more broadly the process of accumulation. The sector analysis, mirroring the macro analysis, can pose analytical questions as outlined in Table 2 in the context of a wider analysis of a sector's characteristics and features to delineate the nature and extent of the sector's financialisation and the implications.

D.2. THE AUSTRALIAN ELECTRICITY SECTOR

Electricity sectors around the world have undergone significant structural change since the early 1990s. Policies, embodying the neoliberal precepts of competition and less government involvement, have spearheaded this transformation. The key policy elements used to achieve the restructuring of electricity sectors have been the breaking-up of government monopolies into separate generation, transmission, distribution and retail companies, the creation of competitive wholesale and retail markets, new regulatory regimes to set market rules and prices for the monopoly transmission and distribution network businesses, and the privatisation of government-owned companies. Australia is considered to have one of the world's most 'liberalised' electricity sectors having adopted virtually the full suite of policy elements in the 'textbook' electricity restructuring model (Joskow 2006).

In 1990, the Australian electricity sector essentially comprised 34 government-owned vertically integrated electricity businesses. That sector is unrecognisable today. The functions of generation and retail are exposed to competition and the monopoly functions of transmission and distribution network services are regulated to emulate competition. The majority of electricity generated, since late 1998, has been traded through the National Electricity Market (NEM) which, by late 2014, had 293 registered participants (AEMCO 2014).[4] Within the NEM, a little

[4] The NEM covers Queensland, NSW, ACT, Victoria, South Australia and Tasmania. The geographic remoteness of the population and industrial centres of Western Australia and the Northern Territory, from the eastern states, make the cost of transmission interconnection to a national grid prohibitive. More than 70 per cent of total installed generation capacity is within the three states of NSW, Queensland and Victoria which also account for about 80 per cent of electricity consumption.

more than 70 per cent of generation capacity is now privately owned along with 43 per cent of distribution networks and 28 per cent of transmission networks. Private companies also deliver the overwhelming majority of retail services.

All five macro Australian institutional forms are evident throughout the operation and structural characteristics of the Australian electricity sector. The extent of sectoral presence – in terms of outcomes similar to the macro level – varies between institutional forms but is generally strong.

Table 3 provides a generalised synthesis of the contemporary Australian mode and its reflection in the electricity sector.

Table 3: Contemporary characterisation of Australian mode of *régulation*

INSTITUTIONAL FORM	MACRO MODE OF *RÉGULATION*	ELECTRICITY SECTOR MODE OF *RÉGULATION*
Wage-labour nexus	Heavily regulated decentralised wage bargaining system. Growing dominance of individual employment contracts, instead of collective bargaining, and 25% all jobs part-time. Long term fall in labour's share of national income and steady increasing share held by profits. Real wage growth has exceeded Falling trade union density. Persistent unemployment and labour under-utilisation. Increasing private provision of social wage elements (health, housing, retirement incomes). Welfare system pared back. Escalating housing debt and house prices/housing stress. Household debt peaked at 163% of disposable income in 2006. Emerging evidence of securitisation of household debts.	Highest union density of all sectors. Average wage levels second highest of 18 industrial sectors. Collective enterprise agreements dominate coverage of non-managerial employees but increasing use of contract employment. Less spread of non-standard work than other sectors. Productivity has declined following privatisations and has been exceeded by real wage growth since the mid-1990s. Real wage growth has generally been well above the market sector since the early 1990s. Average household electricity prices have escalated since mid-2000s (80-120%) far in excess of wage and general price movements. Evidence of widespread and systemic household energy impoverishment from high energy bills despite reduced energy use. Rising numbers of household electricity disconnections. Limited assistance from the state to those struggling to pay household energy bills.
Money and finance	Policy and operational independence of central bank. Monetary policy used to fight inflation. Long-term decline in interest rates. Price stability (inflation target of 2-3% p.a.). High capital adequacy requirements for banks. Single prudential regulator. 'Four-pillar' bank policy and banks too small to expand globally. Financial sector largely composed of domestic banks.	Specific prudential regulation of wholesale market participants to prevent collapses. Electricity derivatives market to reduce exposure to wholesale price volatility and trading nearly five times NEM demand by 2010-11. Higher long-term debt dependence compared to Australia generally. Higher debt to equity ratios and dividend payout rates by government-owned companies compared to domestic private counterparts. Financial institutions hold ownership shares and are registered NEM participants (to buy and sell electricity).
Competition	Legislative restriction of concentration. Predominance of oligopolistic competition (e.g. media, banking, grocery retailing, utilities, domestic airlines). Increasing market concentration in all sectors. Increasing sector specific and national regulation of economic activity to 'improve competition'.	Increasingly oligopolistic with companies de-integrated from former state-owned monopolies dominating. Operation of mandatory wholesale trading market through a complex regulatory regime and specified maximum price. Wholesale price volatility caused by market power not demand and prices not sending investment signals. Re-integration of generation and retail. Retail consolidation.
International position	Adhesion to free trade principles. Increasing global integration through trade and financial markets. Finance and investment promoted by international alliances such as WTO, OECD, APEC and bilateral FTAs. 10 FTAs and 7 being negotiated by mid 2015. High reliance on exports of natural resources (coal, iron ore,	IEA/OECD best practice model for energy liberalisation. Fused into global business strategies through TNC ownership across all sub-sectors and use of offshore financial markets.

INSTITUTIONAL FORM	MACRO MODE OF *RÉGULATION*	ELECTRICITY SECTOR MODE OF *RÉGULATION*
	LNG) and agricultural products, and imports of manufactured goods.	
Form of the state	Proactive and market-enhancing state. New forms of regulatory intervention and range of new institutions created. Little public investment in social and economic infrastructure. New forms of social regulation (e.g. income management; intervention in indigenous communities).	Major source of privatisation proceeds. Nation-state has centralised regulatory control of the sector and strengthened role. Regulation of monopoly networks is framed around company's cost base, cost of capital and financing requirements. Sector provides blueprint for 'marketisation' in other sectors and flagship for IEA/OECD policy agenda.

In summary:

- *Wage-labour nexus*: The macro form of wage determination has shifted since the early 1990s to a heavily regulated decentralised system and increasing use of individual contracts instead of collective bargaining agreements to set wages and conditions for labour. Electricity sector use of individual contracts is around half the national coverage (22 per cent compared to 40 per cent). Similarly the sector's coverage by enterprise agreements is about double the all industries average. The national trends to greater use of casual and part-time are also evident within the electricity sector although not as strong nor is the number of jobs occupied by women. Electricity sector wages are the second highest of 16 industry sectors across Australia. As the rest of the workforce are experiencing longer hours of work without overtime payment, the actual and paid working hours with the electricity sector are more closely matched. This most likely is a result of the sector's higher level of union membership. As union membership has fallen nationally to 18 per cent, sector membership remains consistently one of the highest although it has declined from a peak of 68 per cent in 1995 to a current level of 32 per cent. Overall, the sectoral conjuncture of these changes has, to date, produced less deleterious outcomes for the electricity sector for labour. However, household electricity prices have increased, on average, in the most populous Australian by over 100 per cent from 2007 to 2012 and far outstripping wage and general price movements.
- *Money and finance*: Economic policy decisions have transformed Australia's financial sector leading to higher debt dependencies, a shift to non-traditional sources of debt finance, an explosion in the use of off-balance sheet derivatives, and the creation of new derivatives. All these changes are strongly evident in the electricity sector with an upward shift in long-term debt dependence (debt-to-equity ratios) particularly pronounced. State-owned companies are key contributors to higher sector debt levels. For example: In 1996, 2001 and 2003 the NSW government required substantial capital payments from its electricity companies. In 2001, the amount of NSW equity repaid was $2410 million (along with $424.6 million in dividend payments) and the debt held by these companies rose by $2637 million in the same year. New debt financed these capital payments. New investment by these companies, at this time, was marginal and could not cause such a surge in debt levels. Debt-to-equity ratios for privately-owned electricity companies are ten times or greater than their government counterparts. The electricity sector's use of derivatives to manage interest rate, foreign exchange and trading risks has also escalated although the potential exposure to derivative trading is not known because accounting standards have limited publicly available data. Eleven, of a total 37, government electricity companies reported the use of derivatives in 1995. Ten years later, all 19 government companies reported their use. NSW government electricity companies all report a 'significant risk exposure' to electricity derivatives – equivalent to more than 100 per cent of equity in some cases. Private owners, especially Australian, show a comparative exposure of more than double. Trading of electricity derivatives has reached nearly five times of NEM demand and the share, held by generators and retailers, has fallen from nearly 95 per cent in 1999-00 to 76 per cent in 2010-11, and barely 50 per cent in 2011-12 (Chester 2012).

- *Competition*: Relations between Australian firms and profitability conditions have been strongly shaped by state interventions through the National Competition Policy (NCP), privatisations, compulsory tendering and contracting-out of government services, and targeted government programs to improve industry competitiveness. De-integration, corporatisation and privatisation within the electricity sector became pivotal to the NCP although the oligopolistic NEM is characteristic of all Australian industry sectors. Notably the NEM is a mandatory market with a specified maximum price, both inconsistent with a purportedly competitive market. A small number of state-owned companies dominate generation capacity and the NEM rebidding rules has meant that these companies exert considerable market power (Chester 2012). Wholesale price spikes reflect this market power because they have occurred at levels well below maximum demand, and cannot be attributed to transmission congestion or capacity being offline for maintenance, although the frequency of spikes at less than maximum demand has started to fall in recent years. Wholesale prices are not providing the signals for investment in base-load or peaking capacity as suggested by policymakers. There has been consolidation in the retail sector and increasing re-integration of generation and retail.
- *International position*: Australia has become globally dependent and integrated through trade, investment and finance linkages which have been actively fostered by the nation-state through free trade agreements (FTAs), bilateral investment treaties (BITs) and membership of the World Trade Organisation (WTO) and the Organisation for Economic Cooperation and Development (OECD). This internationalisation is reflected in the Australian electricity sector through high levels of foreign ownership for privatised companies, the fusion into global business strategies and the use of offshore financial markets to source debt. Foreign investment contributed more than 80 per cent to privatisations during the period 1994 to 2006. Asian TNCs dominate the private ownership of electricity assets which has fused Australian electricity companies into global strategies. Interlocking directorships between parent and subsidiary interests, appointment of senior Australian management from parent company executives and the interchange of technology, management and information systems integrate Australian companies with parent global business strategies. These companies also have made significant financial contributions to their owners. For example, Australian electricity operations contributed 40 per cent to the 2004 after-tax profit of the Hong Kong TNC Cheung Kong Infrastructure Holdings. Global integration is also ensured through financial markets. Government electricity companies raise debt through local-state borrowing authorities which have increasingly used offshore financial markets to raise this debt. In 2005, 44 per cent of debt raised by the NSW and Queensland borrowing authorities was from offshore sources. Finally, FTAs and BITs, along with OECD and WTO memberships, provide a web of alliances and allegiances which promote further global integration with investment flows able to move to the location of greatest return ensuring offshore ownership of existing, or additional, Australian electricity assets.
- *The form of the state*: The Australian state has extended its interventions to micro-structuring across the public sector and other areas of the economy through the prolific creation of new regulatory instruments and institutions. The electricity sector strongly exemplifies these regulatory actions of the state with its structure transformed and a wholesale trading market created through regulation but still providing a lucrative source of funds for the local-state from privatisation proceeds and annual financial payments. The Australian sector has been held out as one against other countries could benchmark their electricity liberalisation progress which is beneficial for both the OECD and the Australian state. The OECD has a reputable flagship to promote its policy agenda. The Australian state has international endorsement of its electricity sector liberalisation, a tool to blunt domestic opposition and a blueprint to advance change in other sectors.

The state has played an extremely active role in shaping all five institutional forms of the Australian mode of *régulation* and, consequently, has had a direct bearing on the extent and depth of the presence of each within the electricity sector. It could be suggested that this finding is to be expected. Such a proposition would conveniently ignore the electricity sector's own set of specificities, historical development and place in the Australian accumulation regime that is not emulated by another industry sector. It would also ignore the state's singling out of the electricity sector as the competition 'reform' flagship in the neoliberal age of markets, competition and commodification.

Unique sector institutional arrangements are identifiable for each institutional form but there is a difference amongst these sector arrangements in that they can either be categorised as having been derived from the sector's own specificity *or* as a result of the macro institutional form acting on the sector.

With respect to money and finance, form of competition and form of the state, the institutional arrangements are very sector-specific in their origin. The scope of prudential regulation for NEM participants is not the same as other prudential regulation of Australian companies, the regulatory regime for the NEM does not apply to any other market, the electricity derivatives market has been created to reduce the risk exposure of NEM participants, the dominant ownership by the local-state is peculiar to the mixed-ownership structure of the electricity sector, the centralised sector regulatory control by the nation-state is unsurpassed, and no other sector has provided the state (or the OECD) with an energy sector restructuring blueprint. All of these dimensions directly reflect the nature of their respective macro institutional form but have been designed by the state (or capital, in the case of the electricity derivatives market) as very sector-specific arrangements, that is, unique to the electricity sector and no other Australian industry sector.

On the other hand, the sector dimensions of the other two institutional forms, the wage-labour nexus and international position, are just as unique but derive from their respective macro institutional form which has also been strongly shaped by the Australian state. With respect to the wage-labour nexus, it is the conjuncture of changes in the macro form, acting on the sector, which has produced a unique sector arrangement of high union density, high wage levels, a domination of collective enterprise agreements to determine wages and less growth of non-standard forms of work. In this way the sector institutional arrangement is unique but it derives directly from its macro form acting on the sector not from an arrangement specifically designed for the sector such as the NEM regulatory regime. The same conjuncture of changes in the macro form of the wage-labour nexus, acting on another industry sector, will produce a different sectoral arrangement. The same can be seen for the electricity sector's international institutional arrangement which differs considerably from du Tertre's (2002) notion of rules and regulations of an international regime in that it derives directly from Australia's international position, its international alliances which have promoted global integration through investment, finance and trade. The arrangements which coalesce to comprise Australia's international position, acting on the electricity sector, have also provided the genesis of the electricity sector's institutional arrangement: fusion into global financial markets and the business strategies of foreign TNC owners as well as being a best practice model for electricity restructuring. This sector arrangement is unique to the electricity sector yet the same macro institutional form, acting on another sector, will produce a different sectoral arrangement.

Hence, the derivation of sector institutional arrangements can be traced to one of two sources - either specifically designed sector arrangements or the impact of a macro institutional form on the sector – but all institutional arrangements irrespective of derivation, as exemplified by the Australian electricity sector, have been engineering through interventions by the state. This subtle distinction of different derivation sources of sector institutional arrangements has been overlooked in past sector-based *régulationist* studies. As a result, past studies have focused only on those sectoral arrangements derived from a sector's own specificity and not from the macro institutional form acting on the sector.

E. TWO ALTERNATIVE ANALYTICAL FRAMEWORKS

E.1. THE SOCIAL STRUCTURE OF ACCUMULATION APPROACH

Like *Régulation* theory, the SSA approach is an intermediate level of analysis using concepts based on empirical observations rather than the "usual abstract theory of capitalism-in-general" (Kotz 1994: 87). The relationship of the broader social environment to the process of growth, through the economic, political and social dimensions of the institutions of capitalism, is the focus of the SSA approach. It is contended that economic growth depends on the stability and predictability of the institutional environment and that capitalism evolves through long waves of economic growth, each of which is delineated by a unique group of institutions. The social structure of accumulation and institutions represent the key concepts of the SSA approach.

Gordon (1980: 36, fn. 15, original emphasis) defines an institution "as a set of social relationships whose relative stability and reproducibility permit the repeated fulfilment of an important socio-economic function. This definition immediately stresses the *social* character of the context within which accumulation takes place." It has been subsequently posited that "the current conception of institutions within the SSA framework is borrowed from the Veblenian tradition of institutional economics. As such it is a rough and ready, partially empirical notion of institution revolving around customs, habits, rules and laws" (McDonough, Kotz and Reich 2014: xxvi). On the other hand, Lippitt (2006: 75) suggests that institutions may be conceived narrowly or broadly. Organisations exemplify a narrow conceptualisation whereas a broader view of institutions is as customs, habits and expectations which are culturally or country specific. A further example proffered by Lippitt is the dichotomy of collective bargaining (narrow view) and a national industrial relations system (broad view).

Four categories of 13 institutions to ensure stability for the process of accumulation were identified by Gordon (1980: 12-17). These categories and institutions (in brackets) are: the agents of accumulation (corporate structure), the motors of accumulation (the structure of competition, the structure of the class struggle), the systemic requirements for accumulation (the structure of the monetary system, the structure of the state) and the requirements for individual capital accumulation (the structure of natural supply, the structure of intermediate supply, the social family structure, the labour market structure, the structure of labour management, the structure of final consumer demand, the financial structure and the structure of administrative management). Such an expansive list of institutions renders empirical analysis to be unwieldy at the least.

The list of institutions ensuring stability for capitalist accumulation was distilled by Reich (2006) to a total of six. These were capital-labour relations (including the organisation of work, labour-management relations, and labour supply sources), capital-capital relations (including forms of competition and corporate governance), financial institutions, the role of government, international relations and institutions and the dominant political coalition. Nevertheless, many SSA analyses conducted by this theory's founders of post-Second World War US capitalism 'delimited' the number of institutions to three dominant forms – the capital-labour accord (Fordism), the state-citizen accord (the Keynesian welfare state) and *Pax Americana* (O'Hara 1994). O'Hara (2000: 188) suggests that the number of institutions should be expanded from three to at least five and include the financial system, and household labour and the patriarchal nuclear family.

The amalgam of these institutions is the social structure of accumulation, that is, "all the institutions that impinge upon the accumulation process" (Gordon, Edwards and Reich 1982: 23). The social structure of accumulation is a "coherent set of economic, political and cultural/ideological institutions that provides a structure for capitalist economic activity" (Kotz 2003: 263). This social structure of accumulation has an inner and an outer boundary. Its inner boundary demarcates the institutional environment for capital accumulation (that is, the "social structure") from the capital accumulation process itself. Its outer boundary distinguishes this social structure from other social structures in the rest of a society." (Gordon, Edwards and Reich: 24).

This means that a SSA does not encompass a limitless number of institutions and distinguishes between the process of capital accumulation, its institutional context, and those institutions that directly impact accumulation from those that are tangential to the process.[5]

The institutions of a SSA cohere because of "the interdependencies among the individual institutions create a combined social structure with a *unified* internal structure of its own – a composite whole, in effect, whose intrinsic structure amounts to more than the sum of the individual institutional relationships" (Gordon 1980: 17, original emphasis). This suggests that there is not one-way causality between a SSA's institutions but co-constitutive relationships, that is, "changes in any one constituent institution are very likely to reverberate throughout the entire structure" (*ibid).* Kotz (1994) raises the possibility of 'core' institutions to cohere the SSA, namely those that stabilise class conflict and competition. This may be so. The more salient point, however, is this: each SSA is a composite of a unique set of institutions which means that the institutional relationships of a SSA are inimitable and historically contingent.[6]

The life-cycle of a SSA is directly related to the long swings in capitalist economic activity (Reich 1994). An economic crisis results from a breakdown of a SSA. Capitalist institutions, comprising a SSA, falter, stagnate and decay which undermines the SSA's support for the process of accumulation leading to crisis. Reconstituted institutions, forming a new SSA, are required to overcome a crisis. Institution (re)building is gradual and takes time before a new SSA emerges to promote a long period of rapid and stable economic growth. The creation of new institutions is the result of class struggle and "political innovations" (Kotz 1994: 91).

SSA theorists have overwhelmingly focused their analyses on the United States, identifying four structures of accumulation, the 1840s-70s, the 1890s-1910s(or 1920s), the 1940s-70s, and the contemporary era (Gordon, Edwards and Reich 1980; Kotz, McDonough and Reich 1994).[7] Kotz (2003) has also distinguished two types of SSA institutional structures – liberal and regulationist - which are differentiated by the dominant ideology, capital-capital and capital-labour relations and the economic policy role of the state. The liberal institutionalist structure is characterised by capital-labour conflict, glorification of the free market, a limited economic role for the state and 'cutthroat' competition. A state actively intervening in economic activity, cooperation and compromise between capital and labour, muted competition, and strong support for the contribution of government to social and economic progress and to regulate market activities denote a regulationist institutionalist structure. This dichotomy of institutional structures suggests that the long-run historical pattern of capital accumulation is more appropriately explained by considering the notion of successive institutional configurations "which may or may not promote rapid capital accumulation" (2003: 263). This contention aligns SSA theory with the *Régulation* approach.

In summary, a SSA – through its composite of institutions – ensures the stability and predictability required for rapid and stable accumulation over the long-run. A SSA is cohered by the co-constitutive relationships between institutions which also leads to its demise. The pace of accumulation, and the institutions supporting accumulation, is the focus for SSA theory not the nature of accumulation during a particular period, the concern of *Régulation* theory. The

[5] The inner boundary of a SSA is broadly equivalent to the mode of *régulation*.

[6] An analogous concept is the unique institutional conjunction of *Régulation* theory's mode of *régulation*.

[7] SSA analyses of other capitalist economies has been limited as evidenced by eight chapters out of a total of 72 in the recently published two volume collection edited by McDonough, Kotz and Reich (2014). McDonough and Nardone (2006) propose the SSA approach be extended to the European Union.

creation of a SSA's set of institutions, through political struggle, is gradual over a long period of time which then undergoes a long phase of consolidation before stagnation and decay.

E.2. THE SYSTEMS OF PROVISION APPROACH

Originally developed by Fine and Leopold (1993) and subsequently extended by Fine (2002), the systems of provision (SOP) approach takes consumption as its object of study. Analysis of a SOP focuses on specifying the vertical chain of activities, including feedback relationships,

> connecting production to consumption (and even disposal) with the commodity as meeting point along the way. The commodity form itself structures provision in this way, even if horizontal factors, whether attached to production or consumption, also prevail alongside the imperatives of profitability (Fine 2013b: 220).

A SOP analysis takes into account not only general theories of demand and supply but also the disparate elements of power, taste and culture informed by other disciplines in the analysis of consumption. The combination and nature of these factors will inevitably be commodity specific and not readily bundled into general categories on the basis of individual elements. The SOP approach is

> consciously sensitive to the difference between commodities, not so much as items of consumption alone, but in terms of the economic and social processes and structures by which they become such. Even where these economic and social relations are shared, the way in which they interact may well be different across commodities. All tend to be the product of wage labour; but production processes are organised differently, are consumed and disposed of differently; they serve needs that are themselves socially constructed and satisfied (or not) very differently (Fine 2002: 82).

As well as describing physical supply chains, a SOP includes the relationships across chains either through their intersections at particular levels of the vertical supply system, or horizontally in the context of global and national political and economic structures.

This is how Newman (2009b: 87) used the SOP approach to identify the components of the international coffee system:

We thus define the international coffee system as the vertical and horizontal structures, relations and processes that bring about the supply of coffee from production to consumption. More than the structure of the supply system, made up on any number of coffee chains, the coffee system also includes the relationships across chains either through their intersections at particular levels of the vertical supply system, or horizontally in the context of the global and national political and economic structures. The components of the coffee system thus include: the various market actors that are involved in the production, marketing and processing of physical coffee; the financial intermediaries operating on international commodity exchanges and the institutional and private investors that they serve; and the regulatory environment faced by different actors at different levels of the supply chains as well as the regulatory environment of the international exchanges.

This description aptly illuminates a number of critical aspects about a SOP and its analytical framework, namely:

- systems of provision are commodity-specific;
- each SOP is different and specific to the commodity concerned;
- each SOP is seen as distinct from, if interacting with, others and to vary significantly from one commodity to another;
- a SOP needs to be analysed through the material and cultural specificities that bring together production, distribution, access and the nature and influence of the conditions under which these occur; and

- through vertically integrated chains of activities, consumption of a commodity is inherently linked to production which is shaped by social, political, economic, geographic and historical factors.

These aspects portend a complex analysis for each SOP if all the material and cultural specificities of the entire chain of activities (production to distribution to access) are to be comprehensively identified as well as the nature and influence of the conditions under which these activities occur. However, Bayliss *et.al* (2013) concede that, in practice, the way a SOP will be identified depends on the research question e.g. what is the role of finance and financialisation in the delivery of commodities. The authors further suggest that specification of a SOP can "draw freely upon standard ways of conceptualising and theorising across the social sciences by appeal to the following overlapping categories" *(ibid*: 13). These 'standard ways' are structures, processes, agents/agencies and relations which we can see in the above description by Newman of the international coffee system.

Consumption is located in the context of a chain of processes and structures brought about by relations between agents. Structures are defined as institutional forms of provisioning including - but not limited to - ownership patterns, control and delivery as well as price and quality access structures. Processes include phenomena such as globalisation, privatisation, decentralisation and, we would add, financialisation. Agents/agencies are the participants in all the activities along the chain from production to consumption which goes beyond the direct categories of those who produce and those who to consume to include regulators, trade unions, those who influence the delivery of finance, and more. Agencies interact with structures and processes. Finally, relations within a SOP are "differentiated by the roles of capital (or state as employer) and labour in production and other commercial (or non-commercial) operations through to the relational norms by social characteristics that are attached to levels and meanings of consumption" (*ibid).*

These constructs facilitate a SOP being framed either as an empirical provisioning chain from production to consumption or as a "chain of determinants across structures, processes, agencies and relations" (*ibid:* 14).

Application of the SOP approach in practice is heavily inductive and, as Fine (2013: 222) acknowledges, it is not necessarily straightforward determining where one SOP ends and another begins.

The SOP approach has been applied to commodities such as sugar, meat and dairy, and more recently to the delivery of essential services (housing and water) in which the state often plays a significant role. The latter study of essential services was through the lens of finance and financialisation (Bayliss *et. al* 2013). We note that the SOP analysis of water strongly equated financialisation with the process of privatisation and a flow of private investment funds although subsequent discussion of the proliferation of complex financial instruments aimed at facilitating investment in water - through water-focused investment funds, water-structured financial products, water-indices and water-focused exchange traded funds - suggests a much more nuanced understanding of the processes and forms of financialisation.[8]

We suggest that the SOP approach can be utilised to explain the impacts and consequences of financialisation on the structure of productive organisation through the application of a set of analytical questions akin to those proposed for a *Régulation* macro and sector analyses.

On the surface, the vertical nature of the SOP and its description of the processes involved from production to consumption of a commodity bear a striking resemblance to commodity chain constructs. The SOP approach, however, differs in at least one crucial aspects. In terms of method, this approach proceeds with the understanding that the structure and dynamic of individual SOPs comes from the structuring of accumulation in production and through to consumption in practice. In this way, a SOP analysis seeks to understand the specificities of individual SOPs owing to how specific sectors have evolved in relation to one

[8] We also note that one of authors is of the view that "privatization and commericialization of what was previously provided by the state … is not in and of itself financialization" (Fine 2013a: 55).

another historically and integrally with the socially and historically contingent form taken by the accumulation of capital rather than to construct typologies for the structure and dynamics of SOPs (Fine 2013b).

F: CONCLUSIONS

Table 4 summarises the respective insights and limitations of the three analytical approaches. Each of these approaches can be configured, through the inclusion of a set of critical analytical questions, to reveal the nature and extent of the financialisation of a macroeconomy (*Régulation* theory and SSA approach), a sector (*Régulation* theory) and a commodity (SOP approach).

A *Régulationist* sector analysis yields a detailed understanding of a sector's structure, functioning and position within the accumulation regime of a capitalist economy. Moreover, the analytical framework can be extended if the objective is to understand the impact of finance and financialisation on production within an industrial sector. Nevertheless, a core feature of this analytical framework contains a critical limitation to its application. A sectoral mode of *régulation* can only be understood in terms of the macro mode, and the sectoral impact of financialisation on production is only explicable through the 'lens' of the macro economy's financialisation. Thus the boundaries of the macro economy implicitly limit a sectoral analysis to only those sectors which do not transcend the geographic borders of a national economy otherwise a sector's structure, dynamics and production cannot be explained. However, the globalisation of production over the last thirty years or so means that many commodities are produced within sectors which transcend the physical borders of a national economy.

The highly inductive SOP approach can analyse the financialisation of the production and consumption of a commodity within a sector which transcends the boundaries of a macro economy.

Table 4: Insights and issues for sector analysis from three analytical approaches

ANALYTICAL APPROACH	OBJECT OF ANALYSIS	ANALYTICAL FOCUS	UNIT OF ANALYSIS	INSIGHTS AND ISSUES
Régulation theory	Sector (and macro)	Conjunction of institutional forms	Institutions	• Locates an industrial sector within the broader (macro) political economy. • Requires extensive analysis at macro and sector levels. • Analysis through institutional forms defined in terms of a macro economy. • Sectoral impact of financialisation reflects the financialised mode of *régulation.* • A sector can only be understood in terms of the macro mode which limits analytical application to sectors within the geographic limits of a macro economy.
Social Structure of Accumulation approach	Macro	Amalgam of institutions.	Institutions	•
Systems of provision approach	System linking production of a commodity with its consumption	Structures, Processes, Agents/ Agencies, Relations	Commodity	• Locates a commodity within the broader political economy. • Vertical analysis of entire chain of activities from production to consumption. • Highly inductive approach. • Difficulties in determining where a SOP starts and ends. • Application suitable to commodities produced within sectors which transcend borders of a macro economy.

The starting point for *Régulation* theory it is the nature of capitalist accumulation whereas for SSA theory it is long-run rapid and stable accumulation. Institutions, for both approaches, are the analytical focus and envisaged as continually evolving elements critical to explaining the social processes, relations and structure of the socially-encased economy. There is much in common between these two approaches despite the different starting points and different emphases given to particular institutions.[9]

Régulation theory provides notions of 'institutional complementarity', a 'conjunction of institutions' to ensure economic growth and stability, and different periods of capital accumulation exhibiting a 'hierarchy' of institutional forms which is not universal or permanent. SSA theory provides notions of a 'unique composite whole' of institutions to support stable accumulation, 'interdependencies' between institutions, 'historically contingent' institutions and gradual 'reconstitution' or re-building of institutions following decay. Both theories have shown a periodization (or stages) of capitalism through analyses of changing institutional forms and the metamorphosis of institutions to overcome an economic crisis of capitalism. The historical form and precise articulation of institutions has been shown to continually change while certain core invariant aspects are sustained and their inherent contradictions contained for a time to secure ongoing accumulation. Institutional transformations following periods of crisis have also been shown to ensure renewed accumulation.

These insights of institutional complementarity, conjunction, configuration, hierarchy, unique composite or set, historical contingency, reconstitution and metamorphosis can be similarly deployed by sector analyses to enrich our understanding of the impact of financialisation on the restructuring of production and the implications for national industrial policies.

Régulation theory conceives institutions as the codification of capitalism's social relations and reflected through laws, rules, regulations, compromises or negotiated outcomes, and common value systems or representations. SSA theory considers institutions to be relatively stable social relationships exemplified by organisations, customs, habits, rules and laws which may be country or culturally specific. For institutionalism, institutions are durable social systems or rules which structure social interaction and processes. These conceptualisations, whilst containing relatively common elements, all contain the same inherent weaknesses which is significant because these 'weaken' the cogency of each school's theoretical and analytical frameworks given their respective use of concepts based on empirical observation.

First, there is a lack of definitional clarity. Throughout the discourse for each, the concept of an institution has not received the same attention as the more abstract concepts of accumulation regime, mode of *régulation* or social structure of accumulation. We know that institutions embody habits, norms, laws, values etc. However, in most cases, references to specific institutions are cursory and vague with little description or details of their nature and concrete expression. This means that empirical application of a *Régulationist* or SSA approach requires the researcher to pay close attention to her interpretations of the tangible manifestation of the institutions included in the analysis and develop a detailed description of each.

Detailed descriptions of the concrete manifestation of each institution will also address a second issue. It will both define the parameters of the research task by delineating the institutions to be included in the analysis and establish a 'boundary' for the analysis of each relevant institution. These 'boundaries' may well be somewhat artificial and arbitrary, and in themselves problematic given the varying degrees of inextricability between different institutional forms. For example, within a *Régulationist* analysis there are strong interrelationships between the form of competition and three institutions - the wage-labour

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[9] For example, Kotz (1994) views the SSA approach as giving the greatest importance to class conflicts whereas the *Régulationist* approach places the strongest on structural forces.

nexus, monetary regime and form of the state - given all their direct impacts on profitability conditions.[10] Without a defined 'boundary', the research task becomes virtually open-ended given the factors which impact on, for example, the form of competition. The development of descriptions for each institution will provide a centered analysis by delimiting each to its prime dimensions including the most significant relationships with other institutions.

This means that a third issue is also addressed through detailed institutional descriptions, namely determination of the interdependencies which cohere institutions of a mode of *régulation* or social structure of accumulation. *Régulation* theory and SSA theory are holistic approaches. Capitalism is treated as an open and evolving economic system embedded within social, political and cultural institutions. Thus, changes within one institution will impact other institutions through their interrelationships. However, the nature of those interrelationships is not readily apparent unless clearly explicated which will also explain the form of coherence within a mode or SSA.

Finally, the conceptualisation of institutions should not be constrained by the limits of national economic organisation. Currently, *Régulation* theory and SSA theory denote institutions in terms of autonomous national economic systems and their trajectories. Contemporary capitalism has been transformed over the past thirty years through the global phenomena of neoliberalism, globalisation and financialisation. The processes of financialisation and globalisation are 'flows' which transcend the boundaries of national economies. Capital has overcome the constraints of national economic organisation subordinating it to global financial and commodity markets that cross national boundaries (McMichael and Myhre 1991). Capitalist accumulation has been restructured by these global flows. Consequently, changes are required to the conceptualisation of institutions to explicitly account for these global flows if *Régulation* theory and SSA theory are to provide credible explanations of contemporary capitalism and the impact of global phenomena, like financialisation, on the restructuring of production and the implications for the process of accumulation.

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[10] For example, the wage-labour nexus impacts on profitability conditions through direct and indirect wages not only as a cost but also as a critical determinant of consumption and thus, effective demand. The monetary regime can impact on profitability conditions through the cost of available money forms which it administers. The form of the state strongly influences wage determination processes and the monetary regime and hence, profitability conditions. In addition, the form of competition can be influenced by specific actions of the state designed to shape and change its structural characteristics through economic policy and other specific actions.

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APPENDIX A

Table A.1 : Companies operating in Australian electricity sector

Table A.2 : Companies operating in EU electricity sector